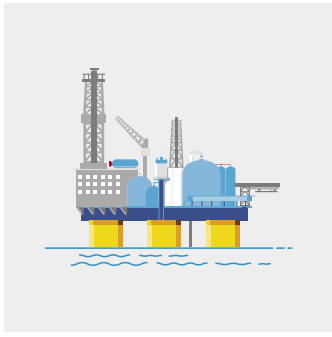
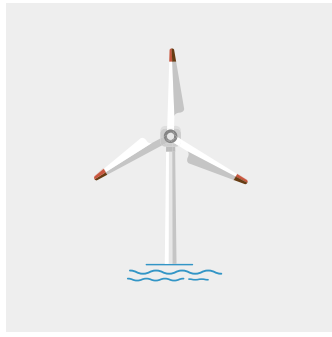
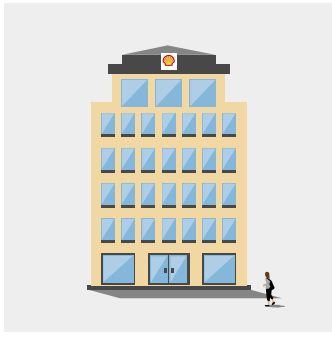
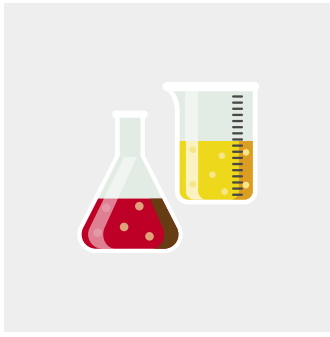


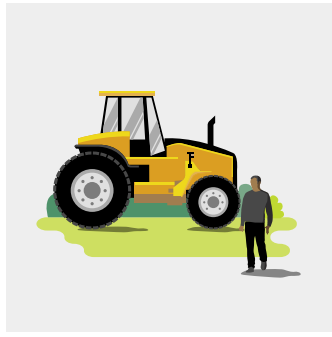
GENERATING
SHAREHOLDER VALUE



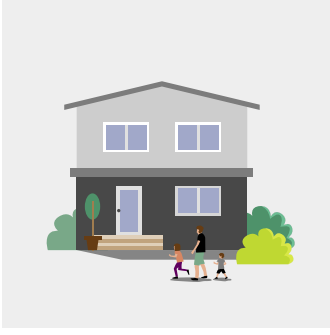
ACHIEVING
NET-ZERO EMISSIONS







POWERING **PROGRESS**

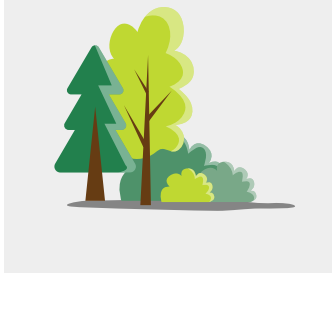


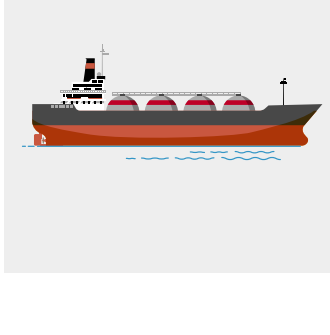


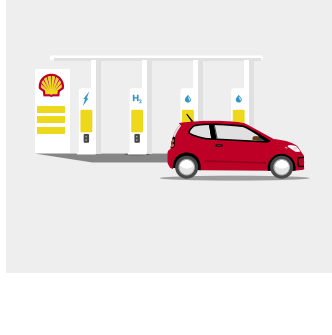
POWERING
LIVES

Shell plc
Annual Report
and Accounts
for the year ended
December 31, 2021

RESPECTING
NATURE







CONTENTS

INTRODUCTION

iii About this Report
iv Terms and abbreviations

STRATEGIC REPORT

2 Chair's message
4 Chief Executive Officer's review
6 Shell Powering Progress
10 Strategy and outlook
16 Section 172(1) statement
22 Risk factors
34 Summary of results
36 Performance indicators
38 Liquidity and capital resources
42 Market overview
45 Integrated Gas
50 Upstream
57 Oil and gas information
65 Oil Products
71 Chemicals
74 Corporate
75 Climate change and energy transition
99 Environment and society
114 Our people

GOVERNANCE

121 The Board of Shell plc
129 Senior Management
131 Introduction from the Chair
134 Statement of compliance with the UK Corporate Governance Code
135 Governance framework
137 Board activities and evaluation
141 Understanding and engaging with our stakeholders
145 Workforce engagement
147 Nomination and Succession Committee
151 Safety, Environment and Sustainability Committee
153 Audit Committee Report
166 Directors' Remuneration Report
171 Annual Report on Remuneration
189 Directors' Remuneration Policy
198 Other regulatory and statutory information

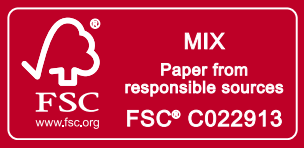
FINANCIAL STATEMENTS AND SUPPLEMENTS

208 Independent Auditor's Report related to the Consolidated and Parent Company Financial Statements
228 Consolidated Financial Statements
284 Supplementary information – oil and gas (unaudited)
302 Supplementary information – EU Taxonomy disclosure
305 Parent Company Financial Statements
314 Independent Auditor's Report related to the Royal Dutch Shell Dividend Access Trust Financial Statements
316 Royal Dutch Shell Dividend Access Trust Financial Statements

ADDITIONAL INFORMATION

321 Shareholder information
326 Non-GAAP measures reconciliations
331 Appendix 1: significant subsidiaries and other related undertakings (audited)
347 Appendix 2: five-year financial dataset

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ABOUT THIS REPORT

The Shell plc Annual Report (this Report) serves as the Annual Report and Accounts in accordance with UK requirements for the year ended December 31, 2021, for Shell plc (the Company) and its subsidiaries (collectively referred to as Shell). This Report presents the Consolidated Financial Statements of Shell (page 228), the Parent Company Financial Statements of Shell (pages 306-313) and the Financial Statements of the Royal Dutch Shell Dividend Access Trust (pages 317-319). Except for these Financial Statements, the numbers presented throughout this Report may not sum precisely to the totals provided and percentages may not precisely reflect the absolute figures due to rounding.

The Financial Statements contained in this Report have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). IFRS as defined above includes interpretations issued by the IFRS Interpretations Committee. Financial reporting terms used in this Report are in accordance with IFRS.

This Report contains certain forward-looking non-GAAP measures such as cash capital expenditure and divestments. We are unable to provide a reconciliation of these forward-looking non-GAAP measures to the most comparable GAAP financial measures because certain information needed to reconcile those non-GAAP measures to the most comparable GAAP financial measures is dependent on future events some of which are outside the control of the company, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures with the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be accomplished without unreasonable effort. Non-GAAP measures in respect of future periods which cannot be reconciled to the most comparable GAAP financial measure are calculated in a manner which is consistent with the accounting policies applied in Shell plc's consolidated financial statements.

The companies in which Shell plc directly or indirectly owns investments are separate legal entities. In addition to the term "Shell", in this Report "Shell Group", "we", "us" and "our" are also used to refer to the Company and its subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. "Subsidiaries" and "Shell subsidiaries" refer to those entities over which the Company has control, either directly or indirectly. Entities and unincorporated arrangements over which Shell has joint control are generally referred to as "joint ventures" and "joint operations", respectively. "Joint ventures" and "joint operations" are collectively referred to as "joint arrangements". Entities over which Shell has significant influence but neither control nor joint control are referred to as "associates". The term "Shell interest" is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated joint arrangement, after exclusion of all third-party interest. Shell subsidiaries' data include their interests in joint operations.

As used in this Report, "Accountable" is intended to mean: required or expected to justify actions or decisions. The Accountable person does not necessarily implement the action or decision (implementation is usually carried out by the person who is Responsible) but must organise the implementation and verify that the action has been carried out as required. This includes obtaining requisite assurance from Shell companies that the framework is operating effectively. "Responsible" is intended to mean: required or expected to implement actions or decisions. Each Shell company and Shell-operated venture is responsible for its operational performance and compliance with the Shell General Business Principles, Code of Conduct, Statement on Risk Management and Risk Manual, and Standards and Manuals. This includes responsibility for the operationalisation and implementation of Shell Group strategies and policies.

This Report references Shell's Sky 1.5 scenarios, specifically within the "Climate change and energy transition" section (pages 242-245). Unlike Shell's previously published Mountains and Oceans exploratory scenarios, the Sky scenario is based on the assumption that society reaches the Paris Agreement's goal of holding the rise in global average temperatures this century to well below two degrees Celsius (2°C) above pre-industrial levels. Unlike Shell's Mountains and Oceans scenarios which unfolded in an open-ended way based upon plausible assumptions and quantifications, the Sky scenario was specifically designed to reach the Paris Agreement's goal in a technically possible manner.

Sky 1.5 scenario starts with data from Shell's Sky scenario but is more aggressive and challenging in its assumptions about energy transitions as the pace of change is accelerated. As in Sky, this scenario is normative, meaning we assumed that society achieves the 1.5 degrees Celsius stretch goal of the Paris Agreement, and we worked back in designing how this could occur. Of course, there are many possible paths that society could take to achieve this goal. This will be extremely challenging, but as of today, we believe there is still a technically possible path while maintaining a growing global economy. However, we believe the window for success is quickly closing.

These scenarios are a part of an ongoing process used in Shell for over 40 years to challenge executives' perspectives on the future business environment. They are designed to stretch management to consider even events that may only be remotely possible. Scenarios, therefore, are not intended to be predictions of likely future events or outcomes. Shell's scenarios also are not intended to be projections or forecasts of the future. Shell's scenarios, including the scenarios referenced in this Report, are not Shell's strategy or business plan. When developing Shell's strategy, our scenarios are one of many variables that we consider. Ultimately, whether society meets its goals to decarbonise is not within Shell's control. While we intend to travel this journey in step with society, only governments can create the framework for success.

Shell's operating plan, outlook and budgets are forecasted for a 10-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, they reflect our Scope 1, Scope 2 and NCF targets over the next 10 years. However, Shell's operating plans cannot reflect our 2050 net-zero emissions target and 2035 NCF target, as these targets are currently outside our planning period. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans to reflect this movement.

Shell's "Net Carbon Footprint" or "net carbon intensity" referred to in this Report include Shell's carbon emissions from the production of our energy products, our suppliers' carbon emissions in supplying energy for that production, and our customers' carbon emissions associated with their use of the energy products we sell. Shell only controls its own emissions. The use of the term "Net Carbon Footprint" or "net carbon intensity" is for convenience only and not intended to suggest these emissions are those of Shell or its subsidiaries.

Except where indicated, the figures shown in the tables in this Report are in respect of subsidiaries only, without deduction of any non-controlling interest. However, the term "Shell share" is used for convenience to refer to the volumes of hydrocarbons that are produced, processed or sold through subsidiaries, joint ventures and associates. All of a subsidiary's production, processing or sales volumes (including the share of joint operations) are included in the Shell share, even if Shell owns less than 100% of the subsidiary. In the case of joint ventures and associates, however, Shell-share figures are limited only to Shell's entitlement. In all cases, royalty payments in kind are deducted from the Shell share.

Except where indicated, the figures shown in this Report are stated in US dollars. As used herein all references to "dollars" or "$" are to the US currency.

This Report contains forward-looking statements concerning the financial condition, results of operations and businesses of Shell. All statements

other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as "aim", "ambition", "anticipate", "believe", "could", "estimate", "expect", "goals", "intend", "may", "milestones", "objectives", "outlook", "plan", "probably", "project", "risks", "schedule", "seek", "should", "target", "will" and similar terms and phrases. There are a number of factors that could affect the future operations of Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this Report, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell's products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, judicial, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; (m) risks associated with the impact of pandemics, such as the COVID-19 (coronavirus) outbreak; and (n) changes in trading conditions. Also see "Risk factors" on pages 22-33 for additional risks and further discussion. No assurance is provided that future dividend payments will match or exceed previous dividend payments. All forward-looking statements contained in this Report are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Each forward-looking statement speaks only as of the date of this Report. Neither the Company nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this Report.

Past performance cannot be relied on as a guide to future performance.

This Report contains references to Shell's website, the Shell Sustainability Report, Tax Contribution Report, Industry Associations Climate Review and our report on Payments to Governments. These references are for the readers' convenience only. Shell is not incorporating by reference into this Report any information posted on www.shell.com or in the Shell Sustainability Report, Tax Contribution Report, Industry Associations Climate Review or our report on Payments to Governments. The content of any other websites referred to in this Report does not form part of this Report.

With effect from January 29, 2022, Shell's A shares and B shares were assimilated into a single line of ordinary shares. Shell's A and B American Depositary Shares (ADSs) were assimilated into a single line of ADSs on the same date. This Report continues to refer to A shares, B shares, A ADSs and B ADSs when describing the position prior to January 29, 2022.

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DOCUMENTS ON DISPLAY

This Report is also available, free of charge, at www.shell.com/annualreport or at the offices of Shell in London, United Kingdom and The Hague, the Netherlands. Copies of this Report also may be obtained, free of charge, by mail.

TERMS AND ABBREVIATIONS

Currencies

$	US dollar
€	euro
£	sterling

Units of measurement

acre	approximately 0.004 square kilometres
b(/d)	barrels (per day)
boe(/d)	barrels of oil equivalent (per day); natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel
kboe(/d)	thousand barrels of oil equivalent (per day); natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel
MMBtu	million British thermal units
megajoule	a unit of energy equal to one million joules
mtpa	million tonnes per annum
per day	volumes are converted into a daily basis using a calendar year
scf(/d)	standard cubic feet (per day)

Products

GTL	gas-to-liquids
LNG	liquefied natural gas
LPG	liquefied petroleum gas
NGL	natural gas liquids

Miscellaneous

ADS	American Depositary Share
AGM	Annual General Meeting
API	American Petroleum Institute
CCS	carbon capture and storage
CCS earnings	earnings on a current cost of supplies basis
CO_2	carbon dioxide
EMTN	Euro medium-term note
EPS	earnings per share
FCF	free cash flow
FID	final investment decision
GAAP	generally accepted accounting principles
GHG	greenhouse gas
HSSE	health, safety, security and environment
IAS	International Accounting Standards
IEA	International Energy Agency
IFRS	International Financial Reporting Standard(s)
IOGP	International Association of Oil & Gas Producers
IPIECA	International Petroleum Industry Environmental Conservation Association
LTIP	Long-term Incentive Plan
OECD	Organisation for Economic Co-operation and Development
OML	oil mining lease
OPEC	Organization of the Petroleum Exporting Countries
OPL	oil prospecting licence
PSC	production-sharing contract
PSP	Performance Share Plan
REMCO	Remuneration Committee
SEC	US Securities and Exchange Commission
TRCF	total recordable case frequency
TSR	total shareholder return
WTI	West Texas Intermediate

STRATEGIC **REPORT**

2	Chair's message
4	Chief Executive Officer's review
6	Shell Powering Progress
10	Strategy and outlook
16	Section 172(1) statement
22	Risk factors
34	Summary of results
36	Performance indicators
38	Liquidity and capital resources
42	Market overview
45	Integrated Gas
50	Upstream
58	Oil and gas information
65	Oil Products
71	Chemicals
74	Corporate
75	Climate change and energy transition
99	Environment and society
114	Our people



SUCCEEDING WITH OUR CUSTOMERS

For more than 100 years, Shell's people have provided much of what is needed for modern life: the energy to heat and light homes, the fuel for cars, trucks, ships and planes, the means to keep the world moving.

In early 2022, when Russia invaded Ukraine, Shell's people stepped up. In Poland and other neighbouring countries, our employees helped refugees, caring for the victims of a senseless conflict.

Shell is also rising to another urgent challenge: the role we must play in helping to tackle climate change, caused for the most part by carbon emissions from the production and use of energy. The COP26 climate summit in Glasgow, Scotland, showed again that the overwhelming majority of countries agree that the world must transition to a low-carbon energy mix. For Shell to play our part will require boldness, ambition and a willingness to transform.



Sir Andrew Mackenzie
Chair

I feel honoured to be the Chair of Shell at such a pivotal stage in its history. Our Powering Progress strategy aims to help us generate shareholder value while achieving our net-zero emissions target, powering people's lives and respecting the natural environment.

We can take heart from the fact that Shell has always thrived on its people's ingenuity, adaptability and determination. We will need those qualities even more in the coming years.

With great challenges and changes come great opportunities. The energy transition is both our greatest challenge and our greatest opportunity. Our resilience will stand us in good stead. After the COVID-19 pandemic caused one of the world's worst economic downturns, Shell took decisive steps to reshape for the future. We had the capital discipline and underlying strength to keep our strategy on track and to emerge with a foundation for future growth.

We should be realistic about the scale of the challenges that lie ahead. But we should also be optimistic about our ability to overcome them.

WORKING WITH OUR CUSTOMERS

The single most important key to our success in the energy transition will be our ability to work with customers. We have a network of 1 million commercial and industrial customers and around 32 million customers a day visit our 46,000 branded retail service stations.

By listening to our customers, learning from them and working with them, we can understand what they want and need as the world moves towards a lower-carbon future. We aim to use such insights to profitably provide the low-carbon products and services they will want to buy.

This approach will be crucial to Shell's target of becoming a net-zero emissions energy business by 2050, in step with society's progress towards achieving the goals of the Paris Agreement. Customers' use of products accounts for the vast majority of energy-related carbon emissions. We can seize opportunities that help us and our customers.

For example, customers in industry and road freight are increasingly working to cut their emissions, to meet society's expectations and comply with tighter environmental regulations. At one of our projects, we can now provide zero-emissions green hydrogen. As part of the Refhyne European consortium, we have installed an electrolyser at Shell's Energy and Chemicals Park Rheinland, in Germany. It began operating in July and will use renewable electricity to produce up to 1,300 tonnes of green hydrogen a year.

We expect to develop new markets by building low-carbon businesses and forming strategic alliances that can help us and entire sectors get to net zero. In November 2021, for example, we signed a strategic co-operation agreement with electric vehicle company NIO aimed at making charging easier for customers around the world.

Shell currently operates almost 90,000 electric vehicle charge points globally. We aim to increase this to more than 500,000 by 2025. To achieve this, we must give customers what they want and need: charging services that are convenient, reliable and easy to use.

SIMPLIFYING FOR THE ENERGY TRANSITION

Many of our customers will also need oil and gas for years to come. If we are to compete in the energy transition and attract investment, we will need to continue to supply their needs too. In August, we took the final investment decision on the Timi gas development project in Malaysia, which will feature the first wellhead platform in the country to be powered by a hybrid solar and wind system.

We expect this and other Upstream projects to generate strong cash flows. Thanks to our integrated presence across the global energy system, we can use this cash to reward investors with shareholder distributions and to invest, with discipline, in low-carbon businesses that will help us transform. In October we set a new target to halve the absolute emissions from our operations and the energy we buy to run them by 2030, compared with 2016 levels on a net basis. These are what are known as our Scope 1 and Scope 2 emissions. Such shorter-term objectives will push us to make faster progress towards our target of becoming a net-zero emissions energy business by 2050, in step with society.

We have simplified our share structure, and believe this will help us accelerate our progress in the energy transition still further. We should find it quicker and easier to manage our portfolio now we have adopted a single line of shares and moved our tax residence to the UK.

POWERING LIVES

Energy can help lift people out of poverty. That means something to me. Growing up in Scotland, a short distance from what became the COP26 venue, I sometimes accompanied my father Hugh, a doctor, as he visited patients in deprived areas of Glasgow. Dad saw the patient, while I sat in the car and read comics. I was struck by the importance Dad attached to those home visits. They allowed him to see how his patients' hardships were affecting their health.

Now I am part of an organisation whose business helps customers to heat their homes and travel to a job. In some parts of the world, that access to modern energy can be the difference between struggling and starting on a path towards a better life. Working with our customers to meet their needs, whether industry seeking to cut carbon emissions, the motorist driving an electric car or a family trying to improve their quality of life, makes good business sense for Shell.

Today and for decades to come, we will only succeed by helping the customer succeed.

SIR ANDREW MACKENZIE
Chair

Shell: providing what is needed for life in the energy transition
(Clockwise from left): energy for cooking; charging for electric vehicles; hydrogen for road freight; and shipments of liquefied natural gas









TAKING ACTION TODAY, **BUILDING FOR TOMORROW**

Like many others, I have been appalled by Russia's invasion of Ukraine, an act of aggression that shocked the world. It has inflicted much suffering, and threatened the security of a continent.

Our first priority, as always, was the safety of our people. We employ around 1,500 staff and contractors in Ukraine. We have been doing everything we can to try to ensure their safety and well-being.

We also took decisive action in support of global economic measures against Russia. We announced our intention to exit joint ventures with Gazprom, a majority Russian-government-owned business, and related entities. This included the Sakhalin-2 liquefied natural gas (LNG) facility, Salym Petroleum Development and the Gydan energy venture. We also intend to end our involvement in the Nord Stream 2 pipeline project.

At the end of 2021, Shell had around $3 billion in non-current assets in these ventures in Russia. We expect our actions will have an impact on the book value of Shell's Russia assets and lead to impairments.



Ben van Beurden
Chief Executive Officer

We also decided to withdraw from involvement in all Russian hydrocarbons, including crude oil, petroleum products, gas and LNG, in a phased manner, in line with government guidance. We will shut our service stations, aviation fuels and lubricants operations in Russia.

We will go ahead with these steps, regardless of their financial implications, while doing everything we can to support our staff in Russia.

Difficult times bring out the best in people. I was moved by how in Shell, Russian and Ukrainian colleagues worked together to respond to events. Shell staff in neighbouring countries stepped up to the task of helping refugees from war.

As a business, Shell too will seek to help in the relief effort. In discussion with governments around the world, we will also work through the detailed business implications, including the importance of secure energy supplies to Europe and other markets, in compliance with relevant sanctions.

BUILDING FOR THE FUTURE

While so much has happened in recent weeks to increase the challenges our business faces, we must stay on track to ensure continued success. Our Powering Progress strategy and financial framework remain unchanged.

In 2021, we continued to build for the future. We moved ahead at pace with the transformation of our refining business into energy and chemicals parks that can meet our customers' growing demand for low-carbon energy.

We made progress in developing our interests in electric vehicle charging, biofuels, and carbon capture and storage (CCS); in hydrogen, wind and solar power.

These are businesses of the low-carbon energy future. The world will need them if it is to tackle climate change. They are also businesses of enormous potential. I believe that, as they mature, they could be as profitable for Shell as our oil and gas operations are now.

STRONG RESULTS

In 2021, we delivered strong financial results. Our income was $20.6 billion in 2021, compared with a loss of $21.5 billion the previous year. Shell's cash flow from operations went from $34.1 billion in 2020 to $45.1 billion in 2021. Our distributions to shareholders were $9.1 billion in 2021, the same as in 2020. We expect shareholder distributions to increase significantly in 2022.

Shell's net debt reduced from $75.4 billion in 2020 to $52.6 billion at the end of 2021. This brought us below the $65 billion milestone, at which point we increased total shareholder distributions to 20-30% of cash flow from operations.

We announced a share buyback programme of $8.5 billion for the first half of 2022. This will include $5.5 billion from the sale of our shales business in the US Permian Basin.

We expect to increase our dividend by around 4% to 25 US cents a share for the first quarter of 2022.

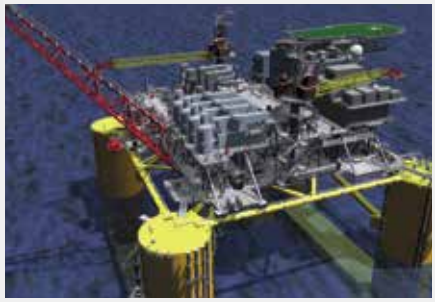
SAFETY

In 2021, sadly, six of our contractor colleagues and a police officer were killed in an appalling attack in Nigeria. In Pakistan, a lorry driver died in a refuelling accident at a dealer-operated retail site. A contractor died in an accident at an Indonesian retail site.

I am determined that we learn from these terrible incidents. We must do everything possible to ensure that anyone who works for Shell goes home safe and well.









Investing to meet demand today and in the future
(Clockwise from above): electrolyser producing hydrogen from renewables at the Energy and Chemicals Park Rheinland; providing electric vehicle charge points; planning the Whale deep-water development; and generating offshore wind power.

RISING TO THE CHALLENGES

The rapid recovery of energy demand in 2021 was very welcome, but a lag in supply led to high oil and gas prices and unfortunately, in some parts of the world, a cost-of-living crisis for consumers as energy prices spiked. Growing tensions as Russia prepared to invade Ukraine added to the rise in prices.

People and businesses must have affordable energy bills. Shell can help to bolster supplies by delivering LNG to countries experiencing shortages.

Shell must also play its part in helping to tackle the world's biggest challenge: climate change. The COP26 summit in Glasgow, Scotland, made some progress. Agreement on how Article 6 of the 2015 Paris Agreement will work in practice, for example, should stimulate cross-border carbon trading – which could prove important in getting the world to net zero.

When we launched our Powering Progress strategy in February 2021, we set short- and medium-term targets to reduce carbon emissions that were ambitious, but realistic. We also reaffirmed our long-term target to become a net-zero emissions energy business by 2050, in step with society's progress towards meeting the climate goals of the Paris Agreement.

In May 2021, the District Court in The Hague ruled that by 2030 Shell must reduce its worldwide net-carbon emissions by 45% by 2030, compared with 2019 levels. We were disappointed by this ruling, but we decided to rise to the challenge by accelerating our strategy to reduce carbon emissions. We set a new target of cutting the absolute emissions from our operations and the energy we buy to run them by 50% by 2030, compared with 2016 levels on a net basis.

At the same time, we are appealing against the ruling. It effectively holds Shell, a single company, accountable for a global challenge – reducing consumer demand for carbon-based fuels. What is really needed is action by all: governments, business, customers and wider society.

Companies like Shell, with our global scale, financial muscle and technological know-how, are critical to getting things done and helping to make the energy transition a reality. Collaborative action is crucial. For example, in July 2021, we signed an agreement with Deutsche Telekom. Shell will supply renewable energy and Deutsche Telekom engineers will install more than 10,000 electric vehicle chargers in Germany.

The transformation of our refineries into energy and chemicals parks opens up many possibilities. We are building an 820,000-tonnes-a-year biofuels facility at the Shell Energy and Chemicals Park Rotterdam, in the Netherlands. And we have started producing hydrogen from renewables at the Energy and Chemicals Park Rheinland, in Germany.

SIMPLER, FASTER

Our company-wide reorganisation has made us more streamlined. Adopting a single line of shares and moving our tax residence to the UK will make it quicker and easier to manage our portfolio in the energy transition. We can also buy back shares more quickly, speeding up distributions to investors.

We will, though, remain a major presence in the Netherlands. We are proud of Shell's Anglo-Dutch heritage. Shell has the agility, and our integrated business model gives us the financial muscle. Cash flows from our Upstream operations enable us to deliver strong shareholder returns and invest in low-carbon opportunities. Upstream also provides oil and gas that the world will need for years to come.

So while we invest for the future, we must continue to invest to meet today's energy demand. In 2021, we strengthened our Upstream position in core regions. We decided to invest in the Whale development in the US Gulf of Mexico. As part of the Libra consortium, we chose to invest in a fourth floating production, storage and offloading (FPSO) vessel in the Mero field, off the Brazilian coast.

If 2021 was a year of historic change for Shell, it was also a year of great progress. One that has set us up for success as we seize the opportunities of the energy transition.

BEN VAN BEURDEN
Chief Executive Officer

WHO WE ARE

Overview

Shell is a global group of energy and petrochemical companies with 82,000 employees and operations in more than 70 countries.

We use advanced technologies and take an innovative approach to help build a sustainable energy future. Shell is a customer-focused organisation, serving more than 1 million commercial and industrial customers, and around 32 million customers at 46,000 retail service stations daily.

Our strategy is to accelerate the transition of our business to net-zero emissions, purposefully and profitably, in step with society.

OUR CONTEXT

The rising standard of living of a growing global population is likely to continue to drive demand for energy, including oil and gas, for years to come. At the same time, technological changes and the need to tackle climate change mean there is a transition under way to a lower-carbon, multi-source energy system with increasing customer choice.

Our Powering Progress strategy combines our ambitions under four goals: generating shareholder value, achieving net-zero emissions, powering lives and respecting nature.

This will help accelerate our progress towards becoming a net-zero emissions energy business by 2050, in step with society. We are building a strong resilient business by putting customers at the centre of our strategy, innovating the products and solutions customers need on their journey to net zero.

We aim to deliver value through our integrated assets and supply chains, optimising value and managing risk for Shell and our customers as we produce, buy, trade, transport and sell energy products and solutions across the world.

OUR STAKEHOLDERS

- Our investor community
- Our customers
- Our employees/workforce/pensioners
- Our strategic partners/suppliers
- Communities
- NGOs/civil society stakeholders/academia/think-tanks
- Governments/regulators

See Section 172(1) statement", "Environment and society", "Our people" and "Governance"

OUR PURPOSE

We power progress together by providing more and cleaner energy solutions.

See "Strategy and outlook"

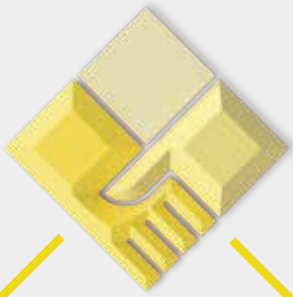
OUR CORE VALUES

- Honesty
- Integrity
- Respect for people

See "Our people"

OUR **PURPOSE**

To power progress together by providing more and cleaner energy solutions



GENERATING
SHAREHOLDER VALUE

Growing value through a dynamic portfolio and disciplined capital allocation

POWERING
LIVES

Powering lives through our products and activities, and supporting an inclusive society





POWERING **PROGRESS**

Our strategy to accelerate the transition to net-zero emissions, purposefully and profitably

RESPECTING
NATURE

Protecting the environment, reducing waste and making a positive contribution to biodiversity



ACHIEVING
NET-ZERO EMISSIONS

Working with our customers and sectors to accelerate the energy transition to net-zero emissions

Underpinned by our **core values** and our focus on **safety**

HOW WE CREATE VALUE

We aim to meet the world's growing need for more and cleaner energy solutions in ways that are economically, environmentally and socially responsible. Our Powering Progress strategy is designed to create value for our shareholders, customers and wider society.

OUR INPUTS [A]

Financial capital

Equity attributable to Shell plc shareholders ($ billion) [B]:
172 2020: 155

Non-current debt ($ billion) [B]:
81 2020: 91

Net debt ($ billion) [B][C]:
53 2020: 75

Average capital employed ($ billion) [B]:
265 2020: 277

Cash capital expenditure ($ billion) [C]:
20 2020: 18

Operations

Refining and chemicals availability:
96% 2020: 96%

Oil & gas production available for sale (kboe/d):
3,237 2020: 3,386

LNG liquefaction volumes (million tonnes):
31 2020: 33

Human capital

Number of employees (thousands) [B]:
82 2020: 87

Number of training days (thousands):
271 2020: 234

Relationships

Customers, joint arrangements, Government relations, suppliers.

Operating countries [B]
>70 2020: >70

Intellectual capital

Research and development expenses ($ million):
815 2020: 907

Number of patents [B]:
8,532 2020: 8,480

Natural resources

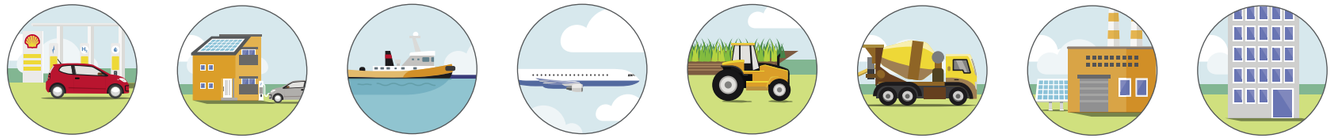
Proved oil and gas reserves (million boe) [B]:
9,365 2020: 9,124

Energy consumed (million MWh):
223 2020: 241

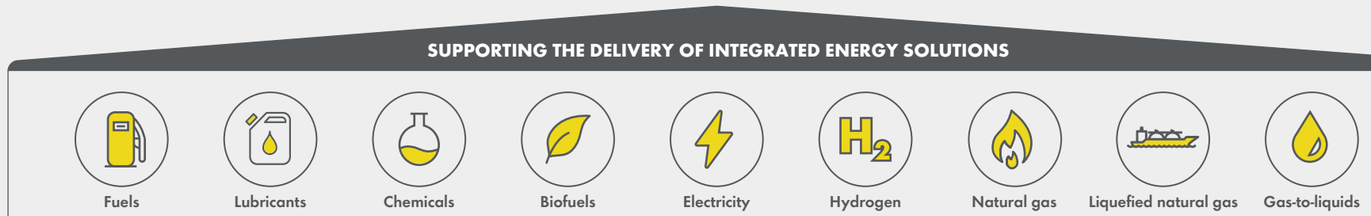
Energy use



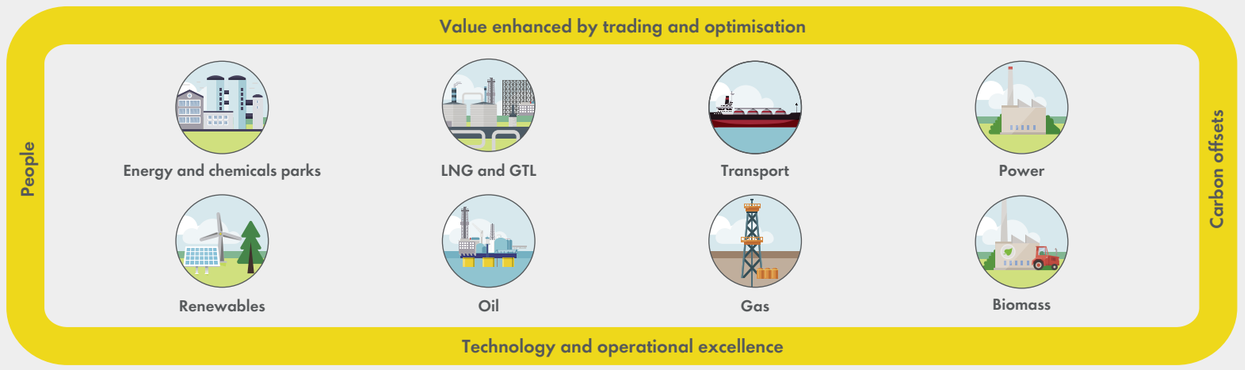
Customer sectors



Energy solutions



Assets and capabilities



OUR OUTCOMES AND IMPACTS [A]

GENERATING **SHAREHOLDER VALUE**

Cash flow from operating activities ($ billion):
45 2020: 34

Adjusted earnings ($ billion) [C]:
19 2020: 5

Adjusted EBITDA (CCS basis – $ billion) [C]:
55 2020: 37

Shareholder distributions ($ billion) [C]:
9 2020: 9

ACHIEVING **NET-ZERO EMISSIONS**

Absolute emissions (Scope 1 and 2 – million tonnes of CO_2 equivalent):
68
2020: 72 | 2016: 83

Net carbon intensity (Scope 1, 2 and 3 – grams of CO_2 equivalent per megajoule):
77
2020: 75 | 2016: 79

POWERING **LIVES**

Women in senior leadership positions [B]:
30% 2020: 28%

Taxes paid and collected ($ billion):
59 2020: 47

Total spend on goods and services ($ billion):
38 2020: 39

RESPECTING **NATURE**

Fresh water consumed in our facilities (million m^3):
22
2020: 22 | 2018: 25

Waste disposed (million tonnes):
2 2020: 2

[A] In 2021 unless stated otherwise. [B] At December 31. [C] See "Non-GAAP measures reconciliations" on pages 326-329.

OUR ORGANISATION

Delivering our Powering Progress strategy

INTEGRATED GAS, RENEWABLES AND ENERGY SOLUTIONS

Integrated Gas manages liquefied natural gas (LNG) activities and the conversion of natural gas into gas-to-liquids (GTL) fuels and other products. It includes natural gas exploration and extraction, and the operation of upstream and midstream infrastructure necessary to deliver gas to market.

In Renewables and Energy Solutions (R&ES), we are exploring emerging opportunities and investing in those where we believe sufficient commercial value is available. R&ES includes Shell's production and marketing of hydrogen, nature and environmental solutions as well as our integrated power activities.

UPSTREAM

Upstream manages the exploration for and extraction of crude oil, natural gas and natural gas liquids. It also markets and transports oil and gas, and operates infrastructure necessary to deliver them to market.

While the Upstream business delivers the energy of today, it is also funding the energy of tomorrow and will play a fundamental role in supporting Shell's ambitious transformation.

DOWNSTREAM

Downstream manages different Oil Products and Chemicals activities as part of an integrated value chain that trades and refines crude oil and other feedstocks into a range of products which are moved and marketed around the world for domestic, industrial and transport use.

The products we sell include gasoline, diesel, heating oil, aviation fuel, marine fuel, biofuel, lubricants, bitumen and sulphur. We also produce and sell petrochemicals for industrial use worldwide.

Our Downstream organisation also manages Oil Sands activities (the extraction of bitumen from mined oil sands and its conversion into synthetic crude oil).

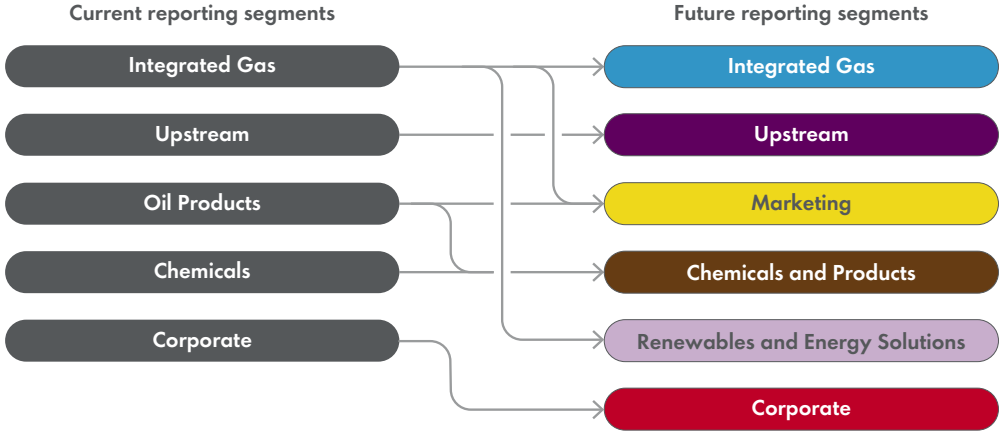
PROJECTS & TECHNOLOGY

Our Projects & Technology organisation manages the delivery of our major projects and drives research and innovation to develop new technology solutions. It provides technical services and technology capability for our Integrated Gas, Upstream and Downstream activities. It is also responsible for providing functional leadership across Shell in the areas of safety and environment, contracting and procurement, wells activities and greenhouse gas management.

Technology and innovation are essential to our efforts to meet the world's energy needs in a competitive way. If we do not develop the right technology, do not have access to it or do not deploy it effectively, this could have a material adverse effect on the delivery of our strategy and our licence to operate (see "Risk factors" on pages 22-33). Our Chief Technology Officer, who is part of the Projects & Technology organisation, oversees the development and deployment of new and differentiating technologies and innovations across Shell. Our main technology centres are in India, the Netherlands and the USA, with other centres in Brazil, China, Germany, Oman and Qatar. A strong patent portfolio underlies the technology that we employ in our various businesses.

Segmental reporting

Our reporting segments are Integrated Gas, Upstream, Oil Products, Chemicals and Corporate. Integrated Gas, Upstream, Oil Products and Chemicals include their respective elements of our Projects & Technology organisation. The Corporate segment comprises our holdings and treasury organisation, self-insurance activities, and headquarters and central functions. See Note 5 to the "Consolidated Financial Statements" on pages 245-248. With effect from 2022, our reporting segments will change to Integrated Gas, Upstream, Marketing, Chemicals and Products, Renewables and Energy Solutions and Corporate, reflecting the way Shell reviews and assesses its performance.



Powering Progress:

How we provide customers with the low-carbon products and services they want and need



BUILDING ONE OF EUROPE'S BIGGEST BIOFUELS FACILITIES

Business customers in the harder-to-abate sectors of road freight and aviation are increasingly keen to cut their carbon emissions.

Shell and Deloitte's Decarbonising Aviation: Cleared for Take-off report, published in September, found that 90% of aviation executives and experts interviewed said cutting emissions was one of their top priorities. The equivalent figure in the January 2021 report Decarbonising Road Freight: Getting into Gear was more than 70%.

Shell intends to supply our road freight and aviation customers with the low-carbon biofuels they want and need. An important aim of our Powering Progress strategy is to transform refineries into energy and chemicals parks so that we reduce our global production of traditional fuels by 55% by 2030.

At our Energy and Chemicals Park Rotterdam, in the Netherlands, for example, we are building one of Europe's biggest biofuels facilities. It is expected to start production in 2024, making up to 820,000 tonnes of biofuels a year, which Shell will sell as sustainable aviation fuel and biodiesel.

The sales will help Shell make purposeful and profitable progress towards our target of becoming a net-zero emissions energy business by 2050, in step with society. The facility will help us achieve our ambition of producing around 2 million tonnes of sustainable aviation fuel a year by 2025.



TRANSFORMING OUR REFINERIES INTO ENERGY AND CHEMICALS PARKS

The multinational chemicals corporation Asahi Kasei, a Shell customer, is aiming to become carbon neutral by 2050 and to use more sustainable feedstocks in its supply chain.

We believe we can profitably supply Asahi Kasei and other customers with products that they want and need to achieve their carbon neutrality and sustainability aims. This will play an important part in transforming the Bukom manufacturing site into the Shell Energy and Chemicals Park Singapore, with an increasing focus on customers' low-carbon energy and sustainability needs. In November, we signed an agreement to supply Asahi Kasei with butadiene, a chemical which it will use to make high-performance tyres that can cut vehicle emissions by improving fuel efficiency.

We plan to make the butadiene at Bukom, using a new unit that upgrades the quality of pyrolysis oil made from hard-to-recycle plastic waste that would otherwise go into landfill. We expect the pyrolysis oil upgrader to start production in 2023 and be the largest in Asia.

The pyrolysis oil it produces can be used to make chemicals that go into hundreds of everyday products, so Shell expects many other companies to become customers, especially those with sustainability goals. This will help Shell profitably achieve its aim of processing 1 million tonnes a year of plastic waste in our global chemicals plants by 2025. The transformation of Bukom and at least four other refining sites into energy and chemicals parks will help us achieve our ambition of reducing our global production of traditional fuels by 55% by 2030.

OUR STRATEGY

Powering Progress is our strategy to accelerate the transition of our business to net-zero emissions, in step with society.

CONTEXT

Climate change is one of the biggest challenges the world faces today, and necessitates a rapid transformation of the energy system to net-zero emissions.

Shell supports the most ambitious goal of the Paris Agreement, which is to limit the rise in global average temperature this century to 1.5 degrees Celsius above pre-industrial levels.

To achieve this, there needs to be urgent action to reduce emissions across power, transport, buildings, and industries like steel and chemicals. Shell must play its part, purposefully and profitably, in helping to make these changes happen.

The energy transition will bring risk and involve confronting complex and difficult obstacles, while at the same time acting on other great challenges such as the COVID-19 pandemic, which is continuing to cause unprecedented levels of disruption.

But the energy transition will also offer great opportunities.

More than 120 countries and over 2,000 companies and organisations have made commitments to get to net-zero emissions by 2050. Shell is taking action, sector by sector. We seek to work with our customers to profitably serve their changing needs, and to help decarbonise the energy system and reach net-zero emissions.

Our approach is to start with the customer or sector and ask: what do they want and need – today, and in the future?

By listening to our customers and learning from them, we work out how to profitably provide the low-carbon products and services that they want and need – today and throughout their progress to net-zero emissions.

There will be no single solution that fits all customers. Instead, there will be variations in what customers want and need, with differing approaches and rates of progress across countries, sectors and markets. Shell aims to provide customers with what works best for them in their particular circumstances.

Customers' use of our energy products accounts for the vast majority of energy-related carbon emissions of our products sold. By helping our customers get to net zero, we will also help ourselves get to net zero.

POWERING PROGRESS

Powering Progress is our strategy to accelerate the transition of our business to net-zero emissions, in step with society's progress towards the goal of the Paris Agreement on climate change.

Powering Progress generates value for our shareholders, customers and wider society. It has four main goals which integrate sustainability with our business strategy. These goals support Shell's purpose, to power progress together by providing more and cleaner energy solutions. We expect our employees at all times to maintain our focus on safety and abide by our core values of honesty, integrity and respect for people.

Generating shareholder value: We aim to create the conditions for share price appreciation by preparing our business for the future and seizing the opportunities presented by the energy transition. Shell must take a dynamic approach to its portfolio during the energy transition. This means continuing to provide the energy the world needs today, and increasing our investments in lower-carbon energy products and services. We aim to do this while providing sustainable distributions today through our progressive dividend policy. In 2021, we re-based our dividend to $0.24 per share. We announced a share buyback programme of up to $3.5 billion, including $1.5 billion from the sale of our Permian business. The additional shareholder distributions from the Permian sale will eventually total $7 billion, with $5.5 billion distributed in the form of share buybacks in 2022. We aim to maintain a strong balance sheet and a disciplined approach to capital investment, so we remain strong and resilient. In this way, we will achieve our aim of being a compelling investment case for our shareholders.

On December 10, 2021, the shareholders of the company supported the resolution to amend Shell's articles of association to enable the simplification of the Company. The simplification entailed establishing a single line of shares to eliminate the complexity of Shell's A/B share structure. It also involved aligning Shell's tax residence with its country of incorporation in the UK by relocating the CEO, the CFO and the venue of Board and Executive Committee meetings to the UK. As a consequence, we changed the Company's name from Royal Dutch Shell plc to Shell plc.

The simplification was designed to strengthen Shell's competitiveness and accelerate shareholder distributions and the delivery of our strategy to become a net-zero emissions energy business.

Achieving net-zero emissions: We have a target to become a net-zero emissions energy business by 2050, in step with society. In 2021, we set a new target to halve the absolute emissions from our operations and the energy we buy to run them by 2030 (our Scope 1 and Scope 2 emissions), compared with 2016 levels on a net basis. We also brought forward our target to eliminate routine gas flaring at our Upstream operated assets from 2030 to 2025.



We are transforming our business and finding new opportunities in selling more low-carbon products and services such as biofuels, hydrogen, electricity generated by solar and wind power, and charging for electric vehicles. In 2021, we announced that we are building an 820,000 tonnes-a-year biofuels facility at the Shell Energy and Chemicals Park Rotterdam, in the Netherlands. In Germany, we opened the Refhyne electrolyser at our Energy and Chemicals Park Rheinland. This electrolyser is the largest of its kind in Europe, producing 1,300 tonnes of green hydrogen per year from renewable energy.



We are decarbonising sector by sector, forming alliances and working collaboratively with customers, businesses and governments to make progress in the energy transition and reduce emissions. This includes sectors that are harder to decarbonise, such as aviation, shipping, commercial road freight, power, heating and certain parts of industry. We also support government policies to reduce carbon emissions in the economy, including putting a direct price on carbon emissions.

Powering lives: Shell helps to power lives and livelihoods by providing vital energy for homes, businesses and transport. The supply of affordable, reliable and sustainable energy is crucial for addressing global challenges, including those related to poverty and inequality. Our ambition, by 2030, is to provide reliable electricity to 100 million people in Africa and Asia who do not have it yet. We support livelihoods by providing employment and training in the communities where we operate. We are working to become one of the most diverse and inclusive companies in the world, a place where everyone feels valued and respected. We are focusing on four areas: gender, race and ethnicity, lesbian, gay, bisexual and transgender (LGBT+) and disability. We seek to respect human rights in all parts of our business.



Respecting nature: We are stepping up our environmental ambitions, and shaping them to reflect the UN Sustainable Development Goals. Our environmental ambitions include protecting and enhancing biodiversity. We are also focusing on using water and other resources more efficiently and reusing as much of them as we can. We are reducing waste from our operations and increasing the recycling of plastics. In 2021, we announced that we will build a new pyrolysis oil upgrader unit at our manufacturing site on Pulau Bukom, Singapore. Scheduled to start production in 2023, the upgrader is designed to improve the quality of pyrolysis oil, a liquid made from hard-to-recycle plastic waste that would otherwise have gone into landfill. We are helping to improve air quality by reducing emissions from our operations and providing cleaner ways to power transport and industry.



BUSINESS PILLARS

Powering Progress is a strategy that combines our financial strength and discipline with a dynamic approach to our portfolio of assets and products, so we can seize the opportunities of the energy transition. Shell is adapting its portfolio of assets and products to better meet the cleaner energy needs of its customers. We are delivering our strategy through three business pillars: Growth, Transition, and Upstream.

Our Growth pillar includes Marketing and Renewables and Energy Solutions businesses, such as Power and Hydrogen. Our Growth businesses increase our returns while helping customers to decarbonise.

Our Transition pillar includes our Integrated Gas and Chemicals and Products businesses. These businesses enable us to accelerate our progress towards net-zero emissions and deliver sustainable cash flow.

Our Upstream pillar delivers value to shareholders, provides vital oil and gas to society and funds the transformation of our portfolio.

Achieving our strategy depends on how we respond to competitive forces. We continually assess the external environment – the markets and the underlying economic, political, social and environmental drivers that shape them – to evaluate changes in competitive forces and business models. We use future scenarios to help inform our strategy. We regularly review the markets where we operate, assessing our competitive position by analysing trends, uncertainties, and the strengths and weaknesses of our traditional and non-traditional competitors.

We maintain business plans that focus on actions and capabilities to create and sustain competitive advantage. We maintain a risk management framework that regularly assesses our response to, and risk appetite for, identified risks.

See "Risk factors" on pages 22-33 and "Governance" on page 120.

Our Executive Directors' remuneration is linked to the successful delivery of our strategy, based on performance indicators that are aligned with shareholder interests. Long-term incentives form the majority of the Executive Directors' remuneration for above-target performance. In 2021, the Long-term Incentive Plan (LTIP) included cash generation, capital discipline, value created for shareholders, and an energy transition condition.

See the "Directors' Remuneration Report" on page 166.

For more details on how the strategic pillars are embedded into our businesses, see "Shell Powering Progress" on pages 6-11.

DELIVERING THE STRATEGY: OUR VISION FOR THE FUTURE OF ENERGY

GROWTH PILLAR:
THE FUTURE OF ENERGY
/Marketing /Renewables and Energy Solutions

MARKETS



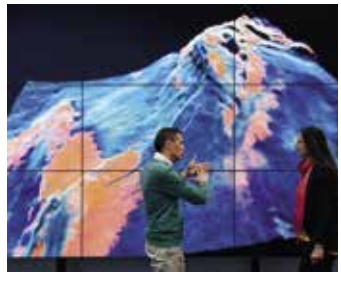
TRANSITION PILLAR:
ENABLING OUR STRATEGY
/Integrated Gas /Chemicals and Products

ASSETS



UPSTREAM PILLAR:
FUNDING OUR STRATEGY

RESOURCES



Enhanced value delivery through trading and optimisation

OUTLOOK FOR 2022 AND BEYOND

We believe that our integrated business model is key to driving our strategy. Shell has a competitive portfolio and we are leading our peer group on cash generation. We intend to develop our portfolio of assets and the mix of energy that we sell to meet the cleaner energy needs of our customers, while delivering value for our shareholders.

Delivering our strategy will require clear and deliberate capital allocation choices. We approach capital allocation at three levels: enterprise, portfolio and project. The enterprise level is about how we make choices between increasing distributions to our shareholders, investing in our business and/or strengthening our balance sheet. The portfolio level is about how we allocate capital between our three business pillars – Growth, Transition and Upstream. The project level is about how we evaluate and prioritise investment opportunities.

For cash capital expenditure, the base capex to sustain our strategy is expected to be $19-22 billion per annum. To accelerate our strategy we expect our cash capital expenditure to grow to $23-27 billion per annum, once we have met our priority to distribute 20-30% of cash flow from operations to shareholders. For 2022 we expect our cash capex to be at the lower end of this range. More than half the additional capex (above the base capex) is expected to be spent on our Growth businesses. We remain committed to our progressive dividend policy and focused on targeting AA-equivalent credit metrics through the cycle.

Subject to Board approval, we aim to increase the dividend per share by around 4% every year. We target the distribution of 20-30% of cash flow from operations to shareholders, and may choose to return cash to shareholders through a combination of dividends and share buybacks.

After reaching this level of shareholder distributions, additional surplus cash is expected to be allocated between further disciplined capital investments to accelerate our strategy and further reduce debt to strengthen the balance sheet.

We support the most ambitious goal of the Paris Agreement, which is to limit the rise in global average temperature this century to 1.5 degrees Celsius above pre-industrial levels. We have a long-term target to become a net-zero emissions energy business by 2050, in step with society. To achieve this target, we will have to be net zero on all emissions from the manufacture of all our products and all our customers' emissions from the use of the energy products we sell. This means the target covers our Scope 1 emissions, which come directly from our operations, our Scope 2 emissions, from the energy we buy to run our operations, and our Scope 3 emissions, which include the emissions from our customers' use of the energy products we sell, regardless of whether they are produced by Shell or a third party.

We also have targets to reduce the net carbon intensity of the energy products we sell, as measured by Shell's Net Carbon Footprint, using 2016 as our baseline year. These include short-term targets of a 3-4% reduction by the end of 2022 and 6-8% by 2023. Our medium- and longer-term targets are to reduce by 20% by 2030, by 45% by 2035 and 100% by 2050, in step with society. We achieved our target of a 2-3% reduction by the end of 2021. In October, we set an absolute emissions reduction target of 50% on all Scope 1 and 2 emissions under Shell's operational control by 2030, compared with 2016 levels on a net basis.

We believe that our total carbon emissions from energy sold peaked in 2018 and will stay below 1.7 gigatonnes per annum (Gtpa). Further details are in the "Climate change and energy transition" section on page 75.

The statements in this "Strategy and outlook" section, including those related to our growth strategies and our expected or potential future cash flow from operations, organic free cash flow, share buybacks, capital investment, divestments, production and Net Carbon Footprint, are based on management's current expectations and certain material assumptions and, accordingly, involve risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied herein. See "About this Report" on page iii and "Risk factors" on pages 22-33.

On February 28, 2022, we announced our intention to exit our ventures with Gazprom. On March 8, 2022, we announced our intention to withdraw from our involvement in all Russian hydrocarbons in a phased manner. For more information, see Note 32 on page 283.

CAPITAL ALLOCATION: TARGET SHAREHOLDER DISTRIBUTIONS OF 20-30% OF CFFO

	Clear capital allocation framework	Putting the framework into operation
1st PRIORITY	**Base cash capex** **Ordinary progressive dividend**	■ $19-22 billion cash capex per annum to sustain our strategy – Inorganic capex included in the range ■ ~4% dividend per share growth annually, subject to Board approval
2nd PRIORITY	**AA credit metrics through the cycle**	■ Net debt level to target AA credit metrics
3rd PRIORITY	**Additional shareholder distributions**	■ Total shareholder distributions of 20-30% of CFFO comprise dividend and share buybacks – Amount based on cash generation, macro-outlook and balance sheet trajectory
4th PRIORITY	**Additional cash capex** **Continued balance sheet strengthening**	■ Measured, disciplined cash capex spend to execute our strategy at pace ■ Further reduce net debt to achieve firm long-term AA credit metrics

First cash priority also includes interest paid (CFFF).
Base cash capex includes spend on asset integrity and to sustain and grow value. Additional cash capex includes further growth.

SECTION 172(1) STATEMENT

The Companies (Miscellaneous Reporting) Regulations 2018 (2018 MRR) require Directors to explain how they considered the interests of key stakeholders and the broader matters set out in Section 172(1) (a) to (f) of the Companies Act 2006 (S172) when performing their duty to promote the success of the Company under S172. This includes considering the interests of other stakeholders which may affect the long-term success of the company. This S172 statement explains how Shell's Directors:

- have engaged with employees, suppliers, customers and others; and
- have considered employee interests, the need to foster business relationships with suppliers, customers and others, and the effects of those considerations, including on the principal decisions taken during the financial year.

The S172 statement focuses on matters of strategic importance to Shell, and the level of information disclosed is consistent with the size and the complexity of Shell's businesses.

GENERAL CONFIRMATION OF DIRECTORS' DUTIES

Shell's Board has a clear framework for determining the matters within its remit and has approved Terms of Reference for the matters delegated to its Committees. Certain financial and strategic thresholds have been set, in order to identify matters requiring Board consideration and approval. The Manual of Authority sets out the delegation and approval process across the broader business. More information on Shell's controls and procedures can be found in "Other regulatory and statutory information" on page 198.

When making decisions, each Director ensures that (s)he acts in the way he or she considers, in good faith, would most likely promote Shell's success for the benefit of its members as a whole, and in doing so has regard (among other matters) to the issues set out below.

S172(1) (a) "THE LIKELY CONSEQUENCES OF ANY DECISION IN THE LONG TERM"

The Directors understand the business and the evolving environment in which we operate, including the challenges of navigating through the energy transition. Based on Shell's purpose to power progress together by providing more and cleaner energy solutions, the strategy set by the Board is intended to accelerate the transition of our business to net-zero emissions, purposefully and profitably, in step with society. We are building a strong, resilient business by putting customers at the centre of our strategy, innovating the products and solutions customers need on their journey to net zero.

As outlined in "Our context" in the "Shell Powering Progress" section on pages 6-11, the rising standard of living of a growing global population is likely to continue to drive demand for energy, including oil and gas, for years to come. At the same time, technological changes, and the need to tackle climate change mean there is a transition under way to a lower-carbon, multi-source energy system with increasing customer choice. Our Powering Progress strategy combines our ambitions under four goals: generating shareholder value, achieving net-zero emissions, powering lives and respecting nature.

In 2021, we continued to navigate the challenges of the COVID-19 pandemic, which has continued to cause unprecedented levels of disruption.

In 2021, the Board announced its move to the next phase of the capital allocation framework, consistent with Shell's Powering Progress strategy. Shell's operational and financial delivery and strengthened balance sheet had given it the confidence to increase shareholder distributions by increasing dividends and commence share buybacks, while Shell continues to invest for the future of energy. The key elements of Shell's strategic direction were highlighted in our 2020 Annual Report and included:

- setting a target to be a net-zero emissions energy business by 2050, in step with society;
- growing our leading marketing business, further developing the integrated Power business and commercialising hydrogen and biofuels to support customers' efforts to achieve net-zero emissions;
- transforming our refining portfolio from the current 13 sites into five high-value energy and chemicals parks, integrated with Chemicals. Growth in Chemicals would shift to more performance chemicals and recycled feedstocks;
- extending leadership in liquefied natural gas (LNG) to enable decarbonisation of key markets and sectors;
- focusing on value over volume by simplifying Upstream to eight significant core positions, which would generate more than 80% of Upstream's cash flow from operations; and
- enhancing value delivery through trading and optimisation.

The Directors recognise that there are differing societal views about our operations and that some Board decisions taken today may not align with all stakeholder interests. Given the complexity of the evolving energy transition, the Directors have taken the good faith decisions they believe best support Shell's strategy.

S172(1) (b) "THE INTERESTS OF THE COMPANY'S EMPLOYEES"

The Directors recognise that Shell employees are fundamental and core to our business and the delivery of our strategic ambitions. The success of our business depends on attracting, retaining, and motivating talented employees. The Directors consider and assess the implications of decisions on employees and the wider workforce, where relevant and feasible. The Directors seek to ensure that Shell remains a responsible employer, including with respect to pay and benefits, health and safety issues, and the workplace environment. In early 2021, in recognition and appreciation of employee resilience during 2020 when bonuses were suspended, the Board supported a one-off award of shares worth $1,000 to employees below the Executive Committee level.

The Directors recognise that our pensioners, though no longer employees, also remain important stakeholders.

More information on this can be found in "Workforce engagement" on page 145.

S172(1) (c) "THE NEED TO FOSTER THE COMPANY'S BUSINESS RELATIONSHIPS WITH SUPPLIERS, CUSTOMERS AND OTHERS"

Delivering our strategy requires strong mutually beneficial relationships with suppliers, customers, governments, national oil companies and joint-venture partners. Shell seeks to promote and apply certain general principles in such relationships. The ability to promote these principles effectively is an important factor in the decision to enter into or remain in such relationships. This standard and others are described in the Shell General Business Principles, which are based upon our core values of honesty, integrity, and respect for people. The Board periodically reviews and approves the Shell General Business Principles. The Directors take account of the General Business Principles and core values when exercising their duties and making Board decisions. When feasible, core value moments are built into Board agendas, so the Board can reflect on the importance of the General Business Principles and core values. The Board also reviews and approves Shell's approach to suppliers, which is set out in the Shell Supplier Principles. In 2021, relevant Board committees held briefing sessions with the Contracting and Procurement (C&P) team to more deeply engage on Shell's C&P programme, including its approach, risk management profile and stakeholder engagement. The businesses continually assess the priorities related to customers and those with whom we do business. The Board engages with the businesses on these topics, for example, within the context of business strategy updates and investment proposals.

The Directors also receive updates on a variety of topics that indicate how these stakeholders have been engaged.

These updates include information provided by the Projects & Technology function on suppliers and joint-venture partners, with respect to items such as project updates and supplier contract management. Businesses also provide information, as relevant, on customers and joint-venture partners in relation to business strategies, projects, and investment or divestment proposals.

The CEO provides a comprehensive update to the Board on material business and external developments at each main Board meeting. These include: i) a report on safety performance; ii) significant operational updates relating to each of the business segments, e.g. partnerships, investments, divestments, flagship projects, commercial highlights and achievements; iii) the development of new technologies and innovation via collaborations with partners, suppliers and others; and iv) political or regulatory developments. The CEO also summarises his own external engagements and any changes of senior executive staff.

S172(1) (d) "THE IMPACT OF THE COMPANY'S OPERATIONS ON THE COMMUNITY AND THE ENVIRONMENT"

This aspect is inherent in our strategic ambitions. The Board receives information on various topics to help it make decisions. The topics can include, for example, the Net Carbon Footprint target, the impact of the continuing COVID-19 pandemic on Shell, country-entry considerations, proposals to invest or divest, and business strategy reviews. The information also goes into Group-level overviews, such as updates on safety and environment performance, reports from the Chief Ethics and Compliance Officer, and reports from the Chief Internal Auditor. In 2021, certain Board committees and Non-executive Directors conducted site visits of various Shell operations and overseas offices and held external stakeholder engagements, where feasible. As in 2020, not all visits could be face-to-face because of continuing restrictions and precautions related to the COVID-19 pandemic. Despite the continued challenges presented by COVID-19, the Board maintained a strong interface with businesses and staff through virtual engagements, making best use of the technology available.

More information can be found in "Understanding and engaging with our stakeholders" on page 141, and in the reports of each Board committee.

S172(1) (e) "THE DESIRABILITY OF THE COMPANY MAINTAINING A REPUTATION FOR HIGH STANDARDS OF BUSINESS CONDUCT"

Shell aims to meet the world's growing need for more and cleaner energy solutions in economically, environmentally, and socially responsible ways. The Board periodically reviews and approves clear frameworks, such as The Shell General Business Principles, Shell's Code of Conduct, specific Ethics and Compliance manuals, the Ethical Decision-Making Framework, and its Modern Slavery Statements, to ensure that high standards are maintained in Shell businesses and in Shell's business relationships. This, complemented by the ways the Board is informed and monitors compliance with relevant governance standards, helps to ensure that Board decisions and the actions of Shell companies promote high standards of business conduct.

S172(1) (f) "THE NEED TO ACT FAIRLY AS BETWEEN MEMBERS OF THE COMPANY"

After weighing up all relevant factors, the Directors consider which course of action best enables delivery of our strategy through the long term, taking into consideration the effect on stakeholders. In doing so, our Directors act fairly as between the Company's members but are not required to balance the Company's interest with those of other stakeholders. This can sometimes mean that certain stakeholder interests may not be fully aligned.

CULTURE

The Board recognises that it plays an important role in assessing and monitoring that our desired culture is embedded in our values, attitudes and behaviours, including in our activities and stakeholder relationships. The Board has established honesty, integrity and respect for people as Shell's core values. The General Business Principles, Code of Conduct, and Code of Ethics help everyone at Shell to act in line with these values and comply with relevant laws and regulations. The Shell Commitment and Policy on Health, Safety, Security, Environment & Social Performance applies across Shell and is designed to help protect people and the environment. In 2021, after our refreshed approach to safety in 2020, we transitioned from our Life-Saving Rules and implemented the Industry Life-Saving Rules. By doing this, we aim to simplify and standardise, to adopt a broader risk scope that focuses on potential for harm to people, and to create a greater sense of individual and team responsibility to avoid fatalities and life-changing injuries. The change builds on existing strong foundations, with an increased and deliberate focus on human performance, the way people, culture, equipment, work systems and processes interact as a system. It remains our ambition to achieve Goal Zero, no harm and no leaks across all our operations.

In 2021, Shell announced its Powering Progress strategy. This has four goals: generating shareholder value, achieving net-zero emissions, respecting nature and powering lives. At its heart is our target to become a net-zero emissions energy business by 2050, in step with society's progress towards the goal of the Paris Agreement on climate change. We also have medium- and long-term targets to reduce our net carbon intensity, compared with 2016 levels, by 20% by 2030, 45% by 2035, and 100% by 2050, in step with society. To achieve our strategic goals, we need to adapt our mindset and behaviours as we navigate the increasing complexity in the world around us. At Shell we seek to have a culture that encourages the attitudes and behaviour that we believe will help us succeed. We seek to encourage:

SECTION 172(1) STATEMENT continued

- applying a learner mindset: everyone has the ability to grow, learn from mistakes and successes, and speak up openly in a safe environment. We encourage curiosity, humility, openness, helping each other to make better decisions and create more value;
- maximising our performance: we collaborate across boundaries and speak up when we see things that can be improved. We enable people to deliver, and we work in an integrated way with discipline, clear focus on priorities, and tangible outcomes in order to reach our full potential;
- increasing trust in Shell: we aim to be a valued member of the communities in which we operate, and to make a positive contribution to society. We seek to listen carefully and with humility and we have a strong desire to understand, and, where possible, adapt to the changing needs and expectations of society, especially as they relate to the environment. We build strong and trusted relationships with customers and partners which are fundamental to our collective success;
- living by our values and Goal Zero: we live by our values and do the right things with respect to ethics, safety, and the environment; and
- inspiring and engaging: we aspire to a situation where everyone feels connected to what we stand for. We build trusting and effective teams where everyone feels ownership and has a voice in how work gets done. We strive to maintain a diverse and inclusive culture.

The Board considers the Shell People Survey to be an important tool for measuring employee engagement, motivation, affiliation, and commitment to Shell. It provides insights into employee views and has a consistently high response rate. It also helps the Board understand how the survey's outcomes are being used to strengthen Shell culture and values. The Board has noted that although staff surveys offer insight, limitations exist. In 2021, a review was launched to enhance Board oversight of culture. Due to the significant developments and challenges affecting Shell in the second half of 2021, that review was paused. The plan is to resume the review in 2022. It is intended that the review will be informed by the results of the Shell People Survey from 2021 and if available 2022, various staff engagements, relevant context from the 2022 external Board evaluation process, and the Board's 2022 Strategy Days.

STAKEHOLDER ENGAGEMENT (INCLUDING EMPLOYEE ENGAGEMENT)

The Board recognises the important role Shell has in society and is deeply committed to public collaboration and stakeholder engagement. This commitment is at the heart of Shell's strategic ambitions. The Board strongly believes that Shell will only succeed by working together with customers, governments, business partners, investors, and other stakeholders.

Working together is critical, particularly at a time when society, including businesses, governments, and consumers, faces issues as complex and challenging as climate change.

We continue to build on our long track record of working with others, such as investors, industry and trade groups, universities, governments, non-governmental organisations (NGOs) and, in some appropriate instances, our competitors through our joint-venture operations or industry bodies. We believe that working together and sharing knowledge and experience with others offers us greater insight into our business. We also appreciate our long-term relationships with our investors and acknowledge the positive impact of ongoing engagement and dialogue.

The guidance on preparing information, proposals or discussion items for the Board asks for these materials to include considerations of the views, interests, and concerns of stakeholders and how management addressed them. This helps to strengthen the Board's knowledge of how the broader business undertakes significant levels of stakeholder engagement. Board minutes have also reflected key points on stakeholder considerations, where appropriate. The Terms of Reference for our Safety, Environment and Sustainability Committee also include, within the Committee's remit, the review and consideration of external stakeholder perspectives and how major issues of public concern that could affect Shell's reputation and licence to operate were or are being addressed.

The Board also engaged with certain stakeholders directly, to understand their views. The Board draws upon Shell's substantial in-house expertise by periodically receiving input from economics and policy experts on key political and economic themes, with some updates being presented to the Board each quarter. More on this engagement is provided in "Understanding and engaging with our stakeholders" on page 141.

Information on how the Directors have engaged with employees can be found on page 145 and in the "Our people" section on pages 114-119. The tables below include examples of how Directors have considered the interests of Shell employees and the resulting outcomes.

PRINCIPAL DECISIONS

In the table below, we outline some of the principal decisions made by the Board over the year. We explain how the Directors have engaged with or in relation to key stakeholder groups and how stakeholder interests were considered in decision-making.

To remain concise, we have categorised our key stakeholders into seven groups. Where appropriate, each group is considered to include both current and potential stakeholders. The groups are:

- (A) investor community;
- (B) employees/workforce/pensioners;
- (C) our customers;
- (D) regulators/governments;
- (E) NGOs/civil society stakeholders/academia/think-tanks;
- (F) communities; and
- (G) suppliers/strategic partners.

Principal decisions

We define principal decisions taken by the Board as decisions taken in 2021 that are of a strategic nature and significant to any of our key stakeholder groups. As outlined in the UK Financial Reporting Council (FRC) Guidance on the Strategic Report, we include decisions related to capital allocation and dividend policy.

How were stakeholders considered

We describe how regard was given to the likely long-term consequences of the decision, including how stakeholders were considered during the decision-making process.

What was the outcome

We describe which accommodations or mitigations were made, if any, and how Directors have considered different interests, and what factors they took into account.

Strategic updates	What was the outcome
Powering Progress Strategy Shell's Powering Progress strategy was announced in February 2021, and highlighted in our 2020 Annual Report. After the announcement and associated stakeholder engagements by management, the feedback received from investors, the media, climate activists and internal staff was presented to and discussed with the Board. In 2021, the Board considered strategic opportunities, and the integration of strategy, portfolio, environmental and social ambitions under our Powering Progress goals. Additional targets regarding Scope 1 and 2 emissions were also announced. A report was produced with the aim of helping investors and society obtain a better understanding of how Shell is addressing the risks and opportunities of the energy transition. The Board also considered Shell's capital and portfolio actions and structure. This was to support the delivery of Powering Progress and came after the Reshape reorganisation of Shell. See "Our People" on pages 114-119 for further information on the Reshape initiative. **How stakeholders were considered** **Energy Transition Strategy publication** In 2021, the Board approved the Shell Energy Transition Strategy publication and its submission to shareholders for an advisory vote at the 2021 AGM. It was essential to ensure that stakeholders and NGOs had a sound understanding of the Energy Transition Strategy. Board members were involved in extensive advance stakeholder engagement. Among these advance engagements was the Safety, Environment and Sustainability Committee (SESCo)'s consultation with an investor stakeholder group with a focus on climate-related financial disclosures. **Company simplification** As the Board considered the simplification, it supported a variety of work to better assess the relevant risks and benefits. Accordingly, a project team was assembled and workstreams set up. One such workstream encompassed stakeholder engagement, focusing on shareholders, staff, government and media. The Board also obtained the views of various external advisers. During the many Board sessions that focused on simplification, discussions considered and assessed a range of factors, including potential costs and benefits and stakeholder feedback. Implementation of the simplification was also subject to an extensive consultation with relevant staff councils. In later meetings, the Board considered the views and responses of stakeholders against current external environmental events and circumstances which could affect stakeholders, but which were beyond the Board's or Shell's control. The Board also participated in engagement sessions, about which more information can be found in "Understanding and engaging with our stakeholders" on page 141. **Staff engagements** Virtual staff engagements were held with Directors which enabled them to speak directly with staff on themes including the benefits of working in Upstream. For further information on the engagement with our workforce see "Board activities and evaluation" and "workforce engagement" on page 137 and page 145.	**Energy transition strategy** The Board set out details of how it planned to achieve its target to be a net-zero emissions energy business by 2050, in step with society's progress towards achieving net zero. The Board announced an additional target to reduce Scope 1 and Scope 2 absolute emissions, under Shell's operational control, by 50% by 2030 compared with 2016 levels on a net basis. It was announced that this formed part of the Powering Progress strategy, alongside the goals to generate shareholder value, respect nature and power lives. The Board regarded this as an important step as we rise to meet the challenge of the Dutch court's ruling in the Milieudefensie case against Shell. Feedback from all of the advance stakeholder engagements was taken into account by the Board, SESCo and the Executive Committee. As appropriate, revisions were made to the Energy Transition Strategy report prior to submission at the 2021 AGM. Shell's Energy Transition Strategy report described our progress towards becoming a net-zero emissions energy business and our emissions targets. Shell was the first energy company to submit an energy transition strategy to shareholders for an advisory vote. Shareholders were informed of the intention to publish an update every three years until 2050. The energy transition strategy received 88.74% shareholder support at the 2021 AGM. Following the AGM, the Chair, CEO and CFO engaged with stakeholders on a number of matters, which included Shell's energy transition strategy and the Dutch court's ruling in the Milieudefensie case against Shell. The key areas on which we received feedback from our largest shareholders were communicated to the Board. On October 28, 2021, Shell responded to this feedback and the court ruling by announcing a new target to halve Scope 1 and 2 absolute emissions under Shell's operational control by 2030, compared with 2016 levels on a net basis. This is another strategic milestone on our path to becoming a net-zero emissions energy business by 2050, in step with society. **Company simplification** The Board reviewed feedback from stakeholders as well as from the Board's independent advisers, concluding that the benefits of the simplification outweighed the downsides. Simplification was assessed as a way to increase the Company's flexibility to implement our Powering Progress strategy at pace, strengthen Shell's competitiveness, and support the acceleration of Shell's transition to a net-zero emissions business and create value for shareholders, customers and wider society. Shareholders were asked to approve a change of Shell's Articles of Association which would facilitate a series of measures leading to simplification. On December 10, 2021, shareholders approved the amendments to the Articles. On December 20, 2021 the Board formally approved the simplification, and on December 31, the Board approved the key steps required to move the Company's tax residence to the UK. The Company's name was changed on January 21, 2022, and the Company's shares were assimilated into a single line of shares on January 29, 2022. This completed the simplification.

SECTION 172(1) STATEMENT continued

Financial strength, cash allocation including shareholder distributions	What was the outcome
The Board considered cash flow, the macro environment and business performance in 2021 compared with 2020. The Board also considered management's view of the outlook for the Group's performance, and reviewed the Capital Allocation Framework with specific focus on the next phase including shareholder distributions. Directors approved several proposals with the aim of delivering value to shareholders and increasing shareholder distributions through a combination of progressive dividends and share buybacks. **How stakeholders were considered** A number of considerations underpinned each proposal, with proposals discussed and reviewed at certain points throughout the year. These considerations took account of the macro environment, robust business performance and outlook, the strength of the balance sheet, capital discipline, feedback from advisers and feedback from other stakeholders, and the net debt milestone. The Financial Framework was reviewed as part of the Board's Strategy Day 2021 meeting. This was at a time when it was being considered whether to move to the next phase of the Capital Allocation Framework and to increase shareholder distributions in the second half of the year. Investor valuation approaches, ongoing pressure for investors to divest from the oil and gas sector and reshaping of the organisation were also considered. So too were planned divestments which were being looked at by the Board. When making decisions regarding the potential use of funds from divestments, and in support of the Capital Allocation Framework, the Board also considered at length the views of debt investors and credit ratings agencies, commitments to pension holders, and broader stakeholder views about whether to use divestment proceeds for shareholder distributions or reinvestment in, for example, energy transition businesses.	The Board and management carefully considered various stakeholders, other strategic factors and matters such as Operating Plan 2022-2024 (OP21) before reaching the decision to proceed with the next phase of the Capital Allocation Framework. In July 2021, Shell announced that shareholder distributions would be increased through an increase in the dividend payment (38% increase on the first quarter payment) and launching $2 billion of share buybacks, aiming to complete them by the end of 2021. On September 20, 2021, Shell announced the sale of its Permian business. The Board confirmed that the cash proceeds from this transaction would be used to fund $7 billion in additional shareholder distributions, with the remainder used to further strengthen the balance sheet. The first tranche of this distribution (up to $1.5 billion) was announced on December 1, 2021. In relation to the decisions to increase distributions to shareholders, the Board and Management considered the views of stakeholders, the strength of the Company's balance sheet and the need to continue to invest for the future of energy. The form and timing for distributing the remaining $5.5 billion was announced in early 2022. These distributions are in addition to our shareholder distributions in the range of 20-30% of cash flow from operations.

Approval of Shell's detailed Operating Plan 2022-2024 (OP21)	What was the outcome
The approval of OP21 followed an in-depth review by the Board of proposals on capital allocation, capital investment outlook, competitive outlook, operating expenses, return on average capital employed and shareholder distributions. This included reviews in numerous Board meetings leading up to the December 2021 Board meeting in which OP21 was approved. **How stakeholders were considered** OP21 discussions included a full review against Shell's Powering Progress strategy, the macroeconomic environment, and the financial strength of the organisation. The Directors and Executive Committee balanced the priorities in the capital allocation framework including capital and operating expenditure commitments towards the energy transition alongside increased shareholder distributions, maintaining balance sheet strength, aspired credit ratings and greenhouse gas target tracking. The plan was discussed extensively and reviewed thoroughly. Responses from investors, and discussions with equity and debt market analysts were also presented to the Board for consideration. The Board sought advice from the Legal Director on the impact of the Dutch Milieudefensie judgment on OP21 and asked questions of management on the flexibility of the Plan to be as agile as feasible in the event of various energy transition scenarios.	Following extensive review and discussion, the overall outcome of this decision was an Operating Plan that the Board believes is robust against various scenarios and features strong optionality if needed. In particular, the Board assured itself that, as decisions are taken by the Board over the Plan period, OP21 flexibly demonstrates pathways to enable delivery of Shell's absolute Greenhouse Gas (GHG) emissions and GHG intensity targets by 2030. While stakeholder opinion differs on Shell's approach, OP21 is based on society's demand for products and services. OP21 also supports Shell in maintaining a reputation for high standards on business conduct and health, safety, security, and environment issues. It maintained the approach to employee remuneration and benefits to pensioners. OP21 also seeks to reward our investors with returns and maintain the long-term financial strength of the Company to invest in more and cleaner forms of energy and meet the current and future needs of society.

Investing in new business, acquisitions and divestments, and closures	What was the outcome
Over the course of the year, the Board considered and approved new opportunities and projects and proposed divestments or closures. The Board also considered and approved country entries and exits, more details of which are available in "Board activities and evaluation" on page 137. **How stakeholders were considered** The Board considered the impact of decisions related to new business opportunities and divesting from existing opportunities in the context of sustainability, supply, regulations, and carbon intensity. Critically, the Board reviewed the various proposals' alignment with Shell's strategy. Particular focus was given to potential benefits of certain divestments, including their potential to: create returns for shareholders; further strengthen the balance sheet; de-risk future cash flow; and avoid significant additional capital investment. As part of the discussions, the Board considered the strategic drivers for the intended divestments, including the Scope 1 emissions of each asset, anticipated regulatory changes expected to lead to value erosion, and any value opportunities afforded by the macro environment. As part of each proposal, the respective business unit will undertake effective due diligence on prospective purchasers from a financial, reputational as well as operating philosophy standpoint to ensure future obligations are met or suitable mitigating measures are in place to protect Shell and its people. Within each divestment proposal, the Board considered if the Company was being a responsible seller of its assets and if the purchasers have the capability to manage our assets/people appropriately. Staff matters are explicitly considered during negotiations and the due diligence process for acquisitions and divestments. Comprehensive engagement plans are developed as appropriate in parallel to the negotiations. **Permian** – shareholder approval for the divestment of Shell Permian assets. **Raízen S.A. and Biosev S.A.** – shareholder approval for Raízen joint venture to acquire Biosev S.A., a Brazilian ethanol producer. **Deer Park Refinery** – shareholder approval for the divestment of Deer Park Refining Limited Partnership. **Sale of holding in PCK Schwedt Refinery** – shareholder approval for the divestment of Shell's interest in PCK Schwedt Refinery. **Purchase of fuel and convenience retail sites in Texas** – This acquisition enables Shell to continue its existing, trusted premium product offerings. **Pernis Refinery** – shareholder approval to take final investment decision to build an 820,000-tonnes-a-year biofuels facility at the Shell Energy and Chemicals Park Rotterdam (formerly Pernis Refinery). Note. References to "shareholder approval" relate to the Shell intercompany approval process.	**Permian** – After reviewing multiple strategies and portfolio options for our Permian assets, the Board determined that the transaction with ConocoPhillips presented a compelling value proposition, as well as disciplined capital stewardship. The Board concluded that Shell's Upstream business plays a critical role in the Powering Progress strategy through a more focused, competitive, and resilient portfolio that provides energy which the world needs while funding shareholder distributions and investments in the energy transition. The cash proceeds from the transaction were identified for use in providing additional shareholder distributions of $7 billion through share buybacks. **Raízen S.A. and Biosev S.A.** – While discussing the proposal for the Raízen joint venture to acquire Biosev S.A., the Board considered joint-venture partner aspects, and factors regarding assurance of due diligence on environmental aspects and safety performance. **Deer Park Refinery and PCK Schwedt Refinery** – This was part of Shell's strategy to reduce its global refinery footprint to core sites integrated with the company's trading hubs, chemicals plants and marketing businesses. **Purchase of fuel and convenience retail sites in Texas** – As one of the largest fuels and convenience retail markets globally, growing in the US gives Shell the opportunity to build on its successful brand presence and benefit from the strength of its ongoing business relationships. **Pernis Refinery** – In discussing the proposal to build a biofuels facility at the Shell Energy and Chemicals Park Rotterdam, in the Netherlands, the Board considered the project's potential to increase the production of low-carbon fuels (including for aviation), Scope 1 emissions and associated adaptations, supply and demand aspects, and enhancing the capability of employees in the talent pipeline.

RISK FACTORS

The risks discussed below could have a material adverse effect separately, or in combination, on our earnings, cash flows and financial condition. Accordingly, investors should carefully consider these risks.

Further background on each risk is set out in the relevant sections of this Report, indicated by way of cross references under each risk factor.

The Board's responsibility for identifying, evaluating and managing our significant and emerging risks is discussed in "Other Regulatory and Statutory Information" on pages 198-206.

STRATEGIC RISKS

We are exposed to macroeconomic risks including fluctuating prices of crude oil, natural gas, oil products and chemicals.

Further information: See "Market overview" on page 42.

Risk description
The prices of crude oil, natural gas, oil products and chemicals are affected by supply and demand, both globally and regionally. Macroeconomic, geopolitical and technological uncertainties can also affect production costs and demand for our products. Government actions may also affect the prices of crude oil, natural gas, oil products and chemicals. This could happen, for example, if governments promote the sale of lower-carbon electric vehicles or even prohibit future sales of new diesel or gasoline vehicles, such as the phasing out in the UK that will come into force in 2030. Oil and gas prices can also move independently of each other. Factors that influence supply and demand include operational issues, natural disasters, weather, pandemics such as COVID-19, political instability, conflicts, such as the recent Russian invasion of Ukraine, economic conditions, including inflation, and actions by major oil- and gas-producing countries. In a low oil and gas price environment, we would generate less revenue from our Upstream and Integrated Gas businesses, and parts of those businesses could become less profitable or incur losses. Low oil and gas prices have also resulted and could continue to result in the debooking of proved oil or gas reserves, if they become uneconomic in this type of price environment. Prolonged periods of low oil and gas prices, or rising costs, have resulted and could continue to result in projects being delayed or cancelled. Assets have been impaired in the past, and there could be impairments in the future. Low oil and gas prices have affected and could continue to affect our ability to maintain our long-term capital investment and shareholder distribution programmes. Prolonged periods of low oil and gas prices could adversely affect the financial, fiscal, legal, political and social stability of countries that rely significantly on oil and gas revenue. In a high oil and gas price environment, we could experience sharp increases in costs, and under some production-sharing contracts, our entitlement to proved reserves would be reduced. Higher prices could also reduce demand for our products, which could result in lower profitability, particularly in our Oil Products and Chemicals business. Higher prices can also lead to more capacity being built, potentially resulting in an oversupplied market which would negatively affect our Upstream, Integrated Gas, Oil Products and Chemicals businesses.

Accordingly, price fluctuations could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed
We maintain a diversified portfolio to manage the impact of price volatility. We test the resilience of our projects and other opportunities against a range of prices and costs for crude oil, natural gas, oil products and chemicals. We prepare annual strategic and financial plans that test different scenarios and their impact on prices on our businesses and company as a whole. We also aim to maintain a strong balance sheet to provide resilience against weak market prices.

Our ability to deliver competitive returns and pursue commercial opportunities depends in part on the accuracy of our price assumptions.

Further information: See "Market overview" on page 43.

Risk description
We use a range of oil and gas price assumptions, which we review on a periodic basis. These ranges help us to evaluate the robustness of our capital allocation for our evaluation of projects and commercial opportunities. If our assumptions prove to be incorrect, this could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed
The range of commodity prices used in our project and portfolio evaluations is subject to a rigorous assessment of short-, medium- and long-term market drivers. These drivers include the extent and pace of the energy transition.

Our ability to achieve our strategic objectives depends on how we react to competitive forces.

Further information: See "Strategy and outlook" on page 14.

Risk description
We face competition in all our businesses. We seek to differentiate our services and products, though many of our products are competing in commodity-type markets. Accordingly, failure to manage our costs and our operational performance could result in a material adverse effect on our earnings, cash flows and financial condition. We also compete with state-owned hydrocarbon entities and state-backed utility entities with access to financial resources and local markets. Such entities could be motivated by political or other factors in making their business decisions. Accordingly, when bidding on new leases or projects, we could find ourselves at a competitive disadvantage because these state-owned entities may not require a competitive return. If we are unable to obtain competitive returns when bidding on new leases or projects, this could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed
We continually assess the external environment – the markets and the underlying economic, political, social and environmental drivers that shape them – to evaluate changes in competitive forces. We define multiple future scenarios and business environments by identifying drivers, uncertainties, enablers and constraints. These scenarios help us to find issues which affect our operating environment and have implications for our strategy.

STRATEGIC RISKS continued

Rising concerns about climate change and effects of the energy transition could continue to lead to a fall in demand and potentially lower prices for fossil fuels. Climate change could also have a physical impact on our assets and supply chains. This risk may also lead to additional legal and/or regulatory measures, resulting in project delays or cancellations, potential additional litigation, operational restrictions and additional compliance obligations.

Further information: For further explanations of our climate change governance, risk management approach, climate ambition and strategy and our portfolio and performance, please refer to the section "Climate change and energy transition" on pages 76-98.

Risk description

Societal demand for urgent action has increased, especially since the Intergovernmental Panel on Climate Change (IPCC) Special Report of 2018 on 1.5°C effectively made the aspirational goal of the Paris Agreement to limit the rise in global average temperature this century to 1.5 degrees Celsius the default target. This increasing focus on climate change and drive for an energy transition have created a risk environment that is changing rapidly, resulting in a wide range of stakeholder actions at global, local and business levels. The potential impact and likelihood of the associated exposure for Shell could vary across different time horizons, depending on the specific components of the risk.

We expect that a growing share of our GHG emissions will be subject to regulation, resulting in increased compliance costs and operational restrictions. Regulators may seek to limit certain oil and gas projects or make it more difficult to obtain required permits. Additionally, climate activists are challenging the grant of new and existing regulatory permits. We expect that these challenges are likely to continue and could delay or prohibit operations in certain cases. Achieving our target of becoming net zero on all emissions from our operations could result in additional costs. We also expect that actions by customers to reduce their emissions will continue to lower demand and potentially affect prices for fossil fuels, as will GHG emissions regulation through taxes, fees and/or other incentives. This could be a factor contributing to additional provisions for our assets and result in lower earnings, cancelled projects and potential impairment of certain assets.

The physical effects of climate change such as, but not limited to, increases in temperature and sea levels and fluctuations in water levels could also adversely affect our operations and supply chains.

Certain investors have decided to divest their investments in fossil fuel companies. If this were to continue, it could have a material adverse effect on the price of our securities and our ability to access capital markets. Stakeholder groups are also putting pressure on commercial and investment banks to stop financing fossil fuel companies. According to press reports, some financial institutions have started to limit their exposure to fossil fuel projects. Accordingly, our ability to use financing for these types of future projects may be adversely affected. This could also adversely affect our potential partners' ability to finance their portion of costs, either through equity or debt.

In some countries, governments, regulators, organisations and individuals have filed lawsuits seeking to hold fossil fuel companies liable for costs associated with climate change. While we believe these lawsuits to be without merit, losing could have a material adverse effect on our earnings, cash flows and financial condition. For example, in May 2021, the District Court in The Hague, Netherlands, ruled that, by 2030, Shell must reduce, from its consolidated subsidiaries, its Scope 1 net emissions by 45% from its 2019 levels and use its best efforts to reduce its Scope 2 and Scope 3 net emissions by 45% from its 2019 levels. In 2019, our Scope 1 emissions from our consolidated subsidiaries were 86 million tonnes carbon dioxide equivalent (CO_2e), rounded. We expect to see additional regulatory requirements to provide disclosures related to climate risks and their impact on business performance.

In summary, rising climate change concerns and effects of the energy transition have led and could lead to a decrease in demand and potentially affect prices for fossil fuels. If we are unable to find economically viable, publicly acceptable solutions that reduce our GHG emissions and/or GHG intensity for new and existing projects and for the products we sell, we could experience financial penalties or extra costs, delayed or cancelled projects, potential impairments of our assets, additional provisions and/or reduced production and product sales. This could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

Our response to the evolving risk outlook requires transparency and clarity around our plans and actions to achieve our climate target. We have a climate change risk management structure which is supported by standards, policies and controls, as part of our health, safety, security and environment and social performance (HSSE & SP) control framework. Climate change and risks resulting from GHG emissions are reviewed and managed in accordance with other significant risks through the Board and Executive Committee. We have established several dedicated climate change and GHG-related forums at different levels of the organisation. These forums seek to address, monitor and review climate change issues. Our strategy to assess and manage risks and opportunities resulting from climate change includes considering different time horizons and their relevance to risk identification and business planning.

Overall, mitigation of the risk is addressed through our strategy to accelerate the transition to net-zero emissions, purposefully and profitably. This approach has three components:

- reducing the GHG emissions intensity of our operations. We expect to reduce our carbon intensity primarily through altering our product mix as customer (Scope 3) emissions represent the largest component of our carbon intensity. Our aim is to achieve this by shifting the focus of our portfolio as we build our power, hydrogen, biofuels, carbon capture and storage and nature-based solutions businesses and activities;
- demonstrating our resilience by aligning our disclosures to the Task Force on Climate-related Financial Disclosures; and
- working towards our target to become a net-zero emissions energy business by 2050, in step with society.

We are also working with governments on their climate policy to help establish regulatory frameworks that will enable society to reach the goals of the Paris Agreement.

The ruling delivered by the District Court in The Hague in May 2021 has provided an additional challenge in this context. We have appealed the ruling but have stated that we want to rise to the challenge and accelerate our Powering Progress strategy to become a net-zero emissions energy business by 2050, in step with society, regardless of whether we win or lose the appeal.

RISK FACTORS continued

STRATEGIC RISKS continued

If we fail to stay in step with the pace and extent of society's changing demands for energy as it transitions to a low-carbon future, we could fail in sustaining and developing our business.

Further information: See "Strategy and outlook" on page 12 and "Climate change and energy transition" on page 80.

Risk description

The pace and extent of the energy transition could pose a risk to Shell if our own actions to decarbonise our operations and the energy we sell move at a different speed relative to society. If we are slower than society, customers may prefer a different supplier, which would reduce demand for our products and adversely affect our reputation besides materially affecting our earnings and financial results.
If we move much faster than society, we risk investing in technologies, markets or low-carbon products that are unsuccessful because there is limited demand for them. This could also have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We actively monitor societal developments, such as regulation-driven carbon-pricing mechanisms and customer-driven preferences for products. We incorporate these into scenarios which provide insights into how the energy transition may unfold in the medium and long term. These insights and those from various other external scenarios (such as the IPCC Special Report 1.5°C) guide how we set our strategic direction, capital allocation and carbon emission commitments. We have updated our strategy and organisational structure to increase our focus on the sectors where our customers operate, in order to make us better able to compete in the current evolving energy environment.

The ruling delivered by the District Court in The Hague in May 2021 has provided an additional challenge. We have appealed against the ruling. But regardless of whether we win or lose the appeal, we want to rise to the challenge, as part of our Powering Progress strategy, of accelerating our transition to a net-zero emissions energy business by 2050, in step with society.

We seek to execute divestments in pursuing our strategy. We may be unable to divest these assets successfully in line with our strategy.

Further information: See "Strategy and outlook" on page 15.

Risk description

We may be unable to divest assets at acceptable prices or within the timeline envisaged because of market conditions or credit risk. This would result in increased pressure on our cash position and potential impairments. In some cases, we have also retained certain liabilities following a divestment. Even in cases where we have not expressly retained certain liabilities, we may still be held liable for past acts, failures to act or liabilities that are different from those foreseen. We may also face liabilities if a buyer fails to honour their commitments. Accordingly, if any of the above circumstances arise, this could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We continually monitor market developments to assess potential divestments in pursuing our strategy. We carefully tailor our sales processes to buyers' perceived expectations so we can deliver the most competitive outcomes. As a general principle, the sales processes are configured so that buyers will acquire the assets including all related liabilities. For some assets, Shell may agree to retain certain liabilities. We monitor these liabilities closely and make appropriate provisions for them.

STRATEGIC RISKS continued

We operate in more than 70 countries that have differing degrees of political, legal and fiscal stability. This exposes us to a wide range of political developments that could result in changes to contractual terms, laws and regulations. We and our joint arrangements and associates also face the risk of litigation and disputes worldwide.

Further information: See "Other regulatory and statutory information" on page 201.

Risk description

Developments in politics, laws and regulations can and do affect our operations. Potential impacts include: forced divestment of assets; expropriation of property; cancellation or forced renegotiation of contract rights; additional taxes including windfall taxes, restrictions on deductions and retroactive tax claims; antitrust claims; changes to trade compliance regulations; price controls; local content requirements; foreign exchange controls; changes to environmental regulations; changes to regulatory interpretations and enforcement; and changes to disclosure requirements. Tensions between nation states, such as Russia's recent invasion of Ukraine, can also affect our business. Any of these, individually or in aggregate, could have a material adverse effect on our earnings, cash flows and financial condition.

Since 2020, many governments have run deficits to deal with the economic impacts of the COVID-19 pandemic. Given the ongoing nature of the pandemic, there will be uncertain long-term fiscal consequences, with possible subsequent effects on government policies that affect Shell's business interests.

From time to time, social and political factors play a role in unprecedented and unanticipated judicial outcomes that could adversely affect Shell. Non-compliance with policies and regulations could result in regulatory investigations, litigation and, ultimately, sanctions. Certain governments and regulatory bodies have, in Shell's opinion, exceeded their constitutional authority by: attempting unilaterally to amend or cancel existing agreements or arrangements; failing to honour existing contractual commitments; and seeking to adjudicate disputes between private litigants. Certain governments have also adopted laws and regulations that could potentially conflict with other countries' laws and regulations, potentially subjecting us to criminal and civil sanctions. Such developments and outcomes could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We continually monitor geopolitical developments and societal issues relevant to our interests. Our Legal and Tax functions are organised globally and support our business lines in ensuring compliance with local laws and fiscal regulations. Our Corporate Relations department engages with governments in countries where we operate to understand and influence local policies and to advocate Shell's position on topics relevant to our industry. We are prepared to exit a country if we believe we can no longer operate there in accordance with our standards and applicable law, and we have done so in the past.

OPERATIONAL RISKS

Russia's invasion of Ukraine has affected the safety and security of our people and operations in these and neighbouring countries. The sanctions and export controls and the evolving geopolitical situation have caused wide-ranging challenges to our operations which could continue in the medium to longer-term.

Further information: See "Post-Balance Sheet Events" on page 283.

Risk description

Russia's recent invasion of Ukraine poses wide-ranging challenges to our operations. The immediate impacts include the safety and security of our people and operations in these and neighbouring countries. The subsequent sanctions and export controls imposed by countries around the world could have a material impact on a number of our activities, including supply, trading and treasury activities. More sanctions and export controls are expected.

Given the evolving situation, there are many other unknown factors and events that could materially impact our operations, which may be temporary or more permanent in nature. These risks and future events could impact our supply chain, commodity prices, credit, commodity trading, treasury and legal risks. The tensions also create heightened cyber-security threats to our information technology infrastructure. The geopolitical situation may influence our future investment and financial decisions.

Any of these factors, individually or in aggregate, could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

In response to the invasion, a Group Crisis Team has been set up to assess the current situation, consider potential scenarios of how events may further develop and co-ordinate our responses accordingly.

Care for our people is Shell's top priority. Local crisis teams, led by the respective Country Chairs, have been deployed to ensure the health, safety and well-being of our staff, contractors and their families in Ukraine, Russia and neighbouring countries. We are supporting evacuations of Shell employees in Ukraine and their families. We are also working with aid partners and humanitarian organisations to help in the relief effort.

We announced our intention to exit our joint ventures with Gazprom and related entities and to end our involvement in the Nord Stream 2 pipeline project. Furthermore, we announced our intention to withdraw from our involvement in all Russian hydrocarbons, including crude oil, petroleum products, gas and LNG in a phased manner, aligned with new government guidance. As an immediate first step, the company will stop all spot purchases of Russian crude oil. We will shut our service stations, aviation fuels and lubricants operations in Russia.

We are closely monitoring and responding to the sanctions that have been imposed and are following international guidelines where relevant to our business activities.

RISK FACTORS continued

OPERATIONAL RISKS continued

The estimation of proved oil and gas reserves involves subjective judgements based on available information and the application of complex rules. This means subsequent downward adjustments are possible.

Further information: See "Supplementary information – oil and gas (unaudited)" on page 284.

Risk description

The estimation of proved oil and gas reserves involves subjective judgements and determinations based on available geological, technical, contractual and economic information. Estimates can change over time because of new information from production or drilling activities, changes in economic factors, such as oil and gas prices, alterations in the regulatory policies of host governments, or other events. Estimates also change to reflect acquisitions, divestments, new discoveries, extensions of existing fields and mines, and improved recovery techniques. Published proved oil and gas reserves estimates could also be subject to correction because of errors in the application of published rules and changes in guidance. Downward adjustments could indicate lower future production volumes and could also lead to impairment of assets. This could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

A central group of reserves experts undertakes the primary assurance of the proved reserves bookings. A multidisciplinary committee reviews and endorses all major proved reserves bookings. Shell's Audit Committee reviews all proved reserves bookings and Shell's CEO is responsible for final approval. The Internal Audit function also provides further assurance through audits of the control framework, from which information disclosed in "Supplementary information – oil and gas (unaudited)" is obtained.

Our future hydrocarbon production depends on the delivery of large and integrated projects and our ability to replace proved oil and gas reserves.

Further information: See "Shell Powering Progress" on page 8.

Risk description

We face numerous challenges in developing capital projects, especially those which are large and integrated. Challenges include: uncertain geology; frontier conditions; the existence and availability of necessary technology and engineering resources; the availability of skilled labour; the existence of transport infrastructure; project delays; the expiration of licences; delays in obtaining required permits; potential cost overruns; and technical, fiscal, regulatory, political and other conditions. These challenges are particularly relevant in certain developing and emerging-market countries, in frontier areas and in deep-water fields, such as off the coast of Mexico. We may fail to assess or manage these and other risks properly. Such potential obstacles could impair our delivery of these projects, our ability to fulfil the full potential value of the project as assessed when the investment was approved, and our ability to fulfil related contractual commitments. This could lead to impairments and could have a material adverse effect on our earnings, cash flows and financial condition.

Future oil and gas production will depend on our access to new proved reserves through exploration, negotiations with governments and other owners of proved reserves and acquisitions, and through developing and applying new technologies and recovery processes to existing fields. Failure to replace proved reserves could result in an accelerated decrease of future production, potentially having a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We continue to explore for and mature hydrocarbons across our Upstream and Integrated Gas businesses. We use our subsurface, project and technical expertise, and actively manage non-technical risks across a diversified portfolio of opportunities and projects. This involves adopting an integrated approach for all stages, from basin choice to development. We use competitive techniques and benchmark our approach internally and externally.

Oil and gas production available for sale

Million boe [A]

	2021	2020	2019
Shell subsidiaries	1,047	1,104	1,182
Shell share of joint ventures and associates	134	135	156
Total	**1,181**	**1,239**	**1,338**

[A] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.

Proved developed and undeveloped oil and gas reserves [A] [B] (at December 31)

Million boe [C]

	Dec 31, 2021	Dec 31, 2020	Dec 31, 2019
Shell subsidiaries	8,456	8,222	9,980
Shell share of joint ventures and associates	909	902	1,116
Total	**9,365**	**9,124**	**11,096**
Attributable to non-controlling interest of Shell subsidiaries	267	322	304

[A] We manage our total proved reserves base without distinguishing between proved reserves from subsidiaries and those from joint ventures and associates.
[B] Includes proved reserves associated with future production that will be consumed in operations.
[C] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.

OPERATIONAL RISKS continued

The nature of our operations exposes us, and the communities in which we work, to a wide range of health, safety, security and environment risks.

Further information: See "Environment and society" on page 100.

Risk description

The health, safety, security and environment (HSSE) risks to which we and the communities in which we work are potentially exposed cover a wide spectrum, given the geographical range, operational diversity and technical complexity of our operations. These risks include the effects of natural disasters (including weather events), earthquakes, social unrest, pandemic diseases, criminal actions by external parties, and safety lapses. If a major risk materialises, such as an explosion or hydrocarbon leak or spill, this could result in injuries, loss of life, environmental harm, disruption of business activities, loss or suspension of permits, loss of our licence to operate and loss of our ability to bid on mineral rights. Accordingly, this could have a material adverse effect on our earnings, cash flows and financial condition.

Our operations are subject to extensive HSSE regulatory requirements that often change and are likely to become more stringent over time. Governments could require operators to adjust their future production plans, as has occurred in the Netherlands, affecting production and costs. We could incur significant extra costs in the future because of the need to comply with such requirements. We could also incur significant extra costs due to violations of or liabilities under laws and regulations that involve elements such as fines, penalties, clean-up costs and third-party claims. If HSSE risks materialise, they could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We have standards and a clear governance structure to help manage HSSE risks and avoid potential adverse effects. The standards and governance structure also help us to develop mitigation strategies aimed at ensuring that if an HSSE risk materialises, we avoid catastrophic consequences and have ways of trying to remediate any environmental damage. Our standards and governance structure are defined in our Health, Safety, Security, Environment and Social Performance (HSSE & SP) Control Framework and supporting guidance documents. These describe how key controls should be operated, for example to ensure safe production and implementation of maintenance activities. Shell Internal Audit provides assurance on the effectiveness of HSSE & SP controls to the Board. We routinely practise implementing our emergency response plans to significant risks (such as a spill, toxic substances, fire or explosion).

We assessed the impact of COVID-19 on our activities and implemented measures to minimise the adverse effect of the pandemic on our operations. These measures include monitoring and additional protection to prevent infections, promote safety and protect the well-being of all staff, especially critical staff who continue to operate our assets. We also seek to minimise the pandemic's impact on our operations through scenario planning, implementing continuity plans and ensuring our sites and offices are COVID safe.

A further erosion of the business and operating environment in Nigeria could have a material adverse effect on us.

Further information: See "Upstream" on page 54.

Risk description

In our Nigerian operations, we face various risks and adverse conditions. These include: security issues affecting the safety of our people, host communities and operations; sabotage and theft; issues affecting our ability to enforce existing contractual rights; litigation; limited infrastructure; potential legislation that could increase our taxes or operating costs; the challenges presented by limited government and state oil company budgets; and regional instability created by militant activities. Some of these risks and adverse conditions, such as security issues affecting the safety of our people and sabotage and theft have occurred in the past and are likely to continue in the future. These risks or adverse conditions could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We test the economic and operational resilience of our Nigerian projects against a wide range of assumptions and scenarios. We seek to proportionally share risks and funding commitments with joint-venture partners. When we participate in joint ventures in Nigeria, we require that they operate in accordance with good industry practice. We monitor the security situation, and liaise with host communities, governmental and non-governmental organisations to help promote peaceful and safe operations.

RISK FACTORS continued

OPERATIONAL RISKS continued

An erosion of our business reputation could have a material adverse effect on our brand, our ability to secure new resources or access capital markets, and on our licence to operate.

Further information: See "Other Regulatory and Statutory Information" on page 201 and "Our people" on page 118.

Risk description

Our reputation is an important asset. The Shell General Business Principles (Principles) govern how Shell and its individual companies conduct their affairs, and the Shell Code of Conduct tells employees and contract staff how to behave in line with the Principles. Our challenge is to ensure that all employees and contract staff comply with the Principles and the Code of Conduct. Real or perceived failures of governance or regulatory compliance or a perceived lack of understanding of how our operations affect surrounding communities could harm our reputation.

Societal expectations of businesses are increasing, with a focus on business ethics, quality of products, contribution to society, safety and minimising damage to the environment. There is increasing focus on the role of oil and gas in the context of climate change and energy transition. This could negatively affect our brand, reputation and licence to operate, which could limit our ability to deliver our strategy, reduce consumer demand for our branded and non-branded products, harm our ability to secure new resources and contracts, and restrict our ability to access capital markets or attract staff. Many other factors, including the materialisation of other risks discussed in this section, could negatively affect our reputation and could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We continually assess and monitor the external environment for potential risks to our reputation. We engage in ongoing dialogue with our key stakeholders such as investors, industry and trade groups, universities, governments and non-governmental organisations (NGOs) to gain greater insights into societal expectations of our business. We have mitigation plans for identified brand and reputation risks at the Group, country and line of business level. Our country chairs are responsible for implementing country reputation plans which are updated annually. We continually develop and defend our brand in line with Shell's purpose and promises, and target our investments to drive brand differentiation, relevance and preference.

We rely heavily on information technology systems in our operations.

Further information: See "Corporate" on page 74.

Risk description

The operation of many of our business processes depends on reliable information technology (IT) systems. Our IT systems are evolving because of changing business models, our increasing focus on customers, ongoing digitalisation of business processes and migration to the cloud. Our IT systems are increasingly dependent on contractors supporting the delivery of IT services. The COVID-19 pandemic and geopolitical tensions altered the nature of the IT threat, increasing the frequency and ingenuity of malware attacks and increasing the temptation to attack targets for financial gain.

In 2021, Shell was impacted by data security breaches, including one involving a third-party supplier who gained unauthorised access to various files during a limited window of time, some of which contained personal data. Shell contacted the impacted individuals and stakeholders and worked with them to address possible risks. We also informed relevant regulators and authorities.

The factors described above continue to contribute to potential breaches and disruptions of critical IT services. If breaches are not detected early and responded to effectively, they could harm our reputation and have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We continually measure and improve our cyber-security capabilities. To reduce the likelihood of successful cyber attacks, our cyber-security capabilities are embedded into our IT systems. Our IT is protected by detective and protective technologies. Identification and assessment capabilities are built into our IT support processes and adhere to industry best practices. When external companies provide us with IT services, the security of those services is managed through contractual clauses and supplier assurance reports. Shell continually invests in efforts to embed and improve our controls and monitoring. For example, we improved our global web content filtering capability in response to the challenge of increased remote working. If breaches occur, all entities, including those that have yet to be fully integrated into Shell's systems and processes, are required to report the incident and use Shell's information security capabilities. In relation to the 2021 breach, the root cause of the incident was addressed, and the investigation showed no evidence of any impact on Shell's core IT systems. The incident was handled in line with regulations and in co-operation with the authorities.

Our business exposes us to risks of social instability, criminality, civil unrest, terrorism, piracy, cyber disruption and acts of war that could have a material adverse effect on our operations.

Further information: See "Environment and society" on page 111.

Risk description

As seen in recent years, these risks can manifest themselves in the countries where we operate and elsewhere. These risks affect people and assets. Potential risks include: acts of terrorism; acts of criminality including maritime piracy; cyber espionage or disruptive cyber attacks; conflicts including war – such as Russia's recent invasion of Ukraine – malicious acts carried out by individuals within Shell, civil unrest and environmental and climate activism (including disruptions by non-governmental and political organisations).

The above risks can threaten the safe operation of our facilities and the transport of our products. They can harm the well-being of our people, inflict loss of life and injuries, damage the environment and disrupt our operational activities. These risks could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We seek to obtain the best possible information to enable us to assess threats and risks. We conduct detailed assessments for all our sites and activities, and implement appropriate measures to deter, detect and respond to security risks. Further mitigations include strengthening the security of sites, reducing our exposure as appropriate, journey management, information risk management, crisis management and business continuity measures. We conduct training and awareness campaigns for staff and provide them with travel and health advice and access to 24/7 assistance while travelling. We learn from incidents, in order to continually improve our security risk management in Shell.

OPERATIONAL RISKS continued

Production from the Groningen field in the Netherlands causes earthquakes that affect local communities.

Further information: See "Upstream" on page 52.

Risk description
Shell and ExxonMobil are 50:50 shareholders in Nederlandse Aardolie Maatschappij B.V. (NAM). An important part of NAM's gas production comes from the onshore Groningen gas field, in which EBN, a Dutch government entity, has a 40% interest and NAM a 60% interest. The gas field is in the process of being closed down owing to earthquakes induced by gas production. Some of these earthquakes have damaged houses and other structures in the region, resulting in complaints and lawsuits from the local community. The government has announced it intends to accelerate the close-down, bringing the end of production forward from 2030 to possibly mid-2022. The exact close-down date depends on security of supply considerations and is still to be decided. While we expect the earlier close-down of the Groningen gas field to further reduce the number and strength of earthquakes in the region, any additional earthquakes could have further adverse effects on our earnings, cash flows and financial condition.

How this risk is managed
NAM is working with the Dutch government and other stakeholders to fulfil its obligations to residents of the area. These include compensating for damage caused by the earthquakes and paying to strengthen houses where this is required for safety considerations. Negotiations with the state are being conducted to determine how to manage the accelerated close-down. Specific remediations within the agreed scope of responsibilities are planned. NAM's joint-venture partners will review its financial robustness against different scenarios for Groningen's liabilities and costs, with the aim of the venture being able to self-fund any additional expenses and claims.

We are exposed to treasury and trading risks, including liquidity risk, interest rate risk, foreign exchange risk and credit risk. We are affected by the global macroeconomic environment and the conditions of financial and commodity markets.

Further information: See "Liquidity and capital resources" on page 38 and Note 20 to the "Consolidated Financial Statements" on pages 270-273.

Risk description
Our subsidiaries, joint arrangements and associates are subject to differing economic and financial market conditions around the world. Political or economic instability affects such markets.

We use debt instruments, such as bonds and commercial paper, to raise significant amounts of capital. Should our access to debt markets become more difficult, the potential impact on our liquidity could have a material adverse effect on our operations. Our financing costs could also be affected by interest rate fluctuations or any credit rating deterioration.

We are exposed to changes in currency values and to exchange controls as a result of our substantial international operations. Our reporting currency is the US dollar, although, to a material extent, we also hold assets and are exposed to liabilities in other currencies. While we undertake some foreign exchange hedging, we do not do so for all our activities. Even where hedging is in place, it may not function as expected.

Commodity trading is an important component of our Upstream, Integrated Gas, Oil Products and Chemicals businesses. Processing, managing and monitoring many trading transactions across the world, some of them complex, exposes us to operational and market risks, including commodity price risks. We use derivative instruments such as futures and contracts for difference to hedge market risks. We do not hedge all our activities and even where hedging is in place, it may not function as expected.

We are exposed to credit risk; our counterparties could fail or be unable to meet their payment and/or performance obligations under contractual arrangements. Although we do not have significant direct exposure to sovereign debt, it is possible that our partners and customers may have exposure which could impair their ability to meet their obligations. Our pension plans invest in government bonds, so they could be affected by a sovereign debt downgrade or other default.

If any of the above risks materialise, they could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed
We use various financial instruments for managing exposure to foreign exchange and interest rate movements. Our treasury operations are highly centralised and seek to manage credit exposures associated with our substantial cash, foreign exchange and interest rate positions. Our portfolio of cash investments is diversified to avoid concentrating risk in any one instrument, country or counterparty. Other than in exceptional cases, the use of external derivative instruments is confined to specialist trading and central treasury organisations that have the appropriate skills, experience, supervision, control and reporting systems.

We have credit risk policies in place which seek to ensure that products are sold to customers with appropriate creditworthiness. These policies include detailed credit analysis and monitoring of customers against counterparty credit limits. Where appropriate, netting arrangements, credit insurance, prepayments and collateral are used to manage credit risk. We maintain committed credit facilities. Management believes it has access to sufficient debt funding sources (capital markets) and to undrawn committed borrowing facilities to meet foreseeable requirements.

In affecting commodity trades and derivative contracts, we operate within procedures and policies designed to ensure that market risks are managed within authorised limits and trading can only be performed by staff with the appropriate skills and experience. Senior Management regularly reviews mandated trading limits. A department that is independent from our traders monitors our market risk exposures daily, using value-at-risk techniques alongside other risk metrics as appropriate.

RISK FACTORS continued

OPERATIONAL RISKS continued

Our future performance depends on the successful development and deployment of new technologies and new products.

Further information: See "Shell Powering Progress" on page 10.

Risk description
Technology and innovation are essential to our efforts to help meet the world's energy demands competitively. If we fail to effectively develop or deploy new technology and products and services, or fail to make full, effective use of our data in a timely and cost-effective manner, there could be a material adverse effect on the delivery of our strategy and our licence to operate. We operate in environments where advanced technologies are used. In developing new technologies and new products, unknown or unforeseeable technological failures or environmental and health effects could harm our reputation and licence to operate or expose us to litigation or sanctions. The associated costs of new technology are sometimes underestimated. Sometimes the development of new technology is subject to delays. If we are unable to develop the right technology and products in a timely and cost-effective manner, or if we develop technologies and products that harm the environment or people's health, there could be a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed
Shell's technology organisation and the relevant business lines work together to determine the content, scope and budget for developing new technology that supports our activities. The new technology is developed to ensure portfolio alignment with Shell's strategic ambitions and deployment commitments. A significant proportion of Shell's technology contributes to our Renewables and Energy Solutions portfolio and our emissions reduction targets. We benefit from key relationships with leading academic research institutes and universities, and from working with start-ups. In our Shell GameChanger programme, we help companies to mature early-stage technologies. In our Shell Ventures scheme, we invest in and partner with start-ups and small and medium-sized enterprises that are in the early stages of developing new technologies.

We have substantial pension commitments, the funding of which is subject to capital market risks and other factors.

Further information: See "Liquidity and capital resources" on page 38.

Risk description
Liabilities associated with defined benefit pension plans are significant, and the cash funding requirement of such plans can also involve significant liabilities. They both depend on various assumptions. Volatility in capital markets or government policies could affect investment performance and interest rates, causing significant changes to the funding level of future liabilities. Changes in assumptions for mortality, retirement age or pensionable remuneration at retirement could also cause significant changes to the funding level of future liabilities. We operate a number of defined benefit pension plans and, in case of a shortfall, we could be required to make substantial cash contributions (depending on the applicable local regulations). This could result in a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed
A pensions forum chaired by the Chief Financial Officer oversees Shell's input to pension strategy, policy and operation. A risk committee supports the forum in reviewing the results of assurance processes with respect to pension risks. Local trustees manage the funded defined benefit pension plans, and the contributions paid are based on independent actuarial valuations that align with local regulations.

We mainly self-insure our hazard risk exposures. Consequently, we could incur significant financial losses from different types of risks that are not insured with third-party insurers.

Further information: See "Corporate" on page 74.

Risk description
Our Group insurance companies (wholly owned subsidiaries) provide insurance coverage to Shell subsidiaries and entities in which Shell has an interest. These subsidiaries and entities may also insure a portion of their risk exposures with third parties, but such external insurance would not provide any material coverage in the event of a large-scale safety or environmental incident. Accordingly, in the event of a material incident, we would have to meet our obligations without access to material proceeds from third-party insurers. We have incurred adverse impacts from events, such as Hurricane Ida in 2021. We may, in the future, incur significant losses from different types of hazard risks that are not insured with third-party insurers, potentially resulting in a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed
We continually assess the safety performance of our operations and make risk mitigation recommendations, where relevant, to keep the risk of an accident as low as possible. Our insurance subsidiaries are adequately capitalised and they may transfer risks to third-party insurers where economical, effective and relevant.

Many of our major projects and operations are conducted in joint arrangements or with associates. This could reduce our degree of control and our ability to identify and manage risks.

Further information: See "Other Regulatory and Statutory Information" on page 203.

Risk description
When we are not the operator, we have less influence and control over the behaviour, performance and operating costs of joint arrangements or associates. Despite having less control, we could still be exposed to the risks associated with these operations, including reputational, litigation (where joint and several liability could apply) and government sanction risks. For example, our partners or members of a joint arrangement or an associate, (particularly local partners in developing countries), may be unable to meet their financial or other obligations to projects, threatening the viability of a given project. Where we are the operator of a joint arrangement, the other partner(s) could still be able to veto or block certain decisions, which could be to our overall detriment. Accordingly, where we have limited influence, we are exposed to operational risks that could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed
For every major project where we share control, Shell appoints a Joint Venture Asset Manager, whose responsibility is to manage performance and create and protect value for Shell. The Joint Venture Asset Manager seeks to influence operators and other partners to adapt their practices in order to drive value appropriately and to mitigate identified risks. An annual assurance review assesses how the joint venture's standards and processes align with those of Shell. The Joint Venture Asset Manager follows up on any gaps identified.

CONDUCT AND CULTURE RISKS

We are exposed to conduct risk in our trading operations.

Further information: See "Other Regulatory and Statutory Information" on page 202 and Note 20 to the "Consolidated Financial Statements" on pages 270-273.

Risk description
Commodity trading is an important component of our Upstream, Integrated Gas, Renewables & Energy Solutions, Oil Products and Chemicals businesses. Our commodity trading entities are subject to many regulations including requirements for standards of conduct. The risk of ineffective controls, poor oversight of trading activities, and the risk that traders could deliberately operate outside compliance limits and controls, either individually or as a group, has occurred. This has resulted in losses in the past and may result in further losses in the future. This could have material adverse effects on our earnings, cash flows and financial condition.

How this risk is managed
We maintain a trading compliance function managed by a regulated Chief Compliance Officer with adequate resources, a comprehensive governance structure, including mitigating controls (both automated and non-automated), and established reporting lines. Staff receive clear guidance through the organisation's Trading Compliance Manual, a specific compliance website, training modules where completion is monitored, and additional quarterly training sessions. Shell leaders frequently reinforce the importance of managing compliance and conduct risk in the trading organisation. In response to the COVID-19 pandemic, we issued guidance on maintaining compliance and conduct standards and upgraded our trader monitoring tools.

Violations of antitrust and competition laws carry fines and expose us and/or our employees to criminal sanctions and civil suits.

Further information: See "Other Regulatory and Statutory Information" on page 202.

Risk description
Antitrust and competition laws apply to Shell and its joint arrangements and associates in the vast majority of countries where we do business. Shell and its joint arrangements and associates have been fined for violations of antitrust and competition laws in the past. This includes a number of fines by the European Commission Directorate-General for Competition (DG COMP). Because of DG COMP's fining guidelines, any future conviction of Shell or any of its joint arrangements or associates for violation of EU competition law could potentially result in significantly larger fines and have a material adverse effect on us. Violation of antitrust laws is a criminal offence in many countries, and individuals can be imprisoned or fined. In certain circumstances, directors may receive director disqualification orders. It is also now common for persons or corporations allegedly injured by antitrust violations to sue for damages. Any violation of these laws can harm our reputation and could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed
We maintain an antitrust programme with adequate resources, a comprehensive governance structure and established reporting lines. Staff receive clear guidance that includes requirements in Shell's Ethics and Compliance Manual, an antitrust-specific website, training modules where completion is monitored and regular messages from Shell leaders on the importance of managing antitrust risks. Staff must understand and comply with the Protect Shell Policy, which explains Shell's position on managing antitrust risks in engagements with parties external to Shell. In response to the COVID-19 pandemic, we issued guidance to address antitrust risks arising from the disruption to supply chains, including procurement guidance which outlines the risks associated with exchanging information and collaborating with Shell's procurement competitors.

Violations of anti-bribery, tax-evasion and anti-money laundering laws carry fines and expose us and/or our employees to criminal sanctions and civil suits.

Further information: See "Our people" on page 118, "Other Regulatory and Statutory Information" on page 202 and Note 26 to the "Consolidated Financial Statements" on pages 278-279.

Risk description
Anti-bribery, tax-evasion and anti-money laundering laws apply to Shell, its joint arrangements and associates in all countries where we do business. Shell and its joint arrangements and associates have in the past settled with the US Securities and Exchange Commission regarding violations of the US Foreign Corrupt Practices Act. Any violation of anti-bribery, tax-evasion or anti-money laundering laws, including potential violations associated with Shell Nigeria Exploration and Production Company Limited's investment in Nigerian oil block OPL 245 and the 2011 settlement of litigation pertaining to that block, could harm our reputation or have a material adverse effect on our earnings, cash flows and financial condition. Violations of such laws also could expose us and/or our employees to criminal sanctions, civil suits and other consequences, such as debarment and the revocation of licences.

How this risk is managed
We maintain an anti-bribery, anti-tax evasion and anti-money laundering (ABC/AML) programme with adequate resources, a comprehensive governance structure and established reporting lines. Staff receive clear guidance, which includes requirements in Shell's Ethics and Compliance Manual, an ABC/AML-specific website, training modules where completion is monitored and regular messages from Shell leaders on the importance of managing ABC/AML risks.

As regards OPL 245, we have always maintained that the 2011 settlement was fully legal and on March 17, 2021, the court in Milan, Italy, acquitted Shell and its former employees of all charges on the grounds that there was no case to answer.

In response to the COVID-19 pandemic, we set up fast-track processes to deal with relief donation requests. These processes include counterparty due diligence and are supported by Shell's Ethics and Compliance Office.

CONDUCT AND CULTURE RISKS continued

Violations of data protection laws carry fines and expose us and/or our employees to criminal sanctions and civil suits.

Further information: See "Other Regulatory and Statutory Information" on page 202.

Risk description

Data protection laws apply to Shell and its joint arrangements and associates in the vast majority of countries where we do business. Since many countries in which we operate have data protection laws and regulations, Shell has adopted Binding Corporate Rules. This means we apply one consistent standard to data protection, across the Group and globally. The EU General Data Protection Regulation (GDPR) forms the basis of our Binding Corporate Rules. With data privacy legislation now in force in the USA, the risk of class actions is increased. Class actions after large-scale data breaches are increasingly common.

Shell companies are increasingly processing large volumes of personal data as we continue to acquire small companies with relatively large amounts of customer data during the energy transition. The COVID-19 pandemic has increased the level of processing of sensitive personal data, for example to confirm the health or vaccination status of our employees and visitors. Some governments require immediate disclosure of information, including sensitive personal data. We must be able to update our guidance to employees quickly, so it includes the relevant points of country legislation on COVID-19.

In some countries that are key to Shell's business operations, such as China, relevant legislation continues to be amended or introduced. Shell must be able to adapt dynamically to such legislative changes and be capable of updating our internal programmes if necessary. Many countries require mandatory notification of data breaches in certain situations. In these circumstances we might be required to report to affected individuals and regulators in the relevant countries.

Non-compliance with data protection laws could harm individuals and expose us to regulatory investigations. This could result in: fines, which could be up to 4% of global annual turnover if under GDPR; orders to stop processing certain data; harm to our reputation; and loss of the trust of existing and potential customers, stakeholders, governments, and employees. With regard to data breaches, we notified a number of data privacy regulators in 2021 of personal data breaches, and some investigations are still ongoing. To date, no material fines have been imposed, but no assurance can be provided that future breaches would have similar outcomes. In addition to imposing fines, regulators may also issue orders to stop processing personal data, which could disrupt operations. We could also be subject to litigation from persons or entities allegedly affected by data protection violations.

Violation of data protection laws is a criminal offence in some countries, and individuals can be imprisoned or fined. Any violation of these laws or harm to our reputation could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We maintain a Group-wide data privacy programme, a comprehensive governance structure and established reporting lines. Shell has had Binding Corporate Rules in place for the last 10 years to ensure consistent levels of data protection across the Group. Staff receive clear guidance which includes requirements in Shell's Ethics and Compliance Manual, a website focusing on data privacy, training modules where completion is monitored, and regular messages from Shell leaders on the importance of managing data privacy risks.

We monitor new and imminent data privacy legislation and ensure we have a robust impact assessment process aligned with the relevant businesses. We design operations and processes with privacy requirements and build controls into our processes and practices which involve the handling of personal data.

Recognising legal developments, not only in data privacy but also in electronic communications and advertising, we have developed pragmatic guidance on direct and indirect marketing.

We have and continue to update a Group-wide incident management process designed to immediately identify and remediate data breaches. The process also helps us to comply with country-level requirements for reporting breaches. We continue to address challenges with compliance in data-heavy companies controlled by Shell but not yet fully integrated into our systems.

There is a requirement for newly acquired companies to become compliant with our Binding Corporate Rules within three years of acquisition and there is currently a multi-year programme under way to achieve compliance. IT remediation work remains a priority in such companies, as does the strengthening of programmes to support data privacy compliance. To respond to the increased risk resulting from the pandemic, we updated our guidance on privacy best practices for COVID-19.

CONDUCT AND CULTURE RISKS continued

Violations of trade compliance laws and regulations, including sanctions, carry fines and expose us and our employees to criminal proceedings and civil suits.

Further information: See "Other Regulatory and Statutory Information" on page 202.

Risk description

We use "trade compliance" as an umbrella term for various national and international laws designed to regulate the movement of items across national boundaries and restrict or prohibit trade and other dealings with certain parties. For example, the EU and the USA continue to impose comprehensive sanctions on countries and territories such as Syria, North Korea and Crimea, and continue to adopt targeted restrictions and prohibitions on certain transactions in countries such as Venezuela and Russia. The USA continues to have comprehensive sanctions against Iran and Cuba. The EU and some nations continue to maintain targeted sanctions against Iran. The EU and the USA introduced sectoral sanctions against Venezuela in 2017, which the USA expanded in 2018 and 2019. The US sanctions primarily target the government of Venezuela and the oil industry.

In 2014, the EU and the USA imposed additional restrictions and controls directed at defined oil and gas activities in Russia. These remain in force. The USA introduced further restrictions regarding Russia in 2017, expanding them in 2018. In February 2022, countries around the world began imposing additional sanctions and export controls against Russia over its invasion of Ukraine including, regional trade bans, designations of entities (including Russian banks and state-owned entities) and individuals as Specially Designated Nationals and Blocked Parties (SDNs), and restrictions on access by Russia to financial systems. Export controls have also been introduced targeting Russian defence, aerospace, and maritime sectors. More sanctions and export controls are expected. A number of countries have also implemented new sanctions against Belarus for its role in the Russian invasion.

Many other nations are also adopting trade compliance programmes similar to those administered by the EU and the USA. Since January 2021, the UK has maintained a legal framework for trade compliance that is separate and distinct from those of the EU and USA.

Abiding by all the laws and regulations on trade compliance and sanctions can sometimes be complex and challenging because of factors such as: the expansion of sanctions; the frequent addition of prohibited parties; the number of markets in which we operate; the risk of differences in how jurisdictions apply sanctions; and the large number of transactions we process. Shell has voluntarily self-disclosed potential violations of sanctions in the past. The COVID-19 pandemic has increased trade compliance risks, because of factors such as growing state involvement in business dealings, the need to maintain and develop business opportunities and cross-border movement of goods and technologies, and the increasing likelihood that counterparties will change ownership as the economic crisis continues.

Any violation of sanctions could lead to loss of import or export privileges and significant penalties on or prosecution of Shell or its employees. This could harm our reputation and have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

We continue to develop and maintain a trade compliance programme with adequate resources, robust screening protocols, a comprehensive governance structure and established reporting lines. Staff receive clear guidance, which includes requirements in Shell's Ethics and Compliance Manual, a specific website for trade compliance, training modules where completion is monitored and regular messages from Shell leaders on the importance of managing trade compliance risks. The effectiveness of the trade compliance programme is assessed annually (or more frequently if necessary) and we are continually seeking ways to improve.

In response to the COVID-19 pandemic, we promote an increased focus on compliance and assurance. For example, in Trading and Supply we promote a particular focus on compliance with trade controls in high-risk areas such as port agency, inspections and terminal operations.

Investors should also consider the following, which could limit shareholder remedies.

OTHER (generally applicable to an investment in securities)

The Company's Articles of Association determine the jurisdiction for shareholder disputes. This could limit shareholder remedies.

Risk description

Our Articles of Association generally require that all disputes between our shareholders in such capacity and the Company or our subsidiaries (or our Directors or former Directors), or between the Company and our Directors or former Directors, be exclusively resolved by arbitration in The Hague, the Netherlands, under the Rules of Arbitration of the International Chamber of Commerce. Our Articles of Association also provide that, if this provision is to be determined invalid or unenforceable for any reason, the dispute could only be brought before the courts of England and Wales. Accordingly, the ability of shareholders to obtain monetary or other relief, including in respect of securities law claims, could be determined in accordance with these provisions.

SUMMARY OF RESULTS

Key statistics

			$ million, except where indicated
	2021	2020	2019
Income/(loss) attributable to Shell plc shareholders	20,101	(21,680)	15,842
Income attributable to non-controlling interest	529	146	590
Income/(loss) for the period	20,630	(21,534)	16,432
Current cost of supplies adjustment	(3,148)	1,833	(605)
Total segment earnings [A][B], of which:	17,482	(19,701)	15,827
Integrated Gas	6,340	(6,278)	8,628
Upstream	9,694	(10,785)	3,855
Oil Products	2,664	(494)	6,139
Chemicals	1,390	808	478
Corporate	(2,606)	(2,952)	(3,273)
Identified Items [B]	(2,216)	(24,767)	(1,192)
Adjusted Earnings [B]	19,289	4,846	16,462
Adjusted EBITDA (CCS basis) [B]	55,004	36,533	56,644
Capital expenditure	19,000	16,585	22,971
Cash capital expenditure [B]	19,698	17,827	23,919
Operating expenses [B]	35,964	34,789	37,893
Underlying operating expenses [B]	35,309	32,502	37,000
Return on average capital employed [B]	8.8%	(6.8)%	6.7%
Net Debt at December 31 [C]	52,556	75,386	79,093
Gearing at December 31 [C]	23.1%	32.2%	29.3%
Oil and gas production (thousand boe/d)	3,237	3,386	3,665
Proved oil and gas reserves at December 31 (million boe)	9,365	9,124	11,096

[A] Segment earnings are presented on a current cost of supplies basis. See Note 5 to the "Consolidated Financial Statements" on pages 245-248.
[B] See "Non-GAAP measures reconciliations" on pages 326-329.
[C] See Note 15 "Debt and lease arrangements" on page 257 and "Non-GAAP measures reconciliations" on pages 326-329.

EARNINGS 2021-2020

Income attributable to Shell plc shareholders in 2021 was $20,101 million, compared with a loss of $21,680 million in 2020. With non-controlling interest included, income/(loss) for the period in 2021 was $20,630 million, compared with a loss of $21,534 million in 2020. After current cost of supplies adjustment, total segment earnings in 2021 were $17,482 million, compared with a loss of $19,701 million in 2020.

Earnings on a current cost of supplies basis (CCS earnings) exclude the effect of changes in the oil price on inventory carrying amounts, after making allowance for the tax effect. The purchase price of volumes sold in the period is based on the current cost of supplies during the same period, rather than on the historic cost calculated on a first-in, first-out (FIFO) basis. When oil prices are decreasing, CCS earnings are likely to be higher than earnings calculated on a FIFO basis and, when prices are increasing, CCS earnings are likely to be lower than earnings calculated on a FIFO basis.

Integrated Gas earnings in 2021 were $6,340 million, compared with a loss of $6,278 million in 2020. The increase was mainly driven by lower impairment charges, higher realised prices for oil, LNG and gas, higher gains on sale of assets and favourable tax movements. This was partly offset by higher losses due to the fair value accounting of commodity derivatives and higher operating expenditure. See "Integrated Gas" on pages 45-49.

Upstream earnings in 2021 were $9,694 million, compared with a loss of $10,785 million in 2020. The increase was mainly driven by higher realised oil and gas prices, lower impairment charges and favourable tax movements. This was partly offset by higher losses related to fair value accounting of commodity derivatives. See "Upstream" on pages 50-56.

Oil Products earnings in 2021 were $2,664 million, compared with a loss of $494 million in 2020. The increase was mainly driven by lower impairment charges and higher marketing volumes and oil sands margins. This was partly offset by lower contributions from trading and optimisation, higher operating expenditure and unfavourable tax movements. See "Oil Products" on pages 65-70.

Chemicals earnings in 2021 were $1,390 million, compared with $808 million in 2020. The increase was mainly driven by higher margins in base chemicals and intermediates as well as favourable tax movements. This was partly offset by higher impairment charges and operating expenditure. See "Chemicals" on pages 71-73.

Corporate segment earnings in 2021 were an expense of $2,606 million, compared with $2,952 million in 2020. The lower expense was mainly driven by lower net interest expenses and favourable foreign exchange movements. See "Corporate" on page 74.

PRIOR YEAR EARNINGS SUMMARY

Our earnings summary for the financial year ended December 31, 2020, compared with the financial year ended December 31, 2019, can be found in the Annual Report and Accounts (page 41) and Form 20-F (page 26) for the year ended December 31, 2020, as filed with the Registrar of Companies for England and Wales and the US Securities and Exchange Commission, respectively.

PRODUCTION AVAILABLE FOR SALE

Oil and gas production available for sale in 2021 was 3,237 thousand boe per day (boe/d), compared with 3,386 thousand boe/d in 2020. This net reduction was mainly driven by divestments, higher maintenance activities, net field declines and production-sharing contract effects.

Oil and gas production available for sale [A]

Thousand boe/d

	2021	2020	2019
Crude oil and natural gas liquids	1,685	1,752	1,823
Synthetic crude oil	54	51	52
Natural gas [B]	1,498	1,583	1,790
Total	3,237	3,386	3,665
Of which:			
Integrated Gas	942	911	922
Upstream	2,240	2,424	2,691
Oil sands (part of Oil Products)	54	51	52

[A] See "Oil and gas information" on pages 57-64.
[B] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.

PROVED RESERVES

The proved oil and gas reserves of Shell subsidiaries and the Shell share of the proved oil and gas reserves of joint ventures and associates are summarised in "Oil and gas information" on pages 57-64 and set out in more detail in "Supplementary information – oil and gas (unaudited)" on pages 284-301.

Before taking production into account, our proved reserves increased by 1,470 million boe in 2021. Total oil and gas production was 1,229 million boe. Accordingly, after taking production into account, our proved reserves increased by 241 million boe in 2021, to 9,365 million boe at December 31, 2021.

CASH CAPITAL EXPENDITURE AND OTHER INFORMATION

Cash capital expenditure was $19,698 million in 2021, compared with $17,827 million in 2020.

Operating expenses were $35,964 million in 2021, compared with $34,789 million in 2020. Underlying operating expenses were $35,309 million compared with $32,502 million in 2020.

Our return on average capital employed (ROACE) increased to 8.8%, compared with (6.8)% in 2020, mainly driven by higher earnings.

Net debt was $52,556 million at the end of 2021, compared with $75,386 million at the end of 2020, mainly driven by cash flow generation.

Gearing was 23.1% at the end of 2021, compared with 32.2% at the end of 2020, mainly driven by net debt reduction and higher earnings.

SIGNIFICANT ACCOUNTING ESTIMATES AND JUDGEMENTS

See Note 2 to the "Consolidated Financial Statements" on pages 233-241.

LEGAL PROCEEDINGS

See Note 26 to the "Consolidated Financial Statements" on pages 277-279.

PERFORMANCE INDICATORS

These indicators enable management to evaluate Shell's performance against our strategy and operating plans during the year. These are also used as part of the determination of Executive Directors' remuneration. See "Directors' Remuneration Report" on pages 166-170.

FINANCIAL DELIVERY

Cash flow from operating activities ($ million)

45,104 2020: 34,105

Cash flow from operating activities is the total of all the cash receipts and payments associated with our sales of oil, gas, chemicals and other products. The components that provide a reconciliation from income for the period are listed in the "Consolidated Statement of Cash Flows". This indicator reflects our ability to generate cash to service and reduce our debt and for distributions to shareholders and for investments.

See "Liquidity and capital resources" on pages 38-41.

Free cash flow ($ million)

40,343 2020: 20,828

Free cash flow is the sum of "Cash flow from operating activities" and "Cash flow from investing activities", which are disclosed in the "Consolidated Statement of Cash Flows". This indicator is used to evaluate the cash available for financing activities, including shareholder distributions and debt servicing, after investment in maintaining and growing our business.

See "Non-GAAP measures reconciliations" on pages 326-329.

Return on average capital employed (%)

8.8 2020: (6.8)

ROACE is defined as income for the period, adjusted for after-tax interest expense, as a percentage of the average capital employed during the year. Capital employed is the sum of total equity and total debt. ROACE measures the efficiency of our utilisation of the capital that we employ and is a common measure of business performance.

See "Summary of results" on pages 34-35 and "Non-GAAP measures reconciliations" on pages 326-329.

Total shareholder return (%)

33.1 2020: (32.7)

Total shareholder return (TSR) is the difference between the share price at the beginning of the year and the share price at the end of the year (each averaged over 90 days), plus gross dividends delivered during the calendar year (reinvested quarterly), expressed as a percentage of the share price at the beginning of the year (averaged over 90 days). The data used are a weighted average in dollars for A and B shares. The TSRs of major publicly traded oil and gas companies can be compared directly, providing a way to determine how we are performing relative to our industry peers.

OPERATIONAL EXCELLENCE

Upstream controllable availability (%)

87.8 2020: 89.2

Upstream controllable availability performance reflects our ability to optimally run our Upstream assets. Reliability issues, turnarounds and maintenance at own-operated or third-party facilities all impact controllable availability, but it excludes the impact of extreme unexpected events that are outside our control such as government restrictions and hurricanes.

Midstream availability (%)

87.3 2020: 92.3

Midstream availability shows to what extent liquefied natural gas (LNG) assets are ready to process product as a comparison with capacity, considering the impact of planned and unplanned maintenance.

Refinery and chemical plant availability (%)

95.6 2020: 95.5

Refinery and chemical plant availability is the weighted average of the actual uptime of plants as a percentage of their maximum possible uptime. The weighting is based on the capital employed, adjusted for cash and non-current liabilities. This indicator is a measure of the operational excellence of our refinery and chemical plant facilities.

Project delivery on schedule (%)

87.0 2020: 48.0

Project delivery on budget (%)

104.0 2020: 103.9

Project delivery reflects our capability to complete major projects on time and within budget on the basis of the targets set in our annual business plan. Project delivery on schedule measures the percentage of projects delivered on schedule. Project delivery on budget reflects the aggregate cost against the aggregate budget for those projects, where a figure greater than 100% means over budget.

PROGRESS IN ENERGY TRANSITION

Upstream and Integrated Gas greenhouse gas (GHG) intensity (tonnes of CO_2 equivalent/tonne of hydrocarbon production available for sale)

0.172 2020: 0.16

Upstream/midstream GHG intensity is a measure of GHG emissions (direct and indirect GHG emissions associated with imported energy, excluding emissions from exported energy), expressed in metric tonnes of CO_2 equivalent emitted into the atmosphere per metric tonne of hydrocarbon production available for sale.

See "Climate change and energy transition" on pages 75-98.

Refining GHG intensity (tonnes of CO_2 equivalent/UEDC™)

1.05 2020: 1.05

Refining GHG intensity is a measure of GHG emissions (direct and indirect GHG emissions associated with imported energy, excluding emissions from exported energy), expressed in metric tonnes of CO_2 equivalent emitted into the atmosphere per unit of Utilised Equivalent Distillation Capacity (UEDC™). UEDC™ is a proprietary metric of Solomon Associates. It is a complexity-weighted normalisation parameter that reflects the operating cost intensity of a refinery based on the size and configuration of its particular mix of process and non-process facilities.

See "Climate change and energy transition" on pages 75-98.

Chemicals GHG intensity (tonnes of CO_2 equivalent/tonne petrochemicals produced)

0.95 2020: 0.98

Chemicals GHG intensity is a measure of GHG emissions (direct and indirect GHG emissions associated with imported energy, excluding emissions from exported energy), expressed in metric tonnes of CO_2 equivalent emitted into the atmosphere per metric tonne of steam cracker, high-value petrochemicals production.

See "Climate change and energy transition" on pages 75-98.

GHG abatements (thousand tonnes of CO_2 equivalent)

279 2020: N/A

This is the total mass of GHG emissions reduced by interventions that lead to sustained drops in emissions. By sustained drops, we mean that each intervention ensured emissions were lower for the given year, and there was a reasonable expectation that emissions would continue to be lower because of the intervention, all things being equal. This is a new metric for 2021.

See "Climate change and energy transition" on pages 75-98.

SAFETY

Serious injury and fatality frequency (cases per 100 million working hours)

6.9 2020: 6.0

Serious Injury and Fatality (SIF) is defined as a serious work-related injury or illness that resulted in fatality or a life-altering event, which is defined as a long-term or permanent injury or illness with significant impact on daily activities.

See "Environment and society" on pages 99-113.

Number of operational Tier 1 and 2 process safety events

102 2020: 103

A Tier 1 process safety event is an unplanned or uncontrolled release of any material, including non-toxic and non-flammable materials, from a process with the greatest actual consequence resulting in harm to employees, contract staff, or a neighbouring community, damage to equipment, or exceeding a threshold quantity, as defined by the API Recommended Practice 754 and IOGP Standard 456. A Tier 2 process safety event is a release of lesser consequence.

See "Environment and society" on pages 99-113.



LIQUIDITY AND CAPITAL RESOURCES

We manage our businesses to deliver strong cash flows to fund investment for profitable growth. Management's priorities for applying Shell's cash are base capital expenditure to sustain our strategy, progressive dividend growth of around 4% annually, AA credit metrics through the cycle, and additional shareholder distributions (20-30% of cash flow from operations). The fourth priority is disciplined and measured capital expenditure growth and continued balance sheet strengthening.

FINANCIAL CONDITION AND LIQUIDITY

Shell generated cash flow from operations of $45.1 billion, including a negative impact from working capital of $10.4 billion, and free cash flow of $40.3 billion in 2021, aided by the improving global macro environment and divestments. (For more information on free cash flow see "Non-GAAP measures reconciliations" on pages 326-329.) Net debt decreased to $52.6 billion at December 31, 2021, (December 31, 2020: $75.4 billion). Gearing fell to 23.1% at December 31, 2021, compared with 32.2% at December 31, 2020, as increases in equity and cash flow generation reduced net debt. Note 15 to the "Consolidated Financial Statements" on page 257 provides information on our debt arrangements, including net debt and gearing definitions.

LIQUIDITY

We satisfy our funding and working capital requirements from the cash generated from our operations, the issuance of debt and divestments. In 2021, access to the international debt capital markets remained strong, with our debt principally financed from these markets through central debt programmes consisting of:

- a $10 billion global commercial paper (CP) programme, with maturities not exceeding 270 days;
- a $10 billion US CP programme, with maturities not exceeding 397 days;
- an unlimited Euro medium-term note (EMTN) programme (also referred to as the Multi-Currency Debt Securities Programme); and
- an unlimited US universal shelf (US shelf) registration.

All these CP, EMTN and US shelf issuances are issued by Shell International Finance B.V., the issuance company for Shell, with its debt being guaranteed by Shell plc (the Company).

We also maintain committed credit facilities. The core facilities were extended in December 2021. Of the $10 billion total facility, $0.08 billion matured in 2021, $1.92 billion matures in 2022, $0.32 billion in 2025 and $7.68 billion in 2026. This remained fully undrawn at December 31, 2021. These core facilities and internally available liquidity provide back-up coverage for our CP programmes. In April 2020, to increase liquidity amid COVID-19-related uncertainties, Shell entered into a dual-currency $7.2 billion and €4.4 billion one-year revolving credit facility, with two six-month extension options at our discretion. This facility remained undrawn and expired at the end of the first year in April 2021. Other than certain borrowing by local subsidiaries, we do not have any other committed credit facilities.

Our total debt decreased by $18.9 billion to $89.1 billion at December 31, 2021. The total debt excluding leases matures as follows: 7% in 2022; 6% in 2023; 7% in 2024; 10% in 2025; and 69% in 2026 and beyond. The portion of debt maturing in 2022 is expected to be repaid from a combination of cash balances, cash generated from operations, divestments and the issuance of new debt.

In 2021, we issued $1.5 billion of bonds under our US shelf registration. All CP outstanding was repaid within the year with no additional issuance. Additionally in 2021, we redeemed $4.5 billion of USD bonds, bringing forward maturities of certain bonds maturing before the end of 2025. We believe our working capital is sufficient for current requirements.

While our subsidiaries are subject to restrictions, such as foreign withholding taxes on the transfer of funds in the form of cash dividends, loans or advances, such restrictions are not expected to have a material impact on our ability to meet our cash obligations.

MARKET RISK AND CREDIT RISK

We are affected by the global macroeconomic environment as well as financial and commodity market conditions. This exposes us to treasury and trading risks, including liquidity risk, market risk (interest rate risk, foreign exchange risk and commodity price risk) and credit risk. See "Risk factors" on pages 29 and Note 20 to the "Consolidated Financial Statements" on pages 268-273. The size and scope of our businesses require a robust financial control framework and effective management of our various risk exposures.

We use various financial instruments for managing exposure to commodity price, foreign exchange and interest rate movements. Our treasury and trading operations are highly centralised and seek to manage credit exposures associated with our substantial cash, commodity, foreign exchange and interest rate positions. Our portfolio of cash investments is diversified to avoid concentrating risk in any one instrument, country or counterparty. The use of external derivative instruments is confined to specialist trading and central treasury organisations that have appropriate skills, experience, supervision, control and reporting systems. Credit risk policies are in place to ensure that sales of products are made to customers with appropriate creditworthiness, and include credit analysis and monitoring of customers against counterparty credit limits. Where appropriate, netting arrangements, credit insurance, prepayments and collateral are used to manage credit risk. Management believes it has access to sufficient debt funding sources (capital markets) and to undrawn committed borrowing facilities to meet foreseeable requirements.

PENSION COMMITMENTS

We have substantial pension commitments, the funding of which is subject to capital market risks (see "Risk factors" on page 30). We address key pension risks in a number of ways. Principal among these is the Pensions Forum, chaired by the Chief Financial Officer, which oversees Shell's input to pension strategy, policy and operation. A risk committee supports the forum in reviewing the results of assurance processes in respect of pensions risks. In general, local trustees manage the funded defined benefit pension plans, with contributions paid based on independent actuarial valuations in accordance with local regulations. Our total employer contributions were $0.9 billion in 2021 and are estimated to be $0.9 billion in 2022. See Note 18 to the "Consolidated Financial Statements" on pages 261-266.

Capitalisation table

$ million

	December 31, 2021	December 31, 2020
Equity attributable to Shell plc shareholders	171,966	155,310
Current debt	8,218	16,899
Non-current debt	80,868	91,115
Total debt [A]	89,086	108,014
Total capitalisation	261,052	263,324

[A] Of total debt, $61.5 billion (2020: $79.4 billion) was unsecured and $27.6 billion (2020: $28.6 billion) was secured. See Note 15 to the "Consolidated Financial Statements" on pages 256-258 for further disclosure on debt.

STATEMENT OF CASH FLOWS

Cash flow from operating activities in 2021 was an inflow of $45.1 billion, compared with $34.1 billion in 2020, mainly due to higher earnings, partly offset by unfavourable working capital movements of $10.4 billion (compared with favourable working capital movements of $4.6 billion in 2020). The decrease in cash flow from operating activities in 2020, compared with $42.2 billion in 2019, was mainly due to lower earnings.

Cash flow from investing activities in 2021 was an outflow of $4.8 billion, compared with an outflow of $13.3 billion in 2020. The decreased cash outflow was mainly due to higher proceeds from sale of property, plant and equipment in 2021, including the divestment of our Permian business in the USA. The decreased cash outflow in 2020 compared with $15.8 billion in 2019 was mainly due to lower capital expenditure in 2020.

Cash flow from financing activities in 2021 was an outflow of $34.6 billion, compared with outflows of $7.2 billion in 2020 and $35.2 billion in 2019, due to net repayment of debt of $19.7 billion (2020: $5.6 billion net issuance; 2019: $3.4 billion net repayment), and higher repurchases of shares of $2.9 billion (2020: $1.7 billion; 2019: $10.2 billion).

Cash and cash equivalents were $37.0 billion at December 31, 2021 (December 31, 2020: $31.8 billion; December 31, 2019: $18.1 billion).

CASH FLOW FROM OPERATING ACTIVITIES

The most significant factors affecting our cash flow from operating activities are earnings, which are mainly impacted by: realised prices for crude oil, natural gas and LNG, production levels of crude oil, natural gas and LNG, chemicals, refining and marketing margins; and movements in working capital.

The impact on earnings from changes in market prices depends on: the extent to which contractual arrangements are tied to market prices; the dynamics of production-sharing contracts; the existence of agreements with governments or state-owned oil and gas companies that have limited sensitivity to crude oil and natural gas prices; tax impacts; and the extent to which changes in commodity prices flow through into operating expenses. Changes in benchmark prices of crude oil and natural gas in any particular period provide only a broad indicator of changes in our Integrated Gas and Upstream earnings in that period. Changes in any one of a range of factors, derived from either within the industry or the broader economic environment, can influence refining and marketing margins. The precise impact of any such changes depends on how the oil markets respond to them. The market response is affected by factors such as: whether the change affects all crude oil types or only a specific grade; regional and global crude oil and refined products inventories; and the collective speed of response of refiners and product marketers in adjusting their operations. As a result, margins fluctuate from region to region and from period to period.

Cash flow information [A]

$ billion

	2021	2020	2019
Cash flow from operating activities excluding working capital movements			
Integrated Gas	18.3	10.8	14.8
Upstream	22.6	9.8	19.9
Oil Products	12.0	7.0	10.7
Chemicals	3.3	1.8	1.7
Corporate	(0.7)	0.1	(0.3)
Total	55.5	29.5	47.0
(Increase)/decrease in inventories	(7.3)	4.5	(2.6)
(Increase)/decrease in current receivables	(20.6)	9.6	(0.9)
Increase/(decrease) in current payables	17.5	(9.5)	(1.2)
(Increase)/decrease in working capital	(10.4)	4.6	(4.8)
Cash flow from operating activities	45.1	34.1	42.2
Cash flow from investing activities	(4.8)	(13.3)	(15.8)
Cash flow from financing activities	(34.7)	(7.2)	(35.2)
Currency translation differences relating to cash and cash equivalents	(0.5)	0.2	0.1
Increase/(decrease) in cash and cash equivalents	5.1	13.8	(8.7)
Cash and cash equivalents at the beginning of the year	31.8	18.1	26.7
Cash and cash equivalents at the end of the year	37.0	31.8	18.1

[A] See the Consolidated Statement of Cash Flows on page 232.

LIQUIDITY AND CAPITAL RESOURCES continued

DIVESTMENT AND CASH CAPITAL EXPENDITURE

The levels of divestment proceeds and cash capital expenditure in 2021 and 2020 reflect our discipline and focus on the Powering Progress strategy. See "Non-GAAP measures reconciliations" on page 326-329.

Divestment proceeds

$ million

	2021	2020	2019
Integrated Gas	3,195	503	723
Upstream	10,930	1,909	5,384
Oil Products	935	1,368	1,517
Chemicals	10	26	22
Corporate	44	205	225
Total divestment proceeds	15,113	4,010	7,871

Cash capital expenditure is used to monitor investing activities on a cash basis, excluding items such as lease additions which do not necessarily result in cash outflows in the period.

Cash capital expenditure

$ million

	2021	2020	2019
Integrated Gas	5,767	4,301	4,299
Upstream	6,269	7,296	10,205
Oil Products	3,868	3,328	4,907
Chemicals	3,573	2,640	4,090
Corporate	221	262	418
Total cash capital expenditure	19,698	17,827	23,919

CONTRACTUAL OBLIGATIONS

The table below summarises our principal contractual obligations at December 31, 2021, by expected settlement period. The amounts presented have not been offset by any committed third-party revenue in relation to these obligations.

Contractual obligations

$ billion

	Less than 1 year	Between 1 and 3 years	Between 3 and 5 years	5 years and later	Total
Debt [A]	4.1	8.2	10.3	38.4	61.0
Leases	5.8	9.1	6.8	18.3	40.0
Purchase obligations [B]	28.8	29.2	21.9	64.1	144.0
Other long-term contractual liabilities [C]	0.4	0.7	0.2	1.1	2.4
Total	39.1	47.2	39.2	121.9	247.4

[A] See Note 15 to the "Consolidated Financial Statements" on pages 256-258. Debt contractual obligations exclude interest, which is estimated to be $1.6 billion payable in less than one year, $3.1 billion between one and three years, $2.7 billion between three and five years, and $15.6 billion in five years and later. For this purpose, we assume that interest rates with respect to variable interest rate debt remain constant at the rates in effect at December 31, 2021, and that there is no change in the aggregate principal amount of debt other than repayment at scheduled maturity as reflected in the table. Leases definition follows IFRS 16, which was implemented as of January 1, 2019. Lease contractual obligations include interest.

[B] Purchase obligations disclosed in the above table exclude commodity purchase obligations that are not fixed or determinable and are principally intended to be resold in a short period of time through sale agreements with third parties. Examples include long-term non-cancellable LNG and natural gas purchase commitments and commitments to purchase refined products or crude oil at market prices. Inclusion of such commitments would not be meaningful in measuring liquidity and cash flow, as the cash outflows generated by these purchases will generally be offset in the same periods by cash received from the related sales transactions.

[C] Includes all obligations included in "Trade and other payables" and provisions related to onerous contracts included in "Decommissioning and other provisions" in "Non-current liabilities" in the "Consolidated Balance Sheet" that are contractually fixed as to timing and amount. In addition to these amounts, Shell has certain obligations that are not contractually fixed as to timing and amount, including contributions to defined benefit pension plans (see Note 18 to the "Consolidated Financial Statements" on pages 261-266) and obligations associated with decommissioning and restoration (see Note 19 to the "Consolidated Financial Statements" on page 267).

GUARANTEES AND OTHER OFF-BALANCE SHEET ARRANGEMENTS

There were no guarantees and other off-balance sheet arrangements at December 31, 2021, or December 31, 2020, that were reasonably likely to have a material effect on Shell.

DIVIDENDS

Subject to Board approval, Shell aims to grow the dividend per share by around 4% every year. In total, Shell targets the distribution of 20-30% of its cash flow from operations to shareholders. Shell may choose to return cash to shareholders through a combination of dividends and share buybacks.

When setting the level of shareholder remuneration, the Board looks at a range of factors, including the macro environment, the underlying business earnings and cash flows of Shell Group, the current balance sheet, future investment and divestment plans and existing commitments. We returned $6.3 billion to our shareholders through dividends in 2021.

The fourth quarter 2021 interim dividend of $0.24 per share will be payable to shareholders on the register at February 18, 2022. See Note 24 to the "Consolidated Financial Statements" on page 277. The Board expects that the first quarter 2022 interim dividend will increase by around 4% compared with the fourth quarter 2021 interim dividend, to $0.25 per share.

PURCHASES OF SECURITIES

On July 29, 2021, the Company announced the start of a share buyback programme of $2 billion, which was completed in November 2021. Subsequently, on December 1, 2021, the Company announced the first $1.5 billion tranche of a buyback programme to return $7 billion of proceeds from the divestment of its Permian assets. This tranche was completed in January 2022. In February 2022, share buybacks of $8.5 billion for the first half of 2022 were announced. These included the remaining $5.5 billion of the Permian divestment proceeds that had been allocated for share buybacks.

At December 31, 2021, 126 million B shares with a nominal value of €8.8 million ($10 million) (1.62% of the Company's total issued share capital at December 31, 2020) were purchased and cancelled during 2021 for a total cost of $2.7 billion including expenses, at an average price of $21.60 per share.

This was in accordance with the authorities granted by shareholders at the 2021 Annual General Meeting (AGM) for the Company to repurchase up to a maximum of 10% of its issued ordinary shares, excluding treasury shares (780 million ordinary shares). As at December 31, 2021, 653 million ordinary shares could still be repurchased under the current AGM authority. The purpose of the share repurchases in 2021 was to reduce the issued share capital of the Company.

A new resolution will be proposed at the 2022 AGM to renew the authority for the Company to purchase its own share capital, up to specified limits, for a further year. This proposal will be described in more detail in the 2022 Notice of Annual General Meeting.

Shares are also purchased by the employee share ownership trusts and trust-like entities (see the "Other regulatory and statutory information" on page 198-206) to meet delivery commitments under employee share plans. All share purchases are made in open-market transactions.

The table below provides information on purchases of shares in 2021 by the Company and affiliated purchasers. Purchases in euros and sterling are converted into dollars using the exchange rate on each transaction date.

Purchases of equity securities by issuer and affiliated purchasers in 2021 [A]

	A shares			B shares			A ADSs [B]	
Purchase period	Number purchased for employee share plans	Number purchased for cancellation [C]	Weighted average price ($)[D]	Number purchased for employee share plans	Number purchased for cancellation [C]	Weighted average price ($)[D]	Number purchased for employee share plans	Weighted average price ($)[D]
January	–	–	–	–	–	–	1,525,265	37.23
February	–	–	–	–	–	–	–	–
March	–	–	–	–	–	–	34,140	40.17
April	–	–	–	–	–	–	–	–
May	–	–	–	–	–	–	–	–
June	156,668	–	20.61	91,523	–	19.70	23,603	40.74
July	–	–	–	–	1,474,422	19.95	–	–
August	–	–	–	–	25,134,113	19.81	–	–
September	–	–	–	–	23,807,741	20.27	32,670	41.01
October	–	–	–	–	25,200,000	23.82	–	–
November	960,000	–	20.93	120,000	17,217,286	22.6	233,300	41.88
December	7,185,000	–	22.03	911,200	33,393,418	21.75	975,299	43.66
Total 2021	8,301,668	–	21.88	1,122,723	126,226,980	21.59	2,824,277	39.94
January	–	–	–	–	31,678,192	24.43	1,106,045	46.31
Total 2022	–	–	–	–	31,678,192	24.43	1,106,045	46.31

[A] Reported as at settlement date.
[B] American Depositary Shares.
[C] Under the share buyback programme.
[D] Includes stamp duty and brokers' commission.

FINANCIAL INFORMATION RELATING TO THE ROYAL DUTCH SHELL DIVIDEND ACCESS TRUST

The results of operations and financial position of the Royal Dutch Shell Dividend Access Trust (the Trust) are included in the consolidated results of operations and financial position of Shell. Certain condensed financial information in respect of the Trust is given below. See "Royal Dutch Shell Dividend Access Trust Financial Statements" on pages 316-319.

The Shell Transport and Trading Company Limited and BG Group Limited have each issued a dividend access share to Computershare Trustees (Jersey) Limited (the Trustee). For the years 2021, 2020 and 2019, the Trust recorded income before tax of £2,201 million, £2,777 million and £5,484 million respectively. In each period, this reflected the amount of dividends payable on the dividend access shares. Dividends are also classified as unclaimed where amounts have not cleared recipient bank accounts.

At December 31, 2021, the Trust had total equity of £nil (December 31, 2020: £nil; December 31, 2019: £nil), reflecting assets of £7 million (December 31, 2020: £7 million; December 31, 2019: £3 million) and unclaimed dividends of £7 million (December 31, 2020: £7 million; December 31, 2019: £3 million). The Trust only records a liability for an unclaimed dividend, to the extent that dividend cheque payments have not been presented within 12 months, have expired or have been returned unpresented.

On January 29, 2022, one line of shares was established through assimilation of each A share and each B share into one ordinary share of the Company. This assimilation had no impact on voting rights or dividend entitlements. Dutch withholding tax, applied previously on dividends on A shares, no longer applies on dividends paid on the ordinary shares following the assimilation.

In relation to the assimilation of the Company's Class A and B shares, the Trust will continue in existence for the foreseeable future to facilitate the payment of unclaimed dividend liabilities for B shareholders, until these are either claimed or forfeited in line with the terms outlined.

MARKET OVERVIEW

We maintain a large business portfolio across an integrated value chain and are exposed to crude oil, natural gas, hydrocarbon product and chemical prices (see "Risk factors" on page 22). This diversified portfolio helps us mitigate the impact of price volatility. Our annual planning cycle and periodic portfolio reviews aim to ensure that our levels of capital investment and operating expenses are appropriate in the context of a volatile price environment. We test the resilience of our projects and other opportunities against a range of crude oil, natural gas, oil product and chemical prices and costs. We also aim to maintain a strong balance sheet to provide resilience against weak market prices.

GLOBAL ECONOMIC GROWTH

After a sharp economic deceleration related to the COVID-19 pandemic in 2020, the global economy has experienced a strong but uneven recovery in 2021. In its World Economic Outlook of January 2022, the International Monetary Fund (IMF) estimates that global growth for 2021 has reached 5.9% – its strongest post-recession pace in 80 years. This recovery is uneven and largely reflects sharp rebounds in some major economies, most notably the USA and China, owing to substantial government policy support. In many emerging market and developing economies, inequalities in access to vaccines led to higher infection rates. This combined with a partial withdrawal of policy support have offset some of the benefits of strengthening external demand and rising commodity prices. Early policy support and vaccinations proved effective at mitigating some of the adverse economic and health impacts of COVID-19 during 2021. However, rising energy prices and supply disruptions have also resulted in broad-based inflation in the second half of 2021, notably in the USA and many emerging market and developing economies.

The global economic prospects remain highly uncertain. The world remains vulnerable to COVID-19 and the pandemic is continuing, owing to unequal access to vaccines, the reluctance of some to get vaccinated and the emergence of more infectious new variants such as Omicron. Socioeconomic challenges abound, including rising inflation, subdued employment growth, supply chain problems, setbacks to educational attainment, and climate change.

Confronted with such complex challenges, policy choice is difficult because a sharp increase in global debt levels during the pandemic has left limited room for manoeuvre. There is also an upside, because the pandemic has induced greater automation and workplace transformation, which could accelerate productivity growth. Structural investment plans implemented in Europe and the USA could also lift the growth outlook.

GLOBAL PRICES, DEMAND AND SUPPLY

The following table provides an overview of the main crude oil and natural gas price markers to which we are exposed:

Oil and gas average industry prices [A]

	2021	2020	2019
Brent ($/b)	71	42	64
West Texas Intermediate ($/b)	68	39	57
Henry Hub ($/MMBtu)	4.0	2.0	2.5
EU TTF ($/MMBtu)	16	3	5
Japan Customs-cleared Crude ($/b) – 3 months	60	51	70

[A] Yearly average prices are based on daily spot prices. The 2021 average price for Japan Customs-cleared Crude is based on available market information up to the end of the period.

CRUDE OIL

Brent crude oil, an international benchmark, rebounded in 2021, supported by stronger demand and moderate supply growth. Brent traded between $50 per barrel (/b) and $86/b in 2021, ending the year at around $77/b and averaging $71/b for the whole year. This was about 70% higher than in 2020.

Global oil product demand rose by 5.6 million barrels per day (b/d) in 2021 to 97.4 million b/d, after a sharp drop of around 8.5 million b/d in 2020, according to the IEA. The rebound was supported by successful vaccine roll-outs, especially in developed economies such as the USA, UK and EU. Road mobility has largely returned to pre-pandemic levels, with COVID-19 travel restrictions being lifted and more people switching from public transport to cars. Air travel has begun to recover, but is still around 20-30% below pre-pandemic levels. This is probably attributable to remaining cross-border travel restrictions and public hesitancy about air travel during a global pandemic. Mirroring the broad economic recovery, demand for naphtha, LPG and ethane also picked up.

Global oil production has started to rise gradually as demand recovers. Annual growth in 2021 was about 1.5 million b/d, with OPEC+ making up most of the growth. From the second quarter of 2021, OPEC+ has been gradually unwinding the production cuts it implemented in 2020, with full unwinding expected by the second half of 2022. Outside OPEC+, US light tight oil (LTO) has dominated the growth, supported by the rebounding oil price. The number of US rotary oil rigs increased by more than 160% by December 2021, from the record low seen in August 2020. This, though, remained only around 60% of the 2019 average.

The OPEC+ production cuts have enabled a quick rundown of a record global oil inventory. The industry stock of Organisation for Economic Co-operation and Development (OECD) economies, which had reached more than 3,200 million barrels by the middle of 2020, fell to around 2,760 million barrels by the end of 2021, a seven-year low.

The oil price largely followed an upward trend for most of the year. The Brent daily price passed the $70/b mark in June and $80/b in October. The strong price move reflected a tight market balance, resulting from modest supply growth and robust demand recovery. It also reflected the broad inflationary pricing environment for energy commodities such as coal and natural gas, in a period of economic recovery and supply chain challenges.

The price rally was at times interrupted by restrictions introduced in response to new waves of COVID-19, especially those caused by the Delta variant in the summer and Omicron towards the end of the year. In the final few weeks of 2021, the Omicron variant triggered the sharpest sell-off since April 2020, with Brent retreating almost $10/b in a single day at the height of the sell-off. Brent started regaining its strength towards the end of December, as a severe Omicron-induced demand disruption failed to materialise and supply concerns once again prevailed.

Looking forward, demand uncertainties related to the COVID-19 pandemic remain a key uncertainty affecting the recovery of the global crude market. This is particularly so for aviation fuel which has been the most impacted by travel restrictions. But the extent of new COVID-related demand disruption could be moderated by booster programmes and the greater availability of more effective treatments for the virus.

At the same time, there has been increasing evidence of supply side risks. Upstream investment worldwide has slowed considerably during the pandemic. As a result, OPEC's excess capacity will be declining. Meanwhile, US light tight oil is expected to be facing continued capital discipline pressures, restraining its growth. These factors will constrain the global fast response supply capacity to manage demand and supply disruptions, which may lead to price upside and volatilities.

NATURAL GAS

Global demand for natural gas rose by an estimated 4.6% in 2021, after the COVID-19 pandemic caused consumption to decline by around 1.2% in 2020, according to the IEA. The 2021 rate represents a return to around the historical norms of growth for gas, and is roughly the same as the pre-pandemic growth rate of 2019. The revival of economic growth underpinned the industrial uptake of gas, especially in China. Underperformance of hydroelectric output in China and South America as well as weak renewables generation in Europe drove incremental power demand for gas. Colder-than-normal winters and hotter-than-usual summers also produced higher-than-expected demand for gas from commercial and residential users. Reduced supply from a number of sources led to shortages and record high prices for gas and LNG globally.

LNG imports were up 6.0% in 2021 after only a minor increase in 2020. The global LNG supply complex experienced upstream production deficits in 2021. Nigeria, Trinidad and Tobago, Peru and Norway were down a combined 12 million tonnes, or 32%, from 2020. The addition of new liquefaction capacity was also limited in 2021, although utilisation of projects that started in 2020 improved, which provided some support for supply growth.

European gas prices rose to unprecedented levels by the middle of 2021, with the average Dutch Title Transfer Facility (TTF) price more than five times that of 2020. The TTF price reached a peak of almost $60 per million British thermal units (MMBtu). TTF and European spot gas hub prices broke above oil parity by the third quarter and continued well above that level for the rest of the year. Prices were supported by an extended heating season that left gas storage at a deficit coming out of winter and prompted fears of scarcity as indigenous production slumped and pipeline and LNG imports were restrained. Record coal and carbon prices also contributed to the price surge.

Asian spot LNG prices, as reflected by the Japan Korea Marker (JKM), responded to the tight European market conditions with bids at a premium to TTF for most of the year. This was in order to secure LNG supplies for China and South Korea, where demand was higher than expected. Average JKM prices ended the year up more than 300% from 2020 and up more than 200% from 2019. Long-term contracts indexed to oil prices tracked the wider crude complex upward during the year but did not increase at the same rate as spot gas and LNG prices.

Strong Asian and European prices incentivised full US LNG export production. This helped strengthen Henry Hub cash prices to an average of $3.81 per MMBtu for 2021, up more than 90% year-on-year. After trading in a narrow range of around $3 per MMBtu for the first half of 2021, Henry Hub prices rose above $5 per MMBtu by the end of the third quarter. The upstream investment cuts of 2020 continued into 2021. Production did not keep pace with rebounding demand, heightened by a combined 34% increase in LNG and Mexico pipeline exports from a year ago.

Looking ahead, we expect that the high gas prices in North America, Europe and Asia-Pacific will go down to more normal levels. This is because we anticipate that global gas inventories will eventually replenish as production recovers in response to the current elevated price levels. Price developments, though, are highly uncertain.

We believe gas and LNG prices in Europe and Asia will be increasingly influenced by European gas storage levels and by competition with Asia for LNG imports, particularly flexible supply from the USA. Overall LNG supply is expected to recover and increase as new liquefaction capacity is added in the USA in 2022. But the global LNG market will remain structurally tight as a relatively small amount of incremental supply will come to market over the coming years.

In the USA, Henry Hub prices are expected to moderate from 2021 as production increases in response to higher gas prices as well as oil prices (which support associated gas production in the Permian basin). But upward pressures on gas prices are also expected as LNG exports, Mexico pipeline exports and economic growth stimulate demand.

CRUDE OIL AND NATURAL GAS PRICE ASSUMPTIONS

Our ability to deliver competitive returns and pursue commercial opportunities ultimately depends on the accuracy of our price assumptions (see "Risk factors" on page 22). We use a rigorous assessment of short-, medium- and long-term market uncertainties to determine what ranges of future crude oil and natural gas prices to use in project and portfolio evaluations. Market uncertainties include, for example, future economic conditions, geopolitics, actions by major resource holders, production costs, technological progress and the balance of supply and demand. See also Note 9 to the "Consolidated Financial Statements" on pages 250-254.

REFINING MARGINS

Refining marker average industry gross margins

$/b

	2021	2020	2019
US West Coast	14.6	8.5	13.5
US Gulf Coast Coking	9.8	2.3	4.9
Rotterdam Complex	1.9	0.4	2.3
Singapore	(1.7)	(0.5)	(0.6)

MARKET OVERVIEW continued

Gross refining margins improved during 2021, especially during the second and third quarters. This is because demand for oil products recovered significantly as economies rebounded and transport use increased with the easing of COVID-19 travel restrictions. Demand for kerosene for aviation remained below pre-pandemic levels because varying levels of international travel restrictions remained in place in 2021. Despite the Omicron variant of COVID-19, demand recovery continued during the fourth quarter.

Industry utilisation showed some recovery, but in 2021 there were further announcements that refineries would fully or partially close on a permanent basis. Construction of new capacity continued during the year, especially in the Middle East and Asia.

Refining margins for the next few years are expected to be supported by demand returning to pre-pandemic levels in 2022. The continued addition of new refinery capacity, often integrated with chemicals production, will put downward pressure on margins during the next few years.

PETROCHEMICAL MARGINS

Cracker industry margins [A]

$/tonne

	2021	2020	2019
North East/South East Asia naphtha	229	362	302
Western Europe naphtha	597	513	528
US ethane	692	433	440

[A] ICIS data are quoted. Cracker margins have been revised from the fourth quarter of 2019 onwards because of ICIS updating its methods for calculating cracker margins. Further revisions are based on available market information to external industry data provider up to the end of the period.

Cracker margins were volatile in 2021. This was because of supply interruptions and demand increases as COVID-19 lockdown restrictions eased. Overall margins were higher than in 2020, except in Asia. Chinese demand recovered quickly from the pandemic, but petrochemical supply was constrained by power restrictions that affected manufacturing centres, logistics issues within China because of COVID-19, and global logistics issues. Asia cracker margins were down slightly from 2020 because of the balance of supply and demand, and rising prices for energy, crude oil and naphtha feedstock. US ethane cracker margins were supported by disruption due to winter storm Uri in February and March and to a lesser extent by interruptions caused by Hurricane Ida in August and September. West European cracker margins were supported by the US weather events and strong domestic demand, which offset rising crude and natural gas prices for the majority of 2021.

The outlook for petrochemical margins in 2022 and beyond depends on feedstock costs and the balance of supply and demand. Demand for petrochemicals will be affected by the spread of COVID-19 as new variants emerge, and the extent of recovery from the pandemic. Supply of petrochemicals will depend on the net capacity effect of new builds and plant closures (taking into account any delays or cancellations in building new plants or closing old ones). Product prices reflect the prices of raw materials, which are closely linked to crude oil and natural gas prices. The balance of all these factors will drive margins.

The statements in this "Market overview" section, including those related to our price forecasts, are forward-looking statements based on management's current expectations and certain material assumptions and, accordingly, involve risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied herein. See "About this Report" on pages iii-iv and "Risk factors" on pages 22-23.

INTEGRATED GAS

Key statistics

	$ million, except where indicated		
	2021	2020	2019
Segment earnings/(loss)	6,340	(6,278)	8,628
Including:			
Revenue (including inter-segment sales)	60,289	36,697	45,602
Share of profit of joint ventures and associates	1,906	562	1,791
Interest and other income	1,787	14	263
Operating expenses [A]	7,126	6,555	6,667
Underlying operating expenses [A]	6,892	5,769	6,534
Exploration	127	611	281
Depreciation, depletion and amortisation	6,188	17,704	6,238
Taxation charge/(credit)	2,246	(2,507)	2,242
Identified Items [A]	(2,417)	(10,661)	(326)
Adjusted Earnings [A]	8,757	4,383	8,955
Adjusted EBITDA (CCS basis) [A]	16,421	11,668	16,719
Capital expenditure	5,279	3,661	3,851
Cash capital expenditure [A]	5,767	4,301	4,299
Oil and gas production available for sale (thousand boe/d)	942	911	922
LNG liquefaction volumes (million tonnes)	31.0	33.2	35.6
LNG sales volumes (million tonnes)	64.2	71.9	74.5

[A] See "Non-GAAP measures reconciliations" on pages 326-329.

OVERVIEW

Our Integrated Gas segment includes liquefied natural gas (LNG), conversion of natural gas into gas-to-liquids (GTL) fuels and other products, and our Renewables and Energy Solutions activities. The segment includes natural gas and liquids exploration and extraction, and the operation of upstream and midstream infrastructure that delivers gas and liquids to market. It markets and trades natural gas, LNG, power and carbon-emission rights, and LNG as a fuel for heavy-duty vehicles and marine vessels.

BUSINESS CONDITIONS

Global demand for natural gas rose by an estimated 4.6% in 2021, after the COVID-19 pandemic caused consumption to decline by around 1.2% in 2020, according to the IEA. The 2021 rate represents a return to around the historical norms of growth for gas, and is roughly the same as the pre-pandemic growth rate of 2019. The revival of economic growth underpinned the industrial uptake of gas, especially in China. Underperformance of hydroelectric output in China and South America as well as weak renewables generation in Europe drove incremental power demand for gas. Colder-than-normal winters and hotter-than-usual summers also produced higher-than-expected demand for gas from commercial and residential users. Reduced supply from a number of sources led to shortages and record high prices for gas and LNG globally.

LNG imports were up 6.0% in 2021 after only a minor increase in 2020. The global LNG supply complex experienced upstream production deficits in 2021. Nigeria, Trinidad and Tobago, Peru and Norway were down a combined 12 million tonnes, or 32%, from 2020. The addition of new liquefaction capacity was also limited in 2021, although utilisation of projects that started in 2020 improved, which provided some support for supply growth.

European gas prices rose to unprecedented levels by the middle of 2021, with the average Dutch Title Transfer Facility (TTF) price more than five times that of 2020. The TTF price reached a peak of almost $60 per million British thermal units (MMBtu). TTF and European spot gas hub prices broke above oil parity by the third quarter and continued well above that level for the rest of the year. Prices were supported by an extended heating season that left gas storage at a deficit coming out of winter and prompted fears of scarcity as indigenous production slumped and pipeline and LNG imports were restrained. Record coal and carbon prices also contributed to the price surge.

Asian spot LNG prices, as reflected by the Japan Korea Marker (JKM), responded to the tight European market conditions with bids at a premium to TTF for most of the year. This was in order to secure LNG supplies for China and South Korea, where demand was higher than expected. Average JKM prices ended the year up more than 300% from 2020 and up more than 200% from 2019. Long-term contracts indexed to oil prices tracked the wider crude complex upward during the year but did not increase at the same rate as spot gas and LNG prices.

In the USA, Henry Hub prices are expected to moderate from 2021 as production increases in response to higher gas prices as well as oil prices (which support associated gas production in the Permian basin). But upward pressures on gas prices are also expected as LNG exports, Mexico pipeline exports and economic growth stimulate demand.

See "Market overview" on pages 42-44.

PRODUCTION AVAILABLE FOR SALE

In 2021, our production was 344 million barrels of oil equivalent (boe) or 942 thousand boe per day (boe/d), compared with 333 million boe, or 911 thousand boe/d in 2020. Natural gas production was 83% of total production in 2021 and 2020. In 2021, natural gas production increased by 3% compared with 2020. This was mainly because of the restart of production at the Prelude floating LNG facility in Australia, and the effects of production-sharing contracts, partly offset by field decline. Liquids production increased by 6% driven mainly by the restart of production at the Prelude facility.

INTEGRATED GAS continued

LNG LIQUEFACTION VOLUMES

LNG liquefaction volumes were 31.0 million tonnes in 2021 compared with 33.2 million tonnes in 2020. The decrease was mainly due to feedgas constraints and higher maintenance activities, partly offset by the restart of production at the Prelude floating LNG facility.

LNG sales volumes were 64.2 million tonnes in 2021 compared with 71.9 million tonnes in 2020. This decrease was mainly due to lower LNG liquefaction volumes and lower purchases from third parties.

Through our Shell Energy organisation, we market a portion of our share of equity production of LNG and sell and market LNG volumes around the world through our hubs in the UK, UAE and Singapore. Shell has term sales contracts for the majority of our LNG liquefaction and term purchase contracts. We are able to maximise the income we generate from our LNG cargoes through our shipping network, regasification terminals and ability to purchase and deliver LNG spot cargoes from third parties. For example, if one customer does not need a scheduled cargo, we can deliver it to another customer who is in need. Similarly, if a customer needs an additional cargo not available from our production facilities, we can contract with third parties to deliver the additional cargo. We also conduct paper trades, primarily to manage commodity price risk related to sales and purchase contracts. We also sell LNG for trucks in China, Singapore and Europe.

INTEGRATED GAS DATA TABLE

LNG liquefaction volumes

Million tonnes

	2021	2020	2019
Australia	13.1	11.8	12.5
Brunei	1.4	1.6	1.6
Egypt	0.3	0.2	0.4
Nigeria	4.3	5.3	5.3
Oman	2.5	2.5	2.6
Peru	0.6	0.9	0.9
Qatar	2.4	2.4	2.5
Russia	2.8	3.1	3.0
Trinidad and Tobago	3.6	5.4	6.7
Other	–	0.2	0.2
Total	31.0	33.2	35.6

EARNINGS 2021-2020

Segment earnings in 2021 were $6,340 million, which included a net charge of $2,417 million. The net charge comprised losses of $2,641 million due to the fair value accounting of commodity derivatives, impairment charges of $594 million and provisions for onerous contracts of $217 million, partly offset by gains on sale of assets of $1,086 million.

Segment earnings in 2020 were a loss of $6,278 million, which included a net charge of $10,661 million. The net charge reflected impairment charges of $9,282 million mainly reflecting revisions to mid- and long-term price outlook assumptions and primarily related to the Queensland Curtis LNG and Prelude floating liquefied natural gas (FLNG) operations in Australia. It also comprised a net charge of $969 million due to the fair value accounting of commodity derivatives and a charge of $607 million related to onerous contract provisions.

Excluding the net charges described above, segment earnings were $8,757 million in 2021 compared with $4,383 million in 2020. The increase was mainly driven by higher realised prices for oil, LNG and gas, favourable tax movements and higher volumes. This was partly offset by higher operating expenditure.

PRIOR YEAR EARNINGS SUMMARY

Our earnings summary for the financial year ended December 31, 2020, compared with the financial year ended December 31, 2019, can be found in the Annual Report and Accounts (page 47) and Form 20-F (page 31) for the year ended December 31, 2020 as filed with the Registrar of Companies for England and Wales and the US Securities and Exchange Commission, respectively.

CASH CAPITAL EXPENDITURE

Cash capital expenditure in 2021 was $5,767 million, compared with $4,301 million in 2020. The increase was mainly due to growth in our Renewables and Energy Solutions businesses. Our cash capital expenditure is expected to be around $8 billion in 2022.

PORTFOLIO AND BUSINESS DEVELOPMENT

Key portfolio events included the following:

- In March 2021, we completed the sale of a 26.25% interest in the Queensland Curtis LNG Common Facilities to Global Infrastructure Partners Australia for $2.5 billion.
- In June 2021, Atlantic Shores Offshore Wind, our 50:50 joint venture with EDF Renewables North America, was awarded rights to provide 1.5 GW of renewable offshore wind power to New Jersey, USA.
- In July 2021, we signed a memorandum of understanding with Deutsche Telekom to advance digital innovation as both companies accelerate their transitions to net-zero emissions.
- In July 2021, we started production in Block 5C in the East Coast Marine Area off the coast of Trinidad and Tobago.
- In December 2021, we completed the acquisition of Savion LLC, a large utility-scale solar and energy storage developer in the USA.
- In December 2021, we signed a gas concession agreement for Block 10 in Oman.
- In January 2022, we announced that Shell and ScottishPower had won bids to develop 5 GW of floating wind power in the UK.
- In January 2022, we started operations at the power-to-hydrogen electrolyser in China.
- In February 2022, we completed the acquisition of online energy retailer Powershop Australia which was announced in November 2021.
- In February 2022, Atlantic Shores Offshore Wind, our 50:50 joint venture with EDF Renewables North America, became the provisional winner of acreage in the New York Bight offshore wind auction, USA.
- In February 2022, we announced our intention to exit our joint ventures with Gazprom and related entities, including our 27.5% interest in Sakhalin-2 and involvement in the Nord Stream 2 pipeline project. For more information, see Note 32 to the "Consolidated Financial Statements" on page 283.

BUSINESS AND PROPERTY

Integrated Gas

A complete list of LNG and GTL plants in operation and under construction in which we have an interest is provided below.

LNG liquefaction plants in operation at December 31, 2021 [A]

	Asset	Location	Shell interest (%)	100% capacity (mtpa) [B]	Shell-operated
Asia					
Brunei	Brunei LNG	Lumut	25	7.6	No
Oman	Oman LNG	Sur	30	7.1	No
	Qalhat LNG	Sur	11 [C]	3.7	No
Qatar	Qatargas 4 [D]	Ras Laffan	30	7.8	No
Russia	Sakhalin LNG [D]	Prigorodnoye	27.5	10.9	No
Oceania					
Australia	Australia North West Shelf [D]	Karratha	16.7	16.9	No
	Gorgon LNG [D]	Barrow Island	25	15.6	No
	Prelude [D]	Browse Basin	67.5	3.6	Yes
	Queensland Curtis LNG T1 [D]	Curtis Island	50	4.3	Yes
	Queensland Curtis LNG T2 [D]	Curtis Island	97.5	4.3	Yes
Africa					
Egypt [E]	Egyptian LNG T1	Idku	35.5	3.6	No
	Egyptian LNG T2	Idku	38	3.6	No
Nigeria	Nigeria LNG	Bonny	25.6	24.1	No
South America					
Peru	Peru LNG	Pampa Melchorita	20	4.5	No
Trinidad and Tobago	Atlantic LNG T1	Point Fortin	46	3	No
	Atlantic LNG T2/T3	Point Fortin	57.5	6.6	No
	Atlantic LNG T4	Point Fortin	51.1	5.2	No

[A] We have offtake rights via a lease to 100% of the capacity (2.5 mtpa) of the Kinder Morgan-operated Elba Island liquefaction plant in Georgia, USA.
[B] 100% capacity represents the total capacity that all trains can process as reported by the operator.
[C] Interest, or part of the interest, is held via indirect shareholding.
[D] These assets are clustered as integrated assets and have onshore or offshore upstream production.
[E] In January 2014, force majeure notices were issued under the LNG agreements as a result of domestic gas diversions severely restricting volumes available to the Egyptian LNG (ELNG) plant. These notices remain in place.

LNG liquefaction plants under construction at December 31, 2021

	Asset	Location	Shell interest (%)	100% capacity (mtpa) [A]	Shell-operated
Africa					
Nigeria	Train 7 [B]	Bonny	25.6	7.6	No
North America					
Canada	LNG Canada T1-2 [C]	Kitimat	40.0	14.0	No

[A] 100% capacity represents the total capacity that all trains can process as reported by the operator.
[B] First LNG is expected around the middle of the 2020s.
[C] Construction started in October 2018 and first LNG is expected around the middle of the 2020s.

GTL plants in operation at December 31, 2021

	Asset	Location	Shell interest (%)	100% capacity (b/d) [A]	Shell-operated
Asia					
Malaysia	Shell MDS	Bintulu	72.0	14,700	Yes
Qatar	Pearl	Ras Laffan	100.0	140,000	Yes

[A] 100% capacity represents the total capacity of the plant.

We also have interests and rights in the regasification terminals listed below. Extension of leases or rights beyond the periods mentioned below will be reviewed on a case-by-case basis.

INTEGRATED GAS continued

LNG regasification terminals

Project name	Location	Shell capacity rights (mtpa)	Capacity rights period	Shell interest (%) and rights
Costa Azul	Baja California, Mexico	2.7 [A]	2008–2028	Capacity rights
Cove Point	Lusby, MD, USA	1.8	2003–2023	Capacity rights
Dragon LNG	Milford Haven, UK	3.1	2009–2029	50
Elba Island Expansion	Elba Island, GA, USA	4.2	2010–2035	Leased
Elba Island	Elba Island, GA, USA	2.8	2006–2036	Leased
Elba Island	Elba Island, GA, USA	4.6	2003–2027	Leased
GATE (Gas Access to Europe)	Rotterdam, the Netherlands	1.5	2015–2031	Capacity rights
Shell Energy India Pvt Ltd (formerly Hazira)	Gujarat, India	5	2005–2035	100
Lake Charles	Lake Charles, LA, USA	4.4	2002–2030	Leased
Lake Charles Expansion	Lake Charles, LA, USA	8.7	2005–2030	Leased
Singapore SGM	SLNG, Singapore	[B]	2013–2029	Import rights
Singapore SETL	SLNG, Singapore	[B]	2018–2035	Import rights
Singapore SETL	SLNG, Singapore	up to 1.0 [C]	2021–2025	Import rights
Shell LNG Gibraltar	Gibraltar	up to 0.04	2018–2038	51

[A] Force majeure declared in May 2020 because of changes in the Firm Storage and Services Agreement (FSSA) General Terms and Conditions.
[B] Licences to import LNG and sell regasified LNG in Singapore with no volume cap.
[C] Exclusive licence to import LNG and sell regasified LNG in Singapore for up to 1.0 mtpa.

Oil and natural gas production, exploration and development

Australia

We operate the Queensland Curtis LNG (QCLNG) venture's natural gas operations, including wells, compression stations and processing plants, in Queensland's Surat Basin. We have interests ranging from 44% to 74% in 25 field compression stations and six central processing plants. Our production of natural gas from the onshore Surat Basin supplies the QCLNG liquefaction plant and the domestic gas market.

We have a 50% interest in Arrow, a Queensland-based joint venture with China National Petroleum Corporation (CNPC). Arrow owns coalbed methane assets and a domestic power business.

We have interests in offshore production, LNG liquefaction and exploration licences in the Browse Basin and in the North West Shelf (NWS) and Greater Gorgon areas of the Carnarvon Basin. Woodside is the operator on behalf of the NWS joint venture (Shell interest 16.7%). We have a 25% interest in the Chevron-operated Gorgon LNG joint venture that includes offshore production.

Our interests in the Browse Basin include joint arrangements, with Shell as the operator, for: the Prelude field (Shell interest 67.5%); the pre-final investment decision Crux gas and condensate field (Shell interest 82%); and other backfill and contingent resources for Prelude FLNG, including the Bratwurst field (Shell interest 100%). Bratwurst, discovered in 2019, is currently under evaluation as a future backfill opportunity.

We are also a partner in the Browse joint arrangement (Shell interest 27%) covering the Brecknock, Calliance and Torosa gas fields, which are under development and operated by Woodside.

Bolivia

We hold a 37.5% participating interest in the Caipipendi block where we produce and explore. We also have a 25% interest in the Tarija XX West block where we produce from the Itaú field. We hold a 15% participating interest in the Repsol-operated Iniguazu exploration.

China

We jointly develop and produce from the onshore Changbei tight-gas field under a production-sharing contract (PSC) with CNPC. We took the final investment decision on the Changbei II Phase 1 project in 2017, and started drilling activity in early 2019.

Colombia

We have 50% interests in three blocks that we operate, and 60% interests in two other deep-water blocks where our partner is the operator.

Egypt

We have a 25% interest in the Burullus Gas Company (Burullus), a self-operated joint venture which operates the West Delta Deep Marine concession (Shell interest 50%) and supplies gas to the domestic market and the Egyptian LNG plant. We have a 50% interest in the Rashid Petroleum Company (Rashpetco), a self-operated joint venture which operates the Rosetta concession (Shell interest 100%).
We have a 30% interest in the El Burg Offshore Company (EBOC), a self-operated joint venture which operates the El Burg offshore concession (Shell interest 60%).

We have participating interests in several exploration concessions in the Mediterranean, Nile Delta, and Red Sea.

Indonesia

We have a 35% interest in the INPEX Masela Ltd joint venture which owns and operates the offshore Masela block.

Oman

In December 2021, with our partners, OQ and Marsa Liquefied Natural Gas LLC (a joint venture between TotalEnergies and OQ), we signed a concession agreement with the Ministry of Energy and Minerals on behalf of the government of the Sultanate of Oman to develop and produce natural gas from Block 10. We also signed a separate gas sales agreement for gas produced from the block. The two agreements followed an interim upstream agreement that detailed a funding and work programme from 2019 until the end of 2021 to develop gas resources for projects to help meet the Sultanate of Oman's growing need for energy.

Qatar

We operate the Pearl GTL plant (Shell interest 100%) in Qatar under a development and PSC with the government. The fully integrated facility has the capacity to produce, process and transport 1.6 billion standard cubic feet per day (scf/d) of gas from Qatar's North Field.
We have a 30% interest in Qatargas 4, which comprises integrated facilities to produce around 1.4 billion scf/d of gas from Qatar's North Field, an onshore gas-processing facility.

Russia
We have a 27.5% interest in the Sakhalin-2 joint venture with Gazprom. Sakhalin-2 is an integrated oil and gas project on Sakhalin island, in the far east of Russia.

Tanzania
We operate and have a 60% interest in Blocks 1 and 4 off the coast of southern Tanzania. In June 2020, the government granted a four and a half-year licence extension for both blocks. We continue to develop a potential domestic gas and LNG project.

Trinidad and Tobago
We have interests in three concessions with producing fields: Central Block (Shell interest 65%), North Coast Marine Area (NCMA) (Shell interest 80.5%), and East Coast Marine Area (Shell interest 100%). The East Coast Marine Area includes Block 5C which started production in July 2021. We also own a 90% interest in Block 22 and an 80% interest in NCMA 4 which includes the undeveloped Iris discovery. Our interests range from 35% to 100% in exploration Blocks 5(d), 5(c)REA, 6(d), and Atlantic Area Block 5.

Renewables and Energy Solutions
Renewables and Energy Solutions includes Shell's production and marketing of hydrogen, nature and environmental solutions as well as our integrated power activities. Our integrated power activities comprise:
- generating electricity through wind and solar;
- providing electricity storage;
- marketing and trading gas and power;
- selling gas and power to commercial, industrial and retail customers;
- providing electric vehicle charging services; and
- providing customers with digitally enabled solutions.

We are building the Renewables and Energy Solutions portfolio through organic growth and acquisitions. Most of these opportunities are in sectors that are different from Shell's existing oil and gas businesses, but have some similarities or adjacencies to our other businesses. Shell-controlled Renewables and Energy Solutions companies are subject to the Shell Control Framework. Some are not yet in full compliance with the Shell Control Framework and we are working to bring them into compliance in a fit-for-purpose manner.

In 2021, cash capital expenditure in Renewables and Energy Solutions amounted to $2.4 billion.

Energy Solutions
We provide electricity and smart energy solutions to residential, commercial and industrial customers. We do this through direct electricity sales, storage solutions and energy optimisation services.

We sell natural gas and power to more than 1.6 million retail customers. Currently our largest retail market is the UK. We are expanding our retail business in Australia, Germany, the Netherlands and the USA.

Our largest markets for commercial and industrial customers are Australia and the USA. In Australia we are the second-largest commercial and industrial retailer of electricity, supplying more than 20% of the market.

Electric mobility
We sell and install charge points at homes, workplaces, destinations and depots, operating more than 80,000 charge points. We also provide software solutions and access to more than 300,000 public charge points through our roaming networks in Europe, North America, and South-east Asia. We will integrate our electric mobility activities into Marketing, which is currently part of Oil Products, from 2022 onwards.

Hydrogen
We are part of joint ventures and alliances that have built hydrogen filling stations for passenger cars and trucks. We have built a 10 MW electrolyser in Germany. This began operating in July 2021 and is now producing green hydrogen, which is hydrogen produced using electricity from renewable sources. In China, we developed a 20 MW renewable power electrolyser and hydrogen refuelling stations in Zhangjiakou City in the Beijing-Tianjin-Hebei region. We started operations in January 2022.

Nature and Environmental Solutions
Nature and Environmental Solutions includes our Nature-Based Solutions (NBS) business and the Environmental Products Trading Business (EPTB). NBS conserve, enhance and restore ecosystems – such as forests, grasslands and wetlands – to prevent greenhouse gas emissions or reduce atmospheric CO_2 levels.

Through EPTB we develop, offtake, trade and supply environmental products across compliance and voluntary markets, and this includes partnering with other businesses such as LNG or Marketing to provide integrated energy solutions to customers.

Marketing and trading
We market and trade natural gas and power from our own assets and from third parties. In North America we are the third-largest power wholesale trader.

Wind and solar
We enable renewable power generation by owning and operating wind farms and solar plants and participating in joint ventures. At the end of 2021, our share of renewable generation capacity was 1.2 GW in operation and 5.6 GW in development. Our renewable power capacities are listed below:

Renewable power capacity in operation and in development

	In operation		In development	
Location	100% capacity (MW)	Shell interest (MW)	100% capacity (MW)	Shell interest (MW)
Asia	398	123	1,488	1,064
Europe	923	337	929	756
North America	1,442	764	7,510	3,684
Australia			120	120

UPSTREAM

Key statistics

	$ million, except where indicated		
	2021	2020	2019
Segment earnings/(loss)	9,694	(10,785)	3,855
Including:			
Revenue (including inter-segment sales)	45,487	28,330	45,217
Share of profit of joint ventures and associates	632	(7)	379
Interest and other income	4,602	542	2,180
Operating expenses [A]	10,604	10,983	11,582
Underlying operating expenses [A]	10,362	10,227	11,284
Exploration	1,296	1,136	2,073
Depreciation, depletion and amortisation	13,539	23,119	16,881
Taxation charge/(credit)	6,100	(467)	5,878
Identified Items [A]	1,745	(7,933)	(598)
Adjusted Earnings [A]	7,950	(2,852)	4,452
Adjusted EBITDA (CCS basis) [A]	27,358	13,247	27,034
Capital expenditure	6,378	6,911	10,003
Cash capital expenditure [A]	6,269	7,296	10,205
Oil and gas production available for sale (thousand boe/d)	2,240	2,424	2,691

[A] See "Non-GAAP measures reconciliations" on pages 326-329.

OVERVIEW

Our Upstream business explores for and extracts crude oil, natural gas and natural gas liquids. It also markets and transports oil and gas, and operates infrastructure necessary to deliver them to market.

BUSINESS CONDITIONS

Brent crude oil, an international benchmark, rebounded in 2021, supported by stronger demand and moderate supply growth. Brent traded between $50 per barrel (/b) and $86/b in 2021, ending the year at around $77/b and averaging $71/b for the whole year. This was about 70% higher than in 2020.

Global oil product demand rose by 5.6 million barrels per day (b/d) in 2021 to 97.4 million b/d, after a sharp drop of around 8.5 million b/d in 2020, according to the IEA. The rebound was supported by successful vaccine roll-outs, especially in developed economies such as the USA, UK and EU. Road mobility has largely returned to pre-pandemic levels, with COVID-19 travel restrictions being lifted and more people switching from public transport to cars. Air travel has begun to recover, but is still around 20-30% below pre-pandemic levels. This is probably attributable to remaining cross-border travel restrictions and public hesitancy about air travel during a global pandemic. Mirroring the broad economic recovery, demand for naphtha, LPG and ethane also picked up.

Global demand for natural gas rose by an estimated 4.6% in 2021, after the COVID-19 pandemic caused consumption to decline by around 1.2% in 2020, according to the IEA. The 2021 rate represents a return to around the historical norms of growth for gas, and is roughly the same as the pre-pandemic growth rate of 2019. The revival of economic growth underpinned the industrial uptake of gas, especially in China. Underperformance of hydroelectric output in China and South America as well as weak renewables generation in Europe drove incremental power demand for gas. Colder-than-normal winters and hotter-than-usual summers also produced higher-than-expected demand for gas from commercial and residential users. Reduced supply from a number of sources led to shortages and record high prices for gas and LNG globally.

European gas prices rose to unprecedented levels by the middle of 2021, with the average Dutch Title Transfer Facility (TTF) price more than five times that of 2020. The TTF price reached a peak of almost $60 per million British thermal units (MMBtu). TTF and European spot gas hub prices broke above oil parity by the third quarter and continued well above that level for the rest of the year. Prices were supported by an extended heating season that left gas storage at a deficit coming out of winter and prompted fears of scarcity as indigenous production slumped and pipeline and LNG imports were restrained. Record coal and carbon prices also contributed to the price surge.

In the USA, Henry Hub prices are expected to moderate from 2021 as production increases in response to higher gas prices as well as oil prices (which support associated gas production in the Permian basin). But upward pressures on gas prices are also expected as LNG exports, Mexico pipeline exports and economic growth stimulate demand.

See "Market overview" on pages 42-44.

PRODUCTION AVAILABLE FOR SALE

In 2021, production was 818 million boe, or 2,240 thousand boe/d, compared with 887 million boe, or 2,424 thousand boe/d in 2020. Liquids production decreased by 5% and natural gas production decreased by 13% compared with 2020.

The decrease in production was mainly caused by divestments in Canada, Egypt and the USA, higher maintenance most significantly in Nigeria and the UK, and the effects of production-sharing contracts (PSCs) which were especially notable in Malaysia and Kazakhstan.

Oil production declined by around 8% from 2019 to 2021. Excluding the impact from the Permian divestment, oil production is expected to decrease on average by 1-2% a year until 2030.

EARNINGS 2021-2020

Segment earnings in 2021 were $9,694 million, which included a net gain of $3,268 million on sale of assets mainly related to the sale of the Permian business in the USA, partly offset by post-tax impairment charges of $479 million, a net charge of $393 million due to the fair value accounting of commodity derivatives and fourth quarter 2021 legal provisions of $287 million.

Segment earnings in 2020 were a loss of $10,785 million, which included a net charge of $6,447 million related to impairments, primarily in the US Gulf of Mexico, unconventional assets in North America, offshore assets in Brazil and Europe, and a project in Nigeria (OPL245), mainly triggered by revision of Shell's mid- and long-term commodity price and updated Appomattox subsurface understanding. Also included was a net charge of $782 million related to the impact of the weakening Brazilian real on a deferred tax position.

Excluding the net gains described above, segment earnings in 2021 were a profit of $7,950 million, compared with a loss of $2,852 million in 2020. Earnings excluding the net gains were helped by higher oil and gas prices mainly driven by the improved macroeconomic conditions as described in the business condition section and the one-off release of a tax provision in Nigeria of $628 million.

PRIOR YEAR EARNINGS SUMMARY

Our earnings summary for the financial year ended December 31, 2020, compared with the financial year ended December 31, 2019, can be found in the Annual Report and Accounts (page 54) and Form 20-F (page 37) for the year ended December 31, 2020, as filed with the Registrar of Companies for England and Wales and the US Securities and Exchange Commission, respectively.

CASH CAPITAL EXPENDITURE

Cash capital expenditure in 2021 was $6.3 billion, compared with $7.3 billion in 2020.

Lower cash capital expenditure in 2021 was mainly driven by deferral and slippage of activities across the portfolio and divestments.

PORTFOLIO AND BUSINESS DEVELOPMENT

We took the following key portfolio decisions during 2021:

- In Brazil, in August 2021, we announced the final investment decision (FID) taken by the Libra consortium, operated by Petrobras, to contract the Mero-4 floating production, storage and offloading (FPSO) vessel to be deployed at the offshore Mero field in the Santos Basin.
- In Malaysia, in August 2021, we announced the FID on the Timi gas development project.
- In the US Gulf of Mexico, in July 2021, we took the FID for Whale, a deep-water development in the US Gulf of Mexico that features a 99% replicated hull and an 80% replication of the topsides of our Vito project.
- We continue to review positions that are outside our risk appetite, such as Nigeria onshore. In the last decade we have reduced the total number of licences by half and we continue to review the portfolio options for Nigeria onshore oil and gas.

We continued to divest assets during 2021, including:

- in Canada, in April 2021, we completed the sale of our Duvernay light oil position in Alberta. The transaction had an effective date of January 1, 2021;
- in Egypt, in September 2021, we completed the sale of our upstream assets in Egypt's Western Desert;
- in Nigeria, in January 2021, we completed the sale of our 30% interest in oil mining lease (OML) 17 in the Eastern Niger Delta, and associated infrastructure;
- in the Philippines, in May 2021, we agreed to sell our 100% shareholding in Shell Philippines Exploration B.V. (SPEX). We aim to complete the sale in 2022; and
- in the USA, in December 2021, we completed the sale of our Permian business.

As announced on February 28, 2022, Shell intends to exit its joint ventures with Gazprom and related entities, including our 50% interest in Salym Petroleum Development and our 50% interest in Gydan energy venture. For more information see Note 32 on page 283.

BUSINESS AND PROPERTY

Our subsidiaries, joint ventures and associates are involved in all aspects of upstream activities, including land tenure, entitlement to produced hydrocarbons, production rates, royalties, pricing, environmental protection, social impact, exports, taxes and foreign exchange.

The conditions of the leases, licences and contracts under which oil and gas interests are held vary from country to country. In almost all cases outside North America, legal agreements are generally granted by, or entered into with, a government, state-owned company, government-run oil and gas company or agency. The exploration risk usually rests with the independent oil and gas company. In North America, these agreements may also be with private parties that own mineral rights. Of these agreements, the following are most relevant to our interests:

- Licences (or concessions), which entitle the holder to explore for hydrocarbons and exploit any commercial discoveries. Under a licence, the holder bears the risk of exploration, development and production activities, and is responsible for financing these activities. In principle, the licence holder is entitled to the totality of production less any royalties in kind. The government, state-owned company or government-run oil and gas company may sometimes enter into a joint arrangement as a participant, sharing the rights and obligations of the licence but usually without sharing the exploration risk. In a few cases, the state-owned company, government-run oil and gas company or agency has an option to purchase a certain share of production.
- Lease agreements, which are typically used in North America and are usually governed by terms similar to licences. Participants may include governments or private entities. Royalties are either paid in cash or in kind.
- Production-sharing contracts (PSCs) entered into with a government, state-owned company or government-run oil and gas company. PSCs generally oblige the independent oil and gas company, as contractor, to provide all the financing and bear the risk of exploration, development and production activities in exchange for a share of the production. Usually, this share consists of a fixed or variable part that is reserved for the recovery of the contractor's cost (cost oil). The remaining production is split with the government, state-owned company or government-run oil and gas company on a fixed or volume/revenue-dependent basis. In some cases, the government, state-owned company or government-run oil and gas company will participate in the rights and obligations of the contractor and will share in the costs of development and production. Such participation can be across the venture or on a field-by-field basis. Additionally, as the price of oil or gas increases above certain predetermined levels, the independent oil and gas company's entitlement share of production normally decreases, and vice versa. Accordingly, its interest in a project may not be the same as its entitlement.

Europe

Italy

We have a 39% interest in the Val d'Agri producing concession, operated by ENI S.p.A.

We also have a 25% interest in the Tempa Rossa producing concession operated by TotalEnergies EP Italia S.p.A.

Netherlands

Shell and ExxonMobil are 50:50 shareholders in Nederlandse Aardolie Maatschappij B.V. (NAM). A significant part of NAM's gas production comes from the onshore Groningen gas field, in which NAM holds a 60% interest. The remaining 40% interest is held by EBN, a Dutch government entity. NAM also has a 60% interest in the Schoonebeek oil field and operates 25 other hydrocarbon production licences.

Production from the Groningen field induces earthquakes that have damaged houses and other buildings and structures in the region. This has led to complaints and claims for compensation for damage from the local community.

Since 2013, the Dutch Minister of Economic Affairs and Climate Policy has set an annual production level for the Groningen field, taking into account all interests, including residents' safety, security of supply in the domestic gas market and supply commitments in EU member states. The production level in the gas year 2021-2022 (ending October 1, 2022) was set as 3.9 billion cubic metres, subject to revision by the Minister.

In June 2018, NAM's shareholders and the Dutch government signed a heads of agreement (HoA) to reduce production from Groningen and to ensure the financial robustness of NAM to fulfil its obligations. In the HoA, NAM's shareholders agreed not to declare dividends for 2018 and 2019. Dividend payments for 2020 and beyond will be made only if a solvency ratio of 25% is reached and maintained, which was not the case for 2021. In September 2018, detailed agreements were signed to further implement the HoA. As part of these agreements, Shell guarantees NAM's payment obligations vis-à-vis the Dutch government in relation to earthquake-related damages and costs of strengthening houses, up to a maximum of 30%. This maximum equates to Shell's indirect interest in the Groningen production system.

In conjunction with the HoA, it was agreed that NAM would cease all involvement in handling damage claims or strengthening buildings to make them safe. The Dutch government has stepped into these two roles and has developed legislation and policies to deal with earthquake-related matters. The Dutch government passes on to NAM the cost of the elements for which NAM is liable. NAM has started arbitration with the Dutch government to have its financial liability determined for certain earthquake costs which the Dutch government compensates to claimants and subsequently recovers from NAM.

In September 2019, the Dutch government issued an update announcing that it was able to reduce Groningen production faster, stopping production in 2022, eight years earlier than initially planned. Discussions have not been concluded between the Dutch government and NAM shareholders regarding the compensation payable by the Dutch government to NAM in order to restore the balance of the package of arrangements laid down in the HoA.

A parliamentary inquiry into production from the Groningen gas field officially started in the spring of 2021. Public hearings are scheduled for the summer of 2022.

On October 26, 2021, NAM announced that it will split up its assets into four new legal entities, with the intent to sell those new entities. This excludes the wider Groningen business, which will remain in the existing NAM legal entity.

Norway

We are a partner in 21 production licences on the Norwegian continental shelf. We are the operator in nine of these, of which two are producing: the Knarr field (Shell interest 45%) and the Ormen Lange gas field (Shell interest 17.8%). In 2021, we took the final investment decision on the Phase 3 project for Ormen Lange, adding subsea compression to the field. We hold a non-operated interest in the producing field Troll (operated by Equinor, Shell interest 8.1%) where the Phase 3 gas project came on stream in 2021 adding new production. Decommissioning is planned for Gaupe (cessation of production was in 2018) and Knarr (cessation of production is expected in May 2022).

We have a 33.3% interest in the Northern Lights joint venture, where the other partners are Equinor and TotalEnergies (equal partners). The joint venture is developing a carbon dioxide transportation and storage project.

UK

For more than 50 years we have operated a significant number of our interests on the UK continental shelf under a 50:50 joint-venture agreement with ExxonMobil. In the fourth quarter of 2021, ExxonMobil completed the sale of its share of some of these and other UK continental shelf assets to Neo Energy. In addition to our oil and gas production from North Sea fields, we have various interests in the Atlantic Margin area where we are not the operator. These are mainly in the West of Shetland area (Clair, Shell interest 27.97%, and Schiehallion, Shell interest 44.89%).

In 2021, new production came on stream in Arran (Shell interest 44.57%), which is a tie-back to the Shearwater facility. New production also came on stream at new wells in the existing and producing Clair Ridge (Shell interest 27.97%, non-operated). In the fourth quarter of 2021, Shell completed a deal to increase its equity in the Shearwater field (from 28% to 55.5%) by purchasing BP's entire interest in the field. Shell will continue to be the operator of the Shearwater field.

In October 2021, the UK's Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) advised that it was unable to approve the environmental statement consent for the Jackdaw Project. Engagement with OPRED has continued, during which there have been discussions of alternative proposals to address the regulator's concerns.

In 2021, Shell increased its stake in the early-stage Acorn carbon capture, utilisation and storage (CCUS) and blue hydrogen (BH2) project from 25% to 30%. Shell was appointed technical development lead for certain parts of the CCS project and will take up the role at the end of the first quarter of 2022. The UK government selected the Scottish Cluster (of which Acorn is part) as a reserve cluster for track 1 in its CCUS cluster sequencing process. This means that if another cluster selected as track 1 is discontinued the Scottish Cluster may take its place. The UK government has stated that it will prioritise track 1 cluster for accelerated negotiation of terms.

In December 2021, after comprehensive screening, Shell concluded that the economic case for investment in Cambo, considering also the potential for delays, was not strong enough to proceed. Shell continues to work with its co-venturer and the UK government to map out the next steps on Cambo.

Decommissioning of the Heather, Goldeneye and Curlew FPSO assets continued. In September 2021, Heerema's Thialf vessel safely lifted Goldeneye's 3,000-tonne jacket and 1,300-tonne topsides, before transporting them to Norway to be dismantled at the AF Offshore Decom yard in Vats.

In Brent, production ceased after 45 years when on March 31, 2021, we shut down Brent Charlie. This is due to become the fourth and final platform to be decommissioned and removed from the Brent oil and gas field. Brent Charlie's topsides are expected to be lifted and removed in 2023, after necessary offshore preparatory works have been completed. The UK regulator OPRED is expected to announce a final decision in the first half of 2022 on the proposed derogations to leave in place the gravity-based concrete structures of Brent Bravo, Brent Charlie and Brent Delta.

Rest of Europe

We also have interests in Albania, Bulgaria and Germany.

Asia (including the Middle East and Russia)

Brunei

Shell and the Brunei government are 50:50 shareholders in Brunei Shell Petroleum Company Sendirian Berhad (BSP). BSP has long-term onshore and offshore oil and gas concession rights, and sells most of its gas production to Brunei LNG Sendirian Berhad (see "Integrated Gas" on pages 45-49), with the remainder (24% in 2021) sold in the domestic market.

In addition to our interest in BSP, we have a non-operating interest in the offshore Block B concession (Shell interest 35%), where gas and condensate are produced from the Maharaja Lela field.

We have a non-operating interest in a gas holding area for deep-water Block CA2 (Shell interest 12.5%), under a production-sharing contract (PSC).

We also operate in the deep-water Block CA1 (Shell interest 86.95%), under a PSC.

Iraq

We have a 44% interest in the Basrah Gas Company, which gathers, treats and processes associated gas that was previously being flared from the Rumaila, West Qurna 1 and Zubair fields. The processed gas and associated products, such as condensate and LPG, are sold to the domestic market. Any surplus condensate and LPG is exported.

Kazakhstan

We are the joint operator of the onshore Karachaganak oil and condensate field (Shell interest 29.3%). The Karachaganak field is in north-west Kazakhstan and covers an area of more than 280 square kilometres.

We have an interest in the North Caspian Sea production-sharing agreement (Shell interest 16.8%) which includes the Kashagan field in the Kazakh sector of the Caspian Sea. The North Caspian Operating Company is the operator. This shallow-water field covers an area of around 3,400 square kilometres. Phase 1 development of the field led to plateau oil production capacity of around 66 thousand boe/d (Shell interest) in 2021, with the possibility of increases after later phases of development.

We have a 7.4% interest in the Caspian Pipeline Consortium, which owns and operates an oil pipeline running from the Caspian Sea to the Black Sea, across parts of Kazakhstan and Russia.

Malaysia

We explore for and produce oil and gas offshore Sabah and Sarawak under 16 PSCs, in which our interests range from 20% to 85%.

Offshore Sabah:

- We operate two producing oil fields, the Gumusut-Kakap field (Shell interest 30%) and the Malikai deep-water field (Shell interest 35%).
- We have a 21% interest in the Siakap North-Petai deep-water field and a 30% interest in the Kebabangan field, both operated by third parties. We also have exploration interests.

Offshore Sarawak:

- We are the operator of eight producing gas fields and one producing oil and gas field. Nearly all the gas produced offshore Sarawak is supplied to Malaysia LNG (MLNG) and to our gas-to-liquids plant in Bintulu. See "Integrated Gas" on pages 45-49. The eight producing gas fields and the one producing oil and gas field are:
  - gas fields F6, F23, E8, F13 East and F13 West under the MLNG PSC (Shell interest 40%);
  - gas fields F14 and F28 under the SK308 PSC (Shell interest 50%);
  - gas field Gorek under the SK408 PSC (Shell Interest 30%); and
  - producing oil and gas field E6 under the SK-308 PSC (Shell interest 50%).
- We achieved first oil and gas for Phase 2 of the E6 project in March 2021.
- We are the operator for Block SK-318 PSC (Shell interest 75%). This block contains the discovered Rosmari, Marjoram and Timi fields. In August 2021, we took the final investment decision on the Timi gas development project. Situated approximately 200 kilometres off the coast of Sarawak, Timi is a sweet gas field discovered in 2018. The Timi project comprises a wellhead platform powered by a solar and wind hybrid renewable power system, two wells and a pipeline tie-in to the F23 production hub, supporting future growth in the Sarawak Central Luconia area. The proposed Rosmari-Marjoram development is the first phase of the Sarawak Integrated Sour Gas Evacuation System (SISGES) development and comprises an offshore platform and onshore gas treatment plant in Bintulu, Sarawak.
- In July 2021, we signed a new exploration PSC for Block SK-437 (Shell interest 85%).
- In our non-operated portfolio:
- We took the final investment decision in March 2021 on Jerun, which is part of the Block SK-408 PSC (Shell interest 30%). Jerun is a gas development with an integrated central processing platform. Block SK-408 also contains the producing non-Shell-operated Larak and Bakong fields.
- We also have a 40% interest in the amended 2011 Baram Delta enhanced oil recovery PSC, and a 50% interest in the SK-307 PSC. In March 2021, Shell announced that it intended to explore options to divest its non-operated interests in Baram Delta and SK-307.

UPSTREAM continued

Oman
We have a 34% interest in the Block 6 oil concession and its operator Petroleum Development Oman (PDO). The Omani government has a 60% interest through its 100% owned affiliate Energy Development Oman (EDO). PDO is the operator of more than 200 oil fields, mainly located in central and southern Oman.

We have a 50% interest in the Block 42 exploration and production-sharing agreement. Oman Oil (OQ) has the remaining 50% interest. Shell is the operator of Block 42. We have signed an exploration and production-sharing agreement that makes us the operator and gives us a 100% working interest in Block 55.

Russia
Shell and Gazprom Neft have a joint interest in several ventures in Russia:
- We have a 50% interest in Salym Petroleum Development N.V., which is developing the Salym fields and conducting exploration activities in the Khanty Mansiysk Autonomous District of western Siberia.
- We have a 50% interest in the Khanty-Mansiysk Petroleum Alliance VOF partnership. Through this, Shell is a holder of a 50% interest in the CJSC Khanty-Mansiysk Petroleum Alliance.
- Because regulatory sanctions prohibit certain defined oil and gas activities in Russia since 2014, we have suspended our support to Salym Petroleum Development N.V. and CJSC Khanty-Mansiysk Petroleum Alliance in relation to shale oil activities.
- We have a 50% shareholding in LLC Gydan Energy. The joint venture changed its name from LLC Gazpromneft-Aero Bryansk in September 2021. It holds licences to the Leskinsky and Pukhutsayakhsky onshore blocks in the north-eastern part of the Gydan Peninsula. The joint venture is currently carrying out an exploration programme in these blocks.

As announced on February 28, 2022, Shell intends to exit its joint ventures with Gazprom and related entities, including our 50% interest in Salym Petroleum Development and our 50% interest in Gydan energy venture. For more information see Note 32 on page 283.

Syria
Shell holds a 65% interest in Syria Shell Petroleum Development B.V. (SSPD), a joint venture between Shell and the China National Petroleum Corporation. SSPD holds a 31.25% interest in Al Furat Petroleum Company, a Syrian joint stock company, whose role was to perform petroleum operations. Shell also holds a 70% interest in two exploration licences via Shell South Syria Exploration B.V. In December 2011, in compliance with international sanctions on Syria, including European Council Decision 2011/782/CFSP, Shell suspended all exploration and production activities in Syria.

Rest of Asia
We also have interests in Kuwait, the Philippines, Turkey and the United Arab Emirates.

In May 2021, in the Philippines, Shell announced an agreement to sell its shares in Shell Philippines Exploration B.V., which includes its 45% interest in Service Contract 38 (Malampaya), which includes the producing Malampaya gas field, to Malampaya Energy XP Pte. Ltd. Subject to partner and regulatory consent, the transaction is targeted to complete in 2022.

Africa
Nigeria
Our share of production, onshore and offshore, in Nigeria was 175 thousand boe/d in 2021, compared with 223 thousand boe/d in 2020. Security issues, sabotage and crude oil theft in the Niger Delta failed to improve and remained significant challenges to our onshore operations in 2021. We will monitor the situation closely and evaluate implications for the integrity of our infrastructure and the sustainability of our current operations.

We announced our intention to reduce our involvement in onshore oil and gas production in Nigeria, in line with our risk appetite. We are in discussion with the Nigerian government and other stakeholders on how this can be best achieved.

In August 2021, Nigeria adopted the Petroleum Industry Act (PIA) that creates a new regulatory framework for the industry. The PIA introduces significant changes, some of which require clarification during the 18-month implementation phase. We are actively engaged to ensure that our operations will comply with any new requirements.

Onshore
The Shell Petroleum Development Company of Nigeria Limited (SPDC) is the operator of a joint venture (JV) (Shell interest 30%) that, after the completion of the sale of its interest in OML 17 on January 15, 2021, has 16 Niger Delta onshore oil mining leases (OML).

In 2019, OML 11 expired when the Federal Government (FGN) denied an application of SPDC JV for renewal. While SPDC JV is challenging this decision in court, the FGN and SPDC JV are exploring an out-of-court solution. SPDC continues to operate OML 11 pending these discussions.

Offshore
Our main offshore deep-water activities are carried out by Shell Nigeria Exploration and Production Company Limited (SNEPCO), (Shell interest 100%). SNEPCO has interests in three deep-water blocks that are under PSC terms: the producing assets Bonga (OML 118) and Erha (OML 133) and the non-producing asset Bolia Chota (OML 135). SNEPCO operates OMLs 118 (including the Bonga field floating production, storage and offloading (FPSO) vessel, Shell interest 55%) and 135 (Bolia and Doro, Shell interest 55%) and has a 43.8% non-operating interest in OML 133 (including the Erha FPSO). In May 2021 OML 118 was renewed for 20 years. In 2021, the licence for the offshore oil block OPL 245 expired.

Authorities are investigating our involvement in Nigerian oil block OPL 245 and the 2011 settlement of litigation pertaining to that block. See Note 26 to the "Consolidated Financial Statements" on pages 277-279.

SPDC also has three shallow-water licences (OMLs 74, 77 and 79) and a 40% interest in the non-Shell-operated Sunlink joint venture that has one shallow-water licence (OML 144).

In our Nigerian operations, we face various risks and adverse conditions which could have a significant adverse effect on our operational performance, earnings, cash flows and financial condition (see "Risk factors" on pages 27). There are limitations to the extent to which we can mitigate these risks. We carry out regular portfolio assessments so we can maintain our long-term competitiveness in Nigeria. We support the Nigerian government's efforts to improve the efficiency, functionality and domestic benefits of Nigeria's oil and gas industry. We monitor legislative developments and the security situation. We liaise with host communities, governmental and non-governmental organisations (NGOs) to help promote peaceful and safe operations. We continue to be transparent about how we manage and report spills, and how we deploy oil-spill response capability and technology. We implement a maintenance strategy to support sustainable equipment reliability and have begun a multi-year programme to reduce routine flaring of associated gas. See "Climate change and energy transition" on pages 75-98.

Rest of Africa

We also have interests in Algeria, Egypt, Mauritania, Namibia, São Tomé and Príncipe, South Africa and Tunisia.

On September 23, 2021, Shell Egypt N.V. and an affiliate completed a full divestment of 13 onshore blocks in the Western Desert. Shell Egypt N.V. subsequently filed a notice of final relinquishment of the North East Obaiyed block, which is the only remaining onshore block still held by Shell Egypt N.V.

In 2021, Shell announced plans to hand back to the Government of Tunisia Upstream assets associated with the Miskar and Hasdrubal concessions. Discussions are in progress regarding the terms of the hand-back.

North America

Canada

In Canada, we produce and market natural gas, natural gas liquids and condensate.

We hold mineral acres, primarily in the Montney play in British Columbia and Alberta. We currently operate four natural gas processing area facilities in our Groundbirch asset in British Columbia. In April 2021, we sold our Duvernay shale light oil position in Alberta.

USA

We produce oil and gas in deep water in the Gulf of Mexico. We produce heavy oil in California through a 51.8% interest in Aera Energy LLC which operates wells in the San Joaquin Valley. The majority of our oil and gas interests are acquired under leases granted by the owner of the minerals underlying the relevant area, including many leases for federal offshore tracts. Such leases usually run on an initial fixed term that is automatically extended by the establishment of continued production, subject to compliance with the terms of the lease (including, in the case of federal leases, extensive regulations imposed by federal law).

We have sold or relinquished all frontier licences in Alaska and have no plans for frontier exploration off Alaska's coast. We retain two exploration acreage positions in the long-established North Slope area of Alaska. One is a non-operating interest of 50% in 13 federal leases held since 2007 and operated by Eni. The other position consists of 18 state leases in nearby West Harrison Bay that have been held since 2012, which we plan to turn over to an alternative operator.

Gulf of Mexico

The Gulf of Mexico is our major production area in the USA. We have an interest in 311 active federal offshore leases.

We are the operator of eight production hubs – Mars, Olympus, Auger, Perdido, Ursa, Enchilada/Salsa, Appomattox and Stones – and the West Delta 143 processing facilities (Shell interests ranging from 33% to 100%). We continue to produce from Coulomb (Shell interest 100%) which ties into the Na Kika platform, where Shell has a 50% non-operating interest.

We continued exploration, development and abandonment activities in the Gulf of Mexico in 2021.

We made discoveries at the Leopard and Blacktip North prospects in the Perdido Corridor. The Leopard well encountered more than 600 feet (183 meters) net oil pay at multiple levels and the Blacktip North well encountered approximately 300 feet net oil pay at multiple levels. Evaluation is ongoing to further define development options. The Leopard and Blacktip North discoveries are opportunities to increase production in the Perdido Corridor, where Shell's Great White, Silvertip and Tobago fields are already producing.

We also took the final investment decision (FID) for Whale, a deep-water development in the Perdido Corridor that features a 99% replicated hull and an 80% replication of the topsides of our Vito project. The Whale development (Shell interest 60%) is currently scheduled to begin production in 2024.

We made progress on the development of Powernap and Vito, which are both in the execution phase. Powernap (Shell interest 100%) is a subsea tie-back to the Olympus production hub, while Vito (Shell interest 63%) is a stand-alone host. Both are expected to achieve first oil in 2022.

The 2021 Atlantic hurricane season adversely impacted production at our US Gulf of Mexico assets. We experienced extended shutdowns at our Mars, Olympus, and Ursa production hubs because of structural damage to our West Delta-143 (WD-143) processing facilities after Hurricane Ida. We safely reinstated production at Olympus on October 1, (33 days after Hurricane Ida), and at Mars and Ursa on November 4, (67 days after Hurricane Ida). This was ahead of estimated timelines.

Shales

Our activity in 2021 was focused in the Permian Basin. On December 1, 2021, we completed the sale of Shell's interest in the Permian to ConocoPhillips for a base consideration of $9.5 billion. As a result of this divestment, Shell no longer has active shales development in the USA.

Rest of North America

We also have deep-water licences and one shallow-water licence in Mexico.

South America

Brazil

Our operated portfolio consists of offshore assets in:

- the Bijupirá and Salema fields (Shell interest 80%), which ceased production in December 2021 to begin abandonment operations;
- the BC-10 field (Shell interest 50%) in the Campos Basin;
- the Gato do Mato area in the Santos Basin and the adjacent Sul de Gato do Mato area (Shell interest 50%), subject to unitisation, with development options under evaluation; and
- a total of 22 exploration blocks in the following areas:
- Barreirinhas Basin (10 blocks with Shell interests ranging from 50% to 100%);
- Santos Basin (two blocks with Shell interests 45% and 55%);
- Potiguar Basin (Shell interest 100%); and
- Campos Basin (three blocks with Shell interest 40% and one block with Shell interest 100%). An additional five blocks were awarded to Shell in the National Petroleum Agency (ANP) permanent offer round in October 2021. Contracts were expected to be signed in the first quarter of 2022.

UPSTREAM continued

Our non-operated portfolio consists of the following fields in the offshore Santos Basin:

- Sapinhoá field (Shell interest 30%, operated by Petrobras), straddling the BM-S-9 and Entorno de Sapinhoá blocks, already unitised;
- Lapa field (Shell interest 30%, not subject to unitisation, operated by TotalEnergies) in Block BM-S-9A;
- Berbigão and Sururu fields (Shell interest 25%, subject to ongoing discussions about unitisation agreements, operated by Petrobras) in Block BM-S-11A;
- Atapu field (Shell interest 4%, unitised in September 2019) in Block BM-S-11A. In December, Shell placed a successful bid in the ANP Transfer of Rights round for the acquisition of 25% of Atapu ToR area to increase its participation in the Atapu field from 4.3% to 16.7%. The contract is expected to be signed in the second quarter of 2022;
- Lula field in Block BM-S-11, renamed the Tupi field (subject to unitisation in effect since April 2019, Shell interest 23%, operated by Petrobras);
- Iracema field in Block BM-S-11 (Shell interest 25%, not subject to unitisation, operated by Petrobras); and
- Mero field in the Libra PSC area (Shell interest 20%, unitisation with an adjoining area still subject to government approval, operated by Petrobras).

In addition to the producing assets, we hold interests in two non-operated exploration blocks in the Santos Basin. These are operated by Petrobras with Shell interests of 20% and 40%.

We also hold interests in two non-operated exploration blocks in the Potiguar Basin, operated by Petrobras (Shell interest 40%).

The activities of operated and non-operated fields are currently supported by 17 producing deep-water FPSOs. We expect two additional FPSOs (Mero 1 and Mero 2) to be brought online in 2022-2023. In August 2021, we announced the final investment decision to contract the Mero 4 FPSO vessel to be deployed at the Mero field.

Rest of South America

We also have interests in Argentina and Suriname.

TRADING AND SUPPLY

We market and trade crude oil from most of our Upstream operations.

OIL AND GAS INFORMATION

Proved developed and undeveloped reserves of Shell subsidiaries and Shell share of joint ventures and associates

	Crude oil and natural gas liquids (million barrels)	Synthetic crude oil (million barrels)	Bitumen (million barrels)	Natural gas (thousand million scf)	Total (million boe) [A]
Shell subsidiaries					
Increase/(decrease) in 2021:					
Revisions and reclassifications	597	(90)	–	3,391	1,091
Improved recovery	30	–	–	9	31
Extensions and discoveries	175	–	–	1,477	430
Purchases and sales of minerals in place	(165)	–	–	(383)	(230)
Total before taking production into account	637	(90)	–	4,494	1,322
Production [B]	(578)	(21)	–	(2,831)	(1,088)
Total	59	(111)	–	1,663	234
At January 1, 2021	3,761	644	–	22,132	8,222
At December 31, 2021	3,820	533	–	23,795	8,456
Shell share of joint ventures and associates					
Increase/(decrease) in 2021:					
Revisions and reclassifications	46	–	–	577	146
Improved recovery	–	–	–	–	–
Extensions and discoveries	2	–	–	2	2
Purchases and sales of minerals in place	–	–	–	–	–
Total before taking production into account	48	–	–	579	148
Production [C]	(36)	–	–	(612)	(141)
Total	12	–	–	(33)	7
At January 1, 2021	216	–	–	3,982	902
At December 31, 2021	228	–	–	3,949	909
Total					
Increase/(decrease) before taking production into account	685	(90)	–	5,073	1,470
Production	(614)	(21)	–	(3,443)	(1,229)
Increase/(decrease)	71	(111)	–	1,630	241
At January 1, 2021	3,977	644	–	26,114	9,124
At December 31, 2021	4,048	533	–	27,744	9,365
Reserves attributable to non-controlling interest in Shell subsidiaries at December 31, 2021	–	267	–	–	267

[A] Natural gas volumes are converted into oil equivalent using a factor of 5,800 standard cubic feet (scf) per barrel.
[B] Included 41 million boe consumed in operations (natural gas: 232 thousand million scf; synthetic crude oil: 1 million barrels).
[C] Included 7 million boe consumed in operations (natural gas: 41 thousand million scf).

OIL AND GAS INFORMATION continued

PROVED RESERVES

The proved oil and gas reserves of Shell subsidiaries and the Shell share of the proved oil and gas reserves of joint ventures and associates are set out in more detail in "Supplementary Information – Oil and Gas (unaudited)" on pages 284-301.

Before taking production into account, our proved reserves increased by 1,470 million boe in 2021. This consisted of an increase of 1,322 million boe from Shell subsidiaries and an increase of 148 million boe from the Shell share of joint ventures and associates.

After taking production into account, our proved reserves increased by 241 million boe in 2021 to 9,365 million boe at December 31, 2021.

SHELL SUBSIDIARIES

Before taking production into account, Shell subsidiaries' proved reserves increased by 1,322 million boe in 2021. This consisted of an increase of 637 million barrels of crude oil and natural gas liquids, an increase of 775 million boe (4,494 thousand million scf) of natural gas and a decrease of 90 million barrels of synthetic crude oil. The 1,322 million boe increase was the result of a net increase of 1,091 million boe from revisions and reclassifications, an increase of 430 million boe from extensions and discoveries, an increase of 31 million boe from improved recovery, and a net decrease of 230 million boe related to purchases and sales of minerals in place.

After taking into account production of 1,088 million boe (of which 41 million boe were consumed in operations), Shell subsidiaries' proved reserves increased by 234 million boe in 2021 to 8,456 million boe. In 2021, Shell subsidiaries' proved developed reserves (PD) decreased by 238 million boe to 6,740 million boe, and proved undeveloped reserves (PUD) increased by 472 million boe to 1,716 million boe.

SHELL SHARE OF JOINT VENTURES AND ASSOCIATES

Before taking production into account, the Shell share of joint ventures and associates' proved reserves increased by 148 million boe in 2021. This consisted of an increase of 48 million barrels of crude oil and natural gas liquids and an increase of 100 million boe (580 thousand million scf) of natural gas. The 148 million boe increase comprised a net increase of 146 million boe from revisions and reclassifications and an increase of 2 million boe from extensions and discoveries.

After taking into account production of 141 million boe (of which 7 million boe were consumed in operations), the Shell share of joint ventures and associates' proved reserves increased by 7 million boe to 909 million boe at December 31, 2021.

The Shell share of joint ventures and associates' PD increased by 8 million boe to 801 million boe, and PUD decreased by 3 million boe to 108 million boe.

For further information, see "Supplementary Information – oil and gas (unaudited)" on pages 284-301.

PROVED UNDEVELOPED RESERVES

In 2021, Shell subsidiaries and the Shell share of joint ventures and associates' PUD increased by 469 million boe to 1,824 million boe. There were decreases of 467 million boe because of maturation to PD, mainly 129 million boe in Troll (Norway), 69 million boe in Tupi (Brazil), and 269 million boe spread across other fields, and a net decrease of 26 million boe due to purchases and sales. These were offset by: increases of 498 million boe due to revisions, an increase of 31 million boe due to improved recovery, and a net increase of 432 million boe due to extensions and discoveries. The extensions and discoveries consisted of 107 million boe in Mero, 81 million boe in Whale, and 244 million boe spread across other fields.

In addition to the maturation of 467 million boe from PUD to PD, 51 million boe was matured to PD from contingent resources through PUD as a result of project execution during the year.

PUD held for five years or more (PUD5+) at December 31, 2021, amounted to 238 million boe, an increase of 54 million boe compared with the end of 2020, which was driven mainly by changes in Kolo Creek (Nigeria), Tupi (Brazil) and Groundbirch (Canada).

The fields with the largest PUD5+ on December 31, 2021 were Lunskoye (Russia), Gorgon (Australia), Kolo Creek (Nigeria) and Tupi (Brazil).

These PUD5+ remain undeveloped because development either requires the installation of compression equipment (Russia) and the drilling of additional wells (Brazil) or will take longer than five years because of the complexity and scale of the project (Australia).

During 2021, we spent $5.3 billion on development activities related to PUD maturation.

DELIVERY COMMITMENTS

We sell crude oil and natural gas from our producing operations under a variety of contractual obligations. Most contracts generally commit us to sell quantities based on production from specified properties, although some natural gas sales contracts specify delivery of fixed and determinable quantities, as discussed below.

In the past three years, we met our contractual delivery commitments, with the notable exceptions of Egypt, Trinidad and Tobago, and Malaysia. In the period 2022-2024, we are contractually committed to deliver to third parties, joint ventures and associates a total of 6,976 billion scf of natural gas from our subsidiaries, joint ventures and associates. The sales contracts contain a mixture of fixed and variable pricing formulae that are generally referenced to the prevailing market price for crude oil, natural gas or other petroleum products at the time of delivery.

In the period 2022-2024, we expect to meet our delivery commitments for almost all the areas in which they are carried, with an estimated 73.2% coming from PD, 5.0% through the delivery of gas that becomes available to us from paying royalties in cash, and 21.8% from the development of PUD as well as other new projects and purchases. The key exceptions are:

- Egypt: The government decision to divert gas from the offshore West Delta Deep Marine fields to domestic use has caused a tangible shortfall of 502 billion scf (84% of the promised gas delivery), expected to continue in the near future leaving LNG gas commitment mostly under force majeure;
- in Trinidad and Tobago (East Coast Marine Area and North Coast Marine Area), we expect to cover 91% of our delivery commitments from existing developed resource volumes and new projects, resulting in an expected true shortfall of some 62 billion scf; and
- in Malaysia, one of the third-party gas supply lines which was under maintenance has not been repaired during 2021. Force majeure has been declared, and no penalties have been incurred, resulting in an expected true shortfall of some 54 billion scf (48% of the promised gas delivery).

Summary of proved oil and gas reserves of Shell subsidiaries and Shell share of joint ventures and associates (at December 31, 2021)

Based on average prices for 2021

	Crude oil and natural gas liquids (million barrels)	Natural gas (thousand million scf)	Synthetic crude oil (million barrels)	Total (million boe) [A]
Proved developed				
Europe	146	2,797	–	628
Asia	1,545	11,886	–	3,594
Oceania	71	4,162	–	789
Africa	218	981	–	387
North America				
USA	397	373	–	461
Canada	2	756	533	667
South America	790	1,306	–	1,015
Total proved developed	3,169	22,261	533	7,541
Proved undeveloped				
Europe	68	506	–	155
Asia	193	1,247	–	408
Oceania	9	1,218	–	219
Africa	47	1,035	–	225
North America				
USA	213	242	–	255
Canada	3	783	–	138
South America	346	452	–	424
Total proved undeveloped	879	5,483	–	1,824
Total proved developed and undeveloped				
Europe	214	3,303	–	783
Asia	1,738	13,133	–	4,002
Oceania	80	5,380	–	1,008
Africa	265	2,016	–	612
North America				
USA	610	615	–	716
Canada	5	1,539	533	805
South America	1,136	1,758	–	1,439
Total	4,048	27,744	533	9,365
Reserves attributable to non-controlling interest in Shell subsidiaries	–	–	267	267

[A] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.

OIL AND GAS INFORMATION continued

EXPLORATION

In 2021, producible hydrocarbons were encountered in the US Gulf of Mexico and Brunei.

Gulf of Mexico

In 2021, we acquired 19 blocks in the US Gulf of Mexico in Lease Sale 256. We relinquished leases for 22 blocks ahead of expiration.

In August 2021, the Mexican regulator, Comisión Nacional de Hidrocarburos, approved the Shell farm-in transaction with China Offshore Oil Corporation E&P Mexico S.A.P.I. de C.V. into a deep-water licence in the offshore Mexico Perdido (Shell interest 30%).

Brazil

In June 2021, the Brazilian government ratified a block in Outboard Campos Basin (Shell interest 100%), awarded in the second National Petroleum Agency permanent offer bid round in Brazil.

In October 2021, we secured five Southern Santos blocks in the 17th National Petroleum Agency bid round in Brazil (Shell interest 100% in four of them, 70% in the remaining one, operator in all cases), all of which are awaiting government ratification.

Malaysia

In July 2021, we signed an exploration production-sharing contract for an offshore Sarawak block (Shell interest 85%).

UK

In 2021, we purchased exploration licences across multiple plays in the 32nd UK Offshore Licence Round (Shell interest 50-100%).

New frontiers

In January 2021, we entered into an agreement with Equinor and YPF for an offshore block in the Argentina basin (Shell interest 30%).

In March 2021, we reduced half of our interest, from 90% to 45%, in an exploration block in Namibia.

In August 2021, the South African government approved a farm-in transaction with Impact Africa Limited under which Shell acquired a 50% participating interest and operatorship in two frontier deep-water blocks off the east coast of South Africa.

We also received regulatory approvals and third-party consents for a portfolio transaction with Kosmos for one block in South Africa under which we acquired an additional 45% working interest.

In December 2021, we signed a farm-in agreement into a shallow-water block in Suriname (Shell interest 20%).

For further information, see "Supplementary Information – oil and gas (unaudited)" on pages 284-301.

LOCATION OF OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITIES

Location of oil and gas exploration and production activities [A] (at December 31, 2021)

	Exploration	Development and/or Production	Shell operator [B]
Europe			
Albania	•	•	•
Cyprus		•	
Germany	•	•	
Italy		•	
Netherlands	•	•	•
Norway	•	•	•
UK	•	•	•
Asia			
Brunei	•	•	•
China		•	•
Indonesia		•	
Kazakhstan	•	•	
Malaysia	•	•	•
Oman	•	•	•
Philippines	•	•	•
Qatar		•	•
Russia	•	•	
Turkey	•		•
Oceania			
Australia	•	•	•
Africa			
Egypt	•	•	•
Mauritania	•		•
Namibia	•		•
Nigeria	•	•	•
São Tomé and Príncipe	•		
South Africa	•		•
Tanzania		•	•
Tunisia		•	•
North America			
Mexico	•		•
USA	•	•	•
Canada	•	•	•
South America			
Argentina	•	•	•
Bolivia		•	
Brazil	•	•	•
Colombia	•		•
Suriname	•		•
Trinidad and Tobago	•	•	•
Uruguay	•		•

[A] Includes joint ventures and associates. Where a joint venture or an associate has properties outside its base country, those properties are not shown in this table.
[B] In several countries where "Shell operator" is indicated, Shell is the operator of some but not all exploration and/or production ventures.

OIL AND GAS PRODUCTION AVAILABLE FOR SALE

Crude oil and natural gas liquids [A]

Thousand barrels

	2021		2020		2019	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe						
Denmark	–	–	–	–	7,490	–
Italy	9,677	–	11,342	–	9,747	–
Norway	4,878	–	6,914	–	7,025	–
UK	25,554	–	30,061	–	30,677	–
Other [B]	578	1,205	609	1,084	723	1,135
Total Europe	40,687	1,205	48,926	1,084	55,662	1,135
Asia						
Brunei	1,076	17,894	387	17,094	196	20,002
Kazakhstan	35,592	–	37,769	–	34,269	–
Malaysia	17,983	–	18,494	–	21,993	–
Oman	78,745	–	74,854	–	76,493	–
Russia	21,012	7,769	20,816	9,050	22,442	9,413
Other [B]	30,061	7,548	30,101	7,629	28,796	7,709
Total Asia	184,469	33,211	182,421	33,773	184,189	37,124
Total Oceania [B]	11,844	–	7,416	–	10,058	–
Africa						
Nigeria	35,911	–	48,620	–	56,589	–
Other [B]	5,540	–	8,485	–	7,802	–
Total Africa	41,451	–	57,105	–	64,391	–
North America						
USA	164,811	–	165,169	–	171,204	–
Canada	2,640	–	8,128	–	11,506	–
Total North America	167,451	–	173,297	–	182,710	–
South America						
Brazil	126,566	–	131,339	–	126,366	–
Other [B]	6,456	1,566	5,072	729	3,900	–
Total South America	133,022	1,566	136,411	729	130,266	–
Total	578,924	35,982	605,576	35,586	627,276	38,259

[A] Reflects 100% of production of subsidiaries except in respect of production-sharing contracts (PSCs), where the figures shown represent the entitlement of the subsidiaries concerned under those contracts.
[B] Comprises countries where 2021 production was lower than 10,100 thousand barrels or where specific disclosures are prohibited.

Synthetic crude oil

Thousand barrels

	2021	2020	2019
	Shell subsidiaries	Shell subsidiaries	Shell subsidiaries
North America – Canada	19,891	18,920	19,076

OIL AND GAS INFORMATION continued

Natural gas [A]

Million standard cubic feet

	2021		2020		2019	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe						
Denmark	–	–	–	–	24,433	–
Germany	36,798	–	35,918	–	41,846	–
Netherlands	–	159,107	–	131,648	–	244,286
Norway	178,577	–	187,627	–	182,683	–
UK	49,128	–	65,012	–	62,174	–
Other [B]	10,329	–	13,005	–	15,062	–
Total Europe	274,832	159,107	301,562	131,648	326,198	244,286
Asia						
Brunei	17,989	147,865	21,025	159,846	22,185	160,648
China	55,967	–	46,750	–	44,510	–
Kazakhstan	72,176	–	86,999	–	84,499	–
Malaysia	193,871	–	226,791	–	226,277	–
Philippines	34,361	–	40,549	–	44,374	–
Russia	4,113	125,973	4,301	142,418	4,563	134,807
Other [B]	413,382	118,397	411,979	118,153	407,899	118,253
Total Asia	791,859	392,235	838,394	420,417	834,307	413,708
Oceania						
Australia	696,562	19,272	633,580	20,646	686,956	20,840
Total Oceania	696,562	19,272	633,580	20,646	686,956	20,840
Africa						
Egypt	86,348	–	104,946	–	92,169	–
Nigeria	161,916	–	190,982	–	234,332	–
Other [B]	23,473	–	27,438	–	30,266	–
Total Africa	271,737	–	323,366	–	356,767	–
North America						
USA	198,578	–	255,383	–	389,130	–
Canada	116,423	–	164,451	–	220,005	–
Total North America	315,001	–	419,834	–	609,135	–
South America						
Bolivia	45,214	–	45,015	–	48,501	–
Brazil	72,107	–	73,914	–	78,526	–
Trinidad and Tobago	121,411	–	141,576	–	159,698	–
Other [B]	11,006	393	9,609	830	8,662	–
Total South America	249,738	393	270,114	830	295,387	–
Total	2,599,729	571,007	2,786,850	573,541	3,108,750	678,834

[A] Reflects 100% of production of subsidiaries except in respect of PSCs, where the figures shown represent the entitlement of the subsidiaries concerned under those contracts.
[B] Comprises countries where 2021 production was lower than 41,795 million scf or where specific disclosures are prohibited.

AVERAGE REALISED PRICE BY GEOGRAPHICAL AREA

Crude oil and natural gas liquids

$/barrel

	2021		2020		2019	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe	68.30	64.18	39.51	39.05	65.11	58.08
Asia	63.82	70.09	38.73	42.51	58.16	65.25
Oceania	63.56	–	21.29	–	51.51	–
Africa	70.89	–	41.23	–	65.39	–
North America – USA	62.75	–	34.17	–	54.56	–
North America – Canada	46.58	–	27.17	–	36.61	–
South America	64.28	56.91	36.01	37.28	56.68	–
Total	64.28	69.34	36.72	42.31	57.56	65.05

Synthetic crude oil

$/barrel

	2021	2020	2019
	Shell subsidiaries	Shell subsidiaries	Shell subsidiaries
North America – Canada	60.11	31.13	50.27

Natural gas

$/thousand scf

	2021		2020		2019	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe	10.71	9.86	3.66	3.76	5.59	4.95
Asia	2.54	6.91	1.88 [A]	4.19	2.66	6.34
Oceania	7.74	4.04	5.95 [A]	3.15	7.83 [A]	3.91
Africa	3.43	–	2.55	–	2.92	–
North America – USA	4.40	–	1.72	–	2.27	–
North America – Canada	2.70	–	1.61	–	1.37	–
South America	4.04	1.82	1.35	1.90	2.33	–
Total	5.39	7.60	2.99 [A]	4.06	3.95	5.80

[A] As revised, following a reassessment.

OIL AND GAS INFORMATION continued

AVERAGE PRODUCTION COST BY GEOGRAPHICAL AREA

Crude oil, natural gas liquids and natural gas [A]

$/boe

	2021		2020		2019	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe	21.48	8.59	20.05 [B]	11.44	14.14	5.76
Asia	5.66	7.64	5.54	6.83	6.30	6.17
Oceania	9.26	24.68	8.92	20.23	9.17	24.49
Africa	11.47	–	9.43	–	8.44	–
North America – USA	10.88	–	12.50	–	11.78	–
North America – Canada	10.64	–	10.52	–	11.88	–
South America	5.80	5.51	5.18 [B]	9.18 [B]	6.33 [B]	–
Total	9.12	8.23	9.10 [B]	8.02 [B]	8.95	6.48

[A] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.
[B] As revised, following a reassessment.

Synthetic crude oil

$/barrel

	2021	2020	2019
	Shell subsidiaries	Shell subsidiaries	Shell subsidiaries
North America – Canada	18.87	18.28	19.29

OIL PRODUCTS

Key statistics

	$ million, except where indicated		
	2021	2020	2019
Segment earnings/(loss) [A]	2,664	(494)	6,139
Including:			
Revenue (including inter-segment sales)	194,734	134,930	288,279
Share of profit of joint ventures and associates	765	988	1,179
Interest and other income	328	(93)	273
Operating expenses [B]	14,376	13,511	15,730
Underlying operating expenses [B]	14,272	12,970	15,590
Depreciation, depletion and amortisation	5,657	10,473	4,461
Taxation charge/(credit)	751	(898)	1,319
Identified Items [B]	(1,280)	(6,489)	(93)
Adjusted Earnings [B]	3,944	5,995	6,231
Adjusted EBITDA (CCS basis) [B]	8,821	10,421	11,779
Capital expenditure	3,705	3,236	4,654
Cash capital expenditure [B]	3,868	3,328	4,907
Refinery utilisation (%)	72	72	78
Refinery processing intake (thousand b/d)	1,639	2,063	2,564
Oil Products sales volumes (thousand b/d)	4,459	4,710	6,561

[A] See Note 5 to the "Consolidated Financial Statements" on pages 245-248. Segment earnings are presented on a current cost of supplies basis.
[B] See "Non-GAAP measures reconciliations" on pages 326-329.

OVERVIEW

Our Oil Products business is part of an integrated value chain that refines crude oil and other feedstocks into products that are moved and marketed around the world for domestic, industrial and transport use. The products we sell include low-carbon fuels, lubricants, bitumen, sulphur, gasoline, diesel, heating oil, aviation fuel and marine fuel. We provide access to electric vehicle charge points at home, at work and on-the-go, including at our fuel and convenience retail site forecourts and at a range of public locations. We also trade crude oil, oil products and petrochemicals.

Our Oil Products activities comprise Marketing and Refining & Trading. These are sub-segments of Oil Products that are made up of various classes of business. Marketing includes Retail, Lubricants, Business-to-Business (B2B), Low-Carbon Fuels (biofuels and renewable natural gas (RNG)), our interests in the Raizen JV, and Pipelines. In Trading and Supply, we trade crude oil, low-carbon fuels, oil products and petrochemicals to optimise feedstocks for Refining, to supply our Marketing businesses and third parties, and for our own profit. The Oil Products business also manage Oil Sands activities – the extraction of bitumen from mined oil sands and its conversion into synthetic crude oil.

BUSINESS CONDITIONS

Global oil product demand rose by 5.6 million barrels per day (b/d) in 2021 to 97.4 million b/d, after a sharp drop of around 8.5 million b/d in 2020, according to the IEA. The rebound was supported by successful vaccine roll-outs, especially in developed economies such as the USA, UK and EU. Road mobility has largely returned to pre-pandemic levels, with COVID-19 travel restrictions being lifted and more people switching from public transport to cars. Air travel has begun to recover, but is still around 20-30% below pre-pandemic levels. This is probably attributable to remaining cross-border travel restrictions and public hesitancy about air travel during a global pandemic. Mirroring the broad economic recovery, demand for naphtha, LPG and ethane also picked up.

Gross refining margins improved during 2021, especially during the second and third quarters. This is because demand for oil products recovered significantly as economies rebounded and transport use increased with the easing of COVID-19 travel restrictions. Demand for kerosene for aviation remained below pre-pandemic levels because varying levels of international travel restrictions remained in place in 2021. Despite the Omicron variant of COVID-19, demand recovery continued during the fourth quarter.

Industry utilisation showed some recovery, but in 2021 there were further announcements that refineries would fully or partially close on a permanent basis. Construction of new capacity continued during the year, especially in the Middle East and Asia.

See "Market overview" on pages 42-44.

REFINERY UTILISATION

Utilisation is defined as the actual usage of the plants as a percentage of the rated capacity.

Utilisation remained at 72%, unchanged from 2020.

OIL PRODUCTS SALES

Oil Products sales volumes decreased by 5% in 2021 compared with 2020. The decrease was largely driven by lower Trading volumes, partly offset by higher Marketing volumes.

EARNINGS 2021-2020

Segment earnings in 2021 were $2,664 million, 639% higher than in 2020. Earnings in 2021 included a net charge of $1,280 million, compared with a net charge of $6,489 million in 2020 which is described at the end of this section.

OIL PRODUCTS continued

Excluding the impact of the net charges (described below), earnings in 2021 were $3,944 million, compared with $5,995 million in 2020. Marketing accounted for 106% of these 2021 earnings, Refining for (36)% and Trading and Supply for 30%.

Oil Products earnings, excluding the net charge, decreased by $2,051 million, or 34% compared with 2020. This was driven by lower contributions from trading and optimisation (around $1,100 million), higher operating expenses (around $1,000 million) and other items, mainly unfavourable deferred tax movements (around $1,100 million), partly offset by higher Marketing volumes (around $700 million) and higher Oil Sands margins (around $500 million).

The decrease in earnings of $2,051 million, analysed by sub-segment, was as follows:
- Marketing earnings were $379 million lower than in 2020, mainly driven by higher operating expenses. These were partially offset by higher sales volumes.
- Refining and trading earnings were $1,671 million lower than in 2020, mainly because of lower contributions from trading and optimisation, higher operating expenses and unfavourable deferred tax movements. These were partly offset by higher refining margins, higher Oil Sands margins due to increased average realised prices and lower depreciation.

Segment earnings in 2021 included a net charge of $1,280 million.

This included:
- impairment charges of $1,619 million mainly related to the divestment of Puget Sound and Deer Park refineries in the USA;
- redundancy and restructuring costs of $62 million (mainly the cost of Reshape 2020-2021, partly offset by Bukom transformation provision release); and
- other net charges of $32 million;

These charges were partly offset by:
- net gains from disposal of assets of $291 million mainly related to the dilution of interest in the Raízen joint venture; and
- a net gain of $142 million due to the fair value accounting of commodity derivatives.

Segment earnings in 2020 included a net charge of $6,489 million.

This included:
- impairment charges of $5,530 million across sites, reflecting revisions to medium- and long-term price outlook assumptions in light of: changes in supply and demand fundamentals in the energy market; macroeconomic conditions; the COVID-19 pandemic; impairment and transformation charges at Pulau Bukom; and the shutdown of Convent;
- restructuring costs of $365 million (mainly shutdown of Convent, Pulau Bukom transformation and various initiatives across Oil Products);
- other net charges of $552 million (mainly onerous contract provisions due to shutdown of Convent); and
- a net charge of $101 million due to the fair value accounting of commodity derivatives.

These charges were partly offset by net gains from disposal of assets of $59 million.

PRIOR YEAR EARNINGS SUMMARY

Our earnings summary for the financial year ended December 31, 2020, compared with the financial year ended December 31, 2019, can be found in the Annual Report and Accounts (page 71) and Form 20-F (page 52) for the year ended December 31, 2020, as filed with the Registrar of Companies for England and Wales and the US Securities and Exchange Commission, respectively.

CASH CAPITAL EXPENDITURE

Cash capital expenditure (cash capex) was $3.9 billion in 2021, compared with $3.3 billion in 2020.

Cash capital expenditure in Marketing increased by $0.3 billion mainly because of higher spend in growth projects relating to biofuels and retail. In Refining and trading, cash capital expenditure increased by $0.2 billion due to turnarounds. Our cash capital expenditure is expected to be around $7 billion to $8 billion in 2022.

PORTFOLIO AND BUSINESS DEVELOPMENTS

Significant portfolio and business developments in 2021 included:
- In July 2021, we announced the start-up of Europe's largest polymer electrolyte membrane hydrogen electrolyser at the Shell Energy and Chemicals Park Rheinland, Germany, producing green hydrogen (hydrogen produced from renewable energy sources).
- In July 2021, our subsidiary Shell Deutschland reached an agreement for the sale of its non-operated 37.5% shareholding in the PCK Schwedt Refinery, 120 km north-east of Berlin, Germany.
- In August 2021, trading in shares of Raízen S.A., our joint venture (Shell interest 44%), began on the São Paulo Stock Exchange (B3) in Brazil, after a successful initial public offering.
- In September 2021, we announced a final investment decision to build an 820,000-tonnes-a-year biofuels facility at the Energy and Chemicals Park Rotterdam, the Netherlands, which was formerly known as the Pernis refinery.
- In October 2021, we signed an agreement to acquire the retail gas station network (including gas stations, convenience retail and dealer supply agreements) from the Landmark group of companies, a Texas-based fuel retail and convenience retailing business. Subject to the satisfaction of closing conditions, the deal expected to be completed in the first half of 2022.
- In January 2022, our subsidiary Shell Oil Company completed the sale of its interest in Deer Park Refining Limited Partnership, in Texas, USA. This was a 50:50 joint venture between Shell Oil Company and P.M.I. Norteamerica, S.A. De C.V. (a subsidiary of Petróleos Mexicanos, or Pemex). The transaction transferred Shell's interest in the partnership, and with it full ownership of the refinery, to Pemex. The agreement for sale of its interest was reached in May 2021. Shell Chemical L.P. continues to operate its 100% owned Deer Park Chemicals facility located adjacent to the site.
- In February 2022, we have made a non-binding offer to purchase all remaining common units held by the public representing limited partner interests in Shell Midstream Partners, L.P. for $12.89 per common unit in cash. The proposed transaction is subject to a number of contingencies, including the approval of the board of directors of Shell Midstream Partners, L.P. and the satisfaction of any conditions to the consummation of a transaction set forth in any definitive agreement concerning the transaction.

BUSINESS AND PROPERTY

Marketing

Mobility

Shell is the world's largest mobility retailer, by number of sites, with more than 46,000 service stations operating in more than 70 countries at the end of 2021. We operate different models across these markets, from full ownership of retail sites through to brand licensing agreements.

Every day, around 32 million customers visit these sites to buy fuel, convenience items including beverages and fresh food, and services such as lubricant changes and car washes. We offer our business customers Shell Fleet Solutions, through which they can obtain items including fuel cards, road services and carbon-offset offers. At the end of 2021, Shell operated 12,400 convenience stores worldwide and we expect to grow this number to 15,000 by 2025.

We have more than 100 years' experience in fuel development. Aided by our partnership with Scuderia Ferrari, we have concentrated on developing fuels with special formulations designed to clean engines and improve performance. We sold such fuels under the Shell V-Power brand in 66 countries in 2021.

In a growing number of markets, we are offering customers lower-emission products and services, including biofuels, electric vehicle fast charging, hydrogen and various gaseous fuels such as LNG. In eight markets, including the UK and the Netherlands, Shell Mobility provides customers with the opportunity to offset their carbon emissions.

Shell Mobility offers electric vehicle (EV) customers nearly 8,000 public charge points at Shell stations, on-street and at destinations like supermarkets. In addition, Shell Renewables and Energy Solutions operates around 80,000 private charge points and offers customers access to more than 300,000 charge points through its growing roaming networks in Europe, North America and South East Asia.

In 2021, Shell, Waitrose and Partners in the UK, and REWE and Penny supermarkets in Germany, announced the intention to install hundreds of charge points over the coming years. In January 2022, Shell opened its first EV charging hub in the UK in Fulham, London, where petrol and diesel pumps at an existing fuel station have been replaced with charge points. Shell Fulham features nine high-powered, ultra-rapid 175 kW charge points.

In 2021, Shell Mobility introduced a new premium fresh coffee and food offer, called Shell Café. The launch of Shell Café provides a consistent brand for drivers visiting Shell stations and addresses the evolving needs of customers with enhanced customer facilities and new on-site service offerings. By the end of 2021, there were 800 conversions across 14 markets in Europe with plans to expand to other regions in 2022.

We have around 50 hydrogen retail sites in Europe and North America, where drivers can fill up their vehicles with hydrogen fuel.

Lubricants

Shell Lubricants has been the number one global finished lubricants supplier in terms of market share for 15 consecutive years, according to Kline & Company data for 2021. Across more than 160 markets, we produce, market and sell technically advanced lubricants for passenger cars, motorcycles, trucks, coaches, and machinery used in manufacturing, mining, power generation, agriculture and construction.

We also make premium lubricants for conventional vehicles and Shell E-fluids for electric vehicles using gas-to-liquids (GTL) base oils that are made from natural gas at our Pearl GTL plant in Qatar (see "Integrated Gas" on pages 45-49).

We have a global lubricants supply chain with a network of four base oil manufacturing plants, 33 lubricant blending plants, eight grease plants and six GTL base oil storage hubs.

Through our marine activities, we primarily provide the shipping and maritime sectors with lubricants. We also provide fuels, chemical products and related technical and digital services. We supply more than 200 grades of lubricants and seven types of fuel to vessels worldwide, ranging from large ocean-going tankers to small fishing boats.

Business-to-business

Our Business-to-business (B2B) activities encompass the sale of fuels, speciality products and services to a broad range of commercial customers.

Shell Aviation provides aviation fuel, lubricants and low-carbon solutions globally. In 2021, we took a final investment decision to build a new biofuels facility at the Shell Energy and Chemicals Park Rotterdam. This will be among the largest in Europe producing sustainable aviation fuel (SAF). We announced plans to produce SAF at our energy and chemicals parks in Germany and Singapore. We also invested in LanzaJet, a leading sustainable fuels technology company.

Shell Bitumen supplies customers across 60 markets and provides enough bitumen to resurface 500 kilometres of road lanes every day. It also invests in research and development to create innovative products.

Shell Sulphur Solutions is a business that manages the complete value chain of sulphur, from refining to marketing. The business provides sulphur for use in applications such as fertiliser, mining and chemicals. The business also licenses Shell Thiogro technologies to create innovative and custom sulphur-enhanced fertilisers.

Low-carbon fuels

Biofuels

In 2021, around 9.1 billion litres of biofuels went into Shell's fuels worldwide, which includes sales made by Raízen, our joint venture in Brazil (Shell interest 44%, not operated by Shell).

Raízen produced around 2.5 billion litres of ethanol and around four million tonnes of sugar from sugar cane in 2021. The cellulosic ethanol plant at Raízen's Costa Pinto mill in Brazil produced 19 million litres of ethanol in 2021.

In February 2021, Raízen announced the acquisition of Biosev, adding a further 50% of production capacity in low-carbon fuels. We believe this will allow Raízen to increase its bioethanol production capacity to 3.75 billion litres a year. The transaction contributes to Shell's target to be a net-zero emissions energy business by 2050, in step with society.

OIL PRODUCTS continued

RNG
Renewable natural gas (RNG), also known as biogas or biomethane, is gas derived from processing organic waste in a controlled environment until it is fully interchangeable with conventional natural gas.

In September 2021, we opened our first US renewable natural gas production facility in Junction City, Oregon. The plant uses locally sourced cow manure and agricultural residues to produce low-carbon fuel for heavy-duty road transport. We opened our first renewable compressed natural gas (R-CNG) fuelling site in the USA at our products distribution complex in Carson, California. The R-CNG is sourced from Shell's portfolio of anaerobic digestion projects.

In Europe, we are offering liquefied renewable natural gas (bio-LNG) to customers with trucks powered by natural gas. In 2021, in collaboration with Nordsol, we opened our first European bio-LNG plant, in Amsterdam Westpoort, in the Netherlands. This will make us the first fuel provider to offer a blend of bio-LNG throughout the entire LNG network in the Netherlands.

Midstream
Shell Pipeline Company LP (Shell interest 100%) operates eight tank farms across the USA. It owns all the interest in one tank farm, and has majority-ownership interests in the other seven through its subsidiaries. It transports around 2 billion barrels of crude oil and refined products a year through around 6,000 kilometres of pipelines in the Gulf of Mexico and five US states. Our various non-Shell-operated ownership interests provide a further 13,000 kilometres of pipeline.

We carry more than 40 types of crude oil and more than 20 grades of fuel and chemicals, including gasoline, diesel, aviation fuel, chemicals and ethylene.

Shell Midstream Partners, L.P., a master limited partnership that is headquartered in Houston, Texas; owns, operates, develops and acquires pipelines and other midstream and logistics assets. The Partnership's assets include interests in entities that own (a) crude oil and refined products pipelines and terminals that serve as key infrastructure to transport onshore and offshore crude oil production to Gulf Coast and Midwest refining markets and deliver refined products from those markets to major demand centers and (b) storage tanks and financing receivables that are secured by pipelines, storage tanks, docks, truck and rail racks and other infrastructure used to stage and transport intermediate and finished products. The Partnership's assets also include interests in entities that own natural gas and refinery gas pipelines that transport offshore natural gas to market hubs and deliver refinery gas from refineries and plants to chemical sites along the Gulf Coast. Shell controls the General Partner of Shell Midstream Partners.

See "Governance – Related Party Transactions" on page 201 for information on transactions between Shell and Shell Midstream Partners, L.P.

Refining and trading
Refining
We have interests in 10 refineries worldwide, with a capacity to process a total of 1.6 million barrels of crude oil per day. The distribution of our refining capacity is 52% in Europe and Africa, 34% in the Americas and 14% in Asia.

Shell's Refining business is transforming. We are concentrating our refineries portfolio to meet our strategic aims and to capitalise on the strong integration between our customers, trading operations, chemical plants and, increasingly, our low-carbon fuels output. We are transforming our refining sites into five energy and chemicals parks. These are expected to be Rotterdam in the Netherlands, Rheinland in Germany, Pulau Bukom in Singapore, Norco in Louisiana, USA, and Scotford in Alberta, Canada.

Transforming our refinery business will mean developing new facilities and converting or dismantling existing units. We plan to process less crude oil and use more renewable and recycled feedstocks such as hydrogen, biofuels and plastic waste.

In 2021, we completed the sale of the Puget Sound refinery near Anacortes, Washington, USA, to a subsidiary of HollyFrontier Corporation. We also completed the sale of Fredericia refinery, Denmark.

Trading and Supply
Through our main trading offices in London, Houston, Singapore and Rotterdam, we trade crude oil, low-carbon fuels, refined products, chemical feedstocks and environmental products. Trading and Supply trades in physical and financial contracts, lease storage and transportation capacities, and manages shipping and wholesale commercial fuel activities globally.

Operating in around 25 countries, with about 130 Shell and joint-venture terminals, we believe our supply and distribution infrastructure is well positioned to make deliveries around the world.

Shipping and Maritime enables the safe delivery of the Shell Trading and Supply contracts. This includes supplying feedstocks for our refineries and chemical plants, and finished products such as gasoline, diesel and aviation fuel to our Marketing businesses and customers.

Shell Wholesale Commercial Fuels provides fuels for transport, industry and heating ranging from reliable main-grade fuels to premium products.

Oil Sands
Synthetic crude oil is produced by mining bitumen-saturated sands, extracting the bitumen, and transporting it to a processing facility where hydrogen is added to make a wide range of feedstocks for refineries. The Athabasca Oil Sands Project (AOSP) in Alberta, Canada, includes the Albian Sands mining and extraction operations, the Scotford upgrader and the Quest carbon capture and storage (CCS) project.

We have a 50% interest in 1745844 Alberta Ltd. (formerly known as Marathon Oil Canada Corporation), which holds a 20% interest in the Athabasca Oil Sands Project.

BUSINESS ACTIVITIES WITH SYRIA AND CUBA
Syria
We ceased all operational activities in Syria in 2011.

Cuba
We do not have any operational activities in Cuba.

OIL PRODUCTS DATA TABLES
The tables below reflect Shell subsidiaries and instances where Shell owns the crude oil or feedstocks processed by a refinery. The tables include Fredericia refinery until the date of divestment in June 2021 and Puget Sound refinery until the date of divestment in October 2021. Other joint ventures and associates are only included where explicitly stated.

Oil Products sales volumes [A][B]

Thousand b/d

	2021	2020	2019
Europe			
Retail	360	344	410
Lubricants	17	15	16
Other Marketing	120	107	178
Refining & Trading	426	472	1,183
Total	923	938	1,787
Asia			
Retail	512	475	535
Lubricants	46	35	36
Other Marketing	103	106	169
Refining & Trading	870	974	1,260
Total	1,531	1,590	2,000
Africa			
Retail	45	40	45
Lubricants	3	3	3
Other Marketing	7	7	11
Refining & Trading	47	70	78
Total	102	120	137
Americas			
Retail	828	782	924
Lubricants	25	24	27
Other Marketing	367	338	450
Refining & Trading	683	918	1,236
Total	1,903	2,062	2,637
Total product sales [C][D]			
Retail	1,745	1,641	1,914
Lubricants	91	77	82
Other Marketing	597	558	808
Refining & Trading	2,026	2,434	3,757
Total	4,459	4,710	6,561

[A] Excludes deliveries to other companies under reciprocal sale and purchase arrangements, that are in the nature of exchanges. Sales of condensate and natural gas liquids are included.
[B] Includes the Shell share of Raízen's sales volumes.
[C] Certain contracts are held for trading purposes and reported net rather than gross. The effect in 2021 was a reduction in oil product sales of approximately 1,127 thousand b/d (2020: 1,284 thousand b/d; 2019: 546 thousand b/d). With effect from January 1, 2020, certain contracts held for trading purposes and reported net for Europe and Asia regions are consolidated in Europe.
[D] Reported volumes include the Shell joint ventures' sales volumes from key countries.

Branded retail sites [A]

	2021	2020	2019
Europe	8,178	8,071	7,978
Asia [B]	10,753	10,387	10,138
Oceania [B]	1,060	1,071	1,038
Africa	2,724	2,622	2,494
Americas [C]	23,305	23,461	23,021
Total	46,020	45,612	44,669

[A] Excludes sites closed for more than six months.
[B] Asia includes Turkey and Russia; Oceania includes French Polynesia, Guam, Palau and New Caledonia.
[C] Includes around 7,500 retail sites operated by Raizen joint venture.

Oil products – cost of crude oil processed or consumed [A]

$/barrel

	2021	2020	2019
Total	60.51	35.03	54.97

[A] Includes Upstream and Integrated Gas margins on crude oil supplied by Shell subsidiaries, joint ventures and associates.

Crude distillation capacity [A]

Thousand b/stream day [B]

	2021	2020	2019
Europe	1,023	1,059	1,057
Asia	307	573	767
Africa	90	90	90
Americas	729	1,028	1,171
Total	2,149	2,750	3,085

[A] Average operating capacity for the year, excluding mothballed capacity.
[B] Stream day capacity is the maximum capacity with no allowance for downtime.

Oil products – crude oil processed [A]

Thousand b/d

	2021	2020	2019
Europe	761	810	829
Asia	223	292	498
Africa	57	54	55
Americas	455	719	1,004
Total	1,496	1,875	2,386

[A] Includes natural gas liquids, share of joint ventures and associates and processing for others.

Refinery processing intake [A]

Thousand b/d

	2021	2020	2019
Crude oil	1,496	1,876	2,342
Feedstocks	143	187	222
Total	1,639	2,063	2,564
Europe	806	854	875
Asia	225	302	517
Africa	57	54	55
Americas	551	853	1,117
Total	1,639	2,063	2,564

[A] Includes crude oil, natural gas liquids and feedstocks processed in crude distillation units and in secondary conversion units.

Refinery processing outturn [A]

Thousand b/d

	2021	2020	2019
Gasolines	624	771	952
Kerosines	141	158	417
Gas/Diesel oils	611	774	818
Fuel oil	108	140	223
Other	258	279	282
Total	1,742	2,122	2,692

[A] Excludes own use and products acquired for blending purposes.

OIL PRODUCTS continued

MANUFACTURING PLANTS AT DECEMBER 31, 2021

Refineries in operation

				Thousand barrels/stream day, 100% capacity [B]			
	Location	Asset class	Shell interest (%) [A]	Crude distillation capacity	Thermal cracking/ visbreaking/ coking	Catalytic cracking	Hydro-cracking
Europe							
Germany	Miro [C]		32	313	40	96	–
	Rheinland	■●	100	354	49	–	90
	Schwedt [C]		38	233	45	59	–
Netherlands	Pernis	■●	100	444	–	53	104
Asia							
Singapore	Pulau Bukom	■●	100	307	55	–	61
Africa							
South Africa	Durban [C]	○	36	180	25	37	–
Americas							
Argentina	Buenos Aires [C]	●○	44	108	20	22	–
Canada							
Alberta	Scotford	○	100	100	–	–	83
Ontario	Sarnia	○	100	85	5	21	10
USA							
Louisiana	Norco	■	100	250	29	119	44
Texas	Deer Park [D]	■●	50	340	96	75	60

[A] Shell interest is rounded to the nearest whole percentage point; Shell share of production capacity may differ.
[B] Stream day capacity is the maximum capacity with no allowance for downtime.
[C] Not operated by Shell.
[D] The sale of Deer Park refinery concluded in January 2022.

■ Integrated refinery and chemical complex
● Refinery complex with cogeneration capacity
○ Refinery complex with chemical unit(s)

CHEMICALS

Key statistics

	$ million, except where indicated		
	2021	2020	2019
Segment earnings [A]	1,390	808	478
Including:			
Revenue (including inter-segment sales)	23,355	14,571	17,485
Share of profit of joint ventures and associates	609	567	546
Interest and other income	(14)	–	(7)
Operating expenses [B]	3,335	3,235	3,430
Underlying operating expenses [B]	3,256	3,035	3,104
Depreciation, depletion and amortisation	1,520	1,116	1,074
Taxation charge/(credit)	(41)	7	(2)
Identified Items [B]	(364)	(154)	(263)
Adjusted Earnings [B]	1,753	962	741
Adjusted EBITDA (CCS basis) [B]	2,959	2,131	1,891
Capital expenditure	3,504	2,608	4,068
Cash capital expenditure [B]	3,573	2,640	4,090
Chemical plant utilisation (%)	78	80	76
Chemicals sales volumes (thousand tonnes)	14,216	15,036	15,223

[A] See Note 5 to the "Consolidated Financial Statements" on pages 245-248. Segment earnings are presented on a current cost of supplies basis.
[B] See "Non-GAAP measures reconciliations" on pages 326-329.

OVERVIEW

Our Chemicals business supplies customers with a range of base and intermediate chemicals to make products that people use every day. We also have major manufacturing plants that are located close to refineries, and our own marketing network.

BUSINESS CONDITIONS

Cracker margins were volatile in 2021. This was because of supply interruptions and demand increases as COVID-19 lockdown restrictions eased. Overall margins were higher than in 2020, except in Asia. Chinese demand recovered quickly from the pandemic, but petrochemical supply was constrained by power restrictions that affected manufacturing centres, logistics issues within China because of COVID-19, and global logistics issues. Asia cracker margins were down slightly from 2020 because of the balance of supply and demand, and rising prices for energy, crude oil and naphtha feedstock. US ethane cracker margins were supported by disruption due to winter storm Uri in February and March and to a lesser extent by interruptions caused by Hurricane Ida in August and September. West European cracker margins were supported by the US weather events and strong domestic demand, which offset rising crude and natural gas prices for the majority of 2021.

The outlook for petrochemical margins in 2022 and beyond depends on feedstock costs and the balance of supply and demand. Demand for petrochemicals will be affected by the spread of COVID-19 as new variants emerge, and the extent of recovery from the pandemic. Supply of petrochemicals will depend on the net capacity effect of new builds and plant closures (taking into account any delays or cancellations in building new plants or closing old ones). Product prices reflect the prices of raw materials, which are closely linked to crude oil and natural gas prices. The balance of all these factors will drive margins.

See "Market overview" on pages 42-44.

CHEMICAL PLANT UTILISATION

Utilisation is defined as the actual usage of the plants as a percentage of the rated capacity.

Chemicals manufacturing plant utilisation was 78% in 2021 compared with 80% in 2020. The change was mainly because of the impact of Hurricane Ida in the USA in 2021 and an extended turnaround.

CHEMICALS SALES

In 2021, Chemicals sales volumes were 14,216 thousand tonnes, which was 5% lower than 2020 sales volumes of 15,036 thousand tonnes, as a result of the impact of Hurricane Ida in the USA.

EARNINGS 2021-2020

Segment earnings in 2021 of $1,390 million were 72% higher than in 2020. Earnings in 2021 included a net charge of $364 million, compared with a net charge in 2020 of $154 million, which is described below.

Excluding the impact of these charges, earnings in 2021 were $1,753 million, compared with $962 million in 2020.

Chemicals earnings, excluding the net charges (described below), increased by $792 million, or 82%, compared with 2020. This was driven by higher margins in base chemicals and intermediates (around $800 million) from a stronger price environment, and favourable deferred tax movements (around $200 million), partly offset by higher operating expenses (around $200 million) driven by the impact of Hurricane Ida.

Segment earnings in 2021 included a net charge of $364 million.

This included:
- impairment charges of $301 million (mainly due to divestment of the Mobile and Deer Park refineries in the USA and the closure of a production unit on Jurong Island, Singapore);
- redundancy and restructuring costs of $21 million;
- other net charges of $38 million (mainly legal provision); and
- net loss from disposal of assets of $12 million.

These charges were partly offset by a net gain from fair value accounting of commodity derivatives of $8 million.

Segment earnings in 2020 included a net charge of $154 million.

CHEMICALS continued

This included:
- impairment charges of $4 million;
- costs related to restructuring of $38 million (various initiatives across Chemicals);
- net loss from disposal of assets of $1 million; and
- other net charges of $115 million (mainly legal provision).

These charges were partly offset by a net gain from fair value accounting of commodity derivatives of $4 million.

PRIOR YEAR EARNINGS SUMMARY

Our earnings summary for the financial year ended December 31, 2020, compared with the financial year ended December 31, 2019, can be found in the Annual Report and Accounts (page 77) and Form 20-F (page 57) for the year ended December 31, 2020, as filed with the Registrar of Companies for England and Wales and the US Securities and Exchange Commission, respectively.

CASH CAPITAL EXPENDITURE

Cash capital expenditure (cash capex) was $3.6 billion in 2021, compared with $2.6 billion in 2020.

Cash capital expenditure increased by $1.0 billion, mainly because of spend on the construction of our cracker facilities in Pennsylvania. Our cash capital expenditure is expected to be around $2 billion to $3 billion in 2022.

BUSINESS AND PROPERTY

Manufacturing

Our plants produce a range of base chemicals, including ethylene, propylene and aromatics, and intermediate chemicals such as styrene monomer, propylene oxide, solvents, detergent alcohols, ethylene oxide and ethylene glycol. We have the capacity to produce around 6.5 million tonnes of ethylene a year. We are expanding our product portfolio to include sustainable chemicals, more intermediates and performance chemicals such as polyethylene and polycarbonate. We operate chemical plants worldwide and have a global balance of locations, feedstocks and products that allows us to seize commercial opportunities and get through cycles of lower margins.

Shell's Chemicals business is transforming and has integrated further with our Refining business. In addition to our standalone, chemicals-only production sites, we are transforming our refineries into five energy and chemicals parks. We expect this to happen at the following sites: Norco in the USA, Scotford in Canada, Rotterdam in the Netherlands, Rheinland in Germany and Pulau Bukom in Singapore. The energy and chemicals parks are expected to focus more on meeting customers' low-carbon and sustainability needs.

Marketing

In 2021, we supplied more than 14 million tonnes of petrochemicals to more than 1,000 industrial customers worldwide. Products made from chemicals are used in everyday life in medical equipment, construction, transport, electronics, agriculture and sports. As global demand for chemicals increases, we plan to increase the size of our business, by understanding and responding to our customers' needs.

BUSINESS ACTIVITIES WITH SYRIA

We ceased supplying polyols, via a Netherlands-based distributor, to private-sector customers in Syria in 2018. Polyols are commonly used for the production of foam in mattresses and soft furnishings.

CHEMICALS DATA TABLES

The tables below reflect Shell subsidiaries and instances where Shell owns the crude oil or feedstocks processed by a refinery. Other joint ventures and associates are only included where explicitly stated.

Ethylene capacity [A]

Thousand tonnes/year

	2021	2020	2019
Europe	1,726	1,701	1,701
Asia	2,542	2,530	2,530
Americas	2,321	2,268	2,268
Total	6,589	6,499	6,499

[A] Includes the Shell share of capacity entitlement (offtake rights) of joint ventures and associates, which may be different from nominal equity interest. Nominal capacity is quoted at December 31.

Chemicals sales volumes [A]

Thousand tonnes/year

	2021	2020	2019
Europe			
Base chemicals	3,883	3,490	3,666
Intermediates and other chemicals products	2,076	1,990	1,872
Total	5,959	5,480	5,538
Asia			
Base chemicals	1,354	1,192	1,057
Intermediates and other chemicals products	2,656	2,969	2,848
Total	4,010	4,161	3,905
Americas			
Base chemicals	1,984	2,936	3,261
Intermediates and other chemicals products	2,263	2,459	2,519
Total	4,247	5,395	5,780
Total product sales			
Base chemicals	7,221	7,618	7,984
Intermediates and other chemicals products	6,995	7,418	7,239
Total	14,216	15,036	15,223

[A] Excludes feedstock trading and by-products.

Major chemical plants in operation [A]

		Thousand tonnes/year, Shell share capacity [B]				
	Location	Ethylene	Styrene monomer	Ethylene glycol	Higher olefins [C]	Additional products
Europe						
Germany	Rheinland	340	–	–	–	A
Netherlands	Moerdijk	971	815	153	–	A I
UK	Mossmorran [D]	415	–	–	–	O
Asia						
China	Nanhai [D]	1,100	645	415	–	A I P
Singapore	Jurong Island [E]	281	1,069	1,081	–	A I P O
	Pulau Bukom	1,161	–	–	–	A I
Americas						
Canada	Scotford	–	475	461	–	A I
USA	Deer Park	889	–	–	–	A I
	Geismar	–	–	400	1,390	I
	Norco	1,432	–	–	–	A
Total		6,589	3,004	2,510	1,390	

[A] Major chemical plants are large integrated chemical facilities, typically producing a range of chemical products from an array of feedstocks, and are a core part of our global Chemicals business.
[B] Shell share of capacity of subsidiaries, joint arrangements and associates (Shell- and non-Shell-operated), excluding capacity of the Infineum additives joint ventures.
[C] Higher olefins are linear alpha and internal olefins (products range from C4 to C2024).
[D] Not operated by Shell
[E] The polyethylene, polypropylene and olefins production mentioned refers to Shell share of capacity of our non-operated joint ventures Petchem Corporation of Singapore (PCS) and The Polyolefin Company (TPC) which are on Jurong Island.

A Aromatics, lower olefins
I Intermediates
P Polyethylene, polypropylene
O Other

Other chemical locations [A]

	Location	Products
Europe		
Germany	Karlsruhe	A
	Schwedt	A
Netherlands	Rotterdam	A I O
Americas		
Argentina	Buenos Aires	I
Canada	Sarnia	A I
USA	Mobile	A
	Puget Sound	I

[A] Other chemical locations reflect locations with smaller chemical units, typically serving more local markets.

A Aromatics, lower olefins
I Intermediates
O Other

CORPORATE

Earnings

$ million

	2021	2020	2019
Segment earnings	(2,606)	(2,952)	(3,273)
Comprising:			
Net interest [A]	(2,701)	(2,991)	(3,080)
Taxation and other [B]	96	39	(194)
Identified Items	81	460	109
Adjusted Earnings	(2,686)	(3,412)	(3,383)

[A] Mainly Shell's interest expense (excluding accretion expense) and interest income.
[B] Other earnings mainly comprise net foreign exchange gains and losses on financing activities, headquarters and central functions' costs not recovered from business segments, and net gains on sale of properties.

OVERVIEW

The Corporate segment covers the non-operating activities supporting Shell. It comprises Shell's holdings and treasury organisation, self-insurance activities and headquarters and central functions. All finance expense and income and related taxes are included in Corporate segment earnings rather than in the earnings of business segments.

The holdings and treasury organisation manages many of the Corporate entities. It is the point of contact between Shell and external capital markets, conducting a wide range of transactions, such as raising debt instruments and transacting foreign exchange. Treasury centres in London and Singapore support these activities.

Headquarters and central functions provide business support in communications, finance, health, human resources, information technology (IT), legal services, real estate and security. They also provide support for shareholder-related activities. The central functions are supported by business service centres, which process transactions, manage data and produce statutory returns, among other services. Most headquarters and central-function costs are recovered from the business segments. Costs that are not recovered are retained in Corporate.

EARNINGS 2021-2020

Segment earnings in 2021 were an expense of $2,606 million, compared with $2,952 million in 2020.

Net interest decreased by $289 million in 2021 compared with 2020. This was primarily due to a decrease in interest expense following debt repayments and a reduction in interest expense on lease liabilities, partly offset by a reduction in interest income generated on cash balances.

Taxation and other earnings increased by $58 million in 2021, compared with 2020. This largely reflected a foreign exchange gain arising from favourable exchange rate movements and lower financing expenses from joint ventures and associates, partly offset by unfavourable deferred tax impacts due to the weakening Brazilian real on financing positions.

PRIOR YEAR EARNINGS SUMMARY

Our earnings summary for the financial year ended December 31, 2020, compared with the financial year ended December 31, 2019, can be found in the Annual Report and Accounts (page 80) and Form 20-F (page 60) for the year ended December 31, 2020, as filed with the Registrar of Companies for England and Wales and the US Securities and Exchange Commission, respectively.

SELF-INSURANCE

We mainly self-insure our hazard risk exposures. Our Group insurance companies are adequately capitalised to meet self-insurance obligations and respective regulations, though they may transfer risks to third-party insurers where economical, effective and relevant (see "Risk factors" on page 30). We continually assess the safety performance of our operations and make risk mitigation recommendations, where relevant, to minimise the risk of an accident.

INFORMATION TECHNOLOGY AND CYBER SECURITY

Given our digitalisation efforts and increasing reliance on information technology (IT) systems for our operations, we continually monitor external developments and actively share information on threats and security incidents. Shell employees and contract staff are subject to mandatory courses and regular awareness campaigns aimed at protecting us against cyber threats. We periodically test and adapt cyber-security response processes and seek to enhance our security monitoring capability.

Given our dependence on IT systems for our operations and the increasing role of digital technologies across our organisation, we are aware that cyber-security attacks could cause significant harm to Shell in the form of loss of productivity, loss of intellectual property, regulatory fines and reputational damage. As a result, we continuously measure and, where required, further improve our cyber-security capabilities to reduce the likelihood of successful cyber attacks. Our cyber-security capabilities are embedded into our IT systems, which are protected by various detective and protective technologies. The identification and assessment capabilities are built into our support processes and adhere to industry best practices. The security of IT services, operated by external IT companies, is managed through contractual clauses and additionally through formal supplier assurance reports for critical IT services.

Shell is frequently subjected to cyber attacks and since the COVID-19 pandemic in 2020, we have noticed an increase in such activity. COVID-19 necessitated a switch from office to remote working, which changed and increased the IT systems' exposure to cyber threats. Shell's CyberDefence team responded by enhancing cyber-security controls for remote connectivity, strengthening its monitoring and detection, and taking additional measures to improve cyber awareness.

See "Risk factors" on page 28.

BRAND VALUE

In January 2022, Shell's brand value was estimated at $49.9 billion in Brand Finance Global 500 2022, the annual report by leading brand valuation consultancy Brand Finance. This was up 18% compared with 2021, and up 36% compared with 2017. According to the valuation, the Shell brand remains the most valued in the oil and gas industry. The gap to second place widened from $4.7 billion in 2021 to $6.3 billion in 2022. The report also showed that Shell's brand rating is AAA- in 2022, which is reduced from AAA in 2021.

CLIMATE CHANGE AND ENERGY TRANSITION

Shell has long recognised that greenhouse gas (GHG) emissions from the use of hydrocarbon-based energy are contributing to the warming of the climate system. We support the Paris Agreement's goal to keep the rise in global average temperature this century to well below two degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

Shell's Powering Progress strategy is designed to generate shareholder value while meeting our target of becoming a net-zero emissions energy business by 2050, in step with society's progress towards achieving the goals of the Paris Agreement.

Shell has supported the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) since 2017. The TCFD requires disclosure of qualitative and quantitative information aligned to its core four elements – governance, strategy, risk management, and metrics and targets. The TCFD aims to improve the disclosure of climate-related risks and opportunities and provide stakeholders with the necessary information to undertake robust and consistent analyses of the potential financial impacts of climate change. We recognise the value that the recommendations bring and continue to align and enhance our climate-related disclosures.

We set out below our climate-related financial disclosures consistent with all of the TCFD recommendations and recommended disclosures. By this we mean the four TCFD recommendations and the 11 recommended disclosures set out in Figure 4 of Section C of the report entitled "Recommendations of the Task Force on Climate-related Financial Disclosures" published in June 2017 by the TCFD.

GOVERNANCE OF CLIMATE-RELATED RISKS AND OPPORTUNITIES

BOARD OVERSIGHT OF CLIMATE-RELATED RISKS AND OPPORTUNITIES

In 2021, Shell reshaped and restructured our organisation to place our energy transition strategy at the heart of everything we do. Our governance is designed to effectively manage our transition to a net-zero emissions energy business by 2050, in step with society's progress towards achieving the goals of the Paris Agreement.

Our governance begins with the Board's approval of our energy transition strategy and oversight of its implementation and delivery. In 2021, the Board considered climate-related matters throughout the year when reviewing and guiding our energy transition strategy, assessing the risk management policies in place, and challenging and endorsing the business plans and budgets, including overseeing major capital expenditures, acquisitions and divestments. In 2021, the Board convened 12 times and continued to regularly oversee the Powering Progress Strategy and net-zero initiatives, including at the Board Strategy Day in June 2021.

Three Board committees provide primary oversight of the delivery of our energy transition strategy: the Safety, Environmental and Sustainability Committee (SESCo), the Audit Committee and the Remuneration Committee. See "Climate change governance organogram" below.

SESCo provides oversight of our technical delivery in driving reduction of our carbon emissions, and the potential impacts and adaptation measures related to the physical risks of climate change. This includes reviewing our Carbon Management Framework and monitoring progress in reducing emissions to meet targets. SESCo met 13 times in 2021 and discussed climate-related matters at nine meetings. After each meeting the SESCo Chair provided updates to the Board directly. For more information on SESCo's activities in 2021, see page 152.

Our Audit Committee provides oversight of the effectiveness of our internal controls and risk management framework to ensure that our financial statements reflect the risks and opportunities associated with our energy transition strategy and climate change. During 2021, the Audit Committee convened 11 times in total and discussed climate-related matters on at least six occasions.

More information on our Audit Committee's activities in 2021 can be found in the Audit Committee Report on page 156.

The Remuneration Committee sets our remuneration policy and targets designed to challenge and support management to reduce our carbon emissions while maintaining shareholder value. The Remuneration Committee met five times during 2021, with climate-related matters discussed at each meeting.

Find more information on our Remuneration Committee's activities in 2021 in the "Directors' Remuneration Report" on page 167 and the "Annual Report on Remuneration" on page 171.

Climate performance and remuneration

Climate-related key performance indicators were considered as part of the 2021 annual bonus scorecard (15% weighting) for almost all of Shell's employees, as well as the 2021 Performance Share Plan (PSP) awards (10% weighting) and the 2021 Long-term Incentive Plan (20% weighting, vesting in 2023) for senior executives.

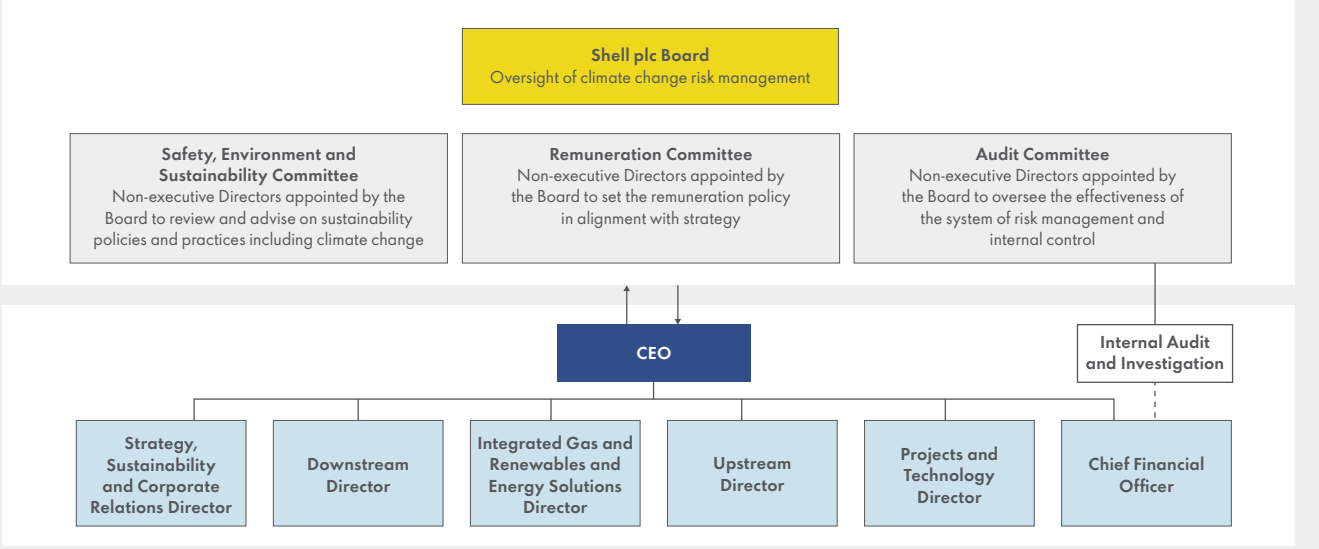
See "Directors' Remuneration Report" on pages 166-170 for further information.

The importance of our energy transition strategy means that all of these committees are informed about climate-related matters on a frequent basis throughout the year.

Find additional information on the Board's oversight in "Governance framework" on page 135.

MANAGEMENT'S ROLE IN ASSESSING AND MANAGING CLIMATE-RELATED RISKS AND OPPORTUNITIES

Climate change management organogram



The Chief Executive Officer (CEO) has the delegated authority from the Board to manage Shell's actions in relation to the Company's strategy, which includes climate change. The CEO is assisted by a number of senior management positions on climate-related matters to implement Shell's energy transition strategy and ensure that such matters are appropriately monitored:

- The Director of Strategy, Sustainability and Corporate Relations supports the CEO in developing Shell's energy transition strategy, including climate scenarios development, and augmenting the Company's Carbon Management Framework. This framework includes the setting of carbon budgets for our businesses, and the implementation of carbon-related activities.
- The Downstream Director identifies climate-related opportunities while managing and mitigating the climate risks of our existing Downstream businesses. The Sectors and Decarbonisation organisation supports the Downstream Director in implementing the sectoral decarbonisation approach.
- The Integrated Gas, Renewables and Energy Solutions Director is responsible for finding and developing low-carbon solutions and opportunities, including those across our solar, hydrogen and wind businesses, as well as managing and mitigating carbon emissions from our business.
- The Upstream Director is responsible for identifying low-carbon and emission reduction opportunities in our Upstream oil and gas business through managing and mitigating our carbon emissions, for example, by eliminating routine flaring and in some cases by using renewable energy to power our oil and gas extraction activities.
- The Projects & Technology (P&T) Director is responsible for setting emissions, climate, and reporting standards that are applicable to all our businesses. The P&T Director is also responsible for developing new technologies that will help our businesses to deliver net-zero emissions targets through both energy efficiency measures and research and development activities geared towards decarbonisation.
- The Chief Financial Officer (CFO) is responsible for monitoring the effective application of the Shell Control Framework, which provides the basis for managing our material risks including climate-related risks and opportunities, and the assurance over our financial information, carbon emissions and climate-related disclosures.

Delivering through three strategic pillars

There are two key supporting management committees, with representatives from across the organisation:

- The Capital Investment Committee (CIC) facilitates the portfolio management discussions to ensure that the climate risks and opportunities are embedded in investment decision-making. This committee is made up of senior executives, including the CEO, CFO, and individual business directors.
- The Carbon Reporting Committee (CRC), which was formed in 2021, is sponsored by the CFO, and includes senior management representatives from business units, Projects & Technology climate-related disciplines and various functions such as Strategy, Finance and Legal. This committee is tasked with ensuring that greenhouse gas (GHG) emissions measures, both absolute emissions and carbon intensity, and associated metrics, comply with all regulatory and legal requirements. The CRC is responsible at Group level for effectively embedding Group-wide training plans, measurement and reporting of GHG emissions metrics, and review and approval of external disclosures.

Our network of country chairs supports the overall governance and development of climate-related opportunities. They set each country's energy transition strategy within our Powering Progress strategy.

Processes by which management is informed about climate-related issues

Several processes are employed across the organisation to ensure that management teams can effectively monitor and manage climate-related matters. The management teams are helped by a combination of carbon-management-related standards and frameworks, forums at various levels of the organisation, and capability development programmes. These include our Carbon Management Framework, carbon pricing, and the Greenhouse Gas (GHG) and Energy Management Manual.

Carbon Management Framework

In 2021, we worked on augmenting our comprehensive Carbon Management Framework (CMF). The CMF seeks to implement an approach to managing and reducing our emissions that is similar to how we use our financial framework.

This helps to ensure that management considers carbon emissions when making decisions.

The CMF helps set carbon budgets in our operating plan. For the 2021 operating plan cycle, our net carbon intensity (NCI) targets were translated into Scope 1, 2 and 3 (see definition below) carbon budgets for each business. These were used as boundaries for optimising each business' operating plan. As a result, the CMF makes it easier to assess the trade-offs between emitting carbon and generating value. This helps to inform portfolio decisions.

Some examples of how our decarbonisation targets are taken into account in fundamental decisions across the organisation are as follows:

- Our businesses further embedded carbon emissions objectives in their individual business units' Capital, Portfolio and Carbon forums. The forums consist of the most senior business management representatives who are responsible for active portfolio management through evaluation, and delivery of growth and divestment decisions.
- Certain assets are required to identify GHG abatement opportunities and reflect them in their annual business plans.

Definition – Scope 1, 2 and 3 emissions

We follow the GHG Protocol's Corporate Accounting and Reporting Standard, which defines three scopes of GHG emissions:

- Scope 1: direct GHG emissions from sources that are owned or controlled by Shell.
- Scope 2: indirect GHG emissions from generation of purchased energy consumed by Shell.
- Scope 3: other indirect GHG emissions, including emissions associated with the use of energy products sold by Shell.

CLIMATE CHANGE AND ENERGY TRANSITION continued

Carbon pricing

To assess the resilience of new projects we consider the potential costs associated with operational GHG emissions. We have developed country-specific short-medium and long-term estimates of future costs of carbon which are reviewed and updated annually. In 2021, we increased the expected cost of carbon, so by 2050, in real terms our cost of carbon estimates for all countries increased to between $125 and $200 per tonne of GHG emissions. The process for developing our cost of carbon estimates uses short-term policy outlooks and long-term scenario forecasts. We believe our estimates appropriately reflect society's current implementation of the Paris Agreement. Unfortunately, however, society is not yet on track to meet the goals of the Paris Agreement. Shell will continue to update the cost of carbon estimates to take account of changes in the economic environment and pace of energy transition.



Shell will continue to update its cost of carbon estimates to take account of changes in the pace of energy transition.

Greenhouse gas and energy management

Each Shell entity and Shell-operated venture is responsible for the development of their GHG and energy management plans.

In 2021, we updated our Greenhouse Gas and Energy Management standard. It is part of both our health, safety, security, environment, and social performance (HSSE & SP) Control Framework, and Asset Management System. This update streamlines accountabilities for GHG and energy management within businesses, assets and projects, tightening the process for analysing our emissions, benchmarking performance, identifying improvement opportunities, and forecasting future performance.

Shell's GHG and energy management process is integrated into our annual business planning cycles to provide leadership with the robust information required to make decisions on GHG reduction opportunities and portfolio choices required to achieve our decarbonisation targets.

We also created the position of a Global Process Owner for GHG and energy management within our Safety, Environment and Carbon, and Asset Management (SEAM) organisation. The Global Process Owner is responsible for working across Shell businesses to ensure the GHG and energy management requirements are adopted and embedded in business operations, planning, and performance management processes. The Global Process Owner also facilitates the ongoing improvement of processes, tools, communications, and capabilities needed within the businesses to achieve our decarbonisation aspirations.



Our GHG & Energy Management process is integrated into our annual business planning cycle.

ENERGY TRANSITION STRATEGY

In 2021, we announced Powering Progress, our strategy to accelerate our transition to a net-zero emissions energy business, purposefully and profitably. Powering Progress aims to deliver value for our shareholders, for our customers and for wider society.

See the "Strategy and outlook" for more information on page 12.

Our strategy aims to support the ambitious goal of the Paris Agreement

Tackling climate change is an urgent challenge. It requires a fundamental transformation of the global economy and the energy system so that society stops adding to the total amount of greenhouse gases in the atmosphere, achieving what is known as net-zero emissions. That is why Shell has set a target to become a net-zero emissions energy business by 2050, in step with society's progress in achieving the goal of the Paris Agreement on climate change.

There is no established standard for aligning an energy supplier's decarbonisation targets with the temperature limit goal of the Paris Agreement. In the absence of a broadly accepted standard, we developed our own approach to demonstrate Paris alignment by setting carbon intensity targets using a pathway derived from the Intergovernmental Panel on Climate Change (IPCC) scenarios aligned with the Paris Agreement's goal. We believe our NCI and absolute emissions targets support the more ambitious goal of the Paris Agreement: to limit the increase in the average global temperature to 1.5 degrees Celsius above pre-industrial levels. It is aligned with the findings of the IPCC which concluded that the world must reach net-zero carbon emissions by around 2050 to limit global warming to 1.5 degrees Celsius and avoid the worst effects of climate change.

We determined our targets using scenarios taken from a database developed for the IPCC Special Report on Global Warming of 1.5°C. We filtered out certain outlying IPCC scenarios to ensure that Shell's targets are aligned with earlier action, and low-overshoot scenarios. Overshoot refers to the extent to which a scenario exceeds an emissions budget and subsequently relies on sinks to compensate for the excess emissions.

Becoming a net-zero emissions energy business means that we are reducing emissions from our operations, and from the fuels and other energy products such as electricity that we sell to our customers. It also means capturing and storing any remaining emissions using technology, protecting natural carbon sinks, and providing high quality nature-based solutions to our customers to offset unavoidable emissions.

Increasing numbers of countries and companies have announced targets to achieve net-zero emissions by the middle of the century, and we are starting to see some changes in the demand and supply of energy. Achieving the 1.5 degrees Celsius goal will be challenging and require unprecedented global collaboration. The pace of change will also vary around the world.

CLIMATE-RELATED RISKS AND OPPORTUNITIES IDENTIFIED BY SHELL OVER THE SHORT, MEDIUM AND LONG TERM

Our target to become a net-zero emissions energy business by 2050, in step with society's progress, requires us to continue enhancing our strategic risk management approach to addressing climate risk. Our energy transition strategy is designed to help us identify and shape how we can assist with decarbonising our customer sectors. This means that our strategy is shaped in response to risks and opportunities identified across the sectors and regions we work in.

There are many teams across Shell involved in this process, to ensure that we make sound strategic decisions.

The process for identifying and assessing climate-related risks and opportunities is set out under "Climate Risk Management" below. Through this process, Shell continues to identify climate change and the associated energy transition as a material risk based on the rapidly evolving societal concerns and developments related to climate change and managing GHG emissions. These developments expose Shell to a variety of factors, which could have an impact on demand for our products, our operational costs, supply chains, markets, regulatory environment, licences to operate and litigation. This risk is composed of a combination of complex elements that affect Shell's overall business value chain. The risks are interrelated, and generally describe a rapidly evolving risk landscape for our asset, product and business portfolio. To achieve our climate ambition, active holistic management of all climate-related risk components is important. The composite risk is broken down into the following sub-components:

- commercial risk;
- regulatory risk;
- societal risk (including litigation risk); and
- physical risk.

In addition to risk, we also continue to identify opportunities for Shell in the energy transition, from our existing position as a leading global energy provider. These risks and opportunities are described below and are also summarised in the strategic risks report section on page 23.

Time horizons: short, medium and long

Due to the inherent uncertainty, and the pervasive nature of the risks across our strategy and business model, the climate-related risks and opportunities are monitored across multiple time horizons.

- Short term (up to three years): we develop detailed financial projections and use them to manage performance and expectations on a three-year cycle. These projections incorporate decarbonisation measures required to meet our short-term targets.
- Medium term (generally three to 10 years): embedded within our operating plan, with our continued focus on the customer, the investments and portfolio shifts required in the medium term that will fundamentally reshape Shell's portfolio. At the same time, our existing asset base is expected to provide the cash flow to finance this transition of our revenue in this period.
- Long term (generally beyond 10 years): it is expected that our portfolio and product mix will look very different, addressing the shift from an asset-based approach to a customer-based business model.

CLIMATE CHANGE AND ENERGY TRANSITION continued

Transition risks

CLIMATE-RELATED COMMERCIAL RISK

- The transition to a low-carbon economy may lead to lower sales volumes and/or margins due to a general reduction or elimination of demand for oil and gas products, possibly resulting in under-utilised or stranded oil and gas assets and a failure to secure new opportunities.
- Changing preferences of investors and financial institutions could reduce access to and increase the cost of capital.

Relevant time horizon:



Potential material impacts on the organisation

Lower demand and margins for oil and gas products
Changing customer sentiment towards renewable and sustainable energy products may reduce demand for our oil and gas products. An excess of supply over demand could reduce fossil fuel prices. This could be a factor contributing to additional provisions for our assets and result in lower earnings, cancelled projects and potential impairment of certain assets

Changing preferences of investors and financial institutions
Financial institutions are increasingly aligning their portfolios to a low-carbon and net-zero world, driven by both regulatory and broader stakeholder pressures. A failure to decarbonise the business portfolios in line with investor and lender expectations could have a material adverse effect on our ability to use financing for these types of future projects. This could also adversely affect our potential partners' ability to finance their portion of costs, either through equity or debt.

Remaining in step with the pace and extent of the energy transition
The energy transition provides us with significant opportunities, as described in the "Transition opportunities" below. If we fail to stay in step with the pace and extent of change or customer and other stakeholders' demand for low-carbon products, this could adversely affect our reputation and future earnings. If we move much faster than society, we risk investing in technologies, markets or low-carbon products that are unsuccessful, therefore we cannot transition too quickly or we will be trying to sell products that customers do not want. This could also have a material adverse effect on financial results.

Our short-term remuneration targets are not conditioned by society's progress towards net zero. However, our 2050 net zero target is conditioned by society's progress as there is significant risk that Shell will not be able to meet its net-zero target if society is not net zero.

CLIMATE-RELATED REGULATORY RISK

The transition to a low-carbon economy will increase the cost of compliance for our assets and/or products, and may include restrictions on the use of hydrocarbons. The lack of net-zero-aligned global and national policies and frameworks increases the uncertainty around this risk.

Relevant time horizon:



Potential material impacts on the organisation

Increased compliance costs
Some governments have introduced carbon pricing mechanisms, which we believe can be an effective way to reduce GHG emissions across the economy at the lowest overall cost to society.

Shell's cost of compliance with the EU Emissions Trading Scheme (ETS) and related schemes was around $331 million in 2021, as recognised in Shell's Consolidated Statement of Income for 2021 (see Note 31 to the "Consolidated Financial Statements").

Shell's annual carbon cost exposure is expected to increase over the next decade because of evolving carbon regulations. The forecasted annual cost exposure in 2030 is estimated to be within the range of $1.0-2.5 billion. This estimate is based on a forecast of Shell's equity share of emissions from operated and non-operated assets (including joint ventures and associates), and real-terms carbon cost estimates which range from around $25 to around $200 per tonne of GHG emissions in 2030. This exposure also takes into account the estimated impact of free allowances as relevant to assets based on their location.

Restrictions on use of hydrocarbons
With around 90% of the global economy now signed up to net-zero commitments as of January 2022, according to the Energy and Climate Intelligence Unit of the UK, there is an ever-increasing threat that governments set future regulatory frameworks that restrict further exploration and production of hydrocarbons, and bring in controls to limit the use of such products. Failure to replace proved reserves could result in an accelerated decrease of future production, which could have a material adverse effect on our earnings, cash flows and financial condition.

Lack of net-zero-aligned global and national policies and frameworks
The lack of net-zero-aligned global and national policies and frameworks increases the uncertainty around how carbon pricing and other regulatory mechanisms will be implemented in the future. This makes it harder to determine the appropriate assumptions to be taken into account in our financial planning and investment decision processes.

Transition risks continued

CLIMATE-RELATED SOCIETAL RISK (INCLUDING LITIGATION RISK)

As societal expectations develop around climate change, there is a potential impact on Shell's licence to operate, reputation, brand and competitive position. This is likely to include class action lawsuits or similar litigation.

Relevant time horizon:



Potential material impacts on the organisation

Decline in reputation and brand

Societal expectations of businesses are increasing, with a focus on business ethics, quality of products, contribution to society, safety and minimising damage to the environment. There is an increasing focus on the role of the oil and gas sector in the context of climate change and the energy transition. This could negatively affect our brand, reputation and licence to operate, which could limit our ability to deliver our strategy, reduce consumer demand for our branded and non-branded products, harm our ability to secure new resources and contracts, and restrict our ability to access capital markets or attract staff.

Deteriorating relationships with key stakeholders

Failure to decarbonise Shell's value chain in line with societal, governmental and investor expectations is a material risk to Shell's reputation as a responsible and market-leading energy company. The impact of this risk includes shareholder divestment, greater regulatory scrutiny and potential asset closure resulting from public interest groups' protests.

Class action lawsuits and litigation

There is an increasing risk for oil and gas companies from public, private and governmental lawsuits taken to inhibit the exploration, excavation and processing of hydrocarbons as a matter of environmental and societal welfare. Such action may force entities to hand over strategic autonomy in part to regulators, divest from hydrocarbon technologies and pay large compensation packages to the plaintiff.

In some countries, governments, regulators, organisations and individuals have filed lawsuits seeking to hold oil and gas companies liable for costs associated with climate change. While we believe these lawsuits to be without merit, losing could have a material adverse effect on our earnings, cash flows and financial condition.

For example, in May 2021, the District Court in The Hague, Netherlands, ruled that, by 2030, Shell must reduce, from its consolidated subsidiaries, its net Scope 1 emissions by 45% and use it best efforts to reduce its net Scope 2 and net Scope 3 emissions by 45%, compared with 2019 levels. In 2019, our Scope 1 emissions from our consolidated subsidiaries were 86 million tonnes of carbon dioxide equivalent (CO_2e) (rounded) (financial control basis).

Physical risks

CLIMATE-RELATED PHYSICAL RISK

The potential physical effects of climate change may impact Shell's assets, operations, supply chains, employees and markets.

Relevant time horizon:



Potential material impacts on the organisation

Mitigation of physical risks, whether or not related to climate change, are considered and embedded in the design and construction of assets. The potential impact of physical changes come from both acute and chronic physical risks.

Acute risks, such as flooding and droughts, wildfires and more severe tropical storms, could potentially impact our operations and supply chains. The frequency of these hazards and impacts is expected to increase in certain high-risk locations. Extreme weather events, whether or not related to climate change, could have a negative impact on earnings. Recent examples in 2021 include the Texas winter storm and Hurricane Ida. These had an impact on our operations and an adverse impact on 2021 earnings of around $200 million and around $400 million respectively.

Chronic risks, such as rising temperatures and rising sea levels, could potentially impact the efficiency of our plants, increase equipment corrosion, decrease gas pipeline capacity, and impact our coastal facilities. The assets at highest risk from these impacts are those in coastal locations across refining, We have performed analyses addressing a range of typical climate change features for a select group of assets. We concluded that currently any adaptation costs for those selected assets are not expected to be significant. We recognise that we need to deepen and widen these analyses for a more comprehensive climate resilience assessment. We continue to monitor this and plan to conduct further analysis on other assets as well as assess long-term physical impacts.

Additionally, the impact of physical climate change on our operations is unlikely to be limited to the boundaries of our assets. The overall impact including how supply chains, resource availability and markets may be affected also needs to be considered, for a holistic assessment of this risk. The risk assessment and mitigation actions are based on our current understanding and we continue to track ongoing research on the subject to update our assessment and actions.

CLIMATE CHANGE AND ENERGY TRANSITION continued

Transition opportunities

CLIMATE-RELATED OPPORTUNITIES

The transition to a low-carbon economy also brings significant opportunities for us to benefit from changing customer demands, given our position as a leading global energy provider.

Relevant time horizon:



Potential material impacts on the organisation

As the global energy mix changes, our current infrastructure, know-how and global footprint put us in an ideal position to service the changing energy demands of the market. Our research and development (R&D) activities are key to achieving our net-zero emissions target.

As we shift from an asset-based to a customer-focused business model our current key focus areas for seizing this opportunity are:

1. Renewables and Energy Solutions
This encompasses our wind, solar, hydrogen, electric vehicle charging, nature-based solutions, and carbon capture and storage businesses. Electricity generated by wind and solar power plays a direct role in reducing emissions in passenger transport and parts of industry. It can also be used to create hydrogen. We expect hydrogen to present a business opportunity for heavy-duty road freight over a shorter time horizon and within shipping, industry and, possibly, aviation, over a longer time horizon. Hydrogen also has the potential to become a material part of Shell's business-to-business (B2B) operations, as heavy industry begins to transition away from energy sourced from hydrocarbons.

2. Biofuels
Shell and our joint venture Raízen (Shell interest 44%, not operated by Shell) are together one of the world's largest blenders and distributors of biofuels. Shell plans to continue to invest in and increase the production of these low-carbon fuels. Our low-carbon fuels projects and operations around the world form part of a wider commitment to provide a range of energy choices for customers. For example, we believe that sustainable aviation fuels (SAF) provide the most effective way of removing emissions within the aviation sector, with wider adoption of SAF enabling us to provide more low-carbon fuels to our customers. Biofuels may also present opportunities in the shipping, road freight and other sectors.

3. Natural gas
Shifting from coal and oil to natural gas is one way for countries to take action as the world moves to a net-zero emissions future. It is a key component of the energy transition. Demand for liquefied natural gas (LNG) is expected to grow and we are a leading LNG supplier, with around 40 million tonnes of equity capacity.

4. Transforming refineries into energy and chemicals parks
An important aim of our Powering Progress strategy is to transform refineries into energy and chemicals parks so that we can sell more low-carbon and sustainable products.

IMPACT OF CLIMATE-RELATED RISKS AND OPPORTUNITIES ON SHELL'S BUSINESSES, STRATEGY AND FINANCIAL PLANNING

The transformation of the energy system to net-zero emissions will require simultaneous action in three areas – an unprecedented improvement in the efficiency with which energy is used, a sharp reduction in the carbon intensity of the energy mix and the mitigation of residual emissions using technology and natural sinks. While it is difficult to predict the exact combination of actions that will deliver the net-zero goal, scenarios help us to understand the direction and pace of the transition needed.

We have been developing scenarios within Shell for almost 50 years, helping Shell leaders to explore ways forward and make better decisions. Shell scenarios are designed to stretch management's thinking in considering events that may be only remotely possible. They help them make crucial choices in times of uncertainty and transition as we grapple with tough energy and environmental issues.

Shell scenarios are aligned to different energy transition pathways and help guide risk and opportunity identification and decision-making. Our energy transformation scenarios – Waves, Islands and Sky 1.5 – are all possible pathways towards the future that have both attractive and challenging features. Out of the three scenarios, Sky 1.5 has a pace and timing for energy decarbonisation that is fast enough to limit global warming to 1.5 degrees Celsius above pre-industrial levels by the end of this century. The full report can be found at www.shell.com/transformationscenarios.

Different socio-economic and technological parameters are used to construct these scenarios, such as:

- sectoral and regional energy demand;
- future trajectory of oil consumption, demand for natural gas;
- renewable electricity demand and the pace of the electrification of the global energy system;
- supply of solar and wind energy;
- pace of uptake of electric vehicles;
- demand for biofuels;
- growth of the hydrogen economy;
- level of carbon capture and storage;
- deployment of lower-carbon energy technologies; and
- global trade of oil and gas.

Management consideration of different climate change outcomes informs a range of areas including, but not limited to, the setting of the long-term strategy, business planning, and investment and divestment decisions. The outcomes considered by management vary in relation to the extent and pace of the energy transition.

Impact on strategic planning

The application of scenario analysis informs our assessment of the impact of climate-related risks and opportunities on our strategy and business planning, both at the Group and business units' levels. At the Group level, the potential impacts of the energy transition on our business model are discussed and assessed at the Board and the Executive Committee level as part of the annual strategic and business planning cycle. This assessment allows us to challenge accepted ways of thinking, identify material risks and opportunities, and formulate key tensions and trade-offs.

Key financial and non-financial components of business planning

The output of our annual business planning process is presented and approved by the Board. The plan contains operational and financial metrics, and its objective is to drive delivery of our Powering Progress strategy.

Decarbonisation targets are key inputs of our business planning process. Each business owner offers viable Scope 1, 2 and 3 reduction opportunities as part of this process, in line with the Carbon Management Framework (CMF) (see page 77).

The business plan is underpinned by assumptions about internal and external parameters. These assumptions are developed with input from our scenarios and internal estimates and outlooks. Some of the key assumptions relate to:

- commodity prices;
- refining margins;
- production levels and product demand;
- exchange rates;
- future carbon costs;
- the schedules of capital investment programmes; and
- risks and opportunities that may have material impacts on free cash flow.

The level of uncertainty around these assumptions increases over longer time horizons.

Impact on business and financial planning

There is no one single scenario that underpins Shell's business and financial planning. Generally, our scenarios are designed to stretch management's thinking including considering events that may be only remotely possible. Scenarios are not intended to be predictions of likely future events or outcomes and, therefore, are not the basis for Shell's operating plans and financial statements. Our scenarios help in developing our future oil and gas pricing outlooks. The oil and gas pricing outlooks take account of various factors relating to the energy transition such as potential changes in supply and demand (see details of scenario parameters above). The low, medium and high pricing outlooks are prepared by a team of experts, reviewed by the Shell Executive Committee and approved by the CEO and CFO. The medium pricing outlook represents management's reasonable best estimate and is the basis for Shell's financial statements, operating plans and impairment testing.

Shell's targets to reduce absolute Scope 1 and 2 emissions by 50% by 2030, compared with 2016 levels on a net basis, and 20% reduction of net carbon intensity of Scope 3 emissions by 2030 have been included in Shell's operating plan. Meeting the goals of the Paris Agreement requires the global economy to transform in a number of complex and connected ways. Shell will continue to revise its operating plan, price outlooks and assumptions as it moves towards net-zero emissions by 2050, in step with society.

Meeting the goals of the Paris Agreement requires the global economy to transform in a number of complex and connected ways. We continue to update our analysis and the corresponding price outlooks and business plans, in line with our strategy and in step with society.

As described in "Climate-related risks and opportunities identified by Shell over the short, medium and long term", the low pricing outlooks could result in increased commercial, regulatory and societal risks, as well as transition opportunities. How these risks are prioritised is described in "Shell's processes for identifying and assessing climate-related risks". Given our ambition to become a net-zero emissions energy business by 2050, in step with society, the use of low-pricing outlooks is a part of our resilience testing and resulting actions. Physical risk is expected to be more material in higher temperature scenarios.

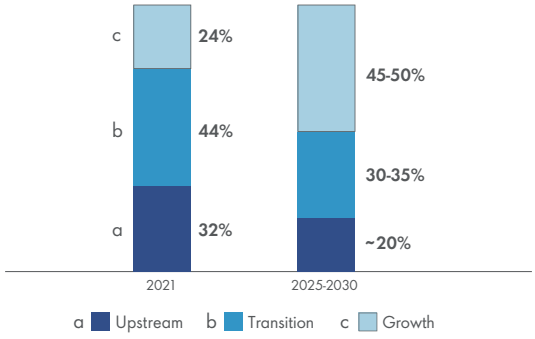
RESILIENCE OF SHELL'S STRATEGY, TAKING INTO CONSIDERATION DIFFERENT CLIMATE-RELATED SCENARIOS, INCLUDING A TWO DEGREES CELSIUS OR LOWER SCENARIO

Shell's financial strength and access to capital give us the ability to reshape our portfolio as the energy system transforms and demand changes. They also allow us to withstand volatility in oil and gas markets.

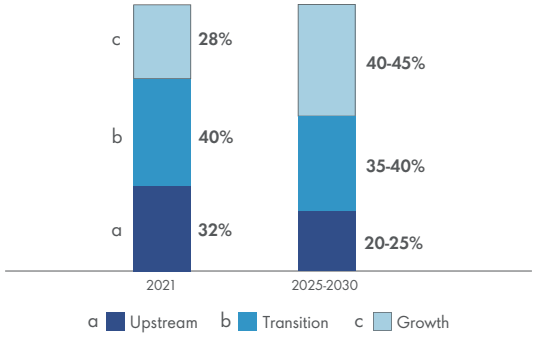
We are shifting capital from our Upstream business to our Transition and Growth businesses as the energy transition accelerates and we sell more low-carbon energy products. We aim to find the right balance between managing our Upstream assets – which will produce the returns needed to help us fund the transition – and investing in our Transition and Growth businesses. These businesses are essential to identify, build and scale up profitable projects that offer low-carbon energy solutions for our customers.

CLIMATE CHANGE AND ENERGY TRANSITION continued

Cash capital expenditure evolution



Operational expenditure evolution



Key aspects of Shell's financial resilience in the context of climate related impacts is assessed and described in more detail in Note 4 to the "Consolidated Financial Statements". This provides an overarching summary of the key areas where climate change and the energy transition impact Shell's financial statements.

Shell's financial statements are based on reasonable and supportable assumptions that represent management's current best estimate of the range of economic conditions that may exist in the foreseeable future. As referred to above, the medium pricing outlook informed by Shell's scenario planning represents management's best estimate.

Sensitivity analysis using external climate scenarios has been performed for the period covering asset life cycles. If these different price outlooks from external and often normative climate change scenarios were used, this would impact the recoverability of certain assets recognised in the Consolidated Balance Sheet as at December 31, 2021.

Price outlooks have been used as the basis for sensitivity analysis because oil and gas prices are one of the key assumptions that underpin Shell's financial statements. Price outlooks reflect a broad range of factors, including but not limited to future supply and demand and the pace of growth of low-carbon solutions. Sensitivity of asset-carrying amounts to prices are under the assumption that all other factors in the models used to calculate impacts remain unchanged. Changes to prices are applied due to the significant impact on Shell's business.

Sensitivity analysis has been performed using price outlooks from:

1. Average prices from four 1.5-2 degrees Celsius external climate change scenarios. In view of the broad range of price outlooks across the various scenarios, the average of four external price outlooks was taken from IHS Markit/ACCS 2021; Woodmac WM AET 2 degree; IEA NZE50; and IEA SDS.

   Applying these prices to Integrated Gas assets of $65 billion and Upstream assets of $89 billion as at December 31, 2021, shows recoverable amounts that are $13-16 billion and $14-17 billion lower, respectively, than the carrying amounts as at December 31, 2021.

2. Hybrid Shell Plan and IEA NZE50: for this Shell's mid-price outlook is applied for the next 10 years. Because of the greater uncertainty, the International Energy Agency (IEA) normative Net Zero Emissions scenario is applied for the period after 10 years. This weights less price-risk uncertainty to the first 10 years reflected in the operating plan period and applies more risk to the more uncertain subsequent periods.

   Applying this priceline to Integrated Gas assets of $65 billion and Upstream assets of $89 billion as at December 31, 2021, shows recoverable amounts that are 10-12 billion and $5-6 billion lower, respectively, than the carrying amounts as at December 31, 2021.

In addition, further sensitivities are provided of -10% or +10% to Shell's medium pricing outlook, as an average percentage over the full period.

Applying -10% to Shell's medium pricing outlook to Integrated Gas assets of $65 billion and Upstream assets of $89 billion as at December 31, 2021, shows recoverable amounts that are $8-10 billion and $4-5 billion lower, respectively, than the carrying amounts as at December 31, 2021.

Applying +10% to Shell's medium pricing outlook to Integrated Gas assets of $65 billion and Upstream assets of $89 billion as at December 31, 2021, shows recoverable amounts that are $3-5 billion and $3-4 billion higher, respectively, than the carrying amounts as at December 31, 2021.

Note 4 to the "Consolidated Financial Statements" describes how Shell has considered climate-related impacts in key areas of the financial statements and how this translates into the valuation of assets and measurement of liabilities as Shell makes progress in the energy transition.

Items in Note 4 include: sensitivity analysis on asset-carrying values using price outlooks from external and often normative climate change scenarios; shifting trends in our portfolio, particularly exploration and evaluation, Upstream production and refineries; risks related to stranded assets; resilience of investments for transformation of the refining portfolio into five energy and chemical parks; forecasted taxable profits sufficient to recover deferred tax assets; dividend resilience; and limited risk on timing of decommissioning and restoration activities for Integrated Gas and Upstream.

To ensure the resilience of our Powering Progress strategy, our responses to the risks and opportunities identified are:

- delivering through three strategic pillars – Upstream, Transition and Growth;
- our sectoral decarbonisation approach – recognising that we need to work with our customers to identify low-carbon energy solutions for their energy demand; and
- decarbonising our energy value chains and operations.

Delivering through three strategic pillars

One of the ways to address the resilience of our portfolio is to continue delivering through our three strategic business pillars: Upstream, Transition and Growth. Shell's financial strength and access to capital give us the ability to reshape our portfolio as the energy system transforms and demand changes. It also allows us to withstand volatility in oil and gas markets. Our financial framework is based on sector-leading cash flow, continued capital discipline, capital flexibility and a strong balance sheet.

- Our Upstream pillar delivers the cash and returns needed to fund our shareholder distributions and the transformation of our portfolio, and provides vital supplies of oil and natural gas which the world needs today.
- Our Transition pillar comprises Integrated Gas, and our Chemicals and Oil Products businesses and it makes the products needed to enable the energy transition. It produces sustainable cash flow and gives us the asset infrastructure to support our investments in our Growth business.
- Our Growth pillar includes our service stations, sales of gasoline and diesel, fuels for business customers, power, hydrogen, biofuels, charging for electric vehicles, nature-based solutions, and carbon capture and storage. It focuses on working with our customers to accelerate the transition to net zero and is the foundation for the future businesses in Shell.

See "Strategy and outlook" for more information on page 14.

Our sectoral decarbonisation approach

Changes to the supply of energy products and decarbonising the energy system require structural changes in the end-use of energy. This requires energy users to improve, update or replace equipment so that they can use carbon-based energy more efficiently, or switch to low- and zero-carbon energy.

For example, in the transport sector, decarbonisation includes replacing internal combustion engine vehicles with electric and hydrogen vehicles. In the industrial sector, replacing oil- and coal-fired furnaces with electrical furnaces would be one solution, carbon capture and storage is another. And in the buildings sector, replacing gas heating systems with electric heating systems would also contribute to decarbonisation.

Such structural changes will help to trigger transitions along the supply chain of individual sectors and across sectors, including the production of energy and emissions over time. The International Energy Agency (IEA) estimates that these changes in the end-use of energy will require substantial investment. Under the IEA's Paris-aligned Sustainable Development Scenario, of the more than $1.5 trillion extra annual spending required on energy-sector investment, 55% will need to be spent on end-use or what is more commonly known as demand-side investment.

Transforming energy demand is the focus of our decarbonisation strategy. To transform demand, we are working with customers sector-by-sector across the energy system. We will change the mix of energy products we sell to our customers as their needs for energy change.

Because emissions resulting from customer use of our energy products make up the greatest percentage of Shell's carbon emissions, this is where we can make the greatest contribution to the energy transition, by increasing sales of low-carbon energy products and services. Today, we sell around 4.6% of final energy consumed in the world and produce around 1.4% of total primary energy. Our share of energy production may decline over the coming decades, but we intend to increase our share of low-carbon energy sales.

We have restructured our company so that we can better identify opportunities and the role that we can play in each sector to help transform demand. We are moving from an approach focused on types of products to one where our customer and account management is focused on sectors.

We have introduced a sector-based approach, so our businesses can help drive the decarbonisation of the sectors they cover such as aviation, commercial road transport, passenger transport, shipping, technology and industry. We will build on our existing relationships across each sector, with consumers, infrastructure owners, other suppliers and policymakers to help to accelerate change.

A key theme running through the whole of our strategic approach to climate change is to work collaboratively. We aim to make strategic alliances with customers, other companies and entire sectors so we and they can make profitable progress towards net zero.

For example, we are working with Swiss food and drinks group Nestlé to reduce emissions across the full cycle of their products, from increasing agricultural yields with high performance fertilisers, to providing renewable energy for the manufacturing process and providing low-carbon fuels for transport.

We continue to engage with the Science Based Targets initiative (SBTi), and we are a member of its Technical Working Group that is currently working to define its methodology to set science-based targets for the oil, gas and integrated energy sector.

As a founding member of the Oil and Gas Climate Initiative (OGCI) we are part of a group of 12 national and international energy companies. OGCI supports the climate goals of the UN Paris Agreement and recognises that collective actions, such as the reduction in methane emissions and accelerating the deployment of carbon capture and storage, will help drive the energy transition.

Decarbonising our energy value chains and operations

We plan to keep customers at the centre of our strategy as we decarbonise our energy value chains and operations. We will seek to base our actions on a deep understanding of the decarbonisation strategies and plans of the users of our energy products. In accordance with our energy transition strategy, the 10 ways below support our net-zero emissions ambition, including changing our product mix to lower-carbon intensity energy products:

- developing our low-carbon Power business through wind and solar;
- transforming refineries into energy and chemicals parks;
- providing low-carbon fuels;
- producing and selling hydrogen;
- providing electric vehicle charging;
- shifting to natural gas;
- using nature-based solutions;
- developing carbon capture and storage (CCS);
- research and development contributing to decarbonisation; and
- pursuing operational efficiency in our assets.

CLIMATE RISK MANAGEMENT

SHELL'S PROCESSES FOR IDENTIFYING AND ASSESSING CLIMATE-RELATED RISKS

Identifying climate-related risks

As discussed in "Energy transition strategy", Shell considers climate change and GHG emissions, referred to as "Rising concerns about climate change and effects of energy transition", as a material risk factor. We monitor the risk related to climate change and GHG emissions across four components:

- commercial risks;
- regulatory risks;
- societal risks (including litigation risk); and
- physical risks.

These components are monitored and assessed on an integrated basis, necessitated by the interdependence of the risks and the related actions. The different components pose different kinds of exposures spanning different time horizons. Similarly, the risk responses for the different components of the risk are also planned by taking a holistic view.

For example, the increasing cost of complying with emission limits in some regions is a regulatory risk that may require operational responses in the near term. The reduction in demand for legacy hydrocarbons is a commercial risk that is likely to have a medium- to long-term impact, demanding changes to our strategic portfolio and business models. The risk of physical impacts of climate change is likely to occur in the medium and long term and would require actions to mitigate adverse impacts to our assets and supply chain. As an example, the transformation of our refineries into energy and chemicals parks mitigates our operational emissions exposure risk, medium- to long-term commercial risks and allows us to plan for other future adaptation measures. This highlights our integrated approach to risk management.

These integrated assessments and the resulting changes in our strategy ensure we manage our aggregate climate change risk within our overall risk appetite over different time horizons.

Shell's processes for identifying and assessing risks are part of our Shell Control Framework.

Our risk management procedures that help us identify climate-related risks and opportunities include:

- monitoring external developments, such as the announcements made at COP26 in November 2021;
- evaluating the status of risk indicators, which illustrate how well we are managing each component of the risk related to climate change and GHG emissions; and
- learning from incidents and assurance review findings.

We use these procedures to identify risks relating to climate change and GHG emissions, which in turn enables us to determine their significance, both individually and relative to other risks.

Assessing climate-related risks

Processes within the Shell Control Framework that help us assess each identified risk include the evaluation of its impact, likelihood and the level of risk we are willing to accept.

When assessing the likelihood of a risk occurring, we consider factors such as our ability to prevent the risk happening, and whether the risk has materialised in the past.

When assessing the potential impact of a risk, we consider the financial consequences and how it might affect more qualitative aspects, such as our reputation, our ability to comply with regulations, and possible damage to health, safety, our assets and the environment. The impact and hence, materiality of a risk is based on how critical it could be to our business model.

As Shell has operations both onshore and offshore, the potential physical impacts of climate change are also important for us to manage. In this respect, we consider the physical risks to our assets and facilities to ensure they can operate and be accessed safely under extreme weather conditions The physical risks are assessed at an asset level. Metocean (meteorology and oceanography) engineering experts assess and monitor the physical risks and logistical activities for certain of our assets. These studies aim to ensure our operations are safe and that our facilities can be accessed safely under extreme conditions

As we operate in multiple countries globally, societal risks are material as they are directly linked to our licence to operate in these countries.

The impact and likelihood assessment helps us to prioritise risks and determine their relative materiality, based on a comprehensive picture of all significant risks in the context of the objectives of the relevant business.

To support our risk assessments, we also seek to establish our risk appetite, which is the level of risk that we are willing to accept in pursuit of Shell's strategy and objectives. We consider the amount of resources – such as financial resources, people, processes, systems and controls – that we are willing and able to allocate to manage each risk in pursuit of our objectives. We also consider the impact to Shell's overall risk profile, such as the change in our overall risks and returns as we develop our Renewables and Energy Solutions businesses and pivot away from our Upstream business.

The impact and likelihood assessment, combined with risk appetite, determines the type of risk responses, such as controls and assurance activities, that may be required to manage each risk.

Possible responses include:

- accepting the risk without any further action;
- mitigating or reducing the risk with appropriate controls, supported by assurance activities;
- transferring the risk, for example to insurance providers where appropriate; and
- altogether stopping or forgoing the activity that gives rise to the risk.

In determining our risk responses, we always seek to comply with our Code of Conduct and other boundaries, such as our financial framework, which set the aggregate level of risk appetite that could be sustained. The financial framework considers boundaries such as net debt levels and our credit rating.

We note that the majority of our emissions are our Scope 3 customer emissions which are outside of our direct control. In recognition of this, we have put customers at the centre of our Powering Progress strategy, partnering with others to reduce carbon emissions, sector-by-sector.

Classifications of risks

We identify and assess risks across the Group in terms of three distinct categories:

- strategic risks: we consider current and future portfolio issues, examining parameters such as country concentration or exposure to higher-risk countries. We also consider long-range developments in order to test key assumptions or beliefs in relation to energy markets.
- operational risks: we consider material operational exposures across Shell's entire value chain which provides a more granular assessment of key risks that the organisation is facing.
- conduct and culture risks: we consider alignment of our policies, practices and behaviours against our purpose and core values.

The four sub-components of risk related to climate change and GHG emissions – commercial, regulatory, societal including litigation, and physical risk – are assessed using the above categories to ensure that we maintain strategic resilience, have robust day-to-day operational risk responses and that responses align with Shell's purpose and core values.

SHELL'S PROCESSES FOR MANAGING CLIMATE-RELATED RISKS

Our climate-related risk management process is carried out at Group level, at business, function and asset level which includes projects.

We apply the Shell Control Framework to ensure that we effectively manage our climate-related risks at all these levels. The framework includes:

- mandatory risk standards and manuals;
- project-level risk management processes;
- management and Board review;
- internal audits and investigations; and
- annual attestation processes.

Mandatory risk standards and manuals

We have mandatory standards and manuals which establish the requirements on how to effectively manage material risks including the operation of appropriate controls. Our standards and manuals also provide guidance on how to monitor, communicate and report changes in the risk environment. These documents aim to:

- ensure consistent management and assessment of climate risk across Shell;
- clarify expectations for risk management and reporting, including roles and responsibilities of the risk owners;
- clarify types of assurance activities that may be applicable;
- strengthen decision-making by ensuring that businesses have better awareness and understanding of climate risks (including their likelihood and potential impact) and mitigation plans; and
- enable integration of Shell's reporting.

We periodically review and, if necessary, update our standards and manuals in light of developments in risks associated with climate change. Our approach continues to evolve as we increase our understanding of changing policies and the differing pace of energy transition in different regions.

Project-level risk management processes

At a project level, assessing climate-related risks is an important part of making initial investment decisions. To support project-level risk management, projects of a certain size or which carry unusual risks are required to follow Shell's Opportunity Realisation Standard, which sets out the rules for managing and delivering opportunities in the organisation. Each project is assisted by experts from our global subject matter groups during their development, implementation and operation.

Projects under development that are expected to have a material greenhouse gas impact must meet our internal carbon performance standards or industry benchmarks. This indicates that they will be able to compete and prosper in a future where society aims to limit overall carbon emissions.

Our performance standards are used for measuring a project's average lifetime GHG-intensity or energy efficiency per asset type. Applying these criteria ensures that our projects can compete and prosper in the energy transition. An exception process is in place to manage specific incidental cases. The reporting year 2021 was the first full year of implementation of performance standards across our Upstream and Transition pillars. The performance standards for the Growth businesses are under development.

The performance standards are approved by the Executive Vice President accountable for implementation in the relevant businesses, and by the Executive Vice President Safety, Environment and Asset Management.

Projects with a material greenhouse gas footprint that meet the performance standards or industry benchmarks will often set more ambitious emissions targets for themselves that then are approved by the Executive Vice President Safety, Environment and Asset Management at certain defined stages. The respective project's GHG abatement plan helps to determine the nature of these targets, and we assess the effects of a project's emissions alongside economic and technical design factors.

We estimate the future GHG emissions of projects in two ways. We apply the performance standards, and we consider the GHG emissions from the use of the products that are to be manufactured. These assessments can lead to projects being stopped or designs being changed.

We expect the performance standards to evolve as our portfolio changes in the energy transition.

Management and Board reviews

Management and the Board perform regular reviews of the risk of climate change and GHG emissions to ensure awareness of emerging issues that impact our strategy and to ensure the effectiveness of our responses in managing this risk at a more granular, operational level. For example, as part of the annual strategic planning cycle, the Executive Committee and the Board assess how climate and GHG emissions may affect the pace of the energy transition and the long-term implications for Shell's current portfolio.

CLIMATE CHANGE AND ENERGY TRANSITION continued

In addition, at an operational level, each business and function regularly reviews its risk profile, risk responses and assurance activities throughout the year to ensure climate-related risks are managed effectively. These insights are used to provide the Executive Committee and Board with an update twice a year on the operational management of climate change and GHG emissions risks. During these updates, the Executive Committee and Board consider the significance of the climate change and GHG emissions risks relative to other risks on the Group risk profile and review whether our risk responses are effective in addressing the four sub-components of the climate change and GHG emissions risk. Where necessary, Board reviews are further supplemented by additional in-depth reviews with the relevant management teams.

Our management reviews help us to update Shell's forward-looking plans and guide our day-to-day operational decisions such as maintenance schedules and our risk response plans.

Internal audits and investigations processes

Shell's Internal Audit and Investigations (SIAI) team provides independent and objective assurance and advises management and the Board on the adequacy and effectiveness of our risk management and internal controls.

For example, in relation to our climate ambitions, SIAI conducted four GHG audits during 2021 to test whether controls are adequately designed and operating effectively to mitigate the identified risks. The controls tested covered GHG emissions measurement and reporting, abatement projects and GHG forecasts. In addition, a SIAI-led Shell Energy audit focused on the reported gas and electricity volumes used for net carbon intensity calculations and reporting.

Annual attestation processes

On an annual basis, each business director is required to provide an annual attestation of their business' compliance with our Health, Safety, Security, Environment and Social Performance (HSSE & SP) Control Framework and to report this to Shell's CEO. This includes the assessment of the effectiveness of the internal controls in managing climate-related risks.

Project-level risk management in action

During project development stages, we consider ways to reduce GHG emissions and whether to include them in the design. Measures considered and adopted in 2021 included:

- flaring reduction:
  - Gbaran asset, Nigeria: improvement project including flare reduction and improved efficiency of power system;
- CCS capabilities;
- exclusion of high-intensity process equipment;
- using renewable energy; and
- electrification:
  - Timi, Malaysia: financial investment decision (FID) taken on fully electrified wellhead platform for gas production;
  - Linnorm, Norway: plan evolves full electrification of a gas production platform; currently past conceptual design phase and expected to take FID in 2022; and
  - F6 Vlap, Malaysia: conceptual planning completed, aimed at implementing an extension of existing platform with improved power production to reduce GHG intensity. The FID is expected in 2022.

We also include considerations of potential physical climate change risks in the internal Design and Engineering Practice (DEP) requirements for new projects.

Physical risk management in action

In addition to the steps we are taking to manage climate-related risks and opportunities, we are also adapting to the changing physical risk environment. An example is:

Port Fourchon Junction, USA, (comprising two Shell-operated ventures, with Shell interest of 75% in the Amberjack Pipeline Company and 71% in Mars Oil Pipeline Company). The Port Fourchon Junction facilities are located in the Mississippi Delta, one of the world's most vulnerable low-elevation coastal zones. These facilities are highly exposed to storm surge and wave-induced inundation under hurricanes which regularly visit the Gulf of Mexico. Another important factor is that the area experiences one of the largest rates of subsidence in the world, which, combined with sea level rise, could increase the site vulnerability in the coming decades. In 2021, Shell assessed the present and future scenarios of subsidence and sea level rise under extreme metocean conditions induced by hurricanes and their impact on Port Fourchon Junction. This led to a new project involving infrastructure changes. In 2021, it was developed past the conceptual design phase and is expected to take FID in 2022. The scope should allow for continued safe operations and accessibility to the location under different extreme circumstances which involves relocation of assets and raising all equipment as per metocean experts' recommendations.

INTEGRATION OF THE CLIMATE-RELATED RISK MANAGEMENT PROCESS INTO SHELL'S OVERALL RISK MANAGEMENT

As described above, our climate-related risk management process follows the approach set out by the Shell Control Framework, ensuring that it is integrated in the overall risk management processes of the Group.

Climate-related risks are considered from a strategic and operational perspective to ensure we maintain a comprehensive view of the different types of climate risks we face and the different time horizons in which they may affect us.

The monitoring and review of risks is a key risk management process in Shell. The Executive Committee and the Board regularly review climate-related risks against the Group's operational and strategic risk profile. This allows management to take a holistic view and to optimise risk mitigation responses, to ensure that climate-related risk responses are properly integrated into the relevant businesses' and functions' activities.

CLIMATE-RELATED METRICS AND TARGETS

METRICS USED BY SHELL TO ASSESS CLIMATE-RELATED RISKS AND OPPORTUNITIES IN LINE WITH ITS STRATEGY AND RISK MANAGEMENT PROCESS

This section describes our energy product and carbon emissions performance and metrics linked to our material climate transition risks and opportunities.

We must decarbonise our portfolio and operations in order to mitigate climate risks and seize opportunities in the energy transition. Key metrics we use to track progress against our energy transition strategy are the net carbon intensity of our portfolio and our absolute emissions.

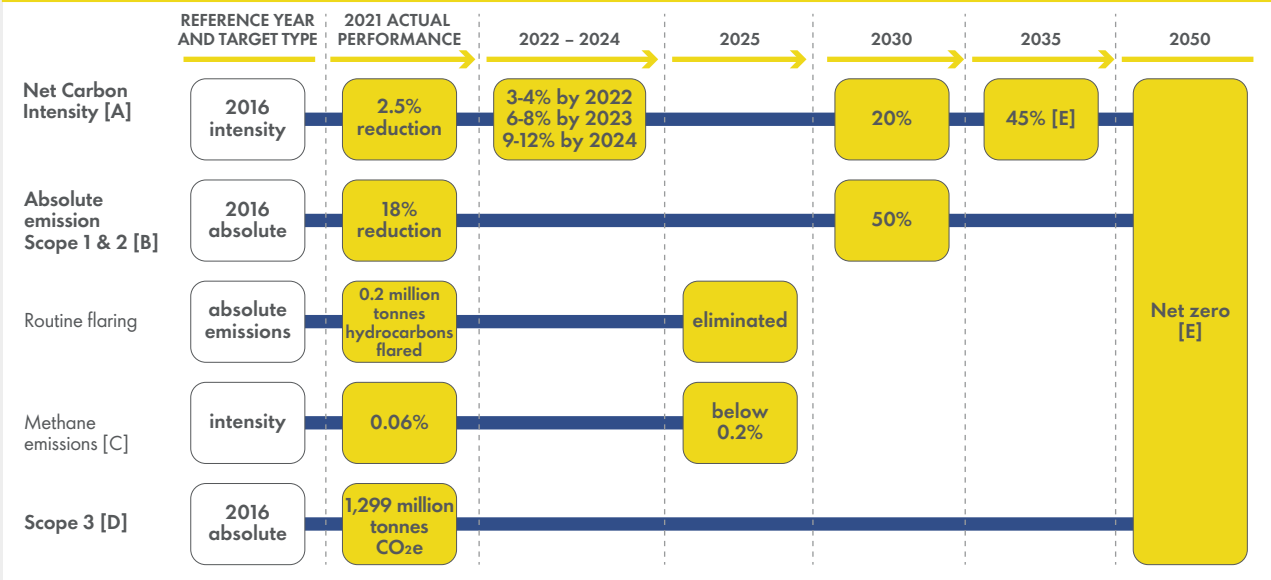
The other material climate-related risk relates to Shell's physical risk exposure. Currently, this response is managed at an asset level. We are continuing to establish a structured process for managing the physical risk of climate change across the Group. The process may include consideration of additional metrics and targets to monitor physical risk exposure.

Our overall climate target is to become a net-zero emissions energy business by 2050, in step with society. It includes net-zero emissions from our operations (Scope 1 and 2 emissions), as well as net-zero emissions from the end-use of all the energy products we sell (scope 3 emissions). We have set short, medium and long-term targets to track our performance against our overall climate target over time.

We believe our total absolute emissions peaked in 2018 at 1.73 gigatonnes of carbon dioxide equivalent ($GtCO_2e$) and our overall climate target means we will have to bring that down to absolute net-zero emissions by 2050, in step with society.

In October 2021, in support of our 2050 net-zero emissions target, we set a target to reduce Scope 1 and 2 absolute emissions from assets and activities under our operational control (including divestments) by 50% by 2030 compared with 2016 levels on a net basis. We monitor our progress against these targets using the key metrics described below.

Climate-related targets summary



[A] Our total emissions (Scope 1, 2 and 3 equity boundary) peaked in 2018 at around 1.73 gigatonnes of carbon dioxide equivalent ($GtCO_2e$) per annum.
[B] Operational control boundary.
[C] Overall methane emissions intensity for facilities with marketing gas.
[D] Indirect GHG emissions (Scope 3) based on the energy product sales included in Net Carbon Intensity (NCI) using equity boundary.
[E] We aim to achieve these targets in step with society.

CLIMATE CHANGE AND ENERGY TRANSITION continued

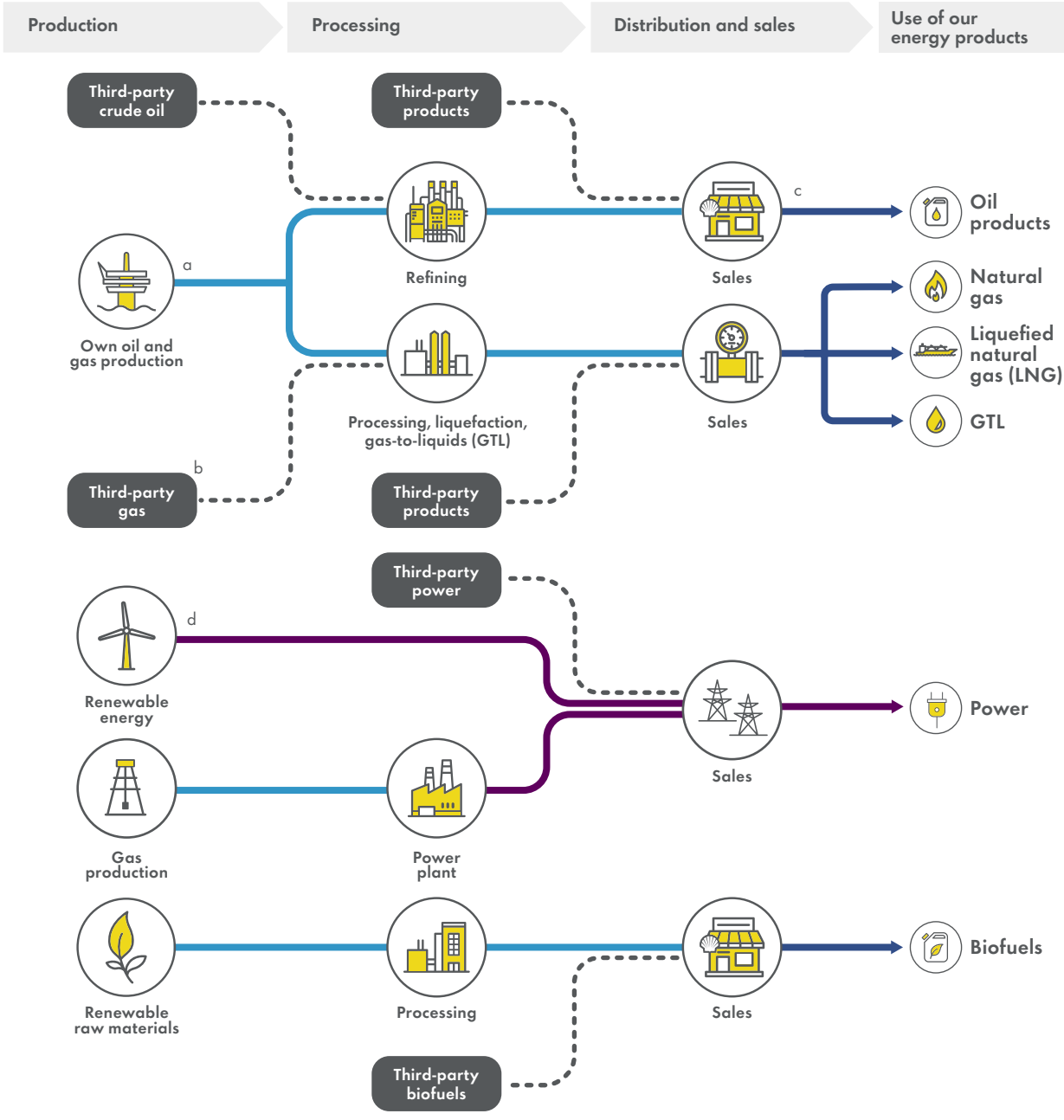
Net carbon intensity

Shell's net carbon intensity is the average intensity, weighted by sales volume, of the energy products sold by Shell. It is tracked, measured and reported using the Net Carbon Footprint (NCF) methodology.

We have received third-party limited assurance on our carbon intensity, measured and reported using the Net Carbon Footprint methodology, for the period 2016 to 2021.

Scope of Net Carbon Intensity

Emissions from energy products included within the Net Carbon Footprint methodology



Performance – net carbon intensity (NCI)

In 2021, Shell's NCI was 77 grams of carbon dioxide equivalent per megajoule of energy (gCO_2e/MJ), a 2.7% increase from the previous year and a 2.5% reduction compared with 2016, the reference year. The increase in Shell's NCI in 2021 was largely due to the introduction of an improved approach for the estimation of the emissions intensity of power sold by Shell. The new approach is based on categorising power sales as certified renewable, own generation or power purchase agreement, or power purchased from the grid. Intensities are then assigned to each power sales category, allowing a better estimate of the overall intensity of power sold by Shell.

NCI reference year: 2016 (equity control boundary)		2021	2020	2019	2016
NCI [E]	gCO_2e/MJ	77	75	78	79
Estimated total energy delivered by Shell [A]	trillion (10^12) MJ	17.89	18.40	21.05	20.93
Estimated total GHG emissions included in NCI (net) [B]	million tonnes CO_2e	1,375	1,384	1,646	1,645
Carbon credits	million tonnes CO_2e	5.1	3.9	2.2	0.0
Estimated total GHG emissions (gross) [C][D]	million tonnes CO_2e	1,381	1,388	1,648	1,645

[A] The NCI calculation uses Shell's energy product sales volume data, as disclosed in the Annual Report and Sustainability Report. This excludes certain contracts held for trading purposes and reported net rather than gross. Business-specific methodologies to net volumes have been applied in oil products and pipeline gas and power. Paper trades that do not result in physical product delivery are excluded. Retail sales volumes from markets where Shell operates under trademark licensing agreements are also excluded from the scope of Shell's carbon intensity metric.
[B] These numbers include well-to-wheel emissions associated with energy products sold by Shell, on an equity boundary; they also include the well-to-tank emissions associated with the manufacturing of energy products by others that are sold by Shell. Emissions associated with the manufacturing and use of non-energy products are excluded.
[C] All figures are disclosed without significant decimal places, and hence include rounding.
[D] While the NCI is an intensity measure and not an inventory of absolute emissions, a notional estimate of the amount of GHG emissions covered by the scope of the NCI calculation can be derived from the final NCI value for any year. Similarly, a fossil-equivalent estimate of the total amount of energy sold included in the calculation can also be determined.
[E] Acquisitions and divestments are included in the actual performance tracking with the target and baseline year unchanged. Note that acquisition and divestments could have a material impact on meeting the targets.

As we implement our Powering Progress strategy, we are increasing the share of lower-carbon products in our energy product sales, which should result in a reduction in our NCI.

Our ability to change the emissions intensity of each energy product varies depending on the product type:

- For hydrocarbon fuels, emissions from end-use by customers are by far the biggest contributors to the carbon intensity of the product. As a result, the emissions intensity of hydrocarbon fuels is expected to stay relatively unchanged over time. This is why we are focused on helping our customers decarbonise.
- This contrasts with the emissions intensity of power, which can be highly variable depending on how it has been generated. To a lesser extent, there is also a contrast between hydrocarbon fuels and biofuels, which can vary significantly in intensity depending on the feedstock and production process used.
- The proportion of our renewable power sales and the generation mix in countries where we sell power to the market both affect Shell's overall power mix and its resulting emissions intensity.

The biggest driver for reducing our NCI is increasing the share of lower-carbon products in our energy product sales.

SCOPE 1, SCOPE 2, AND SCOPE 3 GREENHOUSE GAS (GHG) EMISSIONS, AND THE RELATED RISKS

Shell's target is to be a net-zero emissions energy business by 2050, in step with society. This means we must therefore report our performance against our operational Scope 1 and 2, and Scope 3 emissions. Scope 1, 2 and 3 emissions are among the metrics we use to mitigate climate risks and seize opportunities in the energy transition, as described in the section above.

Shell's absolute emissions in 2021

In 2021, our total combined Scope 1 and 2 absolute GHG emissions (from assets and activities under our operational control) were 68 million tonnes on a CO_2 equivalent basis, a 4% reduction compared with 2020, and an 18% reduction compared with 2016, the base year. Our Scope 3 emissions from energy products included in our net carbon intensity were 1,299 million tonnes CO_2e.

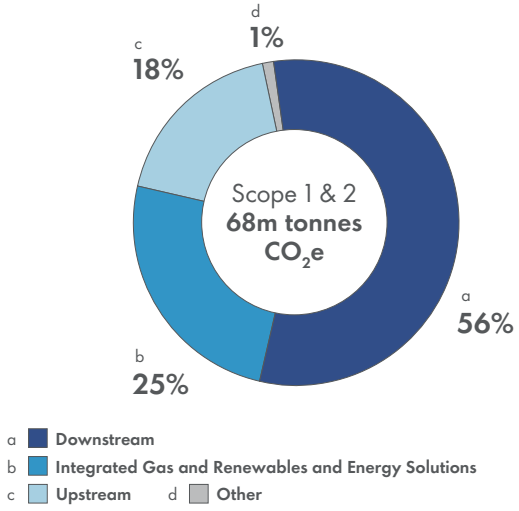
	Absolute emissions [D], [F] million tonnes of CO_2e				Targets [E]	
Scope	2016	2019	2020	2021	Target 2030	Target 2050
Scope 1 [A]	72	70	63	60	50% reduction compared with 2016 levels on a net basis	0
Scope 2 [B]	11	10	8	8		0
Scope 3 [C]	1,545	1,551	1,305	1,299	No target	0

[A] Total direct (Scope 1) GHG emissions from assets and activities under our operational control. It includes emissions from production of energy and non-energy products.
[B] Total indirect GHG emissions from imported energy (Scope 2) from assets and activities under our operational control using the market-based method. It includes imported energy used for production of energy and non-energy products. We have restated our 2020 emissions from 9 to 8 million tonnes CO_2e following a correction of an efficiency factor for steam at one of our assets and a revision to how internal energy transfers of steam and electricity were accounted for at several of our assets to remove double-counting between Scopes 1 and 2.
[C] Indirect GHG emissions (Scope 3) based on the energy product sales included in Net Carbon Intensity (NCI) using equity boundary. The NCI calculation uses Shell's energy product sales volume data, as disclosed in the Annual Report and Sustainability Report. This excludes certain contracts held for trading purposes and reported net rather than gross. Business-specific methodologies to net volumes have been applied in oil products and pipeline gas and power. Paper trades that do not result in physical product delivery are excluded. Retail sales volumes from markets where Shell operates under trademark licensing agreements are also excluded from the scope of Shell's carbon intensity metric.
[D] Carbon credits are not included in the total emissions.
[E] Our 2030 and 2050 targets are on the net basis (i.e., including carbon credits). Acquisitions and divestments have been included in the actual performance tracking with the target unchanged. Note that acquisition and divestments could have a material impact on meeting the targets.
[F] Oil and gas industry guidelines from the International Petroleum Industry Environmental Conservation Association (IPIECA) indicate that several sources of uncertainty can contribute to the overall uncertainty of a corporate emissions inventory. We have estimated the overall uncertainty for our direct GHG emissions (scope 1) to be around 4% and for our energy indirect GHG emissions (scope 2) to be around 6% for 2021 (same for location and market-based methods). IPIECA also note that due to the diversity of scope 3 emissions, sources and the fact that these emissions occur outside the company's boundaries, the emissions estimates may be less accurate or may have high uncertainty.

The Scope 3 emissions from the energy products we sell account for the majority of our total emissions. When we calculate our emissions, we include emissions not only from the products that we produce ourselves but also from the oil and gas that others produce and resell as products to our customers. Altogether, we sell more than three times more oil and gas products than the oil and gas we extract ourselves. Therefore, to account for Shell's full effect, we have to include everything we sell in the measurement of our carbon emissions as shown in the charts on page 90.

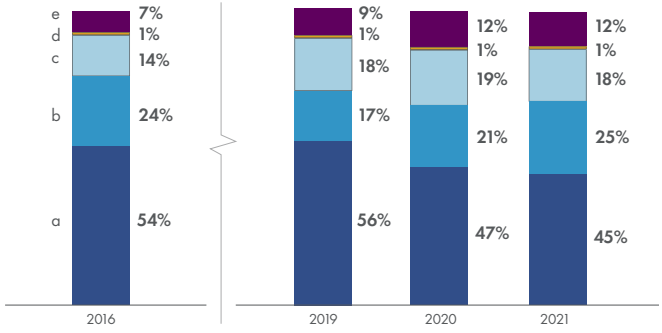
CLIMATE CHANGE AND ENERGY TRANSITION continued

Scopes 1 & 2 – performance [A]



[A] Total direct (Scope 1) and energy indirect (Scope 2) GHG emissions from assets and activities under operational control boundary. It includes emissions from production of energy and non-energy products. For Scope 2, we used the market-based method.

Share of energy delivered per energy product type [A]-[F]



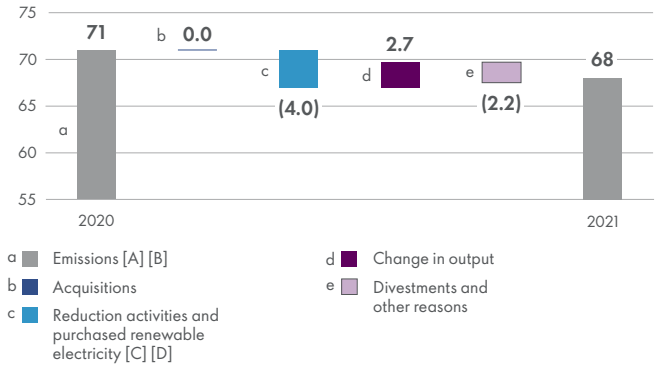
[A] Percentage of delivered energy may not add up to 100% because of rounding.
[B] Total volume of energy products sold by Shell, aggregated on an energy basis, with electricity represented as fossil equivalents. This value is derived from energy product sales figures disclosed by Shell in the Annual Report, Form 20-F and the Sustainability Report.
[C] Lower heating values are used for the energy content of the different products and a fossil-equivalence approach is used to account for electrical energy, so that it is assessed on the same basis as our other energy products.
[D] The NCI calculation uses Shell's energy product sales volume data, as disclosed in the Annual Report and Sustainability Report. This excludes certain contracts held for trading purposes and reported net rather than gross. Business specific methodologies to net volumes have been applied in oil products and pipeline gas and power. Paper trades that do not result in physical product delivery are excluded. Retail sales volumes from markets where Shell operates under trademark licensing agreements are also excluded from the scope of Shell's carbon intensity metric.
[E] In 2021, emissions included in carbon intensity of power have been calculated using the market-based method.
[F] The carbon intensity of biofuels provided in the graph "Share of energy delivered per energy product type" reflects the global average for biofuels sold by Shell for 2021.

We undertake external verification of our GHG emissions annually. Our Scope 1 and 2 GHG emissions from assets and activities under our operational control and Scope 3 emissions included in our NCI have been verified to a level of limited assurance.

Drivers of absolute Scope 1 and 2 emissions change in 2021

Scope 1 and Scope 2 GHG emissions changes from 2020 to 2021

million tonnes carbon dioxide equivalent (CO_2e)



[A] Total Scope 1 and Scope 2 emissions, rounded to the closes million tonnes. Scope 2 emissions were calculated using the market-based method.
[B] We have restated our 2020 emissions from 9 to 8 million tonnes CO_2e following a correction of an efficiency factor for steam at one of our assets and a revision to how internal energy transfers of steam and electricity were accounted for at several of our assets to remove double-counting between Scopes 1 and 2.
[C] In addition to reductions from GHG abatement and energy efficiency projects, this category also includes reductions from permanent shutdown of Convent and Tabangao refineries and the impact of transformational activities at our Shell Energy and Chemicals Park in Singapore.
[D] Excludes 1.05 million tonnes of CO_2 captured and sequestered by our Quest CCS project in Canada in 2021.

Our direct GHG emissions (Scope 1) (consolidated using the operational control boundary) decreased from 63 million tonnes of carbon dioxide equivalent (CO_2e) in 2020 to 60 million tonnes CO_2e in 2021, driven by several factors including:

- the shutdown of the Convent refinery, USA, in late 2020;
- downtime at the Norco site, USA, due to impacts from Hurricane Ida;
- divestments in 2020 and 2021 (e.g. the Martinez and Puget Sound refineries in the USA, and the Fredericia refinery in Denmark);
- sustained emissions reductions (performance against our scorecard and additional reductions as discussed below (page 94); and
- reductions in methane emissions.

These decreases were partly offset by higher emissions due to the restart of the Prelude FLNG facility in Australia and increased flaring in facilities operated by Shell Nigeria Exploration and Production Company Limited (SNEPCo) in Nigeria.

Total routine hydrocarbons flaring reduced from 0.3 to 0.2 million tonnes of hydrocarbon flared from 2020 to 2021.

Around 60% of flaring in our Upstream and Integrated Gas facilities in 2021 occurred in assets operated by the Shell Petroleum Development Company of Nigeria Limited (SPDC) and SNEPCo. We will continue to work in close collaboration with joint-venture partners and the Federal Government of Nigeria to make progress towards the objective of ending the continuous flaring of associated gas.

Our target to keep methane emissions intensity below 0.2% was met in 2021 with Shell's overall methane emissions intensity at 0.06% for facilities with marketing gas and 0.01% for facilities without marketing gas. We believe our methane emissions are calculated using the best methods currently available. This target covers all Shell-operated oil and gas assets in our Upstream and Integrated Gas businesses. Methane emissions include those from unintentional leaks, venting and incomplete combustion, for example in flares and turbines.

Our indirect GHG emissions associated with imported energy (Scope 2) (consolidated using the operational control boundary) were 8 million tonnes CO_2e in 2021, (using the market-based method), the same as in 2020.

Drivers of absolute Scope 3 emissions change in 2021

Emissions associated with the use of our energy products, Scope 3 emissions, account for the vast majority of our carbon emissions related to energy products. Our total Scope 3 emissions from energy products are largely unchanged from last year. The decrease in 2020 from 2019 mainly relates to a decrease in demand for oil products given market conditions in 2020, and a decrease related to volumes associated with additional contracts being classified as held for trading purposes with effect from January 2020.

Our strategy is based on working with our customers, sector-by-sector, to address the emissions from the use of our products and to help them find ways to reduce their emissions and overall carbon footprint to net zero by 2050.

TARGETS USED BY SHELL TO MANAGE CLIMATE-RELATED RISKS AND OPPORTUNITIES AND PERFORMANCE AGAINST TARGETS

Shell's material climate-related risks and opportunities are set out in the "Climate-related risks and opportunities identified by Shell over the short, medium and long term" section. Our response to the transition risk focuses on decarbonising our value chain. Our climate targets are focused on reducing our net carbon intensity as well as our absolute emissions.

NCI target-setting

Tackling climate change is an urgent challenge. But only a transformation of the global economy and the energy system that supports it will stop the world adding to the total amount of greenhouse gases in the atmosphere, achieving what is known as net-zero emissions. That is why, for our part, Shell has set a target to become a net-zero emissions energy business by 2050, in step with society's progress in achieving the goal of the Paris Agreement on climate change.

We believe our targets support the more ambitious goal of the Paris Agreement: to limit the increase in the global average temperature to 1.5°C above pre-industrial levels. Our net-zero target is aligned with the findings of the Intergovernmental Panel on Climate Change (IPCC), which concluded that the world must reach net-zero carbon emissions by around 2050 to limit global warming to 1.5°C and avoid the worst effects of climate change.

As there is no established standard for aligning an energy supplier's decarbonisation targets with the temperature goal of the Paris Agreement, we have developed our own approach to demonstrate that our carbon intensity targets are aligned with the 1.5°C goal. We set our targets using scenarios taken from a database developed for the IPCC Special Report on Global Warming of 1.5°C. We started with the complete range of IPCC 1.5°C scenarios, then chose scenarios that focused on earlier action and placed less reliance on the use of carbon sinks. We then calculated the carbon intensity of each of the selected scenarios and, after removing outlying values, used the resulting range of intensities to produce the final 1.5°C pathways used to set our targets.

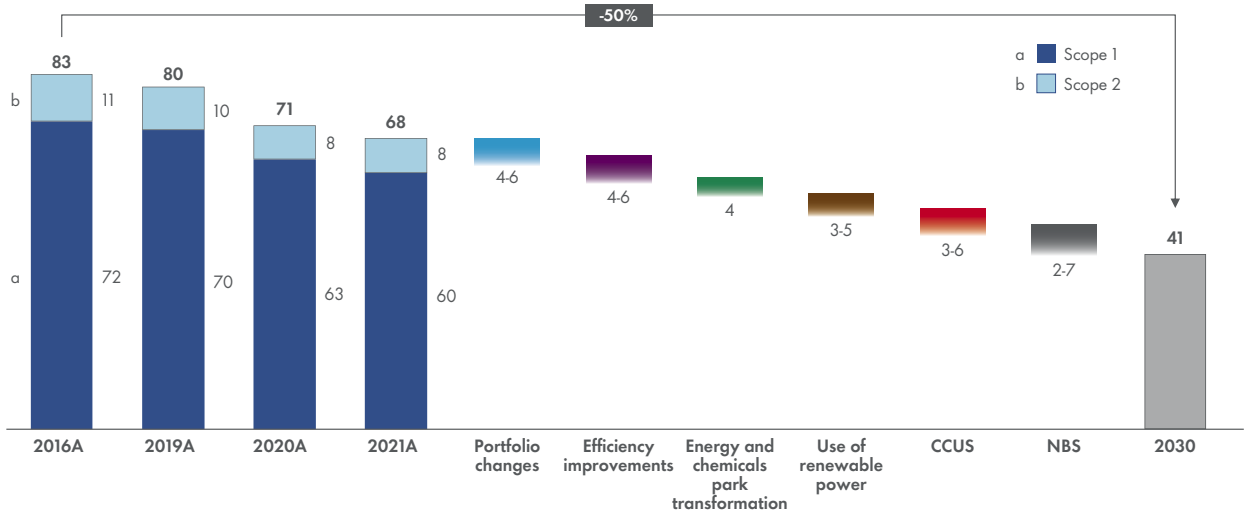
To become a net-zero emissions energy business, we must reduce emissions from our operations, and from the fuels and other energy products such as electricity that we sell to our customers. We must also capture and store remaining emissions using either technology or natural carbon sinks.

Shell will work with our customers to help them accelerate their transition by providing low- and zero-carbon energy products and services. If they are not able to accelerate their transition, we will help our customers in other ways by providing high-quality, nature-based solutions to offset any unavoidable emissions. We know that even though we offer this service, our customers may choose to source offsets from other companies.

Today, it is not possible for energy companies and their customers to jointly account for actions to reduce emissions. We will work with partners towards changing accounting and reporting protocols and developing new systems for suppliers and users of energy to exchange information about steps they are taking to reduce their emissions. These changes will take time to put into practice, and we reflect this in our targets which before 2035 include only mitigation actions directly involving Shell.

Working to reduce our absolute Scope 1 and 2 emissions

Scope 1-2 emissions in million tonnes per annum [A],[B]



[A] This chart assumes no adjustments to the base year
[B] Operational control boundary

CLIMATE CHANGE AND ENERGY TRANSITION continued

Linking Shell's emissions targets to remuneration policies

We have established remuneration policies which are designed to support us in achieving our short-term climate targets:

- remuneration linked to net carbon intensity targets;
- remuneration included in the 2021 annual scorecard against Scope 1 and 2 GHG intensity targets; and
- remuneration included in the 2021 annual scorecard linked to sustained absolute emission reductions from GHG abatement projects.

See also "Directors' Remuneration Report on page 167.

Remuneration linked to net carbon intensity targets

We have linked our target to reduce the carbon intensity of our energy products to our 2021 LTIP awards for Executive Directors and senior executives and our Performance Share Plan awards made to around 16,500 employees globally.

2021 equity control basis

	2021 Target	2021 Performance	2021 Status
NCI reduction against 2016 reference year value of 79 grams of carbon dioxide equivalent per megajoule (gCO_2e/MJ)	2-3%	7%	achieved

The reduction of Shell's NCI from 79 gCO_2e/MJ in 2016 to 7% gCO_2e/MJ in 2021 means that we have achieved our first short-term target of a 2-3% reduction in NCI by the end of 2021. The reduction of Shell's NCI over this period has largely been driven by a reduction in oil product sales combined with growth in power sales.

	2021 Target	2021 Performance	2021 Status
Growing a material power business			
New market entries for direct power sales to end customers	2	1	not achieved
Secure renewable power generation capacity options			
Options created for generation capacity	5-10 GW	25.6 GW	achieved
Post-FID capacity	2-4 GW	2.6 GW	achieved
Investment in energy access customers	$200m	$69m	not achieved
Commercialise advanced biofuels technology			
Technologies at TRL8 or Shell investment in a commercial scale advanced biofuels project	1	2	achieved
Develop emissions sinks			
FID on NBS origination projects verified by recognised carbon credit standards	4-8	9	achieved
FID on Carbon capture, utalisiation and storage	1	1	achieved

Remuneration included in 2021 annual scorecard against Scope 1 and 2 GHG intensity targets

Our annual bonus scorecard for senior management also affects remuneration for almost all of Shell's employees. Our 2021 scorecard included three GHG intensity metrics covering over 75% of Scope 1 and 2 GHG emissions under operational control. They are summarised below.

2021 Scorecard: Scope 1 and 2 GHG intensity targets – operational control

	2021 Target	2021 Performance	2021 Status
Upstream and Integrated Gas tonnes CO_2e/tonne of oil and gas available for sale (excluding Prelude floating liquefied natural gas (FLNG) facility) [A]	0.152	0.17	not achieved
Refining tonnes of CO_2e as per Solomon's Utilised Equivalent Distillation Capacity (UEDC™) [A]	1.03	1.05	not achieved
Chemicals tonnes CO_2e/tonne of high value chemicals [A]	0.97	0.95	achieved

[A] Acquisitions and divestments are included in the actual performance tracking with the target unchanged. Note that acquisition and divestments could have a material impact on meeting the targets set for the scorecard.

We successfully reduced our chemicals emissions intensity to below target intensity, from 0.98 in 2020 to 0.95 in 2021. This was in part driven by sustained good reliability at our Bukom chemical plant in Singapore.

Upstream and Integrated Gas emissions intensity increased from 0.16 in 2020 to 0.17 in 2021. This was partly due to below-plan production at several of our assets. The intensity number for 2021 excludes the Prelude floating liquefied natural gas (FLNG) facility. Refining emissions intensity remained unchanged at 1.05 in 2020 and 2021. The Refining GHG emission intensity was below target partly due to the impact of the February winter freeze and Hurricane Ida on our refineries in the USA. We are taking steps to continue working on measures to drive reductions in GHG intensity.

Remuneration included in 2021 annual scorecard linked to sustained absolute emissions reductions from GHG abatement projects

There was one main absolute target linked to remuneration. This was set out in our 2021 annual scorecard which included a target of 224 thousand tonnes of carbon dioxide equivalent ($ktCO_2e$) sustained emissions reductions from GHG abatement projects. This was included in our annual scorecard to further emphasise the importance of achieving progress in the energy transition in our own operations.

See also "Annual Report on Remuneration" on page 171.

2021 scorecard: Scope 1 sustained emissions reductions – operational control

	2021 Target	2021 Performance	2021 Status
Sustained emissions reductions from delivered GHG abatement projects in $ktCO_2e$	224	279	achieved

We have exceeded this target with 279 $ktCO_2e$ of sustained emissions reductions, by implementing projects across a range of assets that we operate. We have also delivered around 3.6 million tonnes of other GHG reductions (not included in the scorecard). These reductions include GHG abatement projects and emissions reductions from permanent shutdowns and conversions of our facilities. Examples include flaring reduction and energy efficiency projects. The above reductions do not include 1.05 million tonnes of CO_2 captured and sequestered by our Quest CCS project in Canada in 2021.

Basis of preparation – net carbon intensity

Shell's net carbon intensity (NCI) provides an annual measure of the life-cycle emissions intensity of the portfolio of energy products sold. The intended use of the NCI metric is to track progress in reducing the overall carbon intensity of the energy products sold by Shell, as described in Shell's climate target. The NCI is calculated on a life-cycle basis and as such includes GHG emissions – on an equity basis – from several sources, including:

- direct GHG emissions from Shell operations;
- indirect GHG emissions from generation of energy consumed by Shell; and
- indirect GHG emissions from the use of the products we sell.

Emissions from other parts of the product life cycle are also included, such as those from the extraction, transport and processing of crude oil, gas or other feedstocks and the distribution of products to our customers.

Also included are emissions from parts of this life cycle not owned by Shell, such as the extraction of oil and gas processed by Shell but not produced by Shell; or from the production of oil products and electricity marketed by Shell that have not been processed or generated at a Shell facility.

Emissions offset through various measures, such as by working with nature to create carbon sinks – including forests and wetlands – or mitigated by using CCS technology are also taken into account.

Refer to scope of NCI on page 90 for details of the supply chains and steps in the product life cycles that are included in the Net Carbon Footprint methodology.

The following GHG emissions are not included in the net carbon intensity (NCI):

- emissions from production, processing, use and end-of-life treatment of non-energy products, such as chemicals and lubricants;
- emissions from third-party processing of sold intermediate products, such as the manufacture of plastics from feedstocks sold by Shell;
- emissions associated with the construction and decommissioning of production and manufacturing facilities;
- emissions associated with the production of fuels purchased to generate energy on site at a Shell facility;
- other indirect emissions from waste generated in operations, business travel, employee commuting, transmission and distribution losses associated with imported electricity, franchises and investments;
- emissions from capital goods, defined by the GHG Protocol as including fixed assets or property, plant and equipment (PP&E), and other goods and services not related to purchased energy feedstocks sourced from third parties or energy products manufactured by third parties and sold by Shell.

The NCI calculation uses Shell's energy product sales volume data, as disclosed in the Annual Report and Sustainability Report. This excludes certain sales volumes such as:

- certain contracts held for trading purposes reported net rather than gross. Business-specific methodologies to net volumes have been applied in oil products and pipeline gas and power. Paper trades that do not result in physical product delivery are excluded; and
- retail sales volumes from markets where Shell operates under trademark licensing agreements.

Important notes on the Net Carbon Footprint methodology

1. The Net Carbon Footprint is not a mathematical derivation of total emissions divided by total energy, nor is it an inventory of absolute emissions.

2. It is a weighted average of the life-cycle CO_2 intensities of different energy products, normalising them to the same point relative to their final end-use. The use of a consistent functional unit, grams of carbon dioxide equivalent per megajoule (gCO_2e/MJ), allows like-for-like comparisons and the aggregation of individual life-cycle intensities for a range of energy products including renewables.

For further information see our detailed NCF methodology documentation.

Basis of preparation – absolute Scope 1, 2 and 3 emissions

We follow the GHG Protocol's Corporate Accounting and Reporting Standard, which defines three scopes of GHG emissions:

- Scope 1: direct GHG emissions from sources that are owned or controlled by Shell.
- Scope 2: indirect GHG emissions from generation of purchased energy consumed by Shell.
- Scope 3: other indirect GHG emissions, including emissions associated with the use of energy products sold by Shell.

GHG emissions comprise carbon dioxide (CO_2), methane (CH_4), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride, with carbon dioxide and methane being the most significant contributors. Our GHG inventory was prepared in line with the requirement outlined in the ISO 14064-1:2018 Specification with Guidance at the Organisational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals and the GHG Protocol's Corporate Accounting and Reporting Standard.

In line with external standards, Shell aggregates its emissions of greenhouse gases into tonnes of CO_2 equivalent by applying global warming potential (GWP) factors to each greenhouse gas. The GWP factors used for converting the mass of individual gases to their CO_2 equivalents are shown in the consolidated statement of GHG emissions. These factors are taken from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) over a 100-year time horizon, in line with the UK Government GHG Conversion Factors for Company Reporting.

CLIMATE CHANGE AND ENERGY TRANSITION continued

GHG emissions were aggregated using a bottom-up approach: emission source -> asset -> operating unit -> business -> Group. GHG emissions in this Report include emissions from Upstream, Integrated Gas, Renewables and Energy Solutions, Downstream, Projects & Technology businesses and functions (mainly offices). All operated assets were included in the GHG inventory in the reporting period.

Basis of preparation – Scope 1 emissions

Sources included in Scope 1 emissions comprised:

- combustion of carbon-containing fuels in stationary equipment (e.g., boilers, gas turbines) for energy generation;
- combustion of carbon-containing fuels in mobile equipment (e.g., trucks, vessels, mobile rigs);
- flares;
- venting and emissions from industrial processes (e.g., hydrogen plants, catalytic cracking units); and
- fugitive emissions, including piping and equipment leaks and non-routine events.

Scope 1 emissions – exclusions

Carbon dioxide emissions from biogenic sources (for example, biofuels, biomass) were excluded from our Scope 1 emissions; instead, they were captured separately. Methane and nitrous oxide emissions from biogenic sources were included in our Scope 1 emissions.

Captured carbon dioxide that was subsequently sold or otherwise transferred to third parties was excluded from our Scope 1 emissions.

Carbon dioxide captured and sequestered using CCS technologies was excluded from our Scope 1 emissions. But the emissions from operating CCS were included in our Scope 1 and 2 emissions.

Carbon offset credits were excluded from our Scope 1 GHG emissions.

No material sources were excluded from the Scope 1 inventory.

Basis of preparation – Scope 2 emissions

Sources included in Scope 2 emissions comprised indirect emissions from purchased and consumed electricity, steam and heat. We did not identify any assets with imported cooling or compressed air used for energy purposes.

Scope 2 emissions were calculated using the market- and location-based methods separately as defined by the GHG Protocol Scope 2 Guidance.

No material sources were excluded from our inventory.

Basis of preparation – Scope 3 emissions

This report provides Scope 3 emissions included in our net carbon intensity (NCI). They were consolidated using the equity boundary approach. Under this approach, we reported Shell share of emissions from energy products sold by Shell, including those sourced from third parties. Scope 3 categories included in the total number in this Report include following:

Scope 3, category 1: purchased goods and services

This category includes well-to-tank emissions from purchased third-party unfinished and finished energy products excluding electricity (which was reported separately under Category 3: Fuel and energy-related activities (not included in Scope 1 or Scope 2)).

Emissions in this category were estimated using well-to-tank emission factors for crude oil, natural gas, refined oil products (such as gasoline, and diesel), LNG and biofuels. Because the emission factors includes transport, we did not estimate emissions from transport of purchased third-party products separately.

Emissions from purchased non-energy products were not included in this Report.

Scope 3, category 3: fuel and energy-related activities (not included in Scope 1 and 2)

This category includes well-to-wire emissions from purchased third-party electricity sold by Shell, calculated using the market-based method. Emissions were not adjusted for any potential double-counting of sold natural gas that may have been used for generating this electricity.

This category does not include:

- indirect emissions from generation of imported energy (steam, heat or electricity consumed by our assets). These emissions were reported separately as Scope 2 emissions; and
- well-to-tank emissions from purchased electricity, steam and heat consumed by our assets (i.e. Scope 3 emissions from extraction, refining and transport of primary fuels before their use in the generation of electricity or steam).

Scope 3, category 9: downstream transport and distribution

This category includes estimated emissions from transport and distribution of energy products produced or refined by Shell. It does not include the emissions associated with transporting third-party products, which are included in Scope 3, Category 1. In order to avoid double counting the emissions from transport, Scope 1 and 2 emissions from transport included in our equity emissions were subtracted from the total in this category.

Scope 3, category 11: use of sold products

This category includes estimated emissions from the use-phase of sold energy products, such as LNG, GTL, pipeline gas, refined oil products and biofuels. The emissions consist of two separate sub-categories: products manufactured and sold by Shell and third-party products sold by Shell.

This category does not include non-energy products that may have been combusted during the use-phase (for example, lubricants).

Biogenic CO_2 emissions from combustion of sold biofuels

Biogenic CO_2 from combustion of sold biofuels were estimated and reported separately outside of scopes. Methane and nitrous oxide have been included in Scope 3, Category 11 in line with the ISO 14064-1:2018 and GHG Protocol requirements.

We did not estimate CO_2 from combustion of biogenic emissions in other Scope 3 categories. It is assumed that the presence of biogenic emissions in other categories is negligible at present.

Other Scope 3 categories

As noted above, this Report only covers Scope 3 GHG emissions included in our net carbon intensity metric. Other Scope 3 GHG emissions can be found on our website: www.shell.com/ghg.

OTHER REGULATORY DISCLOSURES

GHG EMISSIONS AND ENERGY CONSUMPTION DATA – INFORMATION PROVIDED IN ACCORDANCE WITH UK REGULATIONS

Data in this section are consolidated using the operational control approach. Under this approach, we account for 100% of the GHG emissions and energy consumption in respect of activities where we are the operator, irrespective of our ownership percentage.

Reporting on this operational control basis differs from that applied for financial reporting purposes in the "Consolidated Financial Statements". We acknowledge the strong preference of the UK's Financial Reporting Council (FRC) for companies to report the GHG emissions and energy consumption data using the financial consolidation boundary and are working on including the data and information on this boundary in our Annual Report in the future.

See Basis of preparation – absolute emissions on page 95.

Greenhouse gas emissions in million tonnes of CO_2 equivalent

	2021	2020	2019
Total global direct (Scope 1) [A]	60	63	70
UK including offshore area [B]	1.71	2	2.1
Market-based			
Total global energy indirect (Scope 2) [C]	8	8	10
UK including offshore area	0	0	0
Location-based			
Total global energy indirect (Scope 2) [D]	9	10	11
UK including offshore area	0.05	0.06	0.06
Intensity ratio in tonnes per tonne			
Intensity ratio of all facilities [E]	0.27	0.25	0.24

[A] Emissions from the combustion of fuel and the operation of our facilities globally, calculated using global warming potentials from the IPCC's Fourth Assessment Report.
[B] Emissions from the combustion of fuels and the operation of our facilities in the UK and its offshore area, calculated using global warming potentials from the IPCC's Fourth Assessment Report.
[C] Emissions from the purchase of electricity, heat, steam and cooling for our own use globally, calculated using a market-based method as defined by the GHG Protocol Corporate Accounting and Reporting Standard. We have restated our 2020 emissions from 9 to 8 million tonnes CO_2e following a correction of an efficiency factor for steam at one of our assets and a revision to how internal energy transfers of steam and electricity were accounted for at several of our assets to remove double-counting between Scopes 1 and 2.
[D] Emissions from the purchase of electricity, heat, steam and cooling for our own use globally, calculated using a location-based method as defined by the GHG Protocol Corporate Accounting and Reporting Standard. We have restated our 2020 emissions from 11 to 10 million tonnes CO_2e following a correction of an efficiency factor for steam at one of our assets and a revision to how internal energy transfers of steam and electricity were accounted for at several of our assets to remove double-counting between Scopes 1 and 2.
[E] In tonnes of total direct and energy indirect GHG emissions per tonne of crude oil and feedstocks processed and petrochemicals produced in downstream manufacturing, oil and gas available for sale, LNG and GTL production in Integrated Gas and Upstream. For an additional breakdown by segment, see Scope 1 and 2 GHG intensity by segment section below.

The activity data used to calculate GHG intensity ratios at a portfolio level shown in the table above is reported on an operational control basis. As a result, it is not directly comparable with the production data reported elsewhere in this Report, which is reported on a financial control basis. The table below shows the numbers used in the calculation of the intensity:

Inputs used for calculating the GHG emissions intensity ratio

		2021	2020	2019
A	8.1 Scope 1 – Direct GHG emissions [A]	60	63	70
B	8.2 Scope 2 – Energy Indirect GHG emissions [A]	8	8	10
C=A+B	**Total Scope 1 and 2 GHG emissions [A]**	68	71	80
D	6.5 Total oil and gas production available for sale [B]	128	149	166
E	6.6 Refinery crude and feedstock processed [B]	84	99	124
F	6.3 Chemicals total production [B]	25	26	24
G	6.4 LNG production [B]	10	8	9
H	6.6 GTL production [B]	6	6	6
I=D+E+F+G+H	**Total Upstream, Integrated Gas and Downstream activity [B]**	253	288	329
J=C/I	**GHG intensity ratio [C]**	0.27	0.25	0.24

[A] In million tonnes CO_2 equivalent.
[B] In million metric tonnes of production.
[C] In tonnes of CO_2 equivalent per tonne of production.

Energy use in our operations

The energy consumption data provided below comprise own energy, generated and consumed by our facilities, and supplied energy (electricity, steam and heat) purchased by our facilities for our own use.

Energy consumption data reflect primary (thermal) energy (e.g. the energy content of fuels used to generate electricity, steam, heat, mechanical energy etc.). This includes energy from renewable and non-renewable sources. Own energy generated was calculated by multiplying the volumes of fuels consumed for energy purposes by their respective lower heating values. Own energy generated that was exported to third-party assets or to the power grid is excluded. Thermal energy for purchased and consumed electricity was calculated using actual electricity purchased multiplied by country-specific electricity generation efficiency factors (from IEA statistics). Thermal energy for purchased and consumed steam and heat was calculated from actual steam/heat purchased multiplied by a supplier-specific conversion efficiency, or a generic efficiency factor where supplier-specific data were not available.

CLIMATE CHANGE AND ENERGY TRANSITION continued

Our energy consumption decreased from 241 billion kilowatt-hours (kWh) in 2020 to 223 billion kWh in 2021, in line with the decrease in our Scope 1 and 2 GHG emissions. Around 1% of the energy we used in 2021 for our operations came from low-carbon and renewable sources.

Energy consumption in billion kilowatt-hours

	2021	2020 [A]	2019
Own energy generated and consumed			
Total energy generated and consumed	189	205	220
UK including offshore area	6.2	7.6	7.6
Purchased and consumed energy			
Total purchased and consumed energy	33	36	44
UK including offshore area	0.2	0.2	0.2
Energy consumption			
Total energy consumed	223	241	264
UK including offshore area	6.4	7.8	7.8

[A] We have restated our 2020 energy use figures following a correction of an efficiency factor for steam at one of our assets and a revision to how internal energy transfers of steam and electricity were accounted for at several of our assets to remove double-counting between Scopes 1 and 2.

In 2021, we implemented a variety of measures to reduce the energy use and increase the energy efficiency of our operations.

Examples of some of the principal measures taken in 2021 are listed below (with estimated total savings of around 675 million kWh in 2021):

- At our Scotford upgrader facility in Canada, we completed several projects to minimise energy use and improve efficiency, for example by installing new equipment and making changes to how some equipment operates.
- At our Gannet asset in the UK, we completed a project to enhance the efficiency of the fuel gas compressors by fine-tuning their performance to the specific needs of the platform.
- At our Jurong Island site in Singapore, we installed a second stage flash vessel to recover the heat for reuse in other equipment, and completed a project to minimise power consumption by one of the incinerators.
- At our Rheinland site in Germany, we completed several projects to reduce energy use and improve efficiency, for example, by installing more efficient equipment and changing maintenance schedules to improve efficiency.
- At our Bukom site in Singapore, we completed a project to reduce the consumption of natural gas in flare purge
- At our Scotford refinery and chemical site in Canada, we completed several projects to reduce energy use and improve efficiency, for example, by enabling the reduction of steam usage.
- At our QGC operations in Australia, we implemented a project to reduce power requirements for gas compression.

Examples of some of the principal measures taken in 2020 are listed below (with estimated total savings of around 385 million kWh in 2020):

- At our Clipper facility in the UK, we completed a project to optimise the use of compressors.
- At our Bukom facility in Singapore, we completed two projects to minimise energy loss from steam.
- At our Scotford upgrader facility in Canada, we completed several projects to minimise energy use and improve efficiency, for example by removing equipment from service or replacing it with more efficient equipment.
- At our Geismar facility in the USA, we improved flare staging and temperature control which resulted in lower levels of natural gas consumption.
- At our Mobile facility in the USA, we installed new equipment to increase heat transfer between heat exchangers to improve the energy efficiency of the units.
- At our GTL facility in Qatar, we completed several projects to reduce energy use and improve efficiency, for example by minimising the generation of excess steam and converting excess energy into electricity for export to the public grid.
- In Brazil, we reduced fuel usage of vessels by optimising how they operate in dynamic position, stand-by and navigation modes.

The targets in this "Climate change and energy transition" section, including those relating to the net carbon intensity targets, are forward-looking targets based on management's current expectations and certain material assumptions and, accordingly, involve risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied herein.

EU TAXONOMY REGULATION

The EU Taxonomy Regulation, adopted by the European Union in 2020, is designed to encourage investment in an environmentally sustainable economy by creating uniform definitions of sustainability for investors. Although as a UK company Shell is not currently subject to the regulation, we have prepared a voluntary disclosure in accordance with its requirements. For further information, see "Supplementary Information – EU Taxonomy Disclosure" on pages 302-304.

OUR APPROACH TO SUSTAINABILITY



Our commitment to contribute to sustainable development has been part of the Shell General Business Principles since 1997. These principles, together with our Code of Conduct, apply to the way we do business and to our conduct with the communities where we operate.

We have worked to embed this sustainability commitment into our strategy, our business processes and decision-making.

We aim to provide more and cleaner energy solutions in a responsible manner – in a way that balances short- and long-term interests, and that integrates economic, environmental and social considerations.

Our strategy

Today, we continue to build on these foundations while driving change across the organisation to help society meet its most pressing challenges, including those related to climate change, the environment, diversity and inclusion, and human rights.

We seek the views of various groups and individuals about the role of an organisation like Shell in addressing these challenges. Our efforts are informed by major international agreements and initiatives, such as the Paris Agreement and the UN's Sustainable Development Goals.

In February 2021, we announced Powering Progress, our strategy to accelerate the transition of our business to net-zero emissions, in step with society. Powering Progress is designed to integrate sustainability with our business strategy. Powering Progress has four main goals in support of our purpose, to power progress together by providing more and cleaner energy solutions:

- generating shareholder value: increasing value through a dynamic portfolio and disciplined capital allocation;
- achieving net-zero emissions: working with our customers and across sectors to accelerate the transition to net-zero emissions;
- powering lives: powering lives through our products and activities, and by supporting an inclusive society; and
- respecting nature: protecting the environment, reducing waste and making a positive contribution to biodiversity.

Powering Progress is underpinned by our focus on safety and our core values of honesty, integrity and respect for people. This means we have a commitment to do business in an ethical and transparent way.

For more information on our Powering Progress strategy, see page 12.

Sustainability reporting boundary and guidelines

Data in this section are reported on a 100% basis in respect of activities where a Shell company is the operator (unless noted otherwise). Reporting on an operational control basis differs from that applied for financial reporting purposes in the "Consolidated Financial Statements" on page 233.

Additional data on our 2021 environmental and social performance are expected to be published in the Shell Sustainability Report in April 2022.

We use certain guidelines to inform our reporting on sustainability issues: As a member of the World Business Council for Sustainable Development, we support the organisation's updated criteria for membership from 2022, which include requirements for corporate transparency.

- We report in line with guidelines developed by IPIECA, the global oil and gas association for advancing environmental and social performance across the energy transition.
- In January 2021, we agreed to adopt the Stakeholder Capitalism Metrics, a set of environmental, social and governance metrics released by the World Economic Forum and its International Business Council.
- We map our disclosures against the Sustainability Accounting Standards Board's (SASB) Oil & Gas – Exploration & Production Standard.
- In the "Climate change and energy transition" section of this Report, we set out our climate-related financial disclosures consistent with all of the recommendations and recommended disclosures of the Task Force on Climate-related Financial Disclosures (TCFD).

IMPACT OF THE COVID-19 PANDEMIC – HELPING COLLEAGUES, CUSTOMERS AND COMMUNITIES

The COVID-19 pandemic continues to have a serious impact on people's health and livelihoods in most parts of the world, including communities where we work. Shell is working hard to assist in the global fight against the virus, and to support recovery efforts.

See our website shell.com for information on the steps we took to provide support to our staff and others.



Shell staff and contractors worked hard to assist in the global fight against the virus, and to support recovery efforts.

UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

The UN's 17 Sustainable Development Goals (SDGs) seek to address the world's biggest challenges, including ending poverty, improving health and education, making cities sustainable and tackling climate change.

Governments are responsible for prioritising and implementing approaches that meet the SDGs, but achieving these tasks will require unprecedented collaboration and collective action across businesses, governments and civil society.

We will play our part in helping governments and societies to achieve the SDGs. The goals were one of the considerations in the development of our Powering Progress strategy. The actions we take as part of our Powering Progress strategy can help directly contribute to 13 of the SDGs, while indirectly contributing to others.

See our website shell.com for information on how Shell is contributing to the SDGs.

BOARD OVERSIGHT FOR SUSTAINABILITY

We describe Shell's overall governance framework on page 135. It provides information on the roles of the Board, its committees, and the Executive Committee. The Safety, Environment and Sustainability Committee (SESCo) advises the Board on safety, the environment including climate change and broader sustainability. More information on SESCo's role and activities in 2021 is provided on pages 151-152.

The Annual Report on Remuneration (see page 174) provides details of how the Shell scorecard captures key performance indicators for safety, environment and climate.

SHELL GENERAL BUSINESS PRINCIPLES

The Shell General Business Principles set out our responsibilities to shareholders, customers, employees, business partners and society. They set the standards for how we conduct business with integrity, care and respect for people, while seeking to protect the environment and establish mutually beneficial relationships with communities. All ventures that a Shell company operates must conduct their activities in line with our business principles.

HSSE & SP CONTROL FRAMEWORK

In Shell, health, safety, security, environment, and social performance (HSSE & SP) are vitally important to generating value. They are indispensable elements of our organisation. The Shell HSSE & SP Control Framework (CF) consists of mandatory standards and manuals, which align with the Shell Commitment and Policy on HSSE & SP. Guidance documents, assurance protocols, and training materials support implementation of the standards and manuals.

The HSSE & SP CF applies to every Shell entity and Shell-operated venture, including all employees and contract staff. The HSSE & SP CF defines requirements and accountabilities at each organisational level and sets out processes and procedures. We aim to ensure that all significant HSSE & SP risks associated with our business activities are assessed and managed to minimise them as far as reasonably practicable. Our HSSE & SP functions provide expert advice and support businesses to improve HSSE & SP performance.

We aim to minimise the environmental impact of new projects and existing operations. Shell conducts an environmental, social and health impact assessment for every major project. We engage with local communities and non-governmental organisations (NGOs) in order to understand and respond to their concerns in a timely and suitable manner.

HSSE & SP Control Framework

The HSSE & SP Control Framework defines mandatory standards, requirements and accountabilities. The framework applies to Shell entities and Shell-operated ventures, including employees and contractor staff.

Mandatory manuals describe:
- Purpose of the manual
- Accountabilities and responsibilities
- Scope
- Requirements to be met



Assurance

The Process Safety and HSSE & SP Assurance team provides assurance to the Board on the effectiveness of the HSSE & SP CF through an audit programme. The full Shell portfolio comprises about 200 organisational groups covered by this programme. Audits are performed with a frequency of between three and five years, depending on the overall risk and complexity of a particular facility or organisational group. The Board approves an annual audit plan. On average, the assurance team conducts about 50 audits on a variety of subject areas per year. The scope of the audits is designed to test risk areas as defined in the HSSE & SP CF. This includes the overall HSSE & SP management system and specific requirements for areas such as personal safety, environment and contractor management. Based on audit outcomes, the audit frequency for an entity may be increased. The relevant business documents the audit findings, records any action items and tracks them to completion.

We expect joint ventures not operated by Shell to apply standards and principles substantially equivalent to our own. We support these joint ventures in implementing such standards and principles. We also offer to help them review the effectiveness of their implementation. Even if such a review is not conducted, we periodically evaluate HSSE & SP risks faced by the ventures that we do not operate. If a joint venture does not meet our HSSE & SP expectations, we seek to improve performance by working with our partners to develop and implement remedial action plans.

From August 2021, we integrated the Process Safety and HSSE & SP Assurance team and the related HSSE & SP assurance programme into the Shell Internal Audit & Investigations (SIAI) team to form a single independent assurance organisation within Shell. Within SIAI, the HSSE & SP and Asset Management Assurance team continues to provide assurance to the Board on the effectiveness of the HSSE & SP CF as outlined above.

Shell aims to work with suppliers that behave in a safe, economically, environmentally and socially responsible manner. Our approach to suppliers is set out in our Shell General Business Principles and Shell Supplier Principles. These cover expectations in areas such as business integrity, health and safety, environment, and human rights.

Divestments

Responsible divestments are a key part of transitioning our portfolio to deliver our Powering Progress strategy.

When considering divestments, we collaborate with in-house and external experts, where appropriate, to conduct checks and examine key attributes of potential buyers. These attributes may include their financial strength; operating culture; health, safety, security and environment (HSSE) policies; and approach to ethics and compliance. We also consider risk- and people-management processes and standards; community liaison practices; and social performance programmes.

Applicable attributes are assessed against Shell's policies and the requirements of relevant local regulations. Divestments are often subject to the approval of regulatory authorities, which may in part depend on potential buyers' HSSE capacity, compliance record, and asset-stewardship capabilities.

SAFETY

Shell's Powering Progress strategy is underpinned by our focus on safety. We aim to do no harm to people and to have no leaks across our operations. We call this our Goal Zero ambition.

We seek to improve safety by focusing on the three areas where the safety risks associated with our activities are highest: personal, process and transport. We strive to reduce risks and to minimise the potential impact of any incident, with a particular emphasis on the risks with the most serious consequences if something goes wrong. In 2021, we introduced a new measure to report on our personal safety performance, known as Serious Injury and Fatality Frequency (SIF-F).

This new measure is one example of how we have updated our thinking about safety, how we learn from incidents with potential to cause life-altering injuries, and how leaders should respond. In 2020, we started a multi-year process of refreshing our approach to safety for all employees and contractors. Our updated approach to safety is rooted in a consistent focus on human performance, by which we mean the way people, culture, equipment, work systems and processes all interact. The majority of our fatalities over the last five years were down to the interaction between these elements.

We aim to better understand the gap between how we anticipate work will be done safely and how the work is actually carried out. We continue to work to prevent incidents by maintaining safety barriers and providing training. We acknowledge that people make mistakes and not all incidents may be preventable. We continue to focus more on installing adequate controls to create capacity to fail safely. With that, we believe that we will enhance our safeguards and reduce the likelihood of serious injuries.

We recognise that people are key to executing complex tasks and to finding solutions to problems. We aim to apply a learner mindset, by which we mean the belief that we can always improve, enhance individual capabilities, learn from mistakes and successes, and speak up without being punished. We seek to create conditions that encourage employees and contractors to share ideas and concerns without fear of rejection or punishment.

We work with the large number of our contractors and suppliers so they understand our safety requirements. Together we seek to improve safety performance by building skills and expertise, and by creating an inclusive and safe work environment. We strive to help improve safety throughout the energy industry by sharing our safety standards and experience with other operators, contractors and professional organisations, such as the Energy Institute, the London-based global professional body for the energy sector; IPIECA, the global oil and gas association for advancing environmental and social performance across the energy transition; and IOGP, the international association of the upstream oil and gas industry.

Shell also continues to use technology and digital solutions to help keep people and our operations safe. Drones, remote sensing technologies, robots and other technologies, such as augmented reality, help us keep people out of harm's way. For example, we use drones and robots to conduct inspections, reducing the need for human inspectors to enter hazardous environments. We also use various technologies and devices to help frontline employees stay safe and react quickly should an incident occur.

Personal safety

We continue to strengthen the safety culture and leadership among our employees and contractor staff. This aligns with our focus on caring for people.

We expect everyone to consider two aspects of their tasks: the hazards that could potentially cause serious harm, and the effectiveness of the barriers in place to avoid serious harm if something does happen. We have ongoing safety awareness programmes, and hold an annual global Safety Day to give employees and contractors time to reflect on how to prevent incidents and how we can work together to improve performance.

In September, during Safety Day 2021, we began the transition to a new set of nine industry Life-Saving Rules which came into effect from January 2022. All our staff and contractors were given time to reflect on how these rules apply to everyday activities, and how to put them into practice applying the human performance and learner mindset guidelines. Introducing the industry Life-Saving Rules has been an opportunity to strengthen the way we learn from adverse incidents and to simplify and standardise processes and procedures. Safety Day marked the start of a series of engagements. We encouraged team leaders to hold additional conversations with their team to help further understanding of the nine industry Life-Saving Rules and together create the conditions to enable these rules to be followed. This is particularly important with the new line of fire rule. This states that people must ensure that they and others are out of the way of potential pressure releases, vehicles that might move, or objects that could fall, drop or move. Analysis of safety incidents at Shell-operated ventures showed that many of our most serious events related to the line of fire rule. By the end of 2021, more than 90,000 of our employees and contractors had already completed the mandatory updated training for the Life-Saving Rules.

See our website shell.com for more information on Life-Saving Rules guidance for contractors.

Transitioning to industry Life-Saving Rules

Despite an improving trend, we still experience serious injuries

Recordable fatalities, TRCF and SIF-F

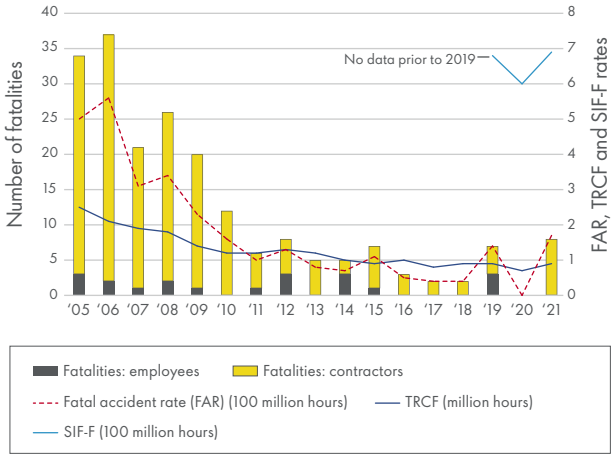


Chart data corresponds to Shell-operated ventures.

80%
of incidents are related to **industry Life-Saving Rules risk areas**

20%
of fatalities since 2014 related to **new line of fire rule**

From Prescriptive **Do's and don'ts**

To **I statements** that create ownership

Process safety

Process safety management is about keeping hazardous substances inside pipes, tanks and vessels, and ensuring that well fluids are contained during well construction and well intervention so that they do not harm people or the environment. It starts at the design and construction stage of projects and continues throughout the life cycle of facilities to ensure they are safely operated, well maintained and regularly inspected.

For example, we embedded safety in the design and construction of the Falcon Ethane Pipeline System in the USA, which was commissioned in 2021. We used pipe with thicker walls and buried it deeper than required by regulations. We used ultrasound and X-ray equipment to test welds before use. The pipeline is designed to withstand almost twice the normal operating pressure.

Our global standards and operating procedures define our expectations for the controls and physical barriers required to reduce the risks of incidents. For example, offshore wells must be designed with at least two independent barriers in the direction of flow, in order to reduce the risk of an uncontrolled release of hydrocarbons. We regularly inspect, test and maintain these barriers to ensure they meet our standards. For example, at the West Delta Deep Marine joint venture assets (Shell interest 50%, not operated by Shell), off the coast of Egypt, more than 750 kilometres of hydrocarbon-carrying pipelines were inspected for their integrity using a technique based on screening pipelines by electro-magnetic waves. Since 2017, until end of 2021, 540 kilometres were confirmed safe. We expect to check the remaining 210 kilometres of concrete-coated pipe in 2022 using a method that helps to inspect pipelines by analysing their magnetic field.

We strive to learn not only from leaks that happened, but also from potential events that were prevented by our barriers. Spending time monitoring and learning from high-potential events – avoided leaks which would have caused significant harm to assets and people – is necessary as our industry moves towards risk-based classification of leaks. In the event of a loss of containment such as a spill or a leak, our standards require the use of independent recovery measures to stop the release from becoming catastrophic. We have embedded a set of process safety fundamentals in order to strengthen barriers relating to critical safety tasks performed by frontline staff. These fundamentals provide guidelines for good operating practices to prevent unplanned releases.

We routinely prepare and practise our emergency response to potential incidents such as a spill or a fire. This involves working closely with local services and regulatory agencies to jointly test our plans and procedures. These tests continually improve our readiness to respond. If an incident does occur, we have procedures to reduce the impact on people and the environment.

In August and September 2021, Hurricane Ida posed a potential safety risk to millions of people across the Gulf Coast region. Thousands of Shell employees, contractors, and their families were affected. Hurricane Ida also threatened Shell's onshore and offshore assets in the region. Years of planning and learning through exercises enabled Shell's emergency response teams to efficiently take care of employees and minimise the disruption of our business. We conducted extensive training at our sites between May and July 2021, so that our teams were ready to react when the hurricane hit.

ENVIRONMENT AND SOCIETY continued

Shell helped with disaster response and recovery efforts in the aftermath of Hurricane Ida, playing our part in assisting employees and neighbours in the communities where we work. We supported employees and communities in the Gulf Coast region and also in Pennsylvania, New York and New Jersey. For example, we distributed assistance packages to more than 400 employees in need. We also established base camps in the Gulf Coast region at Shell's Norco and Convent sites in Louisiana. These hosted more than 700 displaced individuals, employees required to remain on site, and electrical linemen working to restore power to communities. Shell had around 3,000 employees in the Gulf Coast region, and about 2,200 of them found themselves in an area that qualified as a natural disaster zone.

Transport safety

Transporting large numbers of people, products and equipment by road, rail, sea and air poses safety risks. We seek to reduce these risks by developing best-practice standards within Shell. We also work with specialist contractors, industry bodies, NGOs and governments to find ways of reducing transport safety risks.

In 2021, Shell employees and contractors drove around 470 million kilometres on business in more than 50 countries. There were no fatalities related to road transport in activities under the operational control of a Shell company in 2021. By the end of December, we recorded more than 1.2 billion kilometres with no fatalities in almost two-and-a-half years.

We continually take steps to improve our road safety performance. For example, we implement best practice, encourage safe behaviour, and call for safe vehicle design. We run road safety programmes including our online defensive driving course that teaches safe techniques and behaviours and is mandatory for all who drive on public roads while on Shell business. In 2021, around 11,000 Shell employees and contractors completed some form of in-vehicle or virtual defensive driving training.

Falling asleep behind the wheel or being distracted while driving can lead to serious road accidents around the world. Our road transport fleets have begun deploying devices that detect signs of microsleeps, fatigue and distraction, and respond by warning drivers so they can take action to stay alert.

This deployment started in 2020, at the Shell-operated QGC facility in Queensland, Australia, where we worked with four universities and eight contracting companies to evaluate fatigue detection devices and to find the one that performed best in testing. The basis for this project was a scientific study commissioned by Shell, BP, TotalEnergies, and Chevron to review more than 100 commercially available technological systems that purported to detect fatigue or distraction in drivers.

We are adopting a phased approach to deploying the devices and ensuring drivers know how to use them. We will start in countries identified as high-risk locations: Australia, India, Malaysia, Mexico, Pakistan, Russia, South Africa, Thailand, Turkey and the Philippines.

In 2021, the UN General Assembly's status report on road safety globally recognised Shell as being among the very few private-sector companies that have funded road safety projects and activities. We believe that collaboration is key to achieving the UN's target to halve global traffic deaths by 2030, based on their estimations for incidents between 2021 and 2020. This is considered part of Sustainable Development Goal 3: ensure healthy lives and promote well-being for all at all ages. We remain determined to play our part in helping to achieve this, including through organisations such as the Global Road Safety Partnership. Shell has been a founding member of this partnership between businesses, development agencies, governments and civil-society organisations which took on the role to create and support multi-sector road safety partnerships that are engaged with frontline good practice road safety interventions in countries and communities throughout the world.



In 2021, Shell employees and contractors drove around 470 million kilometres on business in more than 50 countries.

Contractor safety

Executives from Shell and our major contractor companies have been collaborating on Shell's contractor safety leadership (CSL) programme since 2014. The programme seeks to identify strategies and practical ways to improve a shared safety culture and achieve our Goal Zero ambition of no harm and no leaks.

Importance of contractor safety for Shell

GOAL ZERO.
NO HARM. NO LEAKS.



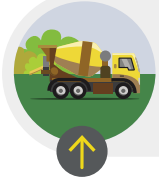
Shell-contractor safety leadership (CSL)

- **21** contractor companies in CSL programme
- **500k+** direct employees (total for all CSL members)
- **80m+** Exposure hours annually



Contractor safety in Shell

- **60%** share of contractor exposure hours in Shell-operated ventures
- Majority of the high-risk work is performed by our contractors
- We want every contractor that works for us to go home safely every day



Shell supply chain management

- **24,000** global supplier/ contractor companies in 2021
- **$37.5 billion** spent on goods and services in 2021 globally
- In partnership with our key contractors

Shell's strategy

Powering Progress
Underpinned by our core values of honesty, integrity and respect for people, and our focus on safety.

GENERATING **SHAREHOLDER VALUE** | POWERING **LIVES** | ACHIEVING **NET-ZERO EMISSIONS** | RESPECTING **NATURE**

We have worked with contractors on standardisation and simplification, and collaborated to develop a contractor safety leadership initiative called Declared Future. We believe these efforts have helped to align our organisations at all levels and improve frontline safety.

Our transition to the industry Life-Saving Rules also brings us closer to the standard shared by most of the main contractor companies in our CSL programme. This was something they had requested of us.

ENVIRONMENT AND SOCIETY continued

Safety performance

Regrettably, in 2021, eight of our contractor colleagues in Shell-operated ventures lost their lives in the course of their work for Shell. So did a police officer who was with our colleagues in Nigeria. The Shell organisation feels these losses deeply. We are determined to learn from these incidents and spread the lessons from them throughout our organisation so we can do everything possible to prevent anything similar recurring.

The fatal incidents were as follows:

In Nigeria, six people working for an engineering contractor and a police officer lost their lives when gunmen attacked a convoy of buses transporting people to the Assa North Gas development project site. The Shell Petroleum Development Company of Nigeria (SPDC) worked with the contractor and supported the police during the investigation of the incident.

In Pakistan, a contractor colleague died after a fire at a dealer-operated retail site. Another contractor lost his life when a wall fell over during demolition work at a retail site in Indonesia.

Several industry safety leadership groups confirm that serious and high-potential incidents often have different root causes than most lower-consequence events. To improve insights from incident investigations and data analysis, we are changing how we report incidents. From 2021 onwards, we measure the number of serious injuries and fatalities per 100 million working hours, instead of the Total Recordable Case Frequency, which measured injuries per million working hours. The new measure, known as Serious Injury and Fatality Frequency (SIF-F), allows us to focus our investigations on the most serious incidents. The aim is to collect and analyse relevant, high-quality data that can help us improve our efforts to prevent serious injuries and fatalities.

In 2021, the SIF-F was 6.9 injuries and illnesses per 100 million working hours, compared with 6.0 in 2020.

There were 102 operational Tier 1 and 2 process safety events in 2021, compared with 103 in 2020.

For reporting on process safety, in this Report, we combine Tier 1 and 2 events. A Tier 1 event is an unplanned or uncontrolled release of any material from a process, including non-toxic and non-flammable materials, with the greatest actual consequence resulting in harm to employees, contract staff or a neighbouring community, damage to equipment, or exceeding a defined threshold quantity. A Tier 2 process safety event is a release of lesser consequence.

As part of Shell's learner mindset approach, we investigate all serious incidents so we can understand the underlying causes, including technical, behavioural, organisational and human factors. We share what we learn widely, including with contractors. We implement mitigations at the site and in the country and business where the incident occurred. We seek to turn incident findings into improved standards or better ways of working that can be applied widely across similar facilities.

Additional information on our 2021 safety performance is expected to be published in the Shell Sustainability Report in April 2022.

ENVIRONMENT

In 2021, as part of our Powering Progress strategy, we launched our Respecting Nature goal, which sets out our environmental ambitions around biodiversity, water, circular economy and waste, and air quality. Our Respecting Nature commitments step up our approach to managing the impacts of our operations on the environment. They also aim to extend our approach with our supply chain, for example, with commitments around plastics and circular economy.

We adopted short-term goals and also set environmental ambitions for 2030 and later. We have been working to embed these new requirements into our systems and processes. Accountability for delivery of the Respecting Nature goal lies with our Executive Committee. We have restructured and resourced our organisation to add specialists on biodiversity and circularity and are building capability with the help of external partners.

We have included our new commitments in our performance management and reporting systems and are defining the baselines for each of the commitments and setting 2022 targets across our businesses. We are working with external environmental partners to develop new approaches that aim to show the extent of the progress we are making towards our environmental goals.

We will continue to seek opportunities to go further. Our environmental ambitions will be underpinned by collaboration with our supply chains and transparent reporting.

Environmental standards

Shell's global environmental standards as set in our HSSE & SP Control Framework cover our environmental performance. They include details of how to manage emissions of greenhouse gases (GHG), consume energy more efficiently, reduce gas flaring and control air quality, prevent spills and leaks of hazardous materials, use less fresh water and conserve biodiversity. We seek to apply our global environmental standards wherever we operate. When planning new major projects, we conduct detailed environmental, social and health impact assessments. We help inform our approach by drawing on external standards and guidelines, such as those developed by the World Bank and the International Finance Corporation.

The Shell HSSE & SP Standards require that we certify our major installations against an internationally recognised independent environmental management system standard if they have significant environmental risks. Major installations are crude oil and natural gas terminals, gas plants, manned offshore and onshore production platforms or flow stations, floating production and storage vessels, refineries, chemicals manufacturing facilities, mines or upgraders. For the purpose of this Report, we did not count each major installation in Upstream and Integrated Gas separately. They were aggregated into their respective operating unit or operating company, such as Shell Upstream UK or Nederlandse Aardolie Maatschappij (NAM), in line with the scope of their certifications. At the end of 2021, 98% of major installations within that scope and operated by Shell were certified against the ISO 14001:2015 Environmental Management System or were in compliance with equivalent environmental frameworks required by local regulations. At the end of 2021, there was one operating unit without active certification because of late changes with key auditing contractors and the impact of COVID-19. Actions have been taken to have their certification renewed in 2022. In addition, many installations that are not classified major, such as lubricant plants or Supply terminals, are also certified against ISO 14001 but are not included in the data above. The total also excludes major installations for which divestments were completed in 2021 or are expected to be completed in 2022.

See also "Control Framework" on page 202 and "Climate change and energy transition" on page 77 for more information on how we manage our GHG emissions.

Biodiversity

We have adopted an ambition to have a positive impact on biodiversity. This involves three new commitments:

- From 2021, our new projects in areas rich in biodiversity – critical habitats – will have a net-positive impact on biodiversity.
- From 2021, our nature-based solutions projects, which protect, transform or restore land, will have a net-positive impact on biodiversity.
- From 2022, we will replant forests, achieving net-zero deforestation from new activities, while maintaining biodiversity and conservation value.

We aim to minimise the impact of our projects on biodiversity and ecosystems by applying the mitigation hierarchy. This is a decision-making framework that involves a sequence of four key actions: avoid, minimise, restore and offset. We assess the potential impact of projects on biodiversity as part of our Impact Assessment process. In 2003, we committed not to explore for, or develop, oil and gas resources in natural and mixed World Heritage Sites.

If we decide to go ahead with a project that is in a critical habitat, we develop a biodiversity action plan. This sets out what we should do to follow the mitigation hierarchy. If there is an impact on biodiversity, the plan outlines the action required to achieve a net-positive outcome for biodiversity. For example, in Australia, the Shell-operated QGC natural gas project manages the 10,000-hectare Valkyrie property as part of its strategy to offset impacts on biodiversity. In 2021, QGC completed the final steps to secure further hectares of habitat for three threatened species: koala, south-eastern long-eared bat and greater glider.

Circular economy and waste

We are working to reduce waste, improve our waste management processes and apply the principles of a circular economy, where materials are recycled and reused, across our businesses and supply chains. Our ambition is to use resources and materials efficiently and to increase reuse and recycling.

We are aiming for zero waste by reducing waste generated and increasing reuse and recycling in our businesses and supply chains. In 2021, we conducted pilot assessments to develop and test a methodology that we could use across a number of businesses in 2022 to gather options to set goals for 2023+ relating to circular economy and waste management.

Some of our sites and businesses are already starting to take a more circular approach. For example, our Mobility business has made the commitment that all Shell-owned service stations will reduce, reuse and repurpose waste by 2025. By 2025, we also aim to remove unnecessary single-use plastic, such as bags, straws and cutlery from our service station shops. We will make it easier for customers to recycle and are looking for ways to repurpose plastic waste.

We have also set commitments to work with our suppliers and contractors to help end plastic waste in the environment:

- By 2030, we will increase the amount of recycled plastic in our packaging to 30% and ensure that the packaging we use for our products is reusable or recyclable.
- We will increase the amount of recycled materials used to make our products, starting with plastics. Our ambition is to use 1 million tonnes of plastic waste a year in our global chemical plants by 2025.

Water

Managing our impacts on water and ensuring the availability of fresh water for our operations is a growing challenge in some parts of the world. Increasing demand for water resources, growing stakeholder expectations and concerns, and water-related legislation may reduce our access to water.

We manage water use carefully, and tailor our use of fresh water to local conditions and requirements. We sometimes use alternatives to fresh water in our operations. These include water that has been recycled from our operations, processed sewage water and desalinated water. We require that all Shell facilities and projects are assessed to see what risks they might pose to water availability. In places where water is scarce, we develop water-management action plans for using less fresh water, increasing water recycling and closely monitoring water use.

In 2021, we set a measurable target for fresh-water use: we will reduce the amount of fresh water consumed in our facilities. This will start with reducing our consumption of fresh water by 15% by 2025 compared with 2018 levels in water-stressed areas, which are places where there is high pressure on fresh-water resources.

At the end of 2021, four of our major facilities were in areas where there is a high level of water stress, based on analysis using references such as the World Resources Institute's Aqueduct Water Risk Atlas and information specific to the local environment. These four facilities are the Pearl GTL (gas-to-liquids) plant in Qatar, the Shell Energy and Chemicals Park in Singapore, the Shell Jurong Island chemical plant, also in Singapore, and the Tabangao Import Terminal in the Philippines. In 2021, these four facilities consumed 22 million cubic metres of fresh water, compared with their baseline of 25 million cubic metres in 2018.

We have also stated that, by the end of 2022, we will have assessed options for further goals related to reducing our use of fresh water.

In 2021, we conducted a pilot assessment of circular approaches towards fresh-water consumption. This helped us to develop a methodology that will be used to assess businesses' performance in 2022. We believe that this will help deepen our understanding of how to improve water efficiency and help us set further goals by the end of 2022. The assessments involve desktop analysis and detailed site evaluations conducted with external organisations.

In 2021, our overall intake of fresh water decreased to 166 million cubic metres, compared with 171 million cubic metres in 2020 mainly driven by the shutdown of the Shell Convent Refinery (USA) in December 2020.

Around 90% of our intake of fresh water was used for manufacturing oil products and chemicals, with the rest mainly used for oil and gas production. Around 35% of our fresh-water intake was from public utilities, such as municipal water supplies. The rest was taken from surface water such as rivers and lakes (around 55%) and groundwater (around 10%).

Additional information on our 2021 environmental performance is expected to be published in the Shell Sustainability Report in April 2022.

ENVIRONMENT AND SOCIETY continued

Air quality

We are helping to improve air quality by reducing emissions from our operations and providing cleaner ways to power transport and industry. We take steps to manage airborne pollutants in our oil and gas production and processing, such as nitrogen oxides, sulphur oxides and volatile organic compounds.

See our website shell.com for more information about our approach to biodiversity, circular economy and plastic waste, and water.

Respecting Nature
Shell's new commitments from 2021

Biodiversity

- Our new projects in areas rich in biodiversity – critical habitats – will have a net positive impact on biodiversity, starting implementation in 2021.
- Our nature-based solutions projects, which protect, transform or restore land, will have a net positive impact on biodiversity, starting implementation in 2021.
- We will replant forests, achieving net-zero deforestation from new activities, while maintaining biodiversity and conservation value, starting implementation in 2022.

Circular economy and waste

We are aiming for zero waste by reducing waste generated and increasing reuse and recycling in our businesses and supply chains. We will set goals for waste reduction, reuse and recycling by the end of 2022.

We will work with our suppliers and contractors to help end plastic waste in the environment:

- By 2030, we will increase the amount of recycled plastic in our packaging to 30% and ensure that the packaging we use for our products is reusable or recyclable.
- We will increase the amount of recycled materials used to make our products, starting with plastics. Our ambition is to use one million tonnes of plastic waste a year in our global chemicals plants by 2025.

Water

- We will reduce the amount of fresh water consumed in our facilities, starting by reducing fresh-water consumption by 15% by 2025 compared with 2018 levels in areas where there is high pressure on fresh-water resources.
- 25 million cubic metres of fresh water were consumed by our facilities in highly water-stressed areas in 2018.
- We will also assess options for further reduction goals by the end of 2022.

Air quality

We are helping to improve air quality by reducing emissions from our operations and providing cleaner ways to power transport and industry.

Collaboration and reporting

- Supply chain: We will include requirements in our purchasing policies to reflect our environmental framework, and take the energy efficiency, material efficiency and sustainability of products into consideration in our purchases.
- External partnerships: We will ensure external partnerships inform key areas of development and delivery of our ambitions.
- External reporting: We will transparently report performance in our annual Sustainability Report.

SPILLS

Large spills of crude oil, oil products and chemicals associated with our operations can harm the environment, and result in major clean-up costs, fines and other damages. They can also affect our licence to operate and harm our reputation.

We have requirements and procedures designed to prevent spills. We design, operate and maintain our facilities with the intention of avoiding spills. To further reduce the risk of spills, Shell has routine programmes to reduce failures and maintain the reliability of facilities and pipelines. Our business units are responsible for organising and executing spill responses in line with Shell guidelines and relevant legal and regulatory requirements. Our offshore installations have spill response plans for when an incident occurs. These plans set out response strategies and techniques, available equipment, and trained personnel and contracts. We can engage specialist contracted services for oil spill response, including vessels, aircraft or other equipment and resources, if required, for large spills. We conduct regular exercises that seek to ensure these plans remain effective and fit for purpose.

We have further developed our ability to respond to spills to water. We have a worldwide network of trained staff to help with this. We also have a global oil spill expertise centre, which tests local capability and maintains our ability to respond to a significant spill into a marine environment.

We are involved in several industry consortia formed to improve well-containment capabilities. Shell Offshore Response Company LLC is a founding member of the Marine Well Containment Company, a non-profit industry consortium providing a well-containment response system for the Gulf of Mexico. Shell Response Limited was a founding member of the Subsea Well Response Project, an industry co-operative effort to enhance global well-containment capabilities, which has since become Oil Spill Response Limited, an industry consortium.

We maintain site-specific emergency response plans in case there is an onshore spill. Like the offshore response plans, these are designed to meet Shell guidelines and relevant local legal and regulatory requirements. The onshore response plans also provide for the initial assessment of incidents and the mobilisation of resources to manage them. In the event of spills on land, businesses are supported by our global Soil & Groundwater team which reviews and implements appropriate remedies. The Soil & Groundwater team is engaged throughout the life cycle of our assets. For example, during acquisition and divestment of assets, the team conducts due diligence to identify land contamination liabilities. Through research and development initiatives, the team collaborates with regulators in developing, modifying, and applying sustainable remediation techniques.

Spills still occur for reasons such as operational failure, accidents or unusual corrosion. In 2021, there were 42 operational spills of more than 100 kilograms compared with 70 in 2020. The weight of operational spills of oil and oil products in 2021 was 0.05 thousand tonnes, compared with 0.4 thousand tonnes in 2020.

Spills in Nigeria

In the Niger Delta, over the last 11 years, the total number of operational hydrocarbon spills and the volume of oil spilled from them into the environment have been significantly reduced.

Most oil spills in the Niger Delta region continue to be caused by crude oil theft, the sabotage of oil and gas production facilities, and illegal oil refining, including the distribution of illegally refined products.

In 2021, the Shell Petroleum Development Company of Nigeria Limited (SPDC) reported 10 operational spill incidents of more than 100 kilograms of crude oil, fewer than the 12 reported in 2020. The volume of around 0.03 thousand tonnes remained on the same level.

SPDC has an ongoing work programme to appraise, maintain and replace key sections of pipelines and flow lines, in order to reduce the number of operational spills. Over the last 11 years, around 1,410 kilometres of pipelines and flow lines have been replaced. This work is organised through a pipeline and flow line integrity management system that proactively addresses pipeline integrity. It installs barriers where necessary, and recommends when and where pipeline sections should be replaced to prevent failures. In 2018, this integrity management system was enhanced to manage threats arising from frequent pipeline sabotage or vandalism.

Spills caused by sabotage in 2021

In 2021, more than 90% of the oil spills of more than 100 kilograms from the SPDC joint venture's facilities were caused by the illegal activities of third parties. In 2021, the volume of crude oil spills of more than 100 kilograms caused by sabotage was around 3.3 thousand tonnes (107 incidents), compared with around 1.5 thousand tonnes (122 incidents) in 2020. We believe that the number of incidents in 2021 continued to decrease because of improved security and surveillance. The doubling of the volume was mainly because of one incident which alone accounted for around 2.3 thousand tonnes of crude oil which was contained and could be recovered.

SPDC continues to undertake initiatives to prevent and reduce spills caused by theft from or sabotage of its facilities in the Niger Delta. In 2021, SPDC continued on-ground surveillance of its areas of operation, including its pipeline network, to mitigate third-party interference and ensure that spills are detected and responded to as quickly as possible.

There are daily overflights of the most vulnerable segments of the pipeline network to identify any new spills or illegal activity. SPDC has introduced anti-theft protection mechanisms for key infrastructure such as wellheads and manifolds. The programme to protect wellheads with steel cages continues to help deter theft.

By the end of 2021, a total of 283 cages had been installed, including 62 that had been upgraded with CCTV. This compared with a total of 364 installed cages at the end of 2020. This year-on-year reduction was because of the 2021 divestment of the OML-17 licence. In 2021, 29 breaches were successful out of 1,700 registered attempts.

Faster response and remediation

Irrespective of the cause, SPDC works to clean up and remediate areas affected by spills originating from its facilities. In 2021, the time that SPDC needed to complete the recovery of free-phase oil – oil that forms a separate layer and is not mixed with water or soil – remained at around one week compared to 2020. This is the average time it takes to safely access a damaged site to start joint investigation visits with regulators, affected communities, and in some cases with NGOs, to clean up oil not mixed with water or soil.

Clean-up activities include bio-remediation which stimulates micro-organisms that naturally break down and use carbon-rich oil as a source of food and energy, effectively removing it. Once clean-up and remediation operations are completed, the work is inspected and, if satisfactory, approved and certified by the Nigerian regulators. With operational spills, SPDC also pays compensation to affected people and communities.

SPDC has been working with the International Union for Conservation of Nature (IUCN) since 2012 to enhance remediation techniques and protect biodiversity at sites affected by oil spills in SPDC's areas of operation in the Niger Delta. Based on this collaboration, SPDC has launched further initiatives to help strengthen its remediation and restoration efforts. In 2021, SPDC, IUCN, the Nigerian Conservation Foundation, and Wetlands International worked together on the Niger Delta Biodiversity Technical Advisory Group, which continues to monitor biodiversity recovery at remediated sites.

SPDC also works with a range of stakeholders in the Niger Delta to build greater trust in spill response and clean-up processes. Local communities participate in remediation work for operational spills. The restrictions of COVID-19 meant there were fewer opportunities to collaborate, but the engagement and partnership with communities continued. Various NGOs have sometimes gone on joint investigation visits with SPDC, government regulators, and members of affected communities to establish the cause and volume of oil spills.

SPDC has implemented programmes to raise awareness of and counter the negative effects of crude oil theft and illegal oil refining. Examples include community-based pipeline surveillance, and promoting alternative livelihoods through Shell's flagship youth entrepreneurship programme, Shell LiveWIRE.

Bodo clean-up process

In 2015, SPDC, on behalf of the SPDC joint venture and the Bodo community, signed a memorandum of understanding (MOU) granting SPDC access to begin cleaning up areas affected by two operational spills that occurred in 2008. The MOU also provided for the selection of two international contractors to conduct the clean-up under the oversight of an independent project director. The clean-up project was delayed in 2016 and for most of 2017 because of access challenges from the community. Engagement with the Bodo community and other stakeholders began in September 2015 and was managed by the Bodo Mediation Initiative.

After two years of engagement, in September 2017, it was possible to start the first phase of clean-up and remediation activities. The clean-up consists of three phases:
1) removal of oil from shoreline surfaces and mud flat beds;
2) remediation of soil and sediments; and
3) planting mangroves and monitoring.

The first phase was completed in August 2018. The contract procurement process for phase two was completed in 2019. Remediation activities in the field started in November 2019. During 2020, work had to be put on hold because of COVID-19 restrictions. By November 2020, controls were in place to mitigate impacts from COVID-19 for the workers on site and the remediation work resumed.

In 2021, the remediation of the soil and sediments at the Bodo project site continued. By the end of 2021, remediation work was completed on more than 60% of around 1,000 hectares that have been designated for clean-up. Almost 2,000 community workers have been trained and engaged in the clean-up. Remediation is expected to be completed by the end of the second quarter of 2023.

The planting of mangrove seedlings (phase 3) started in 2021. Around two million mangrove seedlings need to be planted and survive to 2025 to fulfil the project's goal. By the end of 2021, about 300,000 seedlings had been planted.

Ogoniland: commitment to the United Nations Environment Programme

SPDC remains committed to the implementation of the 2011 United Nations Environment Programme (UNEP) Report on Ogoniland which assessed contamination from oil operations in the region and recommended actions to clean it up. Over the last 10 years, SPDC has acted on all and completed most of the UNEP recommendations that were specifically addressed to it as the operator of the joint venture.

The clean-up efforts are led by the Hydrocarbon Pollution and Remediation Project (HYPREP), an agency established by the federal government. In 2018, HYPREP awarded contracts for the first set of remediation projects. In 2019, 21 contractors started operations on 21 lots which add up to 12 of the 67 polluted sites recorded in the UNEP report. Of those 67 sites, two are waste sites without hydrocarbon pollution. In January 2020, HYPREP awarded a further 29 contracts for remediation on 29 lots covering eight polluted sites. The contractors began remediation activities in the fourth quarter of 2020. In 2021, remediation work was completed on nine sites which have been certified by the National Oil Spill Detection and Response Agency (NOSDRA), the Nigerian government agency responsible for monitoring of and responding to oil spills. Remediation continues on 11 sites. Although remediation works continue to make progress, challenges remain. These include re-pollution, lack of contractor funding, land disputes, environmental issues such as flooding caused by excessive rainfall, and security issues in Ogoniland.

The UNEP report recommended creating an Ogoni Trust Fund (OTF) with $1 billion capital, to be co-funded by the Nigerian government, the SPDC joint venture and other operators in the area. The SPDC joint venture remains fully committed to contributing $900 million to the fund as its share over five years. SPDC joint-venture partners contributed the first instalment of $180 million for the clean-up by July 2018, and released the second instalment of $180 million in 2019. HYPREP did not request the release of any funds in 2020. In 2021, HYPREP requested the release of funds for 2020 and 2021. The SPDC joint venture partners agreed to only pay the 2021 instalment of $180 million because of a delayed use of funds by HYPREP, which only spent around $70 million of the fund. The request for the 2021 payment is being processed. Once the payment is made the total contribution by the SPDC joint venture will be $540 million.

The UNEP continues to monitor the progress of the clean-up through its observer status at HYPREP's Governing Council and the Ogoni Trust Fund. UN agencies such as the United Nations Development Programme and the United Nations Institute for Training and Research provide services to HYPREP in the areas of livelihood programmes, training and project services.

HYDRAULIC FRACTURING

Onshore Operating Principles

We use five aspirational operating principles which focus on safety, environmental safeguards, and engagement with nearby communities to address concerns and help develop local economies. We are working towards making all of our Shell-operated onshore projects where hydraulic fracturing is used to produce gas and oil from tight sandstone or shale, consistent with these principles.

We consider each project – from the geology to the surrounding environment and communities – and design our activities using technology and innovative approaches best suited to local conditions. We also support government regulations consistent with these principles that are designed to reduce risks to the environment and keep those living near operations safe.

We review the Onshore Operating Principles annually and update them as new technologies, challenges and regulatory requirements emerge.

Water

The availability and quality of water, local environmental conditions and regulatory requirements vary from basin to basin.

We aim to minimise water usage in our shale assets by developing a water management strategy specific to the area. Depending on local hydro-geological conditions, our shale assets typically use a combination of fresh water, brackish groundwater, produced water and waste water. We work to limit, and ideally eliminate, our use of fresh water in drilling and hydraulic fracturing operations by increasing recycling capacity and using municipal water.

Chemical additives are needed in hydraulic fracturing fluid to carry sand, reduce friction and prevent the growth of bacteria. Hydraulic fracturing involves pumping fluid that is typically 99.9% water and sand and around 0.1% chemical additives into tight sand or shale rock at high pressure. This creates threadlike fissures – typically the diameter of a human hair – in the rock, making space through which the hydrocarbons can flow more easily.

Greenhouse gas

Shell's shale assets implement greenhouse gas management plans including robust leak detection and repair programmes using the latest technologies, such as infrared cameras and drones. We also seek to minimise routine gas flaring at shale assets.

Shell sold its stake in the Permian Basin, USA, with effect from December 1, 2021. Between the beginning of 2017 and the end of 2021, we reduced our greenhouse gas and methane intensity of the Permian assets by around 80%. We also reduced flaring by more than 80%. At the same time, production increased at the Shell-operated assets by nearly 120%.

Operational footprint

Our Shales assets use technology, local knowledge and management strategies to minimise potential impacts such as high traffic volumes, noise, and effects on supplies of drinking water.

Communities

We build relationships and engage with a broad range of stakeholders across the entire project life cycle. Our stakeholders include residents, local communities – including indigenous populations – government officials, NGOs, civil-society groups, academia and industry. We focus our engagement on understanding local social and economic conditions and proactively identifying and responding to those concerns.

See our website shell.com for more information on our Onshore Operating Principles.

SEISMICITY

Overall, we believe it is relatively unlikely that hydraulic fracturing or well operations for disposing of produced water will induce seismicity that is felt on the surface. We would also expect any such impact to be limited to a relatively small area. The geology of some places, though, does increase the risk of inducing seismicity that can be felt on the surface. Shell assesses the risk profile of each basin before entering and manages operations accordingly, often beyond regulatory requirements. We assess the subsurface formation and surface environment around our operations and have developed appropriate mitigation plans to follow if needed.

See our website shell.com for more information about our induced seismicity management practices, such as the "Onshore Operating Principles in Action: Induced Seismicity Fact Sheet".

For information on the Groningen onshore gas field in the Netherlands, see "Upstream" on page 52.

ENVIRONMENTAL COSTS

We are subject to a variety of environmental laws, regulations and reporting requirements in the countries where we operate. Infringing any of these laws, regulations and requirements could harm our reputation and ability to do business, and result in significant costs, including clean-up costs, fines, sanctions and third-party claims.

Ongoing operating expenses include the costs of preventing unauthorised discharges into the air and water, and the safe disposal and handling of waste.

We place a premium on developing effective technologies that are also safe for the environment. But when operating at the forefront of technology, there is always the possibility that a new technology has environmental impacts that were not assessed, foreseen or determined to be harmful when originally implemented. While we believe we take reasonable precautions to limit these risks, we could be subject to additional remedial, environmental and litigation costs as a result of unknown and unforeseen impacts of operations on the environment. Although these costs have so far not been material to us, no assurance can be given that this will always be the case.

SECURITY

Our operations expose us to criminality, civil unrest, activism, terrorism, cyber-disruption and acts of war that could have a material adverse effect on our business (see "Risk factors" on page 28). We seek to obtain the best possible information to enable us to assess threats and risks. To help us understand the threats, we build strong and open relationships with government, law enforcement, armed forces, industry peers and specialist security information providers. On the basis of these threat assessments, we identify security risks to staff, assets including information technology equipment, and operations. We then seek to manage the risks so they are as low as reasonably practicable. Risk mitigation includes strengthening the security of sites, reducing our exposure to threats as appropriate, journey management, information risk management and cyber-defence operations, crisis management and business continuity measures. We conduct training and awareness campaigns for staff, and provide them with travel advice and access to 24/7 assistance while travelling. We consistently verify the identity of our employees and contract staff, we control physical access to our sites and activities, and we document access with digital tools.

We take steps to have clear and planned responses to security incidents, so that we are able to react quickly and effectively if they occur.

Shell is a member of the Voluntary Principles on Security and Human Rights initiative. This is a multi-stakeholder initiative of governments, extractive sector industries and NGOs that gives guidance on how to respect human rights while providing security for business operations. Shell implements this guidance across its companies, concentrating on countries where the risks of working with state and private security forces are greatest.

The Board's Safety, Environment and Sustainability Committee (SESCo) has oversight of Shell's security risk management activities. In the Executive Committee, accountability for security matters sits with the Chief Human Resources and Corporate Officer.

CONTRIBUTION TO SOCIETY

Shell's businesses are part of society and contribute to it by buying and selling goods and services in many countries. Our employees, suppliers and contractors are part of the local communities where Shell operates.

In 2021, Shell paid $58.7 billion to governments (2020: $47.3 billion). We paid $6.0 billion in corporate income taxes and $6.6 billion in government royalties, and collected $46.1 billion in excise duties, sales taxes and similar levies on our fuel and other products on behalf of governments. In 2021, Shell spent $37.5 billion (2020: $39.3 billion) on goods and services from more than 24,000 suppliers globally.

For more information about our approach to tax and transparency, see Shell's Tax Contribution Report, available via our website shell.com.

Social and economic impacts

We are assessing our social and economic impacts in a number of countries and regions. To do this, we have enlisted the help of the company Oxford Economics using its Global Sustainability Model to assess social, environmental and economic impacts.

In 2021, Shell published its first report based on 2019 social and economic performance data. It details the impacts of our activities in five countries: the Netherlands, UK, USA, Nigeria and India. These countries were chosen because we have significant and wide-ranging operations in them.

The report provides performance data on Shell's contribution to in-country gross domestic product, job numbers, tax payments to governments, and our spending on social and educational programmes. The report also provides details of our operations in each country and our procurement of goods and services. We intend to expand this work to include more European countries.

Supply chain engagement

Our suppliers are critical to our ability to run our businesses. They are involved in almost every step of our operations. They often play an important part in Shell having a positive impact on local communities and achieving business success. Shell aims to work with suppliers, including contractors, that behave in an economically, environmentally and socially responsible manner, as set out in our Shell General Business Principles and Shell Supplier Principles.

The way we engage with our contractors and suppliers is based on our Shell Supplier Principles, which are embedded in contracts. They require contractors and suppliers:

- to commit to protect the environment in compliance with all applicable environmental laws and regulations;
- to use energy and natural resources efficiently; and
- to continually look for ways to minimise waste, emissions and discharge from their operations, products and services.

We also work with our partners and industry peers to include worker welfare in industry standards, guidance, and best practice. This helps raise expectations and levels of consistency across the industry. We achieve results in this area partly by participating in organisations such as:

- the Building Responsibly group of engineering and construction companies working together to raise the bar in promoting the rights and welfare of workers across the industry;
- the Joint Qualification System, an initiative of BP, Equinor, Shell and TotalEnergies, aimed at creating a collaborative approach to human rights supplier assessments;
- the International Association of Oil and Gas Producers (IOGP); and
- the IPIECA, the global oil and gas industry association for advancing environmental and social performance across the energy transition.

We also work closely with our key contractors. As a result, 23 of our biggest contractors have signed up to the Building Responsibly principles, which cover more than 1 million workers.

ENVIRONMENT AND SOCIETY continued

Helping our suppliers decarbonise

We continually work with our suppliers to find ways to reduce greenhouse gas emissions across our supply chains.

In 2020, Shell and 50 of our major suppliers piloted a new digital platform, the Shell Supplier Energy Transition Hub. This platform enables suppliers to set emission targets and track performance, share best practice and exchange emissions data with their own supply chains. In 2021, we rolled out the platform free of charge to the rest of our supply chain and any other interested companies.

See our website shell.com for more information about how we engage with contractors and suppliers.

NEIGHBOURING COMMUNITIES

Engaging with communities is part of our approach to managing human rights and providing access to remedy. Shell's HSSE & SP Control Framework helps to ensure that we operate responsibly and avoid or minimise the negative social impacts of our operations. The requirements set out in the framework also help us to maximise benefits arising from our presence, such as local employment and contractual opportunities. When we divest assets or exit areas, we use well-established processes, applied in a systematic way, to guide our assessment of risks in divestments.

Our requirements set rules, supplemented by guidance, for how we engage with communities that may be affected by our operations. Major projects and facilities that Shell operates have a social performance plan setting out how to manage potential negative impacts and maximise benefits. These plans typically begin with defining the social environment, with a particular focus on people who may be especially vulnerable to the potential impacts of our operations. Another important component is an effective community feedback mechanism for listening and responding to questions and resolving complaints in a timely manner. We have specific requirements to avoid, minimise or mitigate potential impacts on the traditional lifestyles and cultural heritage of indigenous peoples. We also have specific requirements to avoid, minimise or mitigate their involuntary resettlement.

We use our online community feedback tool, launched in 2020, to track and respond to all questions, complaints and feedback that we receive. It allows our network of about 100 community liaison officers (CLOs) to document feedback and outcomes.

The CLOs act as a bridge between local communities and our businesses. In 2021, travel restrictions and lockdowns due to the COVID-19 pandemic continued to limit our face-to-face engagement with members of communities. In response, our CLOs moved engagements online to maintain relationships virtually.

As part of our ongoing effort to improve community engagement, we developed an assessment tool in 2019, to measure the effectiveness of our community feedback mechanisms at 32 priority sites. The assessment is based on criteria set out in the UN Guiding Principles on Business and Human Rights. It has helped 18 priority sites to improve their community feedback mechanisms in the following areas:

- promoting public access to and transparency of the sites' community feedback mechanisms;
- improving written procedures so they are better aligned with global good practice and more reflective of local circumstances;
- providing clear steps for recognising alternative options for communities to seek remedy; and
- respecting people's anonymity and data privacy.

By the end of 2021, 10 sites updated their community feedback mechanisms so procedures are better aligned with the UN Guiding Principles on Business and Human Rights. Five sites have improved access and transparency by publishing the procedures for their community feedback mechanisms. We are working to improve community feedback mechanisms at 20 sites.

In 2020, we developed a guide to help sites improve the effectiveness of their community feedback mechanisms. In 2021, we simplified this guide so it could be applied to a wider range of operations. In 2022, we plan to improve the methods for tracking how feedback is resolved.

See our website shell.com for more information about our work with communities.

HUMAN RIGHTS

Human rights are fundamental to Shell's core values of honesty, integrity and respect for people. Respect for human rights is embedded in the Shell General Business Principles and our Code of Conduct. Our approach is informed by the UN Guiding Principles on Business and Human Rights.

We work closely with other companies and organisations to improve how we apply these UN guiding principles. We focus on four priority areas where respect for human rights is critical to how we operate: communities, security, labour rights, and supply chain. For each of these areas, we have systems to identify potential impacts and to avoid and mitigate them. For example, Shell's HSSE & SP Control Framework contains mandatory standards and manuals that set out how we identify, assess, and manage our impacts on communities where we operate, including any impact on human rights. Our joint-venture partners are expected to implement our control framework or an equivalent.

The Shell Supplier Principles outline how we expect our contractors and suppliers to respect the human rights of their workforce, and to manage the social impacts of their activities on Shell's neighbouring communities.

In 2021, we published Shell's Approach to Human Rights, which increases transparency by providing our staff and external stakeholders with important information about our approach and commitment to human rights. The publication includes Shell's position on respecting and promoting worker welfare. It also contains information on how we provide access to remedy.

In 2021, we launched an updated human rights training course which is mandatory for staff working in areas with the greatest risk of infringement, such as social performance, human resources, and contracting. We encourage all staff to do the course, regardless of their role, to build greater understanding of human rights across Shell.

An internal Human Rights Working Group consisting of experts from different functions guides Shell businesses on the best ways to implement and review our approach to human rights. The group includes an external adviser to provide an outside view and help us to improve our approach. A steering committee composed of senior executives supports the work of the Human Rights Working Group.

Our approach to due diligence is informed by the UN Guiding Principles on Business and Human Rights and is supported by experts working in our focus areas procurement, social performance, human resources, and security. Due diligence helps us to act on our commitment to respect human rights. For example, in our supply chains, where contractors and suppliers are considered to be at risk of having issues with labour rights, we engage with them to assess their management systems, before deciding whether to award a contract. Results of these supplier assessments are evaluated, and where gaps are found, we may work with suppliers and contractors to help them implement corrective actions. We may also conduct on-site audits or consider terminating contracts if serious or persistent shortcomings are found.

The most common shortcomings found during our supplier assessments typically relate to policy gaps rather than performance in the following areas:

- freely chosen employment;
- avoiding child labour;
- working hours, wages and benefits;
- dormitory, housing and working conditions;
- equal opportunities and freedom of association; and
- supply chain and performance management.

The Shell Supplier Principles include specific labour and human rights expectations for contractors and suppliers. Shell companies use a joint industry supplier capability assessment that is delivered in collaboration with other operators. This sharing mechanism is intended to support the improvement of working conditions in the participating companies' supply chains.

See our website shell.com for more information about our approach to human rights.

DELIVERING ENERGY **RESPONSIBLY AND SAFELY**



Performing competitively in the evolving energy system requires competent and empowered people working safely together across Shell.

Our people are essential to the successful delivery of Shell's strategy and to sustaining business performance over the long term. Strong engagement helps us to accelerate our people's development, enhance our leadership capabilities and improve employee performance.

In 2021

Employees
82,000
employees at December 31, 2021

Regions
>70
countries in which we operate

Training
271,000
formal training days for employees and joint-venture partners

Female employees
33%
female employees

Directors
50%
women on the Board of Directors

Executive Committee
25%
women on the Executive Committee

Senior leaders
29.5%
women in senior leadership positions

Experienced hires
1,292
experienced people joined Shell (34% female)

Operations centre hires
2,742
recruited for Shell Business Operations centres (51% female)

Graduate hires
155
graduate hires (47% female)

[A] All metrics except the employees metric exclude the employees in certain Upstream, Renewables and Energy Solutions and Downstream companies that maintain their own HR systems.

EMPLOYEE OVERVIEW

The employee numbers presented here are the full-time equivalent number of people employed by Shell on a full- or part-time basis, working in Shell subsidiaries, Shell-operated joint operations, seconded to non-Shell-operated joint operations, or joint ventures and associates.

At December 31, 2021, there were a total of 82,000 employees at Shell. This total consisted of employees at Shell and employees at certain Upstream, Downstream and Renewables and Energy Solutions companies that operate more autonomously than other Shell subsidiaries and maintain their own HR systems. There were a total of 87,000 employees at December 31, 2020, and December 31, 2019.

In August, we launched our new organisational structure as part of the Reshape initiative. This new structure was created with the aim of reducing costs and making us a more competitive organisation that is agile and better able to respond to customers.

The Reshape initiative in 2021 involved job reductions in line with our expectation that around 8,000 jobs will be reduced by the end of 2022. As a result of different notice periods in various markets, people are continuing to leave until the end of 2022. In certain markets, we provided the opportunity for selected voluntary severance (SVS), in order to reduce the number of enforced redundancies. We have around 3,000 people that are leaving on SVS.

We have sought at all times to conduct the job reductions process in accordance with our core values of honesty, integrity and respect for people. We have constantly sought to show care for anyone losing their role.

Throughout the Reshape process, we have aimed to support those facing job reductions by helping them to find and engage with internal and external opportunities to reskill and upskill. We introduced a global minimum standard for outplacement. This ensured that all employees who were leaving Shell had access to an independent professional career coach who could offer individualised support.

The proportion of voluntary resignations in Shell was 4.4% in 2021 compared with 2.6% in 2020. The rate is low across a range of industries.

The table below shows actual employee numbers by geographical area. Note 27 to the "Consolidated Financial Statements" on page 280 provides the average number of employees by business segment.

Actual number of employees by geographical area

Thousand

	2021	2020	2019
Europe	26	27	27
Asia	30	31	31
Oceania	2	3	2
Africa	4	4	4
North America	18	20	21
South America	1	2	2
Total	82	87	87

In 2021, a total of 271,000 formal training days were provided for employees and joint-venture partners, compared with 234,000 in 2020 and 373,000 in 2019. The increase was caused by the rise in the availability of virtual courses as we rapidly digitalised, enabling people to attend virtually. This allowed us to continue to invest in people and capabilities, while maintaining our focus on safety.

We have migrated to virtual courses and their uptake has increased from 2020, when people were still new to the virtual ecosystem. In 2021, learners embraced the virtual courses. This shows in the increase in the number of completions and the corresponding rise in training person days (TPD) of 37,000 compared with 2020.

EMPLOYEE COMMUNICATION AND INVOLVEMENT

Management regularly engages with our employees, including internally elected employee representatives, through a range of formal and informal channels. These include webcasts and all-staff messages from our Chief Executive Officer (CEO) Ben van Beurden, senior leader webcasts, town halls, team meetings, virtual coffee/chai connects, interviews with Senior Management, and online publications via our intranet. In 2021 Board members had virtual staff engagements and visited some sites such as Qatar, Shell Pernis, and Pennsylvanian Chemicals park to have direct engagement with staff.

For further information on stakeholder engagement, see "Governance" on pages 141-144.

The Shell People Survey is one of the principal tools used to measure employee engagement, motivation, affiliation and commitment to Shell. It provides insights into employees' views and has had a consistently high response rate. In 2021, the response rate was 83%, a decrease of 3.1 percentage points compared with 2020. This decrease was probably because of the timing of the survey, as many employees who were invited to take part were on a notice period before exiting Shell because of the Reshape reorganisation. Employees who are about to leave typically have a lower response rate than those who plan to stay with a company. The average employee engagement score was 75 points out of 100. This is a decrease of three points compared with 2020 but still reflects the resilience of our people in a year of change. This result gives Shell one of the leading employee engagement scores across a range of industries. The employee engagement score is based on a well-researched and validated model that combines satisfaction, motivation, affiliation, loyalty and dedication.

We provide our people with what they need to work in our offices and other locations, with flexibility for staff based on their reasonable business and personal needs. We also seek to provide what they need if they are working remotely. We enable, develop and improve their leadership qualities through global learning programmes, short- and long-term international assignments, and offering the possibility of moving between roles in different parts of the organisation. We help to increase the appeal of working for Shell through flexible working options, supportive policies such as a global minimum maternity leave of 16 weeks, regular engagements between management and employees, and career development tools such as individual development plans, coaching and formal training.

In 2021, we continued to support our people and assist in the fight against COVID-19. We continued our home-working ergonomics programme, providing funding for proper office equipment for home use for 5,000 employees in addition to the 50,000 we assisted in 2020. This included offering funding to new joiners for home-use office equipment. We also provided tips on setting up and maintaining good ergonomics, working with others virtually and maintaining productivity. Our Real Estate teams developed guidance on returning to site safely for all of our locations.

During and before the pandemic, we invested in the mental well-being of our employees through programmes such as World Mental Health Day, I'm Not Okay and the One Thing Wall. We also provided resources for our employees under the Care-for-Self programme.

Shell is one of more than 800 companies to have signed the Neptune Declaration, an international agreement sponsored by the Global Maritime Forum, promising to support seafarers during the COVID-19 pandemic. The support has included providing access to vaccines.

DIVERSITY, EQUITY AND INCLUSION

Our ambition is to become one of the most diverse and inclusive organisations in the world, a place where everyone – including employees, customers, partners and suppliers – feels valued and respected and has a strong sense of belonging. We believe that by achieving this ambition, we will contribute to a better and more equal world. We will also become a stronger organisation, with a richness of experience and views to guide us.

Living by our values

Our approach starts with living up to our core values of honesty, integrity and respect for people. These standards are set out in the Shell General Business Principles and our Code of Conduct. We want everyone to have a strong sense of belonging, irrespective of our differences. We launched two mandatory training courses for all staff in 2021: Respect in the Workplace and Conscious Inclusion. These will help us to continue to embed inclusive behaviours in our culture.

Powering lives DE&I commitments

We are focusing on removing barriers and creating equality of opportunity in four strategic priority areas: gender; race and ethnicity; lesbian, gay, bisexual and transgender (LGBT+); and enablement and disabilities inclusion, as set out in our powering lives commitments to diversity and inclusion.

Shell is working towards achieving 35% representation of women in our senior leadership positions by 2025 and 40% by 2030.

We aim to increase racial and ethnic representation across our workforce so that we better reflect the communities in which we work and live.

At Shell, we seek to provide a safe, caring and inclusive environment for LGBT+ and PWD (people with disabilities) staff so that they can be themselves and reach their full potential.

Gender

Our CEO Ben van Beurden is a Catalyst CEO Champion for Change. Like more than 70 other CEOs he has made an organisational and personal commitment to accelerate the advancement of women, including women of colour, into senior leadership and board positions. Shell also endorsed the World Economic Forum Call to Action on closing the gender gap in the oil and gas sector.

We aim to meet or exceed the target set by the external, UK-based Hampton-Alexander Review of having 33% female Board membership, progressing towards 50% or more representation. We have achieved this target. Currently six out of 12 of our Board members are women.

In an industry where women have been traditionally underrepresented, three of our five largest energy-trading divisions are led by women.

In October, Zoë Yujnovich was appointed Upstream Director, joining Jessica Uhl, the Chief Financial Officer as the second woman on the eight-person Executive Committee.

In 2021, 47% of our graduate recruits were female, compared with 49% in 2020. As of December 31, 2021, the proportion of women in senior leadership positions was 29.5% (this value includes leavers still in the HR System). This was just short of our ambition to have 30% representation of women in our senior leadership positions by 2021, but it was also an increase of 1.7 percentage points compared with the end of 2020. "Senior leadership positions" comprises our top 1,250 leaders and is a Shell measure based on salary group levels and is distinct from the term "senior manager" in the statutory disclosures in the table below.

Gender diversity data (at December 31, 2021)

Gender diversity data		Men		Women
Directors of the Company	6	50%	6	50%
Senior managers [A]	619	71%	254	29%
Employees (thousand)	55	67%	27	33%

[A] Senior manager is defined in section 414C(9) of the Companies Act 2006 and, accordingly, the number disclosed comprises the Executive Committee members who were not Directors of the Company, and other directors of Shell subsidiaries.

Race and ethnicity

We are working to address racial inequity. We seek to ensure everyone at Shell has equal opportunities and feels included. In 2020, we created the Shell Diversity and Inclusion (D&I) Council for Race, supported by a 20-member Employee Advisory Board composed of members from a diverse mix of racial and ethnic backgrounds. Sponsored by our CEO Ben van Beurden, Integrated Gas, Renewables and Energy Solutions Director Wael Sawan and Legal Director Donny Ching, the council aims to advance diversity in our workforce so that it better reflects communities where we work and from which we draw talent. Externally, in the USA, we work closely with the civil rights organisation National Urban League. In the UK, Shell was one of the first signatories to the Race at Work Charter of the Business in The Community organisation. We are part of Black Representation in Marketing (BRiM), a UK initiative to improve the representation of black people in marketing.

As of December 31, 2021, 8% of our Board members were from an ethnic minority.

In the USA:

- In 2021, 65% of our US employees were white; 33.2% were people of colour, with 13% Asian, 11.8% Hispanic/Latino, 8.4% black, and 1.8% in the Other category.
- We are launching mandatory anti-racism training for all US staff.

In the UK:

- In 2021, 78.5% of our UK employees identified as white and 21.5% were from an ethnic minority background. Our ethnic minority employees identified as Asian (13.1%), black (3.4%), mixed (2.4%) or another ethnic background (2.6%). As ethnicity declaration is voluntary, our ethnicity declaration rate is not 100% and all calculations are based on a declaration rate of 81%. The 19% of our workforce who have not provided data or have chosen not to declare their ethnicity were not included in our calculations.
- We have set a recruitment ambition to have 8% black representation in our graduate and experienced hires by 2025, to increase representation in line with UK society through actions such as mentoring and outreach.
- We co-sponsored the UK 2021 Race at Work survey conducted by the membership organisation Business in the Community.
- Shell in the UK was one of the first FTSE 100 companies to voluntarily publish ethnicity pay gap data in November 2020.

In the Netherlands, we began implementing our first Ethnic Inclusion action plan and established an employee sounding board to support this process.

We are focusing on the USA, UK and Netherlands because these are the Shell hubs where we see the most significant opportunities for representation and inclusion of minority staff.

LGBT+

We are working to advance LGBT+ inclusion within Shell. We promote equal opportunity and create an environment where people feel included, regardless of sexual orientation or gender identity. Our approach reinforces respect for people and provides psychological safety for our LGBT+ employees in line with our core values. Most of our work around LGBT+ inclusion happens at a country level in line with local policies, laws and regulations. Shell is active in external organisations and activities that advance LGBT+ inclusion.

We benchmark ourselves externally, with consistent top-tier results. In 2021, in the USA we earned a perfect score of 100 points in the Human Rights Campaign Foundation's Corporate Equality Index, a recognition we have earned annually since 2016. Shell was rated as a top employer in the Workplace Pride Global Benchmark 2021 survey, with a score of 92.4%. We have also pledged support for the UN Standards of Conduct for Business that aim to eliminate discrimination against lesbian, gay, bisexual, transgender and intersex (LGBTI) people.

Shell has a global LGBT+ forum consisting of LGBT+ colleagues and allies. The forum now has 14 chapters globally. The LGBT+ focus area is sponsored by Chief Financial Officer Jessica Uhl. Jessica Uhl was included in the OUTstanding 2021 Ally Executives Role Model List, which recognises business leaders who help create more inclusive workplaces. Two of our LGBT+ colleagues were featured in the OUTstanding 2021 LGBT+ Future Leaders List.

Enablement and disability inclusion

We are creating an environment where people with disabilities can excel. We provide support and make adjustments for people with disabilities during the recruitment process and throughout their careers with Shell. This includes equal access to valuable educational resources, training programmes, and emphasis on personal and professional development. In the UK, we partnered with PurpleSpace to launch a personal development programme called "Empowered and enABLED" to support employees with disabilities to build inner confidence, develop a sense of community and advocate for any adjustments or accommodations they require. In December 2021, we also launched a LinkedIn learning path called "Spotlight – Disability Inclusion: A Guide for Line Managers." This collection of learning resources helps Shell line managers to become more confident about issues relating to disability inclusion.

Our workplace accessibility (WPA) service currently serves 86 locations globally. Supported by functions such as Shell Health, HR, Real Estate and IT, WPA is designed to ensure that all employees have access to reasonable physical workplace or other adjustments so that they can work effectively and productively. We combined the home-working ergonomics programme with WPA to help all employees including those with disabilities to work from home effectively during the COVID-19 pandemic.

To further support staff with disabilities, we have created internal employee resource groups, including the enABLE networks that support and highlight the work of disabled employees in Shell. First launched in the UK in 2005, we now have 14 enABLE networks globally. In 2021, we formed the Global enABLEMENT Coalition, an internal forum bringing together enABLE networks and functions to create an inclusive, accessible and psychologically safe workplace for people with disabilities. The Enablement and disability inclusion focus area is sponsored by Harry Brekelmans, Projects & Technology Director and Huibert Vigeveno, Downstream Director.

Shell is a member of The Valuable 500, a global business group which seeks to eliminate the exclusion of disabled people and ensure that disability remains a priority for company leaders. Shell belongs to the Business Disability Forum. This is a membership organisation that brings business leaders, disabled people, and government together to understand how to improve the life opportunities and experiences of disabled people in employment, the economy and wider society. We belong to PurpleSpace, a networking and professional development hub for disabled employees, employee network leads and allies from all sectors and trades.

Other diversity and inclusion targets: local national coverage

We track local national coverage. This is the percentage of senior local nationals (those working in their respective base country and those expatriated) against the total number of senior leadership positions in their base country.

Local national coverage (at December 31) [A]

	Number of selected key business countries		
	December 31, 2021	December 31, 2020	December 31, 2019
Greater than 80%	13	10	12
Less than 80%	7	10	8
Total	20	20	20

[A] These numbers exclude those in companies with their own HR systems.

CODE OF CONDUCT

In line with the UN Global Compact Principle 10 (businesses should work against corruption in all its forms, including extortion and bribery), we maintain a global anti-bribery and corruption/anti-money laundering (ABC/AML) programme designed to prevent, detect, remediate and learn from potential violations. The programme is underpinned by our commitment to prohibit bribery, money laundering and tax evasion, and to conduct business in line with our Shell General Business Principles and Code of Conduct.

We do not tolerate the direct or indirect offer, payment, solicitation or acceptance of bribes in any form. Facilitation payments are also prohibited. The Shell Code of Conduct includes specific guidance for Shell staff, (which comprises employees and contract staff), on requirements to avoid or declare actual, potential or perceived conflicts of interest, and on offering or accepting gifts and hospitality.

Regular communications from our leaders emphasise the importance of these commitments and compliance with requirements. These are reinforced with both global and targeted messages to ensure that Shell staff are kept reminded of their obligations. To support the Code of Conduct, we have mandatory risk-based procedures and controls that address a range of compliance risks and ensure that we focus resources, reporting and attention appropriately. By making a commitment to our core values of honesty, integrity and respect for people, and by following the Code of Conduct, we protect Shell's reputation.

In 2021, the continuing COVID-19 pandemic brought additional focus on conduct risk, which arises from human behaviour, influenced by factors in the external environment. Our core values are undermined if decisions are taken which fall short of the expected standards of ethical behaviour and compliance. Our response to the pandemic remains to reiterate and emphasise that adherence to Shell's compliance rules (including the Code of Conduct) remains essential to protecting our business and helping us to make the right decisions for the future. While maintaining this basic position, pragmatic, risk-based mitigations have been implemented where appropriate to increase response speed and efficiency without undermining the intended purpose of our controls.

Our ethics and compliance requirements are articulated through our policies, standards and procedures and supported by the Ethical Decision-Making Framework, a tool to help staff think through and discuss, in a structured way, the legal, ethical and external consequences of decisions. They are communicated to Shell employees and contract staff and, where necessary and appropriate, to agents and business partners. We monitor and report internally on adherence to select ethics and compliance requirements, such as mandatory training completion and due diligence screening. We pay particular attention to our due diligence procedures when dealing with third parties. We also make our requirements clear to third parties through a variety of measures such as standard contract clauses. We offer a good practice anti-bribery and corruption e-learning course to third parties that may not have a training programme in place. We publish our Ethics and Compliance Manual on shell.com to demonstrate our commitment in this area.

The Shell Ethics and Compliance Office helps the businesses and functions to implement the ABC/AML and other programmes, assess risks and monitors and reports on progress. Legal counsel provides legal advice globally and supports the implementation of programmes. The Shell Ethics and Compliance Office regularly reviews and revises all ethics and compliance programmes to ensure they remain up to date with applicable laws, regulations and best practices. This includes incorporating results from relevant internal audits, reviews and investigations, and periodically commissioning external reviews and benchmarking.

We investigate all good-faith allegations of breaches of the Code of Conduct, however they are raised. We are committed to ensuring all such incidents are investigated by specialists in accordance with our Investigation Principles. Allegations may be raised confidentially and anonymously through several channels, including a Shell Global Helpline operated by an independent provider.

Allegations of breaches of the Code of Conduct may be raised confidentially and anonymously through several channels, including the Shell Global Helpline, which is operated by an independent provider. In 2021, there were 1,479 entries to the Shell Global Helpline: 1,177 allegations and 302 inquiries. The Business Integrity Department is a specialist investigative unit within Shell Internal Audit that is responsible for managing the Shell Global Helpline and the Group level incident management procedures. The Board has delegated the oversight of the functioning of the Shell Global Helpline to the Audit Committee. The Audit Committee is also authorised to establish and monitor the implementation of procedures for the receipt, retention, proportionate and independent investigation and follow-up action of reported matters.

Violation of the Code of Conduct or its policies can result in disciplinary action, up to and including contract termination or dismissal. In some cases, we may report a violation to the relevant authorities, which could lead to legal action, fines or imprisonment.

Internal investigations confirmed 181 substantiated breaches of the Code of Conduct in 2021. As a result, we dismissed or terminated the contracts of a total of 67 employees and contract staff.

EMPLOYEE SHARE PLANS

We have a number of share plans designed to align employees' interests with our performance through share ownership. For information on the share-based compensation plans for Executive Directors, see the "Directors' Remuneration Report" on pages 166-170.

PERFORMANCE SHARE PLAN, LONG-TERM INCENTIVE PLAN AND EXCHANGED AWARDS UNDER THE BG LONG-TERM INCENTIVE PLAN

Under the Performance Share Plan (PSP), 50% of the award is linked to certain indicators described in "Performance indicators" on pages 36-37, averaged over the performance period. For 2018 to 2019, 12.5% of the award was linked to free cash flow (FCF) and the remaining 37.5% was linked to a comparative performance condition which involves a comparison with four of our main competitors over the performance period, based on three performance measures. For 2020, 11.25% of the award was linked to the FCF measure and 5% was linked to an energy transition measure. The remaining 33.75% was linked to the comparative performance condition. From 2021, 10% of the award is linked to the FCF measure and 10% is linked to an energy transition measure. The remaining 30% is linked to the comparative performance condition.

Under the Long-term Incentive Plan (LTIP) awards made in 2018, 25% of the award is linked to the FCF measure and the remaining 75% is linked to the comparative performance conditions mentioned above. For 2019 and 2020, 22.5% of the award is linked to the FCF measure and 10% is linked to an energy transition measure. The remaining 67.5% is linked to the comparative performance condition mentioned above. From 2021, 20% of the award is linked to the FCF measure and 20% is linked to an energy transition measure. The remaining 60% is linked to the comparative performance condition.

Separately, following the BG acquisition, certain employee share awards made in 2015 under BG's Long-term Incentive Plan were automatically exchanged for equivalent awards over shares in the Company. The outstanding awards take the form of nil-cost options.

Under all plans, all shares that vest are increased by an amount equal to the notional dividends accrued on those shares during the period from the award date to the vesting date. In certain circumstances, awards may be adjusted before delivery or subject to clawback after delivery. None of the awards result in beneficial ownership until the shares vest.

See Note 22 to the "Consolidated Financial Statements" on page 274.

RESTRICTED SHARE PLAN

Under the Restricted Share Plan, awards are made on a highly selective basis to senior staff. Shares are awarded subject to a three-year retention period. All shares that vest are increased by an amount equal to the notional dividends accrued on those shares during the period from the award date to the vesting date. In certain circumstances, awards may be adjusted before delivery or subject to clawback after delivery.

GLOBAL EMPLOYEE SHARE PURCHASE PLAN

Eligible employees in participating countries may participate in the Global Employee Share Purchase Plan. This plan enables them to make contributions from net pay towards the purchase of the Company's shares at a 15% discount to the market price, either at the start or at the end of an annual cycle, whichever date offers the lower market price.

UK SHELL ALL EMPLOYEE SHARE OWNERSHIP PLAN

Eligible employees of participating Shell companies in the UK may participate in the Shell All Employee Share Ownership Plan, under which monthly contributions from gross pay are made towards the purchase of the Company's shares. For every six shares purchased by the employee, one matching share is provided at no cost to the employee.

UK SHARESAVE SCHEME

Eligible employees of participating Shell companies in the UK have been able to participate in the UK Sharesave Scheme. Options have been granted over the Company's shares at market value on the invitation date. These options are normally exercisable after completion of a three-year or five-year contractual savings period. From 2017 no further grants were made under this plan.

Separately, following the acquisition of BG, certain participants in the BG Sharesave Scheme chose to roll over their outstanding BG share options into options over the Company's shares. The BG option price (at a discount of 20% to market value) was converted into an equivalent Company option price at a ratio agreed with HM Revenue and Customs. These options are normally exercisable after completion of a three-year contractual savings period. As of December 31, 2021, there are no outstanding UK Sharesave or BG Sharesave options.

POWERING PROGRESS SHARE AWARD

This was a one-off share award granted to all eligible employees of Shell on June 18, 2021. This award supports employee engagement in the Powering Progress strategy. These awards vest at the end of a one-year period. All shares that vest are increased by an amount equal to the notional dividends accrued on those shares during the period from the award date to the vesting date.

Strategic Report signed on behalf of the Board

/s/ Linda M. Coulter

LINDA M. COULTER
Company Secretary
March 9, 2022

GOVERNANCE

Directors' Report

121 The Board of Shell plc
129 Senior Management
131 Introduction from the Chair
134 Statement of compliance with the UK Corporate Governance Code
135 Governance framework
137 Board activities and evaluation
141 Understanding and engaging with our stakeholders
145 Workforce engagement
147 Nomination and Succession Committee
151 Safety, Environment and Sustainability Committee
153 Audit Committee Report
166 Directors' Remuneration Report
171 Annual Report on Remuneration
189 Directors' Remuneration Policy
198 Other Regulatory and Statutory Information



THE BOARD OF SHELL PLC



SIR ANDREW MACKENZIE
Chair

Tenure

Chair – Nine months (appointed Chair May 18, 2021)
On Board – one year and five months (appointed October 1, 2020)

Board committee membership

Chair of the Nomination and Succession Committee

Outside interests/commitments

Fellow of the Royal Society (FRS)
Chair of UK Research and Innovation (UKRI)

Age	Nationality
65	British

Career

Sir Andrew Mackenzie was appointed Chair of the Board of Shell plc with effect from May 18, 2021. Sir Andrew joined BHP, the world's largest mining company, in 2008, and served as Group CEO from 2013 to 2019, when he systematically simplified and strengthened the business, and created options for the future. He also made BHP the first miner to pledge to tackle emissions caused when customers use its products.

From 2004 to 2007 at Rio Tinto, he was Head of Industrial Minerals, then Head of Industrial Minerals and Diamonds. Prior to this, Sir Andrew spent 22 years with BP, joining in 1982 in research and development, followed by international operations and technology roles across most business streams and functions – principally in exploration and production, and petrochemicals, including as Chief Reservoir Engineer and Chief Technology Officer. Latterly he was Group Vice President for Chemicals in the Americas, then Olefins and Polymers globally.

From 2005 to 2013 Sir Andrew served as a Non-executive Director of Centrica. He has also served on many not-for-profit boards, including public policy think-tanks in the UK and Australia. He was knighted in 2020 for services to business, science, technology and UK-Australia relations.

Relevant skills and experience

Sir Andrew is a highly experienced leader who has managed major international FTSE 100 businesses, and has more than 30 years' experience in the oil and gas, petrochemicals and minerals industry. Following early academic distinction, Sir Andrew made important contributions to geochemistry, including groundbreaking methods for oil exploration and recovery. He was recognised as "one of the world's most influential earth scientists" and made a Fellow of the Royal Society in 2014.

Having lived and worked on five continents, Sir Andrew has applied his deep understanding of the energy business and geopolitical outlook to create public-private partnerships and advise governments around the world. As an earth scientist, Sir Andrew has consistently pursued sustainable action on climate change in the interests of access to affordable energy and global development. Sir Andrew has brought the wealth of his experience and insights to Shell, where his expertise has been helping Shell navigate the energy transition. Sir Andrew is also a committed champion of gender balance, the rights of indigenous peoples, and of the power of large companies to support social change – all of which align closely with Shell's purpose, strategy and values.

In June 2021, Sir Andrew was appointed the chair of UK Research and Innovation. Sir Andrew has been tasked with driving forward the government's ambitious research and innovation agenda.



EULEEN GOH
Deputy Chair and Senior Independent Director

Tenure

Seven years and six months (appointed September 1, 2014).

Euleen was appointed Deputy Chair and Senior Independent Director on May 20, 2020.

Board committee membership

Member of the Nomination and Succession Committee and member of the Remuneration Committee

Outside interests/commitments

Chair of SATS Ltd. Trustee of the Singapore Institute of International Affairs Endowment Fund. Chair of the Singapore Institute of Management Pte Ltd and Non-executive Director of Singapore Health Services Pte Ltd, both of which are not-for-profit organisations. Euleen was appointed as a Member of the Singapore Public Service Commission on April 1, 2021.

Age	Nationality
66	Singaporean

Career

Euleen is an Associate of the Institute of Chartered Accountants in England and Wales, a Fellow of the Singapore Institute of Chartered Accountants, and has professional qualifications in banking and taxation. She has held various senior management positions within Standard Chartered Bank and was Chief Executive Officer of Standard Chartered Bank, Singapore, from 2001 until 2006. She is also a Fellow of the Singapore Institute of Directors.

She has also held non-executive appointments on various boards including Aviva plc, MediaCorp Pte Ltd, Singapore Airlines Ltd, Singapore Exchange Ltd, Standard Chartered Bank Malaysia Berhad, Standard Chartered Bank Thai plc, CapitaLand Ltd, Temasek Trustees Pte Ltd, DBS Bank Ltd and DBS Group Holdings Ltd. She was previously Non-executive Chair of the Singapore International Foundation, and Chair of International Enterprise Singapore and the Accounting Standards Council, Singapore.

Relevant skills and experience

Euleen's current roles as chair of the board of directors of various international organisations provide significant experience in the area of strategy development and international businesses. She is highly regarded both externally and within Shell as a champion of diversity. She consistently, but constructively challenges the Board and management to continue to progress in this area.

Based in Singapore and having been Chair of the Risk Committee of the largest bank in Southeast Asia, Euleen is close to key emerging/growth markets for our business. Euleen's risk management expertise has elevated the Board's deep deliberations around risk governance, and her voice is regularly heard on discussions regarding appropriate risk appetite. Her extensive travel around the world through her various executive and non-executive roles, has equipped her with broad geopolitical insight and significant knowledge of operating in the Asian markets.

Euleen uses her financial acumen and advocacy for diversity to pose probing and insightful questions, both in and beyond the boardroom. This contributes to well-rounded, incisive and inclusive Board discussions.

THE BOARD OF SHELL PLC continued



BEN VAN BEURDEN
Chief Executive Officer

Tenure

Eight years and two months (appointed January 1, 2014)

Board committee membership

N/A

Outside interests/commitments

Ben joined the Supervisory Board of Daimler AG as a Non-executive Director in April 2021.

Age	Nationality
63	Dutch

Career
Ben was Downstream Director from January to September 2013. Before that, he was Executive Vice President Chemicals from 2006 to 2012. In this period, he also served on the boards of a number of leading industry associations, including the International Council of Chemicals Associations and the European Chemical Industry Council. Previously, he held a number of operational and commercial roles in Upstream and Downstream, including Vice President Manufacturing Excellence. He joined Shell in 1983, after graduating with a master's degree in chemical engineering from Delft University of Technology, the Netherlands.

Relevant skills and experience
Ben has more than 38 years' experience of working for Shell. He has built a deep understanding of the industry and has proven management experience in technical and commercial roles.

Ben has led Shell to build resilience and deliver strong financial results. In 2016, he steered the Company through the acquisition and integration of the BG Group, which accelerated Shell's business strategy and led to a streamlining divestment programme of $30 billion of non-core assets.

Under his leadership, Shell has positioned itself to help tackle climate change. Shell has set a target of becoming a net-zero emissions energy business by 2050, in step with society.

In 2020, in the unprecedented circumstances of the COVID-19 pandemic, Shell took decisive action to maintain its financial resilience. Ben also led plans for a strategic reorganisation, which took effect in August 2021. This was aimed at setting Shell up to succeed in the energy transition by making the business nimbler and better able to respond to customers. In February 2021, Shell set out Powering Progress, a detailed strategy which describes our commitments under four goals: generating shareholder value, achieving net-zero emissions, powering lives and respecting nature.

In November 2021, the Company announced a simplification of its structure. As a result, Ben has relocated to the UK.



JESSICA UHL
Chief Financial Officer

Tenure

Five years (appointed March 9, 2017)

In November 2021, the Company announced a simplification of its structure. As a result, Jessica has relocated to the UK. However, due to family circumstances a long-term relocation to the UK is not sustainable and as a result Jessica will step down from her role on March 31, 2022. Jessica will be available to assist Sinead Gorman, who will become CFO effective April 1, 2022, and the Board with transition matters until June 30, 2022. She will then leave Shell.

Board committee membership

N/A

Outside interests/commitments

Jessica joined the Board of Goldman Sachs Group as Non-executive Director on July 1, 2021.

Age	Nationality
54	US citizen

Career
Jessica was Executive Vice President Finance (EVP) for the Integrated Gas business from January 2016 to March 2017. Previously, she was EVP Finance for Upstream Americas from 2014 to 2015, Vice President Finance for Upstream Americas Unconventionals from 2013 to 2014, VP Controller for Upstream and Projects & Technology from 2010 to 2012, VP Finance for the global Lubricants business from 2009 to 2010, and Head of External Reporting from 2007 to 2009. She joined Shell in 2004 in finance and business development, supporting the Renewables business.

Before joining Shell, Jessica worked for Enron in the USA and Panama from 1997 to 2003 and for Citibank in San Francisco, USA, from 1990 to 1996. She obtained a BA from UC Berkeley in 1989 and an MBA at INSEAD in 1997.

Relevant skills and experience
Jessica is a highly regarded executive with a track record of delivering key business objectives, from cost leadership in complex operations to mergers and acquisitions. Jessica's professional background combines an external perspective with more than 17 years of Shell experience. She has held finance leadership roles in Europe and the USA, in Shell's Upstream, Integrated Gas and Downstream businesses, and in Projects & Technology and Corporate.

Jessica was appointed CFO in the year following the BG acquisition, when Shell's debt, gearing and development costs were high and when the oil price was still recovering from the lower levels of 2016. Jessica responded to these challenging conditions with enthusiasm, clarity and discipline and has overseen Shell's delivery of industry-leading cash flow from operating activities.

Jessica drove decisive counter measures to protect the long-term financial health of the organisation, strengthen its balance sheet and preserve cash while ensuring the safe continuity of the business.

Jessica has also been a leading voice for transparency in the energy industry, including on taxes and climate change. Under her tenure, Shell has continued to expand and enhance disclosures related to climate change in line with the principles of the Task Force on Climate-Related Financial Disclosures. Under her guidance, from 2019, Shell began publishing an annual Tax Contribution Report. This includes country-by-country report data, a standard set by the Organisation for Economic Co-operation and Development (OECD).



DICK BOER

Independent Non-executive Director

Tenure

One year and nine months (appointed May 20, 2020)

Board committee membership

Member of the Audit Committee and member of the Nomination and Succession Committee

Outside interests/commitments

Non-executive Director of Nestlé and SHV Holdings; Chair of the Advisory Board for G-Star RAW; Chair of the Supervisory Board of Royal Concertgebouw; Chair of Rijksmuseum Fonds

Age	Nationality
64	Dutch

Career

Dick was President and Chief Executive Officer of Ahold Delhaize from 2016 to 2018. Prior to the merger between Ahold and Delhaize, he served as President and CEO of Royal Ahold from 2011 to 2016. From 2006 to 2011 he was a member of the Executive Board of Ahold and served as Chief Operating Officer of Ahold Europe from 2006 to 2011.

Dick joined Ahold in 1998 as CEO of Ahold Czech Republic and was appointed President and CEO of Albert Heijn in 2000. In 2003, he also became President and CEO of Ahold's Dutch businesses.

Prior to joining Ahold, Dick spent more than 17 years in various retail positions, for SHV Holdings N.V. in the Netherlands and abroad, and for Unigro N.V.

Relevant skills and experience

Dick is a highly regarded, recently retired chief executive, who has a deep understanding of brands and consumers, and extensive knowledge of the US and European markets, from his time leading one of the world's largest food retail groups. He brings a career's worth of experience at the forefront of retailing and customer service, which extended in more recent years to e-commerce and the digital arena. This experience is most timely as Shell focuses on the growth of our marketing businesses and increasing consumer choices in energy products.

Dick is a balanced leader with sound business judgement and a proven track record in strategic delivery, evidenced by the combination of Ahold and Delhaize. He also has a passion for sustainability and is well aware of the importance of the various stakeholder interests in this area.



NEIL CARSON OBE

Independent Non-executive Director

Tenure

Two years and nine months (appointed June 1, 2019)

Board committee membership

Chair of the Remuneration Committee and member of the Safety, Environment and Sustainability Committee

Outside interests/commitments

Non-executive Chair of Oxford Instruments plc

Age	Nationality
64	British

Career

Neil is a former FTSE 100 chief executive. After completing an engineering degree, Neil joined Johnson Matthey in 1980 where he held several senior management positions in the UK and the USA, before being appointed Chief Executive Officer in 2004. Since retiring from Johnson Matthey in 2014, Neil has focused his time on his non-executive roles. He was Chair of TT Electronics plc from 2015 until May 6, 2020.

Relevant skills and experience

Neil is highly experienced, has a broad industrial outlook and a highly commercial approach with a practical perspective on businesses. He brings a track record of strong operational exposure, familiarity with capital-intensive business and a first-class international perspective on driving value in complex environments. Neil was awarded an OBE for services to the chemical industry in 2016. Neil uses his current and past experience in non-executive positions to bring fresh insight and industry understanding to Board discussions. He has also provided valuable insight based on his former executive position and operational experience. Neil was appointed Chair of the Remuneration Committee on May 20, 2020.

THE BOARD OF SHELL PLC continued



ANN GODBEHERE

Independent Non-executive Director

Tenure

Three years and nine months (appointed May 23, 2018)

Board committee membership

Chair of the Audit Committee, and member of the Nomination and Succession Committee

Outside interests/commitments

Non-executive Director and audit committee chair of Stellantis N.V., Fellow of the Institute of Chartered Professional Accountants and a Fellow of the Certified General Accountants Association of Canada.

Age	Nationality
66	Canadian and British

Career

Ann started her career with Sun Life of Canada in 1976 in Montreal, Canada. She joined M&G Group in 1981, where she served as Senior Vice President and Controller for both life and health, and property and casualty businesses throughout North America. She joined Swiss Re in 1996, after it acquired the M&G Group, and served as Chief Financial Officer from 2003 to 2007. From 2008 to 2009, she was interim Chief Financial Officer and an Executive Director of Northern Rock bank in the initial period following its nationalisation.

Ann has also held several non-executive director positions at Prudential plc, British American Tobacco plc, UBS AG, and UBS Group AG. Ann served as a non-executive director of Rio Tinto plc and Rio Tinto Limited until May 2019, and she was also Senior Independent Director of Rio Tinto plc. In January 2021, Ann joined the Board of the newly formed Stellantis NV, and she chairs its Audit Committee.

Relevant skills and experience

Ann is a former CFO, a Fellow of the Institute of Chartered Professional Accountants, and has more than 25 years of experience in the financial services sector. She has worked her entire career in international business and has lived in or served on boards in nine countries. Ann makes significant contributions and adds exceptional value by bringing both her extensive experience and a global perspective to Board discussions.

Ann's long and varied international business career powered by her financial acumen is reflected in the insights and constructive challenges she brings to the boardroom. As Audit Committee Chair, Ann leverages her background to ensure robust discussions are consistently held as the Audit Committee delivers its remit.



JANE HOLL LUTE

Independent Non-executive Director

Tenure

Nine months (appointed May 19, 2021)

Board committee membership

Member of the Audit Committee

On March 9, 2022, the Board announced that Jane would step down from her role on the Audit Committee and had been appointed a member of the Safety, Environment and Sustainability Committee, with effect from the conclusion of the 2022 Annual General Meeting (AGM).

Outside interests/commitments

Non-executive Director of Marsh and McLennen and the Union Pacific Corporation

Age	Nationality
65	US citizen

Career

Jane was President and Chief Executive Officer of the North American operations of SICPA security inks from 2017 to 2021, when she assumed the role of Non-executive strategic director. From 2018 to 2021, Jane was a Non-executive Director of Atlas Air Worldwide Holdings Inc. In 2013 Jane established and led the Council on CyberSecurity, an independent, expert not-for-profit organisation with a global scope, committed to the security of an open internet. From 2015 to 2016 Jane held the role of Chief Executive Officer of the Center for Internet Security, an independent not-for-profit organisation that works to improve cyber security worldwide.

Before this, from 2009 to 2013 Jane served as Deputy Secretary of the US Department of Homeland Security, functioning as the Chief Operating Officer for the third-largest US Federal department. From 2003 to 2009 she held various roles at the United Nations, including Acting Under-Secretary and Assistant Secretary-General for Peacekeeping, Field Support and Peacebuilding. She also served as Executive Vice President and Chief Operating Officer of the United Nations Foundation and Better World Fund. In recent years, Jane has returned to working with the United Nations, serving as a Special Adviser to the Secretary-General.

Jane started her career in the US Army in 1978, serving in Berlin during the Cold War, on the US Central Command Staff during Operation Desert Storm, and on the National Security Council Staff under Presidents George H.W. Bush and William J. Clinton. After retiring from the Army in 1994, she joined the Carnegie Corporation as an Executive Director of its Commission on Preventing Deadly Conflict.

Relevant skills and experience

Jane is a proven and effective leader, who has held significant leadership roles in public service, the military and the private sector. She brings a wealth of expertise in matters of public policy, cyber security and risk management to our Board. She has also made significant contributions to strategic discussions and overseeing the day-to-day business and management of a significant public security department.

Jane is an experienced board director, having served on the boards of large-market-capitalisation companies since 2016. These appointments have provided her with wide experience and given her business perspectives across different sectors and geographical regions. She has also served on various committees including those which focus on audit, environmental and sustainability, nomination and governance issues.



CATHERINE J. HUGHES

Independent Non-executive Director

Tenure

Four years and nine months (appointed June 1, 2017)

Board committee membership

Chair of the Safety, Environment and Sustainability Committee and member of the Remuneration Committee

Outside interests/commitments

–

Age

59

Nationality

Canadian and French

Career

Catherine was Executive Vice President International at Nexen Inc. from January 2012 until her retirement in April 2013, where she was responsible for all oil and gas activities including exploration, production, development and project activities outside Canada. She joined Nexen in 2009 as Vice President Operational Services, Technology and Human Resources.

Prior to joining Nexen Inc., she was Vice President Oil Sands at Husky Oil from 2007 to 2009 and Vice President Exploration & Production Services, from 2005 to 2007. She started her career with Schlumberger in 1986 and held key positions in various countries, including France, Italy, Nigeria, the UK and the USA, and was President of Schlumberger Canada Ltd for five years.

Catherine has also held several non-executive director positions at SNC-Lavalin Group Inc, Statoil ASA and Precision Drilling Inc.

Relevant skills and experience

Catherine contributes through her knowledge of industry and the ease with which she engages with other Directors and managers in the boardroom. With over 30 years of oil and gas sector experience, she brings a geopolitical outlook and deep understanding of the industry. An engineer by training, she has also spent a significant part of her career working in senior human resources roles. The Board highly regards her perspectives on our industry and our most important asset, our people.

Catherine has a strong track record of executing operational discipline with a focus on performance metrics and a continual drive for excellence. Her knowledge of the technology underpinning oil and gas operations, logistics, procurement and supply chains benefits the Board greatly as it considers various projects and investment or divestment proposals.

She also uses her industry knowledge – combined with her commitment to the highest standards of corporate governance and safety, ethics and compliance – in her role as Chair of our Safety, Environment and Sustainability Committee, while using her human resources experience in her membership of the Remuneration Committee.



MARTINA HUND-MEJEAN

Independent Non-executive Director

Tenure

One year and nine months (appointed May 20, 2020)

Board committee membership

Member of the Audit Committee

Outside interests/commitments

Non-executive Director of Prudential Financial Inc., Colgate-Palmolive Company, and Truata Ltd.

Age

61

Nationality

German and US citizen

Career

Martina was Chief Financial Officer of Mastercard Inc. from 2007 to 2019. From 2002 to 2007 she was Senior Vice President, Corporate Treasurer at Tyco International Ltd. and from 2000 to 2002 she was Senior Vice President, Treasurer at Lucent Technologies.

Prior to this, Martina spent 12 years with General Motors, undertaking a number of senior roles within their finance operations.

Relevant skills and experience

Originally from Germany, Martina has spent 30 years in the USA and is an experienced global executive. Her financial and operational leadership of technology-focused companies is extremely relevant as Shell explores new technology-enabled business models. Martina also brings diverse sector experience to the Board, most recently from operating at a large global organisation in the highly regulated finance industry.

Martina is known for her straightforward and direct approach. She maintains the highest standards of leadership, strategic thinking and financial stewardship. She also has a strong track record as a mentor and in promoting diversity.

Martina's deep financial knowledge and unique perspective also enable her to make robust, demanding and constructive challenges to our investment considerations to help ensure that our projects are aligned with our strategic intent.

THE BOARD OF SHELL PLC continued



ABRAHAM SCHOT

Independent Non-executive Director

Tenure

One year and five months (appointed October 1, 2020)

Board committee membership

Member of the Safety, Environment and Sustainability Committee

On March 9, 2022, the Board announced that Bram would be appointed a member of the Remuneration Committee, with effect from the conclusion of the 2022 Annual General Meeting (AGM).

Outside interests/commitments

The Board of Signify N.V. has proposed to its shareholders that Bram join its supervisory board. Signify shareholders are scheduled to vote on this proposal at its AGM scheduled to be held on May 17, 2022.

Age	Nationality
60	Dutch

Career

Bram has been a member of the group Board of Volkswagen AG, responsible for the Premium Car Group, CEO of Audi AG, Chair of Lamborghini and Ducati, responsible for the VW group Commercial Operations and Vice-Chair of Porsche Holding Salzburg.

From 2011 to 2016 he was a Member of the Board of Volkswagen CV, Executive Vice President responsible for Global Marketing, Sales & Services, New Business Models. In 2017 he became a member of the Board of Audi AG. From 2006 to 2011 Bram was President & CEO of Daimler/Mercedes-Benz Italia & Holding S.p.A. From 2003 to 2006 he was President & CEO of DaimlerChrysler in the Netherlands.

Prior to this, Bram held a number of Director and senior leadership roles within Mercedes-Benz in the Netherlands, having joined the business in 1987 on an executive management programme.

Relevant skills and experience

Bram has over 30 years' experience working in the automotive industry at all levels of the business.

He gained a wealth of knowledge on far-reaching cost optimisation programmes at Audi AG. These helped transform the car company into a provider of electric vehicles that could offer sustainable mobility and succeed in the energy transition. He is well placed to leverage this knowledge in the Shell boardroom as Shell navigates its own transformation and pathway through the energy transition.

Bram has strong principles and regards integrity and compliance as the basis for doing business.

His studies have encompassed innovation and organisational effectiveness, geopolitical environments, shareholder value, corporate social responsibility and risk management, in several countries, which are all highly valued management tools and are evident in the questions he raises in the boardroom.



GERRIT ZALM

Independent Non-executive Director

Tenure

Nine years and two months (appointed January 1, 2013)

On March 9, 2022, the Board announced that Gerrit Zalm would not be seeking re-election at the 2022 AGM and would be stepping down from the Board of Shell plc.

Board committee membership

Member of the Audit Committee and member of the Remuneration Committee

Outside interests/commitments

Director of Moody's Corporation Inc. and Danske Bank A/S

Age	Nationality
69	Dutch

Career

Gerrit was an adviser to PricewaterhouseCoopers during 2007, Chair of the Trustees of the International Accounting Standards Board from 2007 to 2010, and an adviser to Permira from 2007 to 2008. He was Chief Economist of DSB Bank from July 2007 to January 2008, Chief Financial Officer from January 2008 to December 2008, and Chair of the Managing Board of ABN AMRO Bank N.V. from 2010 to 2016. He was Minister of Finance of the Netherlands, twice, from 1994 to 2002 and from 2003 to 2007. In between, he was Chair of the parliamentary party of the VVD.

Prior to 1994, he was head of the Netherlands Bureau for Economic Policy Analysis, a professor at Vrije Universiteit Amsterdam, and held various positions at the Ministry of Finance and the Ministry of Economic Affairs. He studied general economics at Vrije Universiteit Amsterdam, from where he also received an honorary doctorate in economics.

Relevant skills and experience

An economist by background, Gerrit's distinguished 12-year service as the Minister of Finance of the Netherlands, and his experience gained from his time with ABN AMRO Bank, bring a deep and valuable understanding of Dutch politics and financial markets to the Board. His international financial management expertise and strategic development experience also benefit the Audit Committee.

A highly regarded and seasoned leader in both the public and private spheres, his significant experience in analysing financial commitments from a wider public stakeholder and a global business standpoint serves the Board well, particularly when considering investment proposals. Gerrit consistently and concisely articulates the logic and reasoning behind his views, which he regularly and directly provides to the benefit of the Board and management. His questions often trigger other analytical questions from fellow Directors, deepening and widening Board discussions.



LINDA M. COULTER

Company Secretary

Tenure

Five years and two months (appointed January 1, 2017)

Age	Nationality
54	US citizen

Career

Linda was General Counsel of the Upstream Americas business and Head of Legal US, based in the USA, from 2014 to 2016. Previously, she was Group Chief Ethics and Compliance Officer, based in the Netherlands, from 2011 to 2014. Since joining Shell in 1995, she has also held a variety of legal positions in the Shell Oil Company in the USA, including Chemicals Legal Managing Counsel and other senior roles in employment, litigation, and commercial practice.

Relevant skills and experience

Linda is our Company Secretary and plays an important role as Shell's General Counsel Corporate, overseeing corporate legal teams in Canada, the Netherlands, the UK and the USA.

The various legal roles Linda has undertaken at our headquarters, and in supporting both the Upstream and Downstream businesses, have provided her with a strong understanding of our global operations and people. Her experience of engaging with the Board in previous roles, coupled with her broad understanding and engagement across Shell's businesses and functions, helps to ensure that the right matters come to the Board at the right time.

RETIREMENTS IN 2021

CHARLES O. HOLLIDAY

Retired: May 18, 2021. In line with best practice, Chad chose not to seek re-election at the 2021 AGM after 10 years of service, including six years as Chair of the Board.

SIR NIGEL SHEINWALD

Retired: May 18, 2021. In line with best practice, Sir Nigel chose not to seek re-election at the 2021 AGM following completion of his third three-year term and retired from the Board.

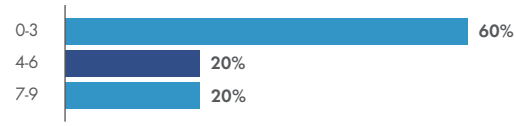
THE BOARD OF SHELL PLC continued

BOARD DIVERSITY

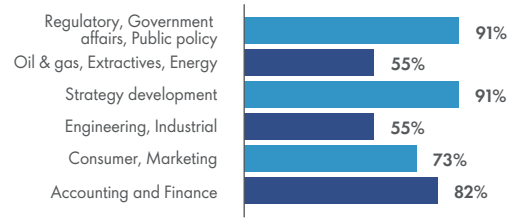
Gender diversity



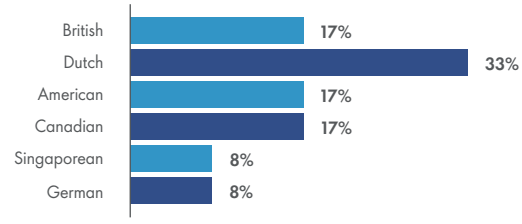
Non-executive Director tenure (years)



Non-executive Director sector experience



Director nationality



ATTENDANCE

The Board met 12 times during 2021. One meeting was held physically in The Hague, the Netherlands and one meeting was held in London, United Kingdom. The remainder were held via videoconference in the context of COVID-19 circumstances. Attendance during 2021 for all Board meetings is given in the table below [A].

[A] For attendance at Committee meetings during the year, please refer to individual Committee Reports.
[B] Charles O. Holliday retired from the Board following the AGM in May 2021.
[C] Jane Holl Lute joined the Board in May 2021.
[D] Sir Nigel Sheinwald retired from the Board following the AGM in May 2021.
[E] Jessica Uhl was unable to join an ad hoc Board meeting connected to the Simplification due to a family medical emergency.

Board member	Meetings attended
Ben van Beurden	12/12
Dick Boer	12/12
Neil Carson	12/12
Ann Godbehere	12/12
Euleen Goh	12/12
Charles O. Holliday [B]	3/3
Jane Holl Lute [C]	9/9
Catherine J. Hughes	12/12
Martina Hund-Mejean	12/12
Sir Andrew Mackenzie	12/12
Bram Schot	12/12
Sir Nigel Sheinwald [D]	3/3
Jessica Uhl [E]	11/12
Gerrit Zalm	12/12

DIRECTOR INDEPENDENCE

All the Non-executive Directors are considered by the Board to be independent in character and judgement. The Chair is not subject to the Code's independence test other than on appointment.

ETHNIC DIVERSITY

The Board is satisfied that it currently meets the recommendation from the Parker Review.

SENIOR MANAGEMENT

The Senior Management of the Company comprises the Executive Directors, Ben van Beurden and Jessica Uhl, and those listed below. All are members of the Executive Committee (see "Governance Framework" on page 122).



HARRY BREKELMANS

Projects & Technology Director

Tenure

Seven years and five months (appointed October 2014)

Age	Nationality
56	Dutch

Career

Harry was previously Executive Vice President Upstream International Operated, based in the Netherlands. He joined Shell in 1990 and has held various management positions in Exploration and Production, Internal Audit, and Group Strategy and Planning. From 2011 to 2013, he was Country Chair Russia and Executive Vice President for Russia and the Caspian region. In November 2021, Harry played a key role in the partnership of Shell with energy technology firm Baker Hughes Co., in an effort to help the partnership achieve their targets of net-zero carbon emissions.



DONNY CHING

Legal Director

Tenure

Eight years and one month (appointed February 2014)

Age	Nationality
57	Malaysian

Career

Donny was previously General Counsel for Projects & Technology, based in the Netherlands. He joined Shell in 1988 based in Australia and then moved to Hong Kong and later to London. In 2008, he was appointed Head of Legal at Shell Singapore, having served as Associate General Counsel for Gas & Power in Asia-Pacific.



RONAN CASSIDY

Chief Human Resources and Corporate Officer

Tenure

Six years and two months (appointed January 2016)

Age	Nationality
55	British

Career

Ronan previously served as EVP HR for both the Downstream and Upstream International businesses in turn. He joined Shell in 1988 and has held various HR positions across the Shell value chain, including regional roles in Europe and NE Asia/China, and global roles in HR Strategy & Regional Coordination, Retail and LPG.



ED DANIELS

Strategy, Sustainability and Corporate Relations Director

Tenure

One month (appointed February 2022)

Age	Nationality
56	British

Career

Ed was previously Executive Vice President Strategy, Portfolio & Sustainability. He joined Shell in 1988 and has held roles in Shell's Upstream, Integrated Gas, and Downstream businesses and our Projects & Technology organisation. He previously served as Shell's UK Country Chair.

SENIOR MANAGEMENT continued



WAEL SAWAN

Integrated Gas, Renewables and Energy Solutions Director

Tenure

Two years and eight months (appointed July 2019)

Age	Nationality
47	Lebanese and Canadian

Career

On October 25, 2021, Wael succeeded Maarten Wetselaar as Integrated Gas, Renewables and Energy Solutions Director.

Wael was previously the Upstream Director and a member of the Executive Committee. Before that, he was Executive Vice President Deep Water and a member of the Upstream Leadership Team. He joined Shell in 1997 and worked in a variety of roles in each of Shell's core business units: Upstream, Integrated Gas and Downstream.



HUIBERT VIGEVENO

Downstream Director

Tenure

Two years and two months (appointed January 2020)

Age	Nationality
52	Dutch

Career

Huibert was previously Executive Vice President Global Commercial. He joined Shell in 1995 as a business analyst and led many Downstream businesses across Shell in Europe, Africa, North and South America as well as Asia. In 2009, Huibert was appointed Vice President Supply & Distribution, Europe and Africa. In 2012 he became Executive Chair of Shell in China, and in 2016 led the integration of BG Group.



ZOË YUJNOVICH

Upstream Director

Tenure

Five months (appointed October 2021)

Age	Nationality
46	Australian

Career

On October 25, 2021, Zoë succeeded Wael Sawan as Upstream Director and was appointed to the Executive Committee.

Zoë has held various management positions in Downstream, Integrated Gas and Upstream. Most recently, she served as Executive Vice President Conventional Oil & Gas and was previously Chair and Executive Vice President Shell Australia Pty Ltd. She joined Shell from Rio Tinto in 2014 to lead the company's Oil Sands business in Canada.

2021 LEAVERS

MAARTEN WETSELAAR

Integrated Gas, Renewables and Energy Solutions Director until October 2021 (appointed January 2016).

INTRODUCTION FROM THE CHAIR

I feel very honoured to have been appointed Chair at our 2021 AGM, particularly at such a pivotal time for Shell, the industry and wider society. It is also a great honour to succeed Chad Holliday, whose chairmanship I have much admired and who I know is warmly remembered not only for the Shell achievements he oversaw but also for his integrity and leadership.

Before being appointed Chair, I was delighted to participate as a Non-executive Director in the shaping of the compelling Powering Progress strategy that Shell unveiled in February 2021. I believe Shell has an exceptional portfolio of future-facing assets and, working with Ben van Beurden and the Board, we will profitably accelerate Shell's transition to a net-zero emissions energy business that continues to generate substantial value for shareholders, customers and communities alike.

The recent simplification of Shell supports this value generation. The Board thanks our shareholders for the overwhelming support shown at the General Meeting in December 2021. This ultimately allowed us to establish a single line of shares to eliminate the complexity of Shell's A/B share structure and to align Shell's tax residence with its country of incorporation in the UK. On December 20, 2021, the Board formally approved the simplification, and on December 31, the Board approved the key steps required to move the Company's tax residence to the UK. The Company's name was changed on January 21, 2022, and the Company's shares were assimilated into a single line of shares on January 29, 2022, completing the simplification.

Shell is proud of its Anglo-Dutch heritage and will continue to be a significant employer with a major presence in the Netherlands. The Group's Projects & Technology division, its global Upstream and Integrated Gas businesses and its renewable energies hub remain in The Hague. Shell's growing presence in offshore wind and the recent decision to build a world-scale low-carbon biofuels plant at the Energy and Chemicals Park Rotterdam underline the importance of the Netherlands to Shell's energy transition activities. So too does the fact that we are working towards final investment decisions on plans to build Europe's biggest electrolyser in Rotterdam and to participate in the Porthos carbon capture and storage project.

The last two years have been transformative – not just in the macroeconomic uncertainty around prices and demand for oil and gas products, but also in the ongoing impact on our ways of working, our people, our customers and their families. Throughout 2021, society continued to cope and live with COVID-19, with governments loosening and tightening restrictions based on local conditions. As vaccinations increased, workers in some regions started returning to offices. Various travel restrictions were lifted. But many of Shell's office-based employees continued to work from home in 2021 and into 2022. Although our offices in some regions are returning to a new normal, many of our office-based staff have not worked together physically for almost two years. Health measures implemented at our sites have led to changes such as differing shift patterns and self-isolation. This can impact the time people are away from their families. Yet in this challenging environment, our people drove proposals to final investment decision across the business and safely delivered significant projects, such as the sale of our Permian assets, the divestment of the Deer Park refinery in Texas, USA, and Company simplification to name but a few.

As Chad said last year, the list of what our people do, and continue to do, for Shell and for each other is extensive and in many instances humbling. The Board and I thank them for their continued commitment, perseverance and personal sacrifices.

We are equally aware of the scale of the complex climate challenges confronting Shell and society. The answer, though, is not as simple as stopping the extraction of oil and gas and wholly shifting capital investment into other areas. The cash generated by Shell's oil and gas operations provides returns to our investors, who can be global pension funds, governments, insurance companies and investment products through which the general public invest. Crucially, the cash flows from oil and gas also help fund Shell's investments in lower-carbon energy businesses. These help Shell, our customers and entire sectors to cut emissions and accelerate the energy transition. The goal is a low-carbon world, not a single lower-carbon company. Achieving a low-carbon world requires governments, companies and society to work together to deliver change – to help people make the right choices, in a way that is affordable and inclusive. We believe that our Powering Progress strategy enables this. We think it allows Shell to successfully navigate the energy transition in step with society. We believe that the commitments Shell has made within its shareholder-approved energy transition strategy to drive this collective goal are market leading amongst the companies in our sector.



Sir Andrew Mackenzie
Chair

INTRODUCTION FROM THE CHAIR continued

ENERGY TRANSITION STRATEGY

In February 2021, Shell announced its intention to put its energy transition strategy to shareholders for an advisory vote every three years, with the first vote being at the 2021 AGM. This was an important step for Shell and the first time that an energy company asked shareholders to vote on its energy transition strategy.

Shareholders endorsed the energy transition strategy, with 88.74% voting in favour of this resolution. The Board thanks our shareholders for their support. At the 2022 AGM, scheduled for May 24, 2022, shareholders will be asked to vote on our progress in respect of our energy transition. Shareholder support is important as our business changes and we work towards our target to become a net-zero emissions energy business by 2050, in step with society.

BOARD LEADERSHIP AND SHELL'S PURPOSE

The UK Corporate Governance Code (the "Code") provides that the Board should promote the long-term sustainable success of Shell, generating value for shareholders and contributing to wider society. The Board believes that Shell's efforts give it an effective framework to play its part in the energy transition as a growing, successful, commercial organisation. In the Board's view, this framework will allow Shell to provide the energy solutions that consumers will want and buy in this period of uncertain change. The Board also thinks that Shell will be able to deliver against its recently published targets and reduce the carbon intensity of the energy products it sells.

The purpose of Shell is set out in the early pages of this Annual Report. We will continue with the theme of communicating purpose throughout this Governance report. We will focus on how Shell's governance operates in practice, and why we believe this is the best approach for us.

The Governance report is structured around the key themes of the Code. Our narrative seeks to explain how governance supports and protects Shell and our stakeholders.

Although Shell applies the principles and the spirit of the Code, there are instances where we adopt an approach slightly different from that suggested by some of the Code's provisions. We explain these on page 134. In these instances, our governance processes are considered appropriate, given the specific circumstances and range of factors particular to Shell, such as its global nature, size, complexity and history. More detail on Shell's compliance with the Code can be found on page 134.

Last year, Chad highlighted the importance of our stakeholders and the greater level of external focus on these groups. We also expressed our enthusiasm for building on our engagement with our stakeholder groups in 2021. The use of technology to facilitate virtual engagements proved valuable, and continues to improve. But sadly the continued restrictions on social interaction and travel, combined with other notable projects needing the Board's attention, meant that we did not make as much progress on this ambition as we had hoped. As a result, this is a focus area for 2022, as outlined in the outcomes of the Board evaluation on page 139. Information on how the Board discharges its duty in relation to key stakeholder interests, including those of our workforce, and an explanation of how it considered these when making principal decisions are set out on page 16. On page 137 we provide information about our Board activities and highlight which stakeholders we considered.

Our workforce engagement methods remain unchanged from those previously disclosed. As we continue to implement the proposals from our Reshape reorganisation, we anticipate an enhanced level of workforce engagement, within the parameters of COVID-19 restrictions. We continue to believe that constructive relationships built on mutual respect and transparency help Shell attract and retain employees while supporting greater productivity and operational safety and efficiency. Ensuring that the employee voice is heard on relevant matters in the boardroom in practical ways is key to understanding the broader impact of business decisions, including with respect to organisational culture.

The Board recognises the importance of culture and its link to delivering Shell's purpose and strategy. Given our culture's importance, it requires long-term commitment. The Board believes that our people and safety culture is strong, and takes pride in having such a culture.

Shell's culture reflects the values of the organisation – honesty, integrity and respect for people. These underpin all the work we do and are embedded in our strategy and purpose. The Board continues to increase its focus on Shell's culture and in 2021 the Nomination and Succession Committee initiated an in-depth examination of Diversity, Equity & Inclusion (see page 147).

DIVISION OF RESPONSIBILITIES

More information on how the Board and its Committees support business operations is provided on page 135. Further detail is contained within the Terms of Reference for each Committee, which are provided on our website. Each year the Board committees' Terms of Reference are reviewed and updated, as required.

Maintaining independent judgement on the Board is a fundamental governance principle and one the Board supports. The Code provides circumstances that it considers are likely to impair, or could appear to impair, a Non-executive Director's independence. One of these is tenure. On page 134 we note that for part of 2021 our previous Chair, Chad Holliday, exceeded the recommended term outlined in the Code. When this new provision was introduced, we provided a clear explanation to shareholders that we believed it was right for the Company to exceed this term in order to ensure smooth Board succession. The Board also disclosed when it expected Chad's tenure to end. Director and Chair succession has been facilitated in line with the timeline that was communicated to shareholders.

COMPOSITION, SUCCESSION AND EVALUATION

For biographies of current Board members see pages 121-128.

For how the Board, Committees and Directors appraised their performance see pages 137-140.

At the 2021 AGM, shareholders appointed Jane Holl Lute as a Non-executive Director to the Board. After joining the Board, Jane was appointed to the Audit Committee. An overview of Jane's induction programme can be found on page 149. Committee membership has been further reviewed during the year. The 2021 AGM was also Chad Holliday's last day with Shell, after six years' service as Chair and since joining the Board in September 2010. He left a distinguished legacy of strong, inclusive leadership, and the Board is deeply grateful for his tireless and dedicated commitment to Shell and its people over the years.

An overview of the Chair succession process was provided in the 2020 Annual Report and a summary is included on page 150.

As announced on March 1, 2022, Jessica Uhl will step down as Chief Financial Officer of Shell plc, effective March 31, 2022. Sinead Gorman is to be appointed Chief Financial Officer of Shell plc, effective April 1, 2022. The Board is immensely grateful to Jessica for her tremendous contribution to the company over many years, but particularly as CFO and especially during the past two years as we successfully tackled the many challenges presented by the pandemic. She has been instrumental in strengthening Shell's financial position, putting in place measures to secure the company's long-term health while delivering industry leading cash flows year on year. Jessica has been an exemplary ambassador for Shell and the company's strength today is testament to her professionalism, resolve and values-driven leadership.

AUDIT, RISK MANAGEMENT AND INTERNAL CONTROL

The Audit Committee assists the Board in maintaining a sound system of risk management and internal control and oversight over Shell's financial reporting. A variety of standing matters and more specific topics are discussed by the Audit Committee throughout the year. As part of the year-end reporting process, the Audit Committee advises the Board on the adequacy of the system of risk management and internal control, the appropriateness of the viability statement and going concern basis of accounting. The Audit Committee also advises on whether this Report, taken as a whole, is fair, balanced and understandable and provides the information necessary for stakeholders to assess Shell's position and performance, business model and strategy. More information on the Audit Committee's activities, highlights and priorities can be found in its report on page 153.

LOOKING AHEAD

As we shared last year, Shell is at a point where it must transform itself. The steps of this transformation, will be intensely scrutinised by society and the environment in which we operate will continue to change rapidly. Not all of our stakeholders will be fully supportive of the decisions that we take, yet we must frame and implement our strategy with courage and commitment and a focus on the long-term success of the Company. This we will do with the humility to listen, learn and adapt. Shell's Board and leadership must be steadfast, agile and sensitive to the opportunities, risks and rewards confronting the business. I, my fellow Directors on the Board, and our colleagues across the business, remain confident that Shell is up to the task.

SIR ANDREW MACKENZIE
Chair
March 9, 2022

STATEMENT OF COMPLIANCE WITH THE UK CORPORATE GOVERNANCE CODE

The Board confirms that, throughout the year, the Company has applied the principles, both in spirit and in form, and complied with the provisions set out in the UK Corporate Governance Code issued by the Financial Reporting Council (FRC) in July 2018 (the "Code"), with the exception of provisions 5 and 19 noted below. A copy of the Code can be found on the FRC's website: www.frc.org.uk.

Shell's governance arrangements have been considered alongside the Code. The information set out in the Directors' report, including the Board committee reports on (pages 147 to 170) is intended to provide an explanation of how the Code's principles were applied practically throughout the year. We also provided clear and meaningful explanation below where we believe stakeholders may benefit from more specific information on a particular Code provision 4.

CHAIR TENURE (PROVISION 19)

Charles O. Holliday (Chad) was appointed as Chair in 2015, after four and a half years as a Non-executive Director. In September 2019 he reached a tenure of nine years. Chad stood down from the Board at the 2021 AGM.

The 2018 UK Corporate Governance Code introduced a new requirement that the Chair not remain in post beyond nine years of the date of their first appointment. As a result, for part of the year in review (from January 1 to May 18, 2021), Shell did not comply with this provision. But the Code also notes that to facilitate effective succession planning and development of a diverse Board this period can be extended, particularly where the Chair was an existing non-executive Director on appointment. Within the 2019 Annual Report we provided a thorough explanation of why Chad was to remain on the Board for longer than nine years as we transitioned to the (then) new Code requirement. We also said when his tenure would end. An explanation also featured on page 126 of the 2020 Annual Report. Following the 2021 AGM, Chad was succeeded by Sir Andrew Mackenzie, in line with the timeline Shell disclosed in 2020 (within the 2019 Annual report).

WORKFORCE ENGAGEMENT (PROVISION 5)

The size and diversity of our employee base and wider workforce have complicated the feasibility of implementing any of the three specific workforce engagement methods recommended in the Code. The Board believes that its current approach to workforce engagement continues to be pragmatic and effective, particularly when considered against the required coverage needed for a global organisation such as Shell.

Elsewhere in this Annual Report, we explain how our people are essential to the successful delivery of the Shell strategy, and how the Board recognises the importance of understanding their views through engagement. In previous Annual Reports, we communicated the Board's desire and intention to increase its direct engagements, when the Board, committees and individual Directors visit our sites across the world. The ongoing travel restrictions associated with the COVID-19 pandemic again limited our ability to do this in 2021. While some engagements could not be held physically, many were held virtually, and there were opportunities for the Board to speak with our stakeholders and obtain feedback. The Board also intends to keep the effectiveness of the engagements under review. Stakeholder engagement also continues to be enhanced in management reporting. More information on the current approach and a description of the channels used by the Board, its committees, and the Executive Committee are outlined in "Workforce engagement" on pages 145 to 146.

AGM VOTING (PROVISION 4)

At the 2021 AGM more than 20% of shareholders supported a resolution which the Board had recommended voting against. Provision 4 of the UK Governance Code requires certain actions to be undertaken if more than 20% of shareholders vote in a way which is different to what the Board recommended. There are three stages to these actions. First, explain when announcing the voting results what actions the company intends to take to consult shareholders to understand the reasons behind the voting result. Shell included this explanation with its voting results, published on May 18, 2021. Second, an update on the engagement with shareholders should be published no later than six months after the shareholder meeting. This statement was added to the Shell website in November 2021. Third, a final summary of the engagement and the actions taken should be included within the Annual Report. This information is provided on page 141.

CORPORATE GOVERNANCE REQUIREMENTS OUTSIDE THE UK

In addition to complying with applicable corporate governance requirements in the UK, the Company complies with the rules of Euronext Amsterdam as well as Dutch securities laws because of its listing on that exchange. The Company likewise adheres to US securities laws and the New York Stock Exchange (NYSE) rules and regulations because its securities are registered in the USA and listed on the NYSE.

GOVERNANCE FRAMEWORK

BOARD OF DIRECTORS

The Company has a single-tier Board of Directors headed by a Chair, with executive management led by the Chief Executive Officer. The names of the Directors that held office during the year can be found on pages 121-128. Information on the Directors who are seeking appointment or reappointment is included in the Notice of Annual General Meeting.

There is no fixed amount of times that the Board may meet in one year. During 2020, the Board met 12 times. During 2021, the Board also met 12 times and, as detailed throughout our Strategic Report, including the Section 172 statement and activities undertaken throughout the year, worked hard to promote the long-term sustainable success of the Company, generating value for shareholders and contributing to wider society. Further information on the Board's work and assessments in relation to strategy, culture, engagement with stakeholders and its workforce can be found as follows:

The Board's responsibilities are governed by a formal schedule of matters reserved to it and include:

- Approval of overall strategy and oversight of management;
- Changes to the corporate and capital structure;
- Approval of financial reporting and controls (including approval of the Annual Report and Accounts, approval of the Annual Report on Form 20-F, and interim dividends);
- Oversight of risk management and internal control;
- Approval of significant contracts;
- Determining succession planning and new Board appointments;
- Remuneration for the Chair and Executive Directors; and
- Corporate governance matters.

Board Committees

Audit Committee

- Carries out certain oversight functions on behalf of the Board; and
- Assists the Board in fulfilling its responsibilities in relation to internal control and financial reporting.

Safety, Environment and Sustainability Committee

- Carries out certain oversight functions on behalf of the Board; and
- Advises the Board on safety, the environment including climate change, and Shell's overall sustainability performance.

Nomination and Succession Committee

- Leads the process for appointments to the Board;
- Recommends Board appointments and re-appointments;
- Reviews and makes recommendations on succession planning; and
- Reviews and makes recommendations on corporate governance guidelines.

Remuneration Committee

- Determines and agrees with the Board the remuneration policy for the Chair, Executive Directors and Senior Management of the Company;
- Within the terms of such agreed policy, determines individual remuneration packages for the Chair, and Executive Directors; and
- Monitors and makes recommendations regarding the structures and levels of remuneration structures and levels for other senior executives, if appropriate.

More information on the composition of each of the Board Committees, their roles and activities during the year is provided on the following pages:

Audit Committee	153-165	Safety, Environment and Sustainability Committee	151-152
Nomination and Succession Committee	147-150	Remuneration Committee	166-170

Other ad-hoc Committees

The Nigeria Special Litigation Committee is an ad-hoc Committee which was formed to monitor the status of the OPL-245 litigation and investigations. Its members are Euleen Goh (Chair), Sir Andrew Mackenzie and Ann Godbehere.

GOVERNANCE FRAMEWORK continued

BOARD OF DIRECTORS continued

Division of responsibilities

The roles of the Chair, a non-executive role, and the CEO are separate and clearly defined. The Board has agreed on their respective responsibilities and set these out in writing. These are available on request from the Company Secretary.

Chair

- Responsible for ensuring that the Board and its Committees function effectively. One way in which this is achieved is by ensuring Directors receive accurate, timely and clear information; and
- Responsible for making sure that there is an adequate induction and training programme followed by all Directors (see page 149 below), with assistance from the Company Secretary.

Deputy Chair/Senior Independent Director

- Sounding board for the Chair;
- Serves as an intermediary for the other Directors and shareholders; and
- Leads the annual appraisal of the Chair's performance.

Non-executive Directors

- Appointed by the Board or by shareholders at general meetings and, in accordance with the Code, seek re-election by shareholders on an annual basis;
- Letters of appointment refer to a specific term of office, the provisions of the Code and the Company's Articles of Association;
- Upon appointment, Non-executive Directors confirm they are able to allocate sufficient time to meet the expectations of the role. Appointments are subject to a minimum of three months' notice of termination, and there is no compensation provision for early termination;
- The Non-executive Directors bring a wide range and balance of skills and international business experience. Through their contribution to the Board and Board Committee meetings, respectively, they are expected to challenge and help develop proposals on strategy and bring independent judgement on issues of performance and risk; and
- At every Board meeting, time is set aside for the Chair and Non-executive Directors to meet without the Executive Directors being present. The Non-executive Directors discuss, among other matters, the performance of individual Executive Directors. A number of Non-executive Directors also meet major shareholders over the course of the year.

EXECUTIVE MANAGEMENT

Chief Executive Officer

- Has overall responsibility for the implementation, by the Executive Committee, of the overall strategy approved by the Board, the operational management of the Company and the business enterprise connected with it; and
- Is supported in this by the Executive Committee that he chairs.

Executive Committee

- Operates under the direction of the Chief Executive Officer (CEO) in support of his responsibility for the overall management of Shell's business. The CEO has final authority in all matters of management that are not within the duties and authorities of the Board or of the shareholders' general meeting; and
- Executive Committee members are listed in the Senior Management biographies on page 129.

GOVERNANCE DOCUMENTS AVAILABLE ON WWW.SHELL.COM/INVESTOR:

- Articles of Association
- Matters Reserved for the Board
- Board Committee Terms of Reference
- Modern Slavery Act Statement
- Shell General Business Principles
- Shell Code of Conduct
- Code of Ethics for Executive Directors and Senior Financial Officers

BOARD ACTIVITIES AND EVALUATION

BOARD ACTIVITIES

A rolling Board agenda is reviewed at Board meetings, enabling effective forward management of meetings and focused discussions. Forthcoming Board agenda items are categorised as: Strategy & Portfolio, Delivery & Performance, External Environment, Corporate & Miscellaneous or Standard items. Of the standard items, Board agendas regularly include reports from the Chief Executive Officer, the Chief Financial Officer and each Board committee. Core values moments and Shell Hero stories featured in early 2021 while updates continued throughout the year from various businesses and key functions, including Investor Relations; Health and Safety, Security and Environment; Information Technology; Human Resources; and Legal, as well as the Company Secretary. The Board also considers and approves the quarterly, half-year and full-year financial results, shareholder distributions and the associated announcements, and, at most meetings, considers investment, divestment and/or financing proposals. To enable purposeful debates and focus on particular aspects of agenda topics, including the impact on key stakeholders, Directors have an opportunity to specify information they require to be provided in advance of Board meetings. Finally, given the number of new Non-executive Directors over 2020 and 2021 in a continued virtual environment, virtual break-out sessions were built in to try to nurture relationship-building while promoting focused discussions on discrete topics.

During the year, where possible, certain Non-executive Directors conducted site visits. These visits were predominantly virtual, as a result of continued COVID-19 restrictions. The visits were designed to provide Directors with a deeper insight into certain business operations. Directors also held various virtual workforce engagements, as well as virtual external stakeholder engagements. More detail on these can be found in the table below and on pages 138-139.

Some of the activities and areas of Board focus over the year are summarised in the table below. The information below is not exhaustive. Information on other topics discussed by the Board and details of the resulting decisions are covered elsewhere, primarily in the Section 172 Statement contained in the Strategic Report on page 16. In some cases, a brief outline has been provided below, and page references are provided for additional and more comprehensive information.

June strategy days

As in 2020 and in lieu of the traditional physical June Strategy off-site meetings or Board's Strategy Day, virtual meetings were held over the course of three days in June 2021. Effort was again invested into making the virtual sessions as engaging and interactive as possible, including break-out sessions and staff engagements. Directors shared the feedback obtained during the staff engagements on topics such as staff views on Shell strategy (including acceleration of Shell's energy transition strategy), Project Reshape, pride in the Shell brand, diversity, and pride and concerns regarding Shell's future.

Strategy Day 2021 marked the start of the roll-out of Shell's Powering Progress strategy. The agenda focused on implementing this strategy and the critical enablers. Delivering the Powering Progress strategy requires us to transform Shell. The challenge is to navigate how we move from the certainty of familiar and proven business models to the uncertainty of a new energy environment, which is still evolving at variable pace in different sectors and regions. The Board Strategy Day agenda was built on the theme of Powering Progress in an Accelerating World, explored the topics which pose strategic risk or opportunity for Shell. The Board also reviewed areas where the strategy is already in action as implementation is under way and new businesses are developing. The Board Strategy Days included discussions on various topics including:

- energy transition and commitment to net zero emissions;
- simplification of Shell's equity capital and corporate structure;
- review of Upstream strategy;
- review of Power strategy;
- update on Financial Framework and financing the energy transition; and
- deep dive on electric vehicle charging.

Topic	Discussion/activity/updates included	Examples of outcome/progress	Stakeholders considered
Board leadership and company purpose			
External business environment	▪ Received updates on and discussed regional geopolitical issues.	▪ Considered feedback from investor community on quarterly financial performance, including business segment results. ▪ Considered how COVID-19 continued to impact on the business and how the workforce could be supported post-COVID-19.	A B C D E F G
Strategy	▪ Reviewed and discussed progress of strategy including management recommendations. ▪ Assessment of the energy transition strategy after the Dutch Court's ruling in the Milieudefensie case against Shell.	▪ Alignment on outcomes from virtual Board Strategy Days. ▪ Shell energy transition strategy and AGM vote.	A B C D E F G
Country entries and exits	▪ Considered entries into and exits from certain countries, based on an examination of proposals from management and businesses.	▪ Approved proposals, after a review of the following in each relevant country: business situation; legal risks; reputation and investor considerations; country, regional and geopolitical landscape; and security situation.	A B C D E F G

A investor community B employees/workforce/pensioners C regulators/governments D NGOs/civil society stakeholders/academia/think-tanks
E communities F customers G suppliers/strategic partners

BOARD ACTIVITIES AND EVALUATION continued

Topic	Discussion/activity/updates included	Examples of outcome/progress	Stakeholders considered
Culture			
Shell People Survey (2021 results)	▪ In December 2021, the Board reviewed the results of the 2021 Shell People Survey.	▪ Further discussion and review of this topic is scheduled for the early part of 2022.	B
Staff updates	▪ Received updates from management and Board Committees on Project Reshape including performance tracking. ▪ Engagement through various sources such as Shell People Survey results, talent information, conduct and culture risk dashboard, Chief Ethics & Compliance Officer Report, cultural information embedded in investment proposals.	▪ Obtained informal feedback on the post-Reshape environment and on topics such as health, safety and the environment.	B
Board staff engagements	▪ Directors participated in staff engagements by visiting sites. ▪ Received updates from management on staff achievements and outstanding contributions made by our people supporting communities, promoting social justice or intervening in challenging circumstances to uphold ethics and compliance standards.	▪ Gained first-hand insight into the development and culture of operations and maintenance teams, as well as staff perspectives on other matters of interest to our people. ▪ Received practical examples of ways in which staff members were exhibiting Shell's core values and contributing to society.	B
Audit, risk and internal control			
Safety and Environment	▪ Received regular updates from management on safety and environment performance. ▪ Throughout the year under review, Directors shared personal anecdotes and reflections on topics related to core values and safety. ▪ Received regular updates from the Safety, Environment and Sustainability Committee, including regarding site visits and engagement with stakeholders.	▪ Provided with commentary and examples of how safety continues to be upheld as important by staff, especially in the context of continued restrictions as a result of COVID-19. ▪ Gained perspective and brought diversity of thought to Board discussions by using learnings and insight gained outside Shell. ▪ Provided with insights into the views and priorities of NGOs, communities and other stakeholders.	B D E F G
Risk management and internal control	▪ Reviewed risk reports, covering cyber-security risk, external trends, emerging risks, proposed changes to the Group's strategic, operational and conduct and culture risk profiles. ▪ Received updates on risk strategy, operational risks and culture and conduct risk.	▪ Considered the effectiveness of the risk management and internal control system. The Board considered the effects of COVID-19 and the perceived impacts on the Group's strategic, operational and conduct risk profiles. ▪ Reflected on progress regarding risk management and controls, adoption of new technology, enhancements to management of climate risk and disclosures.	A E F
Composition, succession and evaluation			
Succession planning	▪ Received recommendations from the Nomination and Succession Committee (NOMCo) regarding succession plans and Board and committee composition, as well as the appointment of a new Chair of the Board.	▪ Kept regularly informed about succession planning arrangements. ▪ Approved recommendations regarding the appointment of new Directors. ▪ Please see the "Nomination and Succession Committee" section for further details.	A B D E
Board and committee effectiveness reviews	▪ Examined the internal evaluation reports after the assessment led by the NOMCo on the effectiveness and performance of the Board, its committees and the Chair.	▪ Concluded that throughout the year, the Board, its committees and the Chair continued to operate effectively. ▪ Reflected on progress made against the objectives it set itself for 2021 and made observations about the circumstances affecting this, such as the continued impact of COVID-19, significant projects and Board changes. ▪ Please refer to Board evaluation on page 139 for further details.	A B D E F G
Board membership, other appointments	▪ Reviewed Directors' tenure, external commitments, conflicts of interests, composition/membership of Board committees and appointments.	▪ Approved committee membership changes, approach to conflicts of interest and appointments to the Board, following recommendations made by the NOMCo. ▪ Approved a renewal of the Directors' terms and tenure, where relevant. ▪ Please see "Nomination and Succession Committee" for further details.	A B D E
Talent overview and senior succession review	▪ Noted senior succession strategy.	▪ Enhanced insight into Shell talent and future leaders, assurance of robust succession and contingency plans.	B

A investor community B employees/workforce/pensioners C regulators/governments D NGOs/civil society stakeholders/academia/think-tanks
E communities F customers G suppliers/strategic partners

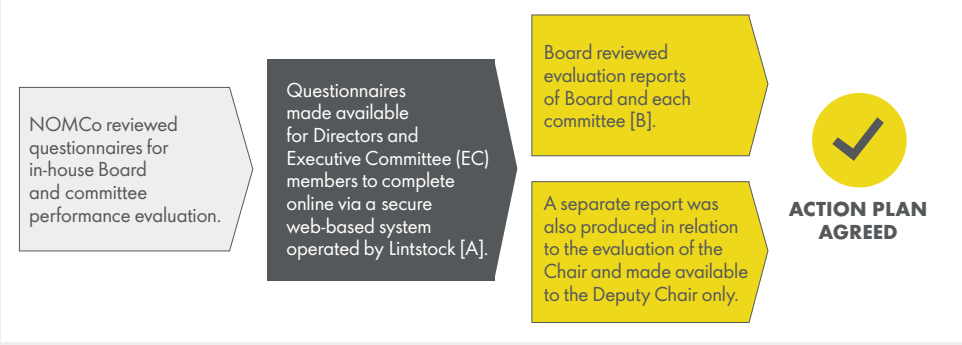
Topic	Discussion/activity/updates included	Examples of outcome/progress	Stakeholders considered
Remuneration			
Remuneration and reward matters	▪ Oversight of matters reviewed and considered by the Remuneration Committee.	▪ Received regulatory, political and investor insights and updates relating to reward matters.	A B C
Governance matters			
Governance	▪ Provided with emerging corporate governance developments and updates relating to ethics and compliance matters. ▪ Modern Slavery Statement and assurance, and considered other regulatory and legislative requirements.	▪ Provided with insight of consultations and projects relating to governance and legislative requirements and Shell's participation.	A B C D E F
Ethics & Compliance	▪ Reviewed the Chief Ethics & Compliance Officer's Annual Report. ▪ Engaged with external panel of independent experts in field of ethics and compliance.	▪ Received insights from the panellists, including observations that Shell's ethical processes were robust. Also received confirmation that interaction with Shell staff was positive and reflective of Shell's values.	A B C D E F

A investor community B employees/workforce/pensioners C regulators/governments D NGOs/civil society stakeholders/academia/think-tanks
E communities F customers G suppliers/strategic partners

BOARD EVALUATION

Board evaluation

The 2021 Board evaluation was facilitated internally, led by the Nomination and Succession Committee (NOMCo) and managed by the Company Secretary.



[A] Lintstock, a London-based corporate advisory firm previously used by Shell for Board performance evaluations
[B] Separate reports were provided for the responses from the Board and the Executive Committee. The reports in relation to the Audit Committee, Nomination and Succession Committee, Safety, Environment and Sustainability Committee and Remuneration Committee were sent to the respective committee chairs.

Insight

The feedback from the Board Directors was positive throughout their responses to the evaluation. Views were provided on what additional expertise or experience might benefit Board composition through the energy transition. These views were actively considered, along with other factors, in Nomination and Succession Committee discussions.

Board dynamics – The Non-executive Directors' engagement, support and challenge of management was rated very highly, with the quality of the interaction and the openness of the Executive team being commended. The Boardroom atmosphere was also highly rated.

Board oversight – The Board's oversight of the Powering Progress strategy was rated highly overall, as was the understanding of the capacity of the Company to deliver the strategy. Some recommendations for further enhancement were received in this area. Board oversight of monitoring various external forces was also highly rated, although the Board noted an appetite for improved oversight of new technologies and digitalisation. The Board viewed its oversight of various specific aspects of risk positively and suggested further enhancements to improve risk discussions between the Board and management. The Board's oversight of the Company's processes for managing and developing senior executive talent was rated very highly, with a focus on the work in progress on further improving the ethnic diversity of senior talent.

Management and focus of meetings – Themes included: Board papers (a common topic for many corporates), which would still benefit from further simplification; and a desire to return to physical meetings when circumstances permit. The support available to the Board in terms of the induction/onboarding, Company Secretarial support and access to external advice was rated highly.

Stakeholder oversight – The mechanisms by which the Board obtains insight into the views and needs of major investors and employees were highly rated. At the same time, it was again noted that mechanisms for obtaining views of customers, private/retail investors, communities and suppliers should be explored to see whether feasible and relevant enhancements could be made. The Board's effectiveness in monitoring and assessing culture throughout the organisation was rated positively overall, although the Board indicated interest in further enhancing its oversight in this area, particularly as the Company transforms through the energy transition.

BOARD ACTIVITIES AND EVALUATION continued

Delivery against the 2021 ambitions

The COVID-19 pandemic continued to impact both the near- and long-term business outlook. Although government restrictions in many countries loosened as vaccinations increased, resulting in some regions starting to return to offices, international travel continued to present challenges well into the fourth quarter of 2021 and into 2022. Through the use of additional meetings, the Board balanced its focus on short-term operational matters and long-term strategy. However, delivery of some of the Board's ambitions were affected by the need to focus attention and resources on other key events, such as the completion of Reshape, Shell's company-wide reorganisation, and the simplification announced towards the end of 2021.

The Board progressed and supported significant projects throughout the year. Some of these are discussed in more detail in the Section 172 statement on page 16. These efforts were made throughout 2021 alongside numerous sessions to monitor and support management in implementing strategy. Management sought the Board's input and support on the proposed announcements for Strategy Day 2021, the presentations on stakeholder feedback from Strategy Day 2021, and the Board's review, and approval of Shell's energy transition strategy.

The Board continued to monitor the Reshape reorganisation and had regular engagements on culture and workforce engagement through various sources. Because information on culture is dispersed across various reports and activities, and because of timeliness after launching Powering Progress and finalising Reshape, a discussion was originally planned for the latter part of 2021 to determine how best to address this topic in a unified and pragmatic way. Subsequently this was deferred to early 2022 because of the other pressing Board agenda topics that arose in the second half of 2021.

Other 2021 ambitions were: Chair succession, which has received positive reviews from the Chair evaluation; and enhancements for the greater oversight of litigation, which were also implemented. Further optimisation of the Non-executive Director onboarding programme was largely completed (except for items still impacted by travel restrictions, such as sharing Board travel). The plan to enhance ongoing training and explore pragmatic ways to further improve Board materials was impacted by the prioritisation of resources towards other significant projects.

Planned enhancements for 2022

The 2021 Board evaluation findings provided areas of focus or priorities for 2022. There was strong agreement between the Board and Executive Committee around:

- building on the "monitoring execution and strategic implementation" focus area from the 2020 evaluation, (including ensuring continued alignment on the Financial Framework). Directors' suggestions were relayed to appropriate individuals for incorporation into the Strategy Agenda for 2022;
- clarifying the need for, and how best to obtain, wider external stakeholder views in feasible and relevant ways; and
- enhancing the risk management dialogue between management and the Board.

Powering Progress strategy/strategic direction/energy transition

This is very important for the years ahead. The Board and Executive Committee will continue to oversee the strategic execution as a priority (particularly Powering Progress, and the net zero/Carbon Management Framework).

External engagement

Enhancing interactions and/or obtaining the views of relevant external stakeholders, including external experts, customers, partners and society, was highlighted within the evaluation. The Board began discussions on this objective at its February 2022 meeting, considering how it could best be accomplished, and the informational scope that would be most relevant from various stakeholder groups. The Board plans to explore this topic further in 2022.

Financial framework

Capital investment allocation and operating expense are key to achieving the Company's 2030 net-zero goals and intermediate actions. Alignment on the distribution policy/strategy and on the long-term financial framework will also be areas of focus.

Chair evaluation

The Chair was very highly rated as having made a strong start under difficult circumstances, with the COVID-19 pandemic limiting opportunities for face-to-face interaction. It was noted that his relationship with the CEO is balanced and positive. Transparency and good alignment between the Chair and the Non-executive Directors was highlighted. Directors praised his clear communication skills, noting only minor areas for improvement. The Chair's management of the individual input of Directors both inside and outside Board meetings was highly rated, and his availability to individual Directors was valued and appreciated. The Board also praised his ability to keep agendas focused with sufficient time for full discussion.

The Deputy Chair communicated the feedback to the Chair, along with requests to:

- consider feasible and reasonable improvements in reducing Board materials and meetings; and
- continue to apply his industry experience and expertise as relevant in Board discussions, which adds strong contextual perspectives.

The Chair fully accepted the feedback, agreed to reflect and act upon it, and offered additional development points not identified that he was working on.

UNDERSTANDING AND ENGAGING WITH OUR STAKEHOLDERS

The Board continues to value and recognise the importance of engagement and co-operation with our stakeholders. Time is dedicated to listening to different stakeholder views and our commitment to stakeholder engagement is built upon the understanding that knowledge-sharing, widening of experiences and adopting a learner mindset will help us achieve our commercial, environmental and social objectives.

The Board's and Shell's commitment to public collaboration and stakeholder engagement has in the past been easier to demonstrate by looking at the number of physical events and engagements held in a particular year. In recent years, as we continue to be affected by the COVID-19 pandemic, we have had to be more creative and maximise virtual opportunities in order to obtain feedback on stakeholder issues and priorities.

We continue to put the safety and health of our people, customers and other stakeholders first, along with the safe operations of our businesses. With that as our priority, we have endeavoured to engage in ways that are as effective and as safe as possible.

The continued impact of COVID-19 has inevitably limited the engagements we planned for 2021. Many of our events have again been held virtually, with the Board prioritising the health and safety of our shareholders, employees and other stakeholders. Most recently, our General Meeting was held physically in the Netherlands but shareholders were urged to consider whether physically attending was in their and the public's interest, with the meeting webcast being recommended as an alternative way to follow the proceedings. Any engagements, virtual or physical, always involved considering stakeholder interests, public health and safety, and the advice and law of local governments. The Board was disappointed that there have been relatively few possibilities to engage in person in 2021, having hoped for a significant improvement on the limited opportunities of 2020. We remain grateful for the opportunities that we have had and are thankful for the continued support of our stakeholders. We also look forward to future engagements in the year ahead, when it is safe and appropriate to hold them.

The Directors have continued to consider stakeholders' views in Board discussions and decision-making, as described on page 16.

Engagement with our stakeholders goes beyond the Board and is continuous. Our broader businesses regularly engage with stakeholders throughout the year, and in the build-up to or during many Shell projects or activities. This engagement is often governed by formulated policies, control frameworks, regulation and legislation. It may differ by region.

Site visits

The Chair, certain Board committees and Non-executive Directors traditionally visit a number of Shell operations and overseas offices. The visits are designed to provide Directors with:

- first-hand insights into portfolio positions; and
- opportunities to engage directly with stakeholders including employees, partners, communities and NGOs.

In previous years, and as part of the Board evaluation process, the Directors have reflected on the use of site visits for improving the Board's oversight of risk and concluded that the best way to determine if risks are being properly managed is to visit sites and talk to local management. Similarly, some Directors have used site visits as a way to monitor and assess culture first-hand. They have commented on the difficulty of doing that this year. It was also noted that visits to key sites played an important part of the induction process for new Board members and provided good opportunities for Board members to get to know each other better.

Alternative arrangements were made where feasible, and details of these are described below.

Shareholders

The Chair, the Deputy Chair and Senior Independent Director, the Chief Executive Officer, the Chief Financial Officer and the Executive Vice President Investor Relations each meet regularly with major shareholders and report the views of such shareholders to the Board. Committee chairs also seek engagement with shareholders on significant matters related to their areas of responsibility. Over the year and following his appointment as Chair, Sir Andrew Mackenzie met with 93 major shareholders, including at roadshows. Prior to his retirement from the Board and position as Chair, Chad Holliday met with 34 major shareholders, including at roadshows. The Remuneration Committee Chair met with 31 shareholders over the course of the year. A variety of topics were discussed.

Shareholders can contact Shell directly via the "Contact us" section of the Shell website. This allows investors' questions to be directed to the appropriate Shell team that can assist. Shareholders are also able to make use of our automated question response tool. Investors can also access information via the frequently asked questions section of the Shell website.

The Shell website also provides contact details for our registrar, Equiniti, shareholder queries, our media team, requests for copies of the Annual Report, and general customer enquiries.

The Company's registrar operates an internet access facility for registered shareholders, providing details of their shareholdings. Facilities are also provided for shareholders to lodge proxy appointments electronically. The Corporate Nominee service, facilitated by Equiniti, provides a facility for investors to hold their shares in the Company in paperless form.

Stakeholder engagement on AGM resolution

In September 2021, after the second quarter results and the summer holiday period, the Chair, Chief Executive Officer and Chief Finance Officer hosted meetings with some of our large shareholders. These meetings covered many topics. Shareholders were asked for specific feedback on Shell's energy transition strategy and the resolution submitted by the Follow This group. Shareholders who had voted for the Follow This resolution were asked about the rationale of supporting it while also voting in favour of Shell's energy transition strategy. These shareholders were also asked what they would like to change in Shell's energy transition strategy. In some instances, these discussions also included talk about the outcome of the Dutch court case.

Many investors were complimentary about Shell's energy transition strategy and the comprehensive targets we had set. Some shareholders said they were merely supporting a "climate-related" resolution, and so they could or probably had supported both Shell's energy transition strategy and the Follow This resolution. Some investors mentioned that they would like to see targets for cutting absolute emissions rather than just reducing net carbon intensity. But many were understanding of why these had not been set. Some said Shell's net-zero target needed to be clearer and not so dependent on customers reducing their emissions.

All of the stakeholder feedback was added to the ongoing internal considerations of the Company's climate targets, along with the outcome of the Dutch court case, the Powering Progress strategy and the commitments that Shell had made within its energy transition strategy. On October 28, 2021, Shell announced a new target to halve Scope 1 and 2 emissions under Shell's operational control by 2030, compared with 2016 levels on a net basis. This is another strategic milestone on our path to becoming a net-zero emissions energy business by 2050, in step with society.

UNDERSTANDING AND ENGAGING WITH OUR STAKEHOLDERS continued

Board governance event

We previously reported our proposal for the next Board Engagement Day to be held in October 2021, circumstances permitting. Unfortunately, after the publication of the 2020 Annual Report and Accounts, and 20-F, the COVID-19 pandemic continued and was still causing concern in the autumn of 2021. The Board had to balance health and safety concerns with the value to Shell of stakeholder engagements, such as Board Engagement Day. As a result, there was no Board Engagement Day in 2021. The Board has sought to obtain feedback and be involved in discussions in other ways, in the absence of this particular event. These ways are described below and elsewhere in this Annual Report.

Engagements in 2021

Information on engagements the Board has held during the year are summarised below. Information on engagement with other stakeholders including the workforce is provided on page 145. The way in which stakeholder interests were considered in principal decision-making by the Board in 2021 (Section 172 statement) can be found on pages 16. Further insight into our engagement with stakeholders can be found within our Sustainability Report, scheduled for publication in April 2022.

Engagement before event	Event/activity	Director attendance	Outcome/insight
Strategy Day 2021 Presentation			
There was engagement with stakeholders and feedback was sought from them at the bi-annual Chair Roadshows, prior to Strategy Day 2021.	The CEO and CFO hosted 2021 Strategy Day presentation webcasts which on February 11, 2021. The presentations set out Shell's strategy to accelerate its transformation into a provider of net-zero emissions energy products and services, powered by growth in customer-facing businesses. It was also announced that a disciplined cash allocation framework and thorough approach to driving down carbon emissions would be pursued to deliver value for shareholders, customers and wider society. After the presentations, the CEO and CFO invited questions from the media and investors. The webcasts separated investor and media questions, enabling answers to be focused on specific stakeholders' questions.	CEO CFO	Positive feedback was received. This included comments on the logic of the strategy which appeared to use Shell's existing strengths. It was also noted that the strategy would support focusing on higher-margin elements in the value chain and emphasising capital discipline.
Remuneration Roadshow – Q1 2021 Engagement			
Engagement was undertaken before the meetings so that the Directors were provided with understanding and insight on particular topics of interest.	In March and April 2021, Neil Carson, Chair of the Remuneration Committee, presented 2020 remuneration outcomes and 2021 remuneration plans to investors. The presentation repeated previous comments in support of employees, customers and communities, and resilient financial performance and strategy to accelerate the transition to net zero. A summary of key Remuneration Committee decisions was also provided and included: ▪ no 2020 annual bonus; ▪ LTIP vesting outcome of 90% (45% of maximum) based on strong relative performance outcomes; ▪ CEO single figure down 41% from 2019; ▪ no salary increases for 2021; and ▪ reduction of 2021 LTIP share awards to mitigate the risk of windfall gains (equivalent to a reduction of 50% of the fall in share price since the 2020 award). The CEO's award was also reduced from 300% of base salary to 264.5% and the same approach was applied to the CFO. Shareholding policies and large personal shareholdings were discussed, noting that this continued to deliver strong alignment between management and shareholder interests. The Chair also announced that pay measures for management were consistent with the general employee population (except for the reduction to the 2021 share award, which was applied at Executive Director level).	Remuneration Committee Chair	Following the event, high levels of support were given to the Remuneration Committee and this was further demonstrated by the favourable voting outcome at the 2021 AGM. The Remuneration Committee was praised for how it had navigated a difficult year due to COVID-19.

Engagement before event	Event/activity	Director attendance	Outcome/insight
Annual ESG Update 2021			
Discussions were held with the Chair of the Safety, Environment and Sustainability Committee ahead of the event to formulate the agenda and ensure that key areas of interest were covered.	Presentations from the Chair of the Safety, Environment and Sustainability Committee and the CEO were given. The CEO and the CFO met the President of Ceres, a non-profit organisation, for discussions focusing on the Shell Energy Transition Strategy report. Discussions covered matters relating to Nigeria and the Powering Progress goals of respecting nature and powering lives. During these sessions the audience was encouraged to ask questions. The audience was informed that for any unanswered questions, representative from the Investor Relations team would follow-up after the event.	CEO Chair of the Safety, Environment and Sustainability Committee Projects & Technology Director Legal Director Upstream Director	Any questions requiring follow-up were picked up outside the presentations. In some cases, follow-up meetings were held with stakeholders and the Chair of Safety, Environment and Sustainability Committee.
Plastic Waste – Safety, Environment and Sustainability Committee engagement with external organisation			
Discussion with the Chair of the Safety, Environment and Sustainability Committee on key topics for discussion.	Wide-ranging discussion on the issue of plastic waste reaching the environment and solutions through partnerships to address this societal challenge.	Safety, Environment and Sustainability Committee	Greater insights into the role governments and businesses can play in partnership to address the issue of plastic waste.
Shell's Climate Targets – Safety, Environment and Sustainability Committee engagement with external stakeholders			
Discussion with the Chair of the Safety, Environment and Sustainability Committee and external stakeholders to develop the agenda and agree on the meeting format.	Feedback on how Shell's climate targets are perceived by external stakeholders and feedback on evolving societal expectations of business.	Safety, Environment and Sustainability Committee	Deeper understanding of how Shell is perceived and likely future stakeholder expectations.
Shell Energy Transition Strategy 2021			
Engagement took place with the shareholder organisation Climate Action 100+ and feedback was actively incorporated into the drafted report.	A presentation and question and answer session were held in respect of the Shell Energy Transition Strategy. This particular engagement was provided for in advance of the 2021 Annual General Meeting (AGM), where the Energy Transition Strategy was being put to an advisory shareholder vote.	CEO Chair Project & Technology Director	Subsequent shareholder engagement sessions were held with CEO and Chair. The voting outcome at 2021 AGM was overwhelmingly supportive, with 88.74% of votes received in favour. Shell also formally commented on the Follow This shareholder resolution outcome and set a net absolute Scope 1 and 2 target by 2030 within its existing strategy.
2021 AGM			
The Board sought feedback from the investor community and other stakeholder groups prior to the AGM.	Safety was prioritised ahead of the 2021 AGM, in the context of the continued COVID-19 pandemic and the ban on public gatherings in both the Netherlands and UK. Physical attendance was limited to the Chair, CEO, CFO and Company Secretary. Other Directors joined the meeting virtually, as did many of our shareholders.	Board (both virtual and physical attendance)	Resounding support from shareholders for the resolutions proposed by the Board, including the advisory vote on the Shell Energy Transition Strategy.
Chair Roadshows and SID calls			
Over 100 meetings were held between the Chair of the Board and shareholders during 2021. A handful of engagements with key institutional investors were also undertaken as part of the appointment of the SID.	The dialogue was typically strategic in nature and included ESG topics as well as energy transition and business outlook. The discussions predominately focused on the selection process for a new Chair and how to ensure that the new Chair was aligned with Shell's Powering Progress strategy outlined in February 2021.	Chair Deputy Chair/SID	Investors also had subsequent dialogue with Shell's Investor Relations team. Access to and availability of management and the Board as well as the open and transparent approach in shareholder engagement was positively recognised by several institutional shareholders. Feedback from the meetings was positive. Shareholders were provided with insights and assurances associated with the process for selection of a new Chair.

UNDERSTANDING AND ENGAGING WITH OUR STAKEHOLDERS continued

Engagement before event	Event/activity	Director attendance	Outcome/insight
The Institutional Investors Group on Climate Change (IIGCC) meetings			
We have a continuing dialogue with this group throughout the year. Moreover, meetings with the IIGCC are held with the CEO, and another with a member of the Executive Committee twice a year as part of our engagement and collaboration with the IIGCC and Climate Action 100+.	In 2021, the Executive Committee member was Harry Brekelmans. The topics discussed were the energy transition, the Dutch court ruling, Shell's energy transition strategy, the sectoral approach, and Shell's industry association climate lobbying.	CEO Projects and Technology Director	We continue to value and appreciate the collaboration with Climate Action 100+ and their large institutional investor base.
Shareholder engagement regarding the simplification			
Feedback was obtained from the investor community and other stakeholder groups about how best and most practically to support the needs of stakeholder engagement.	This engagement provided those in attendance with an opportunity to put questions to the Board, ahead of the 2021 General Meeting. The webcast facilitated enhanced engagement with institutional investors and allowed more of them to participate compared with previous years.	Board	Resounding support from shareholders for the resolution proposed by the Board to amend the Articles.
2021 General Meeting			
Feedback was obtained from the investor community and other stakeholder groups about how best and most practically to support the needs of stakeholder engagement.	Outbreaks of COVID-19 variants intensified following the publication of the Company's Notice of Meeting. The meeting was held as a hybrid meeting meaning shareholders could attend and participate both in person and virtually. However, due to COVID-19 shareholders were encouraged to reflect on whether physical attendance at the meeting was in their best interests. Shareholders supported the amending of the Company's new Articles and one of the steps required to simplify Shell's share structure.	Chair CEO Deputy Chair/SID	Shareholders overwhelmingly supported the resolution proposed.
Audit Committee visits			
Engagement prior to the visits helped to formulate the agenda and refine the areas of focus for the respective visits.	The Audit Committee conducted two site visits to Shell's Energy Transition Campus in Amsterdam and Shell's Houston offices. These visits were conducted virtually because of continued COVID-19 travel restrictions. Further details are provided on page 153 of the Audit Committee Report.	Audit Committee	Committee members gained deeper insight into how the Company's Powering Progress strategy is being implemented. The virtual visits also provided Committee members with opportunities to engage with a diverse range of the workforce.
Director visits			
Discussions were held with the respective Directors ahead of the visit to formulate the agenda and encourage a natural, open dialogue in the group sessions.	In September 2021, two Directors visited the Shell Energy and Chemicals Park Rotterdam (formerly the Pernis refinery) in the Netherlands. They were shown the site, and briefed about safety process measures, including those to protect against COVID-19. They had lunch with employees, allowing them to get staff feedback on businesses in the reorganised, post-Reshape Shell. The Board met staff virtually from Shell's Pennsylvania Chemicals complex in the USA. During this session, the Board received an overview of Shell's Chemicals strategy, industry outlook, plans to achieve goals and to support the customer experience. The Board also engaged in discussions on health, safety, security and the environment.	Directors	The Board gained an insight into the development and culture of the operations and maintenance teams. The use and impact of digitalisation tools were highlighted, and the future environmental capabilities of the site were discussed.

WORKFORCE ENGAGEMENT

The Board recognises merit in the Code's three mechanisms for engaging with the workforce. As with all the Code's provisions, boards must consider the size and structure of their business, including its international scope, and select an approach that most practically delivers the underlying spirit and ambition of the Code, even if the chosen approach differs from what the Code outlines. The Code does note that alternative methods for workforce engagement are supported where an explanation is provided.

The Code states that its use of the term "workforce" is not meant to align with legal definitions of workforce, employee, worker or similar terms. But for a global organisation bound by the laws of more than 70 countries, blurring the clearly prescribed legal definitions that affect complex issues (such as local health, safety, security and environment (HSSE) requirements, work contract terms, legal accountability, employment rights) or merging two definitions of the same term could have a notable impact on the business, its operations and its stakeholder relationships (including with suppliers). As a result, Shell considers its workforce to be employees of companies in the Shell Group. The Board also engages with others outside this group (for example, on site visits), and some of this engagement is shared on page 141.

Although our reporting and formal engagement focuses predominantly on our employees, all individuals working on Shell sites (including Shell offices) are required to undertake certain Shell training (for example, on matters relating to HSSE and the Code of Conduct). Adhering to the Life-Saving Rules and the Code of Conduct compliance obligations is included within our contracts with suppliers. The Shell Global Helpline is available for all workers to report matters of concern.

For many years, Shell has recognised the importance of engaging with its workforce. Engagement is especially important in maintaining strong business delivery in volatile times of change. We strive to maintain a dialogue between management and our workforce – both directly and where appropriate, through employee representative bodies. Management regularly engages with the workforce through a range of formal and informal channels, including via webcasts and emails from the Chief Executive Officer (CEO) and other senior executives, webcasts, town halls, team meetings, face-to-face gatherings (pre-COVID-19), interviews with Senior Management and online publications via our intranet.

The Board considers effective engagement a key element of its understanding of the Company's ability to create value, because it recognises that our people are our greatest asset. Workforce views can help inform the Board on matters such as operational effectiveness, Shell culture, diversity, equity and inclusion, identifying risk and developing and delivering strategy.

Throughout 2021, the COVID-19 pandemic impacted how the Board engaged with the workforce. In most countries, employees were largely working from home in accordance with government rules and guidance, except for those operating vital assets. Face-to-face engagements could not be pursued because of travel bans. Board members did undertake virtual engagements, often around the time of scheduled Board discussions. Feedback from these video calls was shared with and discussed by the wider Board. Management also engaged extensively throughout the year, implementing a number of focused events to better understand how people were coping with the working environment caused by the COVID-19 pandemic, their mental well-being and what the business could do to better support them. In February 2021, the first strategy day for staff was held to engage on the new Powering Progress strategy. Engagement sessions were held on the strategic scenarios, the carbon reduction elements, and the Growth, Transition and Upstream pillars of our strategy. Management held several engagements on Reshape, the restructuring of our organisation. Reshape is focused on how we are organised (organisational structure), how we work (mindset and behaviours) and who we are (identity), underpinned by our values. At the end of 2021, several webcasts and walk-in sessions were held to engage with the workforce on the simplification for the future, including Shell's move of official headquarters and tax residence, and its name change from Royal Dutch Shell plc to Shell plc. Information from these discussions was regularly provided to the Board.

The Board considers the current workforce engagement approach effective. The information provided in the following table gives examples of various methods of Board engagement.

Board's direct engagements with the workforce
(Because of COVID-19 restrictions in various countries, the engagement activities have mostly been held virtually.)

Virtual informal engagement – Board
Nomination and Succession Committee members meet with various senior leaders and high-potential individuals throughout the year. The Nomination and Succession Committee also received a detailed briefing alongside that given to the full Board on the results of the annual Shell People Survey, which was completed by around 83% of employees.
Off-site visits
Because of COVID-19 restrictions, site visits were limited in 2021. Although in some instances we were able to organise virtual visits and meetings, priority was given to running the business operations.
People engagements during Board and/or meetings off-sites.
Meeting talent/leadership teams.
Company Chair engaging with various individuals.
Through these more formal engagements, the Chair and other Non-executive Directors (either individually or with their committees) have deepened their understanding of how the Company's purpose, strategy and values are embedded in particular businesses, sites and countries. This gives insight into progress made, risks and opportunities. The benefits are mutual. The Board obtains direct insight into local business operations and projects, and local strengths and challenges. Our people have a chance to better understand the Board and to provide direct feedback on topics of importance to them, their business or function and their location.
Employee network and related sessions
Conducted by Directors with, for example, Directors engaging with Shell's lesbian, gay, bisexual and transgender (LGBT+) networks. In 2021, engagement took place with the Board and representatives from the LGBT+ network. There were discussions about the challenges facing the LGBT+ community and what type of support they could receive so everyone in Shell could perform at their best. Various members of the Board joined these discussions.
Directors involved in these engagements noted the opportunity to enrich their understanding of the LGBT+ perspective within Shell, so they had better insights into the challenges and the employee experience in this area.

WORKFORCE ENGAGEMENT continued

Formal reports and information updates to the Board

Shell People Survey (anonymous survey facilitated externally)

The Board was provided with an update on the outcomes and employee engagement levels and the quality and resilience of leadership across Shell's workforce. As well as a broad range of subjects, the Board was informed of principal metrics, with particular focus on rewards, working conditions/workload and reputation. A more in-depth review and discussion is scheduled for early 2022.

The Board considers the Shell People Survey to be one of its principal tools for measuring employee engagement, motivation, affiliation and commitment to Shell. It provides insights into employee views and has a consistently high response rate. In 2021 the response rate was 83%, which remains high. The average employee engagement score was 75 points out of 100. This is a decrease of three points compared with 2020 but still reflects resilience of our people in a year of change. The Board also considers this engagement to understand, for example, how Shell is using the survey outcomes in: i) data analytics, for example, to identify potential correlative relationships between employee engagement and safety or ethics and compliance incidents; and ii) strengthening Company culture and values.

Senior Succession and Resourcing Review

The annual Senior Succession and Resourcing Review focused on the strength of senior leadership and plans for its development and succession, while highlighting the breadth, depth and diversity of its pipeline, the developing profile of the leadership cadre, and recruitment and attrition levels.

The Nomination and Succession Committee noted the effectiveness of succession planning, the impact of its associated execution, and the professional, data-driven, integrated approach to leadership and leadership development. It welcomed the continued focus on performance management, proactive management of Shell's talent pipeline, and the focus on advancing Shell's diversity agenda with increased attention on gender, race, LGBT+ and disabilities. This year's insights provided a deeper understanding of the interplay between culture, identity, leadership talent and employee engagement across Shell.

Assessment of key trends and material incidents

Presented by Chief Ethics and Compliance Officer. This is based on the established channels for staff and others to file complaints or report on suspected breaches in relation to the Shell General Business Principles (SGBP), the Code of Conduct or any breaches of law or regulations, including accounting control and auditing concerns.

The update covers Shell employees and our wider stakeholder base. The Board (also via the Audit Committee and SESCo) obtains insight into incidents and reporting levels and remediation. These provide indicators of conduct risks and, together with the related Board reports noted below, suggest the strength of embedding and awareness of the Code of Conduct and SGBP obligations and employees' comfort levels in raising incidents.

Risks

The Board reviews reports on strategic risks annually, and considers reports on operational risks twice a year. These reports assess current business activities against risk appetite.

Organisational culture

As part of the Reshape restructuring, the Board has been discussing the Powering Progress strategy, including powering lives. The Board also focused on diversity, equity and inclusion commitments and the launch of new organisation after Reshape. There was also engagement on the safety refresh, with the launch of the alignment with the International Association of Oil and Gas Producers (IOGP) life-saving rules. There were also discussions on psychological safety, to further improve the learner mindset and our organisational culture.

The Audit Committee also reviewed the Conduct and Culture Risk Report, which included a refreshed dashboard of risk appetite measures aligned with Shell's core values of honesty, integrity and respect for people. Elements measured by the dashboard include: the number of terminations as a result of formally investigated Code of Conduct violations; the number of overdues on mandatory Ethics and Compliance training; anonymous reporting rates on our Global Helpline; and a selection of Shell People Survey scores. Qualitative assessments of insider threats and our approach to caring for our people were also covered.

Chief Ethics and Compliance Officer Report

Data and insights include information from the Global Helpline, the Shell Ethics and Compliance organisation and the Shell People Survey. SESCo continues to strongly support the work of the Chief Ethics and Compliance Officer, including the efforts to ensure a safe working environment where staff feel confident to raise any concerns in good faith.

The Audit Committee is kept updated when matters highlighted through the Global Helpline are investigated. The Audit Committee is also informed about the associated remediation. For more information see page 162 of the Audit Committee Report.

Assurance activities

Assurance activities, including items raised by businesses and functions (through the Group Assurance Letters process) and assurance (from Internal Audit, HSSE, Ethics and Compliance, Reserves Assurance and Reporting), provide additional evidence to the Board of the commitment to high standards of risk management and internal control. The assurance activities ensure that work can be done safely, within regulatory frameworks.

The information provided within these reports further supports the Board's annual review of the effectiveness of the Group's system of risk management and internal control and feeds into the Group scorecard, against which staff bonuses are calculated.

The Shell Control Framework

Significant HSSE, Ethics and Compliance, and more broadly, business control incidents are brought to the attention of Senior Management and the Board through regular reporting.

The Board discussed how the organisation could learn more from incidents and how the business could drive safety performance. The Board shared and discussed examples based on personal experience of how to promote a strong safety culture.

NOMINATION AND SUCCESSION COMMITTEE

Focus areas for 2021

- Discussions about Non-executive Director and Executive Committee succession
- Discussions on talent engagements with key staff and succession candidates
- In-depth examinations of the Shell People Strategy and culture, with an increased focus on diversity, equity and inclusion and end-to-end talent management

Priorities for 2022

- Non-executive Director and Executive Committee succession
- Continued talent engagements with key staff and succession candidates
- Maintain proactive oversight over Shell's ambition to become one of the most diverse and inclusive organisations in the world

PURPOSE

The Nomination and Succession Committee (the "Committee") leads the process for appointments to the Board and Senior Management [A] positions, ensures plans are in place for orderly, well-planned succession, and oversees the development of a diverse succession pipeline of candidates. It also reviews the Company's policy and strategy on diversity, equity and inclusion (DE&I), and monitors the effectiveness of these initiatives. It makes recommendations to the Board on corporate governance guidelines, as referred to in the Chair's statement.

[A] "Senior Management" refers to the Executive Committee and the Company Secretary.

COMMITTEE MEMBERSHIP AND ATTENDANCE FOR 2021



Sir Andrew Mackenzie



Dick Boer



Euleen Goh



Ann Godbehere

Committee member	Member since	Maximum possible meetings	Number of meetings attended	% of meetings attended
Sir Andrew Mackenzie (Chair of the Committee from May 18, 2021)	Oct 1, 2020	5	5	100%
Dick Boer	May 19, 2021	3	3	100%
Ann Godbehere	October 27, 2021	1	1	100%
Euleen Goh	July 1, 2019	5	5	100%
Chad Holliday [A]	May 19, 2015	2	2	100%
Sir Nigel Sheinwald [A]	May 20, 2020	2	2	100%

[A] Chad Holliday and Sir Nigel Sheinwald retired from the Board following the 2021 Annual General Meeting, held on May 18, 2021.

TALENT MANAGEMENT AND SUCCESSION

The Committee is fully engaged with the end-to-end talent management and senior succession planning approach that is deployed within Shell. It plays a key role in senior succession and resourcing. Retaining in-depth knowledge of the individuals within the talent pipeline is a Committee priority. The Committee makes time to personally meet and engage with numerous individuals within the pipeline. The Committee's oversight and input extend from recruitment to leadership identification and from leadership development to leadership appointment, all of which are underpinned by clearly articulated talent priorities and a commitment to advancing diversity, equity and inclusion across Shell.

The Committee manages Board and Senior Management succession under a structured, proactive methodology. The processes have clear and agreed selection principles for short-, medium- and long-term succession and are aligned with Shell's strategic priorities.



SIR ANDREW MACKENZIE
Chair of the Nomination and Succession Committee

NOMINATION AND SUCCESSION COMMITTEE continued

For Non-executive Director succession, the Committee continues to follow its Principles for the Strategic Composition of the Board, adding factors as they evolve. These principles function much like a policy and include both quantitative and qualitative principles, considering:

- the overall aspired Board composition and diversity of gender, race and ethnicity, nationality, background, experience and desired skill sets that align with the Company's strategy and purpose; and
- the values, attitudes, and behaviours expected of Directors.

For Senior Management succession, the selection principles include process-specific elements, such as a clear and proactive approach to identifying and developing succession candidates. The principles also outline the long-term structured nature of the succession planning process. There is also great focus on ensuring that the principles reflect the leadership qualities required for future business success and that they advance the progress of diversity in all its forms.

Senior Management principles feature in the Committee's review of the succession plans which occurs in every Committee meeting. Using the principles, the Committee implements any changes through a well-defined and diligent process with overall Board engagement. The Committee agrees candidate profiles and meets prospective candidates well ahead of any selection decision being necessary. It also engages the Board early in the process to ensure all Directors have an opportunity to meet and assess prospective candidates. Consequently, some of the leaders whom the Committee and Board have engaged with extensively in the past are now members of the Board or the Executive Committee.

In 2021, the Committee undertook its annual in-depth look at the succession plans for Senior Management across Shell and reviewed the talent pipeline in line with the business outlook. The engagement focused on the organisational health of our workforce following Project Reshape; the introduction of a single integrated and global Diversity, Equity & Inclusion plan aligned to our strategy and purpose, the depth and breadth of the senior executive leadership pipeline including good progress in enhancing diversity, the skills, behaviours and development support required for future success, and an evolving outlook on senior executive roles. Following the Committee's review, the findings were reported to the Board.

DIVERSITY OF LEADERSHIP

The Committee recognises that continuing to improve all types of diversity at each level of the Shell Group is crucial. Shell aims to be an inclusive workplace where everyone feels valued and respected and has a strong sense of belonging. The Committee's review of diversity objectives and strategies for the Shell Group as a whole also monitors the impact of diversity and inclusion initiatives.

In February 2021, Shell published its aspirations for diversity, equity and inclusion as part of its strategic update. The focus will continue to be on gender and nationality diversity, and is broadening and deepening to the areas of race and ethnicity, enablement and LGBT+. When looking at our progress against our ambitions, female representation has steadily improved in recent years. Among experienced recruitment in 2021, Shell companies recruited 34% females, and among graduates 47%. Female representation in the top 1,250 roles ("Senior Leadership" positions) has strengthened by 1.7 percentage points during 2021 to 29.5%, and we continue to progress towards our aim of achieving 35% female senior leadership representation by 2025. Nationality diversity, such as Asian and American talent, continues to be managed in accordance with the business outlook and we have a strong focus on progressing race and ethnic minority representation, beginning in the UK and the USA and followed by the Netherlands. The representation of people of colour among Shell's senior leaders in the USA has been actively tracked for many years. It stood at 26.1% at the end of 2021, compared with 17.3% in 2016. In the UK, race and ethnicity representation among senior leaders was 16.5% [A].

[A] As ethnicity declaration is voluntary, our ethnicity declaration rate is not 100% and all calculations are based on a declaration rate of 81%. The 19% of our workforce who have not provided data or chosen not to declare their ethnicity were not included in our calculations.

Senior Leadership is a Shell-specific measure and different from that which we are required to report under the Code, being female representation in Senior Management and their direct reports, where the percentage is 28.4%.

Although the Committee monitors Shell's organisational diversity, equity and inclusion strategies and initiatives, it also holds itself accountable for the Board's own diversity and inclusion. By the end of 2020, the Board's diverse composition met the Hampton Alexander and Parker Reviews' objectives by reflecting 38.46% female representation with one person meeting BAME criteria. Gender representation was down slightly from May 2020 (when the Board's composition included 42% female representation) as a result of the departure of three Non-executive Directors (one female, two males) and the appointment later in the year of four new Non-executive Directors (one female, three males). However, following the 2021 AGM, for the first time in Shell's history, the Board reached gender parity with 50% female representation.

More information on diversity, equity and inclusion in Shell is provided in the Our people section on page 114.

The People Strategy and culture and identity

During the year, the Committee initiated an in-depth examination into our approach on diversity, equity and inclusion. This will follow the format of the examination of the Shell People Strategy that the Committee undertook in 2020, which placed particular emphasis on our aspired culture and identity. Powering Lives is a foundational element of our Powering Progress strategy. The Committee will be conducting further engagements in 2022 to maintain proactive oversight over Shells ambition to become one of the most diverse and inclusive organisations in the world, where everyone feels valued, respected, with a focus on four areas of gender, race and ethnicity, LGBT+ and disability.

Committee activity

In addition to its considerations regarding succession, the Committee made recommendations on corporate governance guidelines, monitored compliance with corporate governance requirements and made recommendations on corporate governance-related disclosures. The Committee continues to monitor and review this area, considering whether and how current Company governance matters should be strengthened. Further insight on some of the Committee's areas of consideration in 2021 is provided below.

Succession [A]	Topic of discussion/example of Board activity
Recommendation	▪ Appointment of Sir Andrew Mackenzie and Jane Holl Lute to the Board. ▪ Changes to the composition of the Board committees.
Review and oversight	▪ Shell Senior Succession and Resourcing Review and ongoing succession planning.
Oversight	▪ Shell diversity, equity and inclusion. ▪ End-to-end talent management in Shell.
Engagement	▪ Talent engagements.

Governance	Topic of discussion/example of Board activity
Governing the Board and its committees	▪ Reviewed its Terms of Reference, and the terms of reference for other Board committees and the matters reserved to the Board.
Regulation, legislation and other governance-related guidance	▪ Key governance matters affecting the Company's external reporting. ▪ Other governance and regulatory changes agreed or proposed and their impact or potential impact on the Company, its processes and its reporting.
Shell plc matters	▪ Considered any potential conflicts of interest and the independence of the Non-executive Directors. ▪ Review of additional external appointments requested by Directors, with specific focus on the time allocated to all commitments. For Executive Directors, the benefit/relevance to the business of the Director undertaking the additional role is also a key consideration. ▪ Determined the process for the 2021 internal Board Evaluation.

Board membership and other appointments	Topic of discussion/example of Board activity
Directors' tenure, external commitments, conflicts of interests and succession planning	▪ Non-executive Director appointments and changes to Committee membership.

Talent overview and senior succession review	Topic of discussion/example of Board activity
Shell Senior Succession and Resourcing Review covering Executive Director and Executive Committee (EC) succession, EC direct reports, the senior executive group and the overall talent pipeline	▪ Enhanced insight on Shell talent and future leaders. ▪ Assurance of robust succession and contingency plans.

[A] The Committee was assisted during the year by Russell Reynolds Associates ("Russell Reynolds"), an external global search company whose main role was to propose suitable candidates. Russell Reynolds does not have any connection with the Company other than that of search consultants. The Chair does not participate in discussions regarding his own succession. Russell Reynolds is a signatory to The Voluntary Code of Conduct for Executive Search Firms, which aims to improve board diversity.

Director induction and training

After being appointed to the Board, Directors receive a comprehensive induction tailored to their individual needs. This normally includes site visits and meetings with Senior Management to enable them to build up a detailed understanding of Shell's business and strategy, and the key risks and issues that Shell faces. Existing Directors are also able to join these visits to keep abreast of business developments and progress. With the abnormal COVID-19 circumstances in 2020 and 2021, the induction programme was quickly adapted to a completely virtual induction.

Onboarding is phased and prioritised based on forthcoming Board agenda items to help ensure the new Non-executive Directors hit the ground running. In 2020 and 2021, digital onboarding books were provided for each new Non-executive Director. These onboarding books complemented the existing digital Directors' Handbook and featured:

- overviews of scheduled briefing meetings customised to the Non-executive Directors' needs and linked to upcoming Board agenda items;
- hyperlinks to key Shell publications (external and internal);
- lists of common Shell acronyms;
- key current materials on:
  - Shell's safety and core values;
  - Board governance;
  - Group strategy and portfolio;
  - key businesses and functions; and
  - climate change and energy transition;
- biographies of key executives.
- Other elements of the onboarding programme for Non-executive Directors included:
  - arranging briefing meetings with key executives (both business and functional) customised to Non-executive Directors' needs and phased based on forthcoming Board agenda items;
  - where feasible, pairing up new Non-executive Directors in onboarding briefings to optimise learning while also providing opportunities for collegial relationship-building and increasing efficiencies for the executives; and
  - where possible, arranging virtual site visits (either specifically for onboarding or by inviting the new Directors to committees' virtual site visits).

Supported by the benefits of the global vaccination programme, we are now seeing COVID-19-related restrictions starting to ease in many countries. As a result, we envisage Directors being able to increase their face-to-face engagement with our teams at our sites in 2022 and to enhance ongoing Director training.

NOMINATION AND SUCCESSION COMMITTEE continued

CHAIR SUCCESSION

Message from Euleen Goh

In early 2018, the process of selecting the next Chair of the Board of Shell plc (at the time known as Royal Dutch Shell plc) began in response to the proposed limit on Chair tenure, outlined in the then draft version of the Code. The Nomination and Succession Committee (NOMCo) created a subcommittee, drew up a potential succession timeline, and initiated an internal and external search process. Hans Wijers, the Senior Independent Director at the time, led the subcommittee and the search process. Chad Holliday, the current Chair, was not a member of the subcommittee.

My predecessor Gerard Kleisterlee took over from Hans in May 2018 and refined the selection criteria and succession timeline. The subcommittee agreed what qualities the successful candidate should have, and determined the functional focus elements of the new Chair's role. Accordingly, the subcommittee considered and interviewed multiple candidates.

After Gerard retired from the Board at the 2020 AGM, I assumed leadership of the subcommittee and we further reviewed the required qualities and functional focus elements of the role in the context of the current environment. The subcommittee also examined the main trends and factors affecting the long-term success and future viability of Shell, and the organisation's strategic priorities, consulting on these with the wider Board. One-on-one discussions were held with each Board member. The review and the discussions helped us to refine our search process with a clear and updated understanding of the qualities, skills and attributes that the future Chair should possess.

We engaged with some of our larger investors, as appropriate, seeking input on the skills, attributes and sector knowledge that they considered important for the Chair candidate profile. These discussions were very valuable. They helped inform our search and selection of the most appropriate individual for the role.

After this thorough and robust search process, the Board agreed unanimously at its March 2021 meeting that Sir Andrew Mackenzie should be appointed Chair of the Board with effect from the conclusion of Shell's 2021 Annual General Meeting, which was held on May 18, 2021.

When reviewing candidates, our preferred qualities and functional focus elements included a strong requirement for a candidate who has experience in leading large, complex, international organisations. The candidate would have had significant experience in capital discipline. He/she should have an ability to balance the transformational changes that Shell needs to make against the timing of these changes as it navigates the energy transition. The successful candidate should have demonstrated sustainable actions with respect to the climate change agenda. An understanding of the energy market was essential, without it being necessary for the candidate to have spent their entire career working in the oil and gas sector.

In Andrew we believe that we have found the required qualities and more. Andrew is a lifelong learner with a collaborative, agile mindset and he is a champion of good governance. His strategic vision has helped operations and companies under his leadership to transform. His leadership performance in the areas of environmental, social and governance (ESG) and climate action are outstanding. He was recently knighted by the Queen of the United Kingdom for his services to business, science and technology. Andrew firmly believes that business can be a force for good, for shareholders and society alike.

Since joining the Board in October 2020, Andrew has dedicated significant time to familiarising himself with the business, the people, and the Powering Progress strategy which he and the Board fully support and are committed to delivering together with management.

His broad experience, strategic vision, scientific curiosity and commercial acumen made him the ideal candidate to lead the Board of Shell plc.

SAFETY, ENVIRONMENT AND SUSTAINABILITY COMMITTEE

Focus areas for 2021

- Safety and environmental performance
- Assurance programme
- Shell's climate targets
- Non-financial elements of Shell's strategy
- Sustainability metrics for remuneration

Priorities for 2022

- Process safety and personal safety
- Environmental performance
- Emerging safety and non-financial risks
- Progress against energy transition targets
- Broader sustainability performance

"SESCo focused on Shell's safety and environmental performance and assurance programme in 2021, as well as targets for the energy transition and sustainability elements of Shell's Powering Progress strategy."

CATHERINE J. HUGHES
Chair of the Safety, Environment and Sustainability Committee



COMMITTEE MEMBERSHIP AND ATTENDANCE FOR 2021



Catherine J. Hughes



Neil Carson OBE



Bram Schot

Committee Member	Member since	Maximum possible meetings	Number of meetings attended	% of meetings attended
Catherine J. Hughes (Chair of the Committee since May 19, 2021)	November 1, 2017	5	5	100%
Neil Carson OBE	June 1, 2019	5	5	100%
Bram Schot	October 1, 2020	5	5	100%
Sir Nigel Sheinwald (Chair of the Committee until May 18, 2021) [A]	July 1, 2012	2	2	100%
Ann Godbehere [B]	May 20, 2020	4	4	100%

[A] Sir Nigel Sheinwald retired from the Board following the 2021 Annual General Meeting, held on May 18, 2021.
[B] Ann Godbehere stepped down from her role on the Committee on October 27, 2021 when she became a member of the Nomination and Succession Committee.

PURPOSE

The Safety, Environment and Sustainability Committee (SESCo) assists the Board in reviewing the policies, practices, targets and performance of Shell, primarily with respect to safety, environment including climate change, and broader sustainability.

OVERVIEW

The Committee meets regularly to review and discuss a wide range of important topics. These include the safe condition and responsible operation of Shell's assets and facilities, environmental protection and greenhouse gas emissions, any major incidents that impact or had the potential to impact safety, environmental performance, and progress towards meeting Shell's energy transition targets.

The Committee also endorses the annual Shell assurance plan for Health, Security, Safety, Environment and Social Performance (HSSE & SP) and Asset Management, and reviews the execution of the plan and audit outcomes.

The Committee assesses Shell's overall sustainability performance and provides input to Shell's annual reporting and disclosures on sustainability. It also advises the Remuneration Committee on metrics relating to safety and energy transition that apply to the Executive Committee annual scorecard and Long-term Incentive Plan.

SAFETY, ENVIRONMENT AND SUSTAINABILITY COMMITTEE continued

The Committee reviews and considers external stakeholder perspectives in relation to Shell's business, and how Shell addresses issues of public concern that could affect its reputation and licence to operate.

In line with the strategic importance of the Committee's agenda, the Chair of the Board of Directors and the Chief Executive Officer of Shell plc regularly attend Committee meetings for discussions on specific topics.

Shell's Chief Executive Officer and the Executive Committee hold overall accountability for sustainability within Shell. In February 2022, Shell announced a newly created role of Strategy, Sustainability and Corporate Relations Director. The new director is a member of Shell's Executive Committee.

ACTIVITIES

During 2021, the Committee focused on the areas of greatest operational and strategic importance to Shell, in line with its Terms of Reference. This allowed the Committee to oversee effectively and thoroughly the practices and performance of the Company with respect to safety, environment including climate change, and broader sustainability.

The topics discussed in particular depth by the Committee included personal and process safety, a range of environmental topics, Shell's energy transition targets, and remuneration metrics. The Committee also reviewed in detail Shell companies' operations and the challenges faced in Nigeria.

The Committee supported and contributed to the announcement of Shell's Powering Progress strategy in 2021. This included a series of targets and commitments under the goals of achieving net-zero emissions, respecting nature, and powering lives. The Committee believes the Powering Progress strategy further demonstrates Shell's determination to play its full role in the energy transition. The Committee has conducted in-depth discussions with senior management about how Shell's energy transition targets for the near-term, medium-term and longer-term will be met through a combination of developing low-carbon energy businesses, transforming existing assets to energy and chemicals parks, carbon abatement programmes, portfolio actions, the use of nature-based solutions, and the development of carbon capture, utilisation, and storage (CCUS).

Following the Committee's review of remuneration with management, the safety and energy transition metrics have been further enhanced for the 2022 Executive Committee annual scorecard and the 2022-24 Long-Term Incentive Plan in order to drive further performance improvements.

Together with the Audit Committee, the Committee reviewed the controls and procedures for managing contracting and procurement activities. The Committee Chair held several meetings with senior leaders to discuss specific topics, including reducing carbon emissions and enhanced assurance protocols. Committee members also held a series of individual engagements with business directors to discuss their reflections on emerging risks.

The Committee also reviewed wider matters of public concern during 2021 such as plastic waste, methane emissions, human rights, diversity and inclusion, and access to energy in low- and middle-income countries. The Committee engaged with external stakeholders on the topic of plastic waste and undertook a feedback session on how Shell's energy transition strategy and targets are perceived.

The Committee continued to closely monitor and strongly support Shell's response to the COVID-19 pandemic in 2021 in terms of care for staff and the safe management of operations.

For further details on SESCo and how Shell manages sustainability see www.shell.com

SITE VISITS

The Committee postponed its planned site visits for 2021 because of the COVID-19 pandemic. The Committee instead conducted a virtual site visit to the Qatar Gas-to-Liquids facility via videoconference. The visit focused on safety and environmental performance and broader sustainability issues. The Committee Chair also held a follow-up engagement with the Rheinland Refinery in Germany to review safety performance and progress with the planned transformation of the site into an energy and chemicals park.

Activities performed	Frequency
Review Shell's practices and performance relating to safety, including the safe condition and responsible operation of Shell's assets (Shell-operated ventures and non-Shell-operated ventures), with a focus on both employees and contractors	E
Review Shell's practices and performance relating to environment, including in particular environmental protection and greenhouse gas emissions	E
Review any major incidents that impact, or had the potential to impact, Shell's safety and environmental performance	N
Review progress towards meeting Shell's Powering Progress ambitions, including its near-term and longer term energy transition targets for net carbon intensity and becoming a net-zero emissions energy business, in step with society	M
Endorse Shell's annual assurance plan for Health, Security, Safety, Environment and Social Performance (HSSE & SP) and Asset Management	A
Review execution of Shell's HSSE & SP assurance plan and audit outcomes, and review relevant findings from Shell's broader internal audit programme	M
Assess Shell's overall sustainability performance and provide input to Shell's annual reporting and disclosures regarding sustainability	A
Review how Shell addresses other major issues of public concern that could affect Shell's reputation and licence to operate	M
Review and consider external stakeholder perspectives in relation to Shell's business	P
Advise the Remuneration Committee on metrics relating to safety and energy transition	A

Committee Activity Key: A Annually P Periodically M Most meetings E Every meeting N As necessary

AUDIT COMMITTEE REPORT

Dear Shareholders,

I am pleased to present our Audit Committee Report for 2021.

I begin this report by welcoming Jane Holl Lute to the Audit Committee (AC). Jane joined the AC in July 2021 and her insights are a valuable addition to the AC.

The primary role of the AC is to assist the Board in fulfilling its oversight responsibilities in areas such as the integrity of financial reporting, the effectiveness of the risk management framework and system of internal controls as well as consideration of ethics and compliance matters. We are responsible for assessing the quality of the audit performed by, and the independence and objectivity of, the external auditor. The AC also makes a recommendation to the Board on the appointment or reappointment of the external auditor. In addition, we oversee the work and quality of the internal audit function.

The AC's work programme over the course of a year focuses on a variety of matters that involve either a high degree of judgement and/or are significant to Shell's consolidated financial statements. Topics addressed during 2021 included the potential impact of climate change on Shell's consolidated financial statements, redundancy and restructuring charges related to Reshape, deferred taxes and tax exposures, significant portfolio acquisitions and divestments, third-party credit exposure, litigation, including the Dutch climate court case ruling, discount rates used for impairment testing, decommissioning and other provisions, impairment trigger assessments, charges and reversals, accounting for complex contracts, dividend distribution capacity and marked-to-market derivatives accounting.

The AC reviewed with management areas which required significant judgement, the sources of estimation uncertainty and other key assumptions in light of economic and market uncertainty, climate risk and the energy transition, and evolving stakeholder expectations. In addition, the AC discussed with management the robustness of the risk and internal control management framework, results of internal control testing performed throughout the year and remediation activities.

These discussions also covered how risks to controls stemming from the organisational restructuring aspects of Reshape were managed. The AC also received briefings from the Chief Internal Auditor on the effectiveness of Shell's risk management and internal control system and on the outcomes of significant audits and notable control matters.

The impacts of climate change and the energy transition touch on many aspects of the AC's work. The AC's focus areas for 2021 included a number of discussions on the financial statement impacts of climate change and energy transition and the increasing calls for expanded climate-related information. Non-financial reporting was one such topic and included discussions on planned enhanced disclosures related to climate change reporting and other ESG information. The AC reviewed the pricing methodology for oil and gas and discussed with management how the impact of climate change was reflected in the methodology. This topic provided greater insights to the AC as to how macroeconomic conditions, major trends in the industry, and geopolitical factors, including carbon pricing and long-term demand for oil and gas, are considered in developing the outlook for commodity prices and refining margin assumptions, which are important considerations in business planning, asset impairment analyses, and investment and divestment decisions. Further, the quarterly reports reviewed by the AC from Ernst and Young LLP (EY), our external auditor, and the Chief Internal Auditor, also included specific steps they have taken to incorporate climate change considerations into all facets of their work.

The AC reviewed the additional disclosures in relation to the potential financial impacts of climate change. The AC, recognising the evolving nature of climate change risks and responses, concluded that climate change has been appropriately considered by management in key judgements and estimates and agreed with the disclosure made by management.



"The primary role of the AC is to assist the Board in fulfilling its oversight responsibilities in areas such as the integrity of financial reporting, the effectiveness of the risk management framework and system of internal controls as well as consideration of ethics and compliance matters."

AUDIT COMMITTEE REPORT continued

The AC reviewed the governance and controls related to Renewables and Energy Solutions (R&ES) new business models and ventures and was briefed on the new proposed business re-segmentation for 2022. Other focus topics for 2021 included pensions, trading and supply, and contracting and procurement, all of which represent significant financial activities and obligations.

As part of its oversight of compliance with applicable legal and regulatory requirements, including monitoring ethics and compliance risks, the AC discussed with the Chief Ethics and Compliance Officer activities undertaken in the ethics and compliance programme related to conduct risks stemming from the continued effects of COVID-19 as well as Reshape, and steps taken to manage those risks.

Due to continued COVID-19 travel restrictions, the AC conducted virtual visits to Shell's Energy Transition Campus in Amsterdam and Shell's Houston offices. As part of its virtual visit to the US, the AC also toured virtually the Shell Geismar Chemicals facility in Baton Rouge, Louisiana. These site visits deepen the AC's understanding of the risks and opportunities arising in key markets as well as of how the Company's Powering Progress strategy is being implemented in those locations. The visits also provide the opportunity for the AC to engage with a diverse range of Shell staff in each location and to hear directly from them.

On a final note, the AC acknowledges the financial reporting team's substantial work during 2021. While continuing under a remote work environment, the team has demonstrated resilience and continued focus on enhancements in reporting while working to maintain a robust control environment. The AC conveys its gratitude and appreciation for their strong commitment and dedication.

ANN GODBEHERE
Chair of the Audit Committee
March 9, 2022

Focus areas for 2021

- Non-financial reporting (including enhanced disclosures related to climate change)
- Oil and gas pricing methodology (including carbon pricing and long-term demand for oil and gas)
- New business models and ventures
- Contracting and procurement
- Trading and Supply
- Pensions

Priorities for 2022

- Non-operated ventures controls and governance
- Update on regulatory developments (including in relation to climate change and energy transition)
- Portfolio activities (refineries) and managing post-completion rights and obligations
- Asset Management System
- GHG reporting and assurance framework

COMMITTEE MEMBERSHIP AND ATTENDANCE FOR 2021


Ann Godbehere


Dick Boer


Martina Hund-Mejean


Gerrit Zalm


Jane Holl Lute

During 2021, the members and meeting attendance of the AC were as follows:

Committee Member	Member since	Maximum possible meetings	Number of meetings attended [A]	% of meetings attended
Ann Godbehere (Chair)	May 23, 2018	6	6	100%
Dick Boer	May 20, 2020	6	6	100%
Jane Holl Lute [B]	July 28, 2021	2	2	100%
Martina Hund-Mejean	May 20, 2020	6	6	100%
Gerrit Zalm	March 8, 2017	6	6	100%

[A] In addition to the six meetings, the AC conducted three deep-dive sessions and two virtual site visits as part of its activities.
[B] Ms Lute was appointed to the Board with effect May 19, 2021 and the AC with effect from July 28, 2021.

All AC members are financially literate, independent Non-executive Directors. In respect of the year ended December 31, 2021, for the purposes of the UK Corporate Governance Code, Ann Godbehere and Martina Hund-Mejean both qualify as: a person with "recent and relevant financial experience" and competence in accounting, and, for the purposes of US securities laws, an "audit committee financial expert".

The experience of the AC members outlined on pages 121-128 demonstrates that the AC as a whole has competence relevant to the sector in which Shell operates, and the necessary commercial, regulatory, financial and audit expertise required to fulfil its responsibilities. The AC members have gained further knowledge and experience of the sector as a result of their Board membership and through various in-person and virtual site visits since their respective appointments.

The AC invites the Chief Financial Officer, the Legal Director, the Chief Internal Auditor, the Executive Vice President (EVP) Taxation and Controller, the Vice President Group Reporting and the external auditor to attend each meeting. The Chief Executive Officer attends each meeting where the quarterly, half-year and year-end financial results are discussed. The Chair of the Board also regularly attends AC meetings. Other members of management attend when requested on specific topics or to provide input on more detailed technical matters that may arise. The AC regularly holds private sessions separately with the Chief Internal Auditor and the external auditor without members of management, except for the Legal Director, being present. Outside of the formal AC meetings the AC Chair meets regularly with each of the Chief Financial Officer, EVP Taxation and Controller, the Chief Internal Auditor, the external auditor, and the Chief Information Officer (CIO).

AC REMIT

The roles and responsibilities of the AC, as set out in its Terms of Reference, are reviewed annually taking into account relevant regulatory changes and recommended best practice. The key responsibilities of the AC include, but are not limited to:

Risk Management and Internal Control

- evaluating the effectiveness of the system of risk management and internal control;

Financial Reporting

- reviewing the integrity of the financial statements, including annual reports, half-year reports, and quarterly financial statements;
- reviewing the potential impact on the consolidated financial statements of the implementation of the Company's strategy, climate change and the energy transition;
- advising the Board whether, in the AC's view, the Annual Report taken as a whole is fair, balanced and understandable and provides the information necessary for shareholders to assess Shell's position and performance, business model and strategy;
- reviewing and discussing with management the appropriateness of judgements involving the application of accounting principles and disclosure rules;

Compliance and Governance

- reviewing the functioning of the Shell Global Helpline and reports arising from its operation;
- overseeing compliance with applicable legal and regulatory requirements, including monitoring ethics and compliance risks;

Internal Audit

- monitoring the qualifications, expertise, resources and independence of the internal audit function;
- approving the internal audit function's remit and the annual internal audit plan to ensure alignment with the key risks of the business;
- reviewing the significant matters arising from internal audits with the Chief Internal Auditor and assessing management's response to significant internal audit findings and notable control weaknesses. This includes discussing with management potential improvements and agreed actions;
- assessing internal audit's performance and effectiveness each year; and

External Audit

- reviewing and monitoring the qualifications, expertise, resources and independence and objectivity of the external auditor;
- considering the annual external audit plan and approving related remuneration, including fees for audit and non-audit services;
- assessing the performance and effectiveness of the external auditor and the audit process, including an assessment of the quality of the audit; and
- recommending to the Board for it to put to the Company's shareholders for approval at the Annual General Meeting (AGM) to appoint, reappoint, or remove the external auditor.

AUDIT COMMITTEE REPORT continued

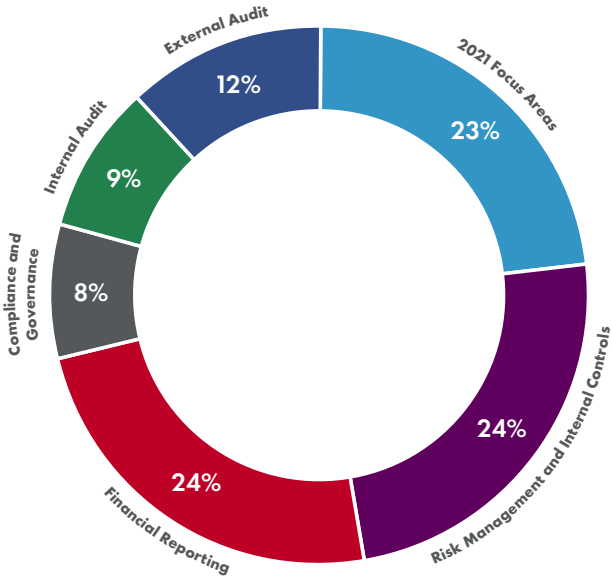
These responsibilities form the basis of the AC's annual work plan, which is adjusted throughout the year as necessary. In addition, the AC annually identifies certain business and function areas to focus on during that year. The focus areas generally encompass aspects of risk management and internal control, financial reporting and compliance. The AC is authorised to seek any information it requires from management and external parties and to investigate issues or concerns as it deems appropriate. The AC may also obtain independent professional advice at the Company's expense. No such independent advice was requested in 2021.

The AC keeps the Board informed of its activities and recommendations, and the Chair of the AC provides an update to the Board after every AC meeting. The AC discusses with the Board if it is not satisfied with or believes that action or improvement is required concerning any aspect of financial reporting, risk management and internal control, compliance or audit-related activities.

A copy of the AC's Terms of Reference, which was updated to reflect the amended New York Stock Exchange rule regarding the AC's oversight for related party transactions and AC's role regarding the impact of Shell's strategy, climate change and energy transition on the financial statements of the Company and with respect to non-financial reporting relating to climate change and energy transition metrics, can be found at www.shell.com.

AC TOPIC COVERAGE IN 2021

The pie chart below shows the percentage of time the AC spent on various activities during 2021.



FOCUS AREAS FOR 2021



of AC time and activities

Senior leaders from various business and function areas briefed the AC on the adequacy, design and operational effectiveness of risk management and controls related to the critical activities carried out by their respective business or function. The discussions included information on any enhancements to strengthen controls and how areas identified for improvement had been addressed, monitoring activities around key risks, and steps being taken to identify new or emerging risk areas.

In addition to the significant accounting and reporting considerations discussed on page 160, the business and function areas reviewed by the AC in 2021 included the following:

- **Non-Financial Reporting (NFR)** – The AC was briefed on the increasing pace of change in external regulatory and voluntary frameworks in non-financial reporting, which includes ESG reporting. The AC and management discussed the key shifts in the external landscape and in particular requests for expanded disclosure regarding: (i) a company's resilience to climate-related financial impacts, (ii) quantification of climate risks likelihood and impacts (including physical risks), (iii) explanations on emissions methodologies, (iv) further granularity on targets, and (v) details on low-carbon activities such as capital expenditure, revenues and research and development. The AC noted that Shell's NFR and ESG disclosures are included in Shell publications such as the Annual Report, the Sustainability Report, the Shell Energy Transition Strategy and Shell's website. The AC was informed of key regulatory and ESG frameworks and Shell advocacy activities in this area. The AC and management also discussed planned climate-related disclosure enhancements in Shell's reporting in line with the framework of the Task Force on Climate-Related Financial Disclosures (TCFD) and guidance from regulators. The AC and management discussed the expanded disclosures around governance, strategy, risk management, and targets and metrics and how to describe these elements and demonstrate the interdependencies that exist in practice between them. Management and the AC discussed the scenarios included in the expanded disclosure to assist stakeholders to understand the robustness of Shell's forward-looking strategy and plans across a range of possible future states. The AC and management also discussed a new note to the financial statements which summarises key areas where climate related risks are considered and the related impact on the financial statements.
- **Oil and gas pricing methodology** – The AC reviewed the process, methodology and approach to price assumptions used in Shell for such purposes as business planning, accounting (for example, impairment and deferred tax assessments) and investment and divestment decisions. The AC considered the overall governance framework, how the key principles of independence, expertise, consistency and stability are applied and management's oversight responsibilities. The AC also reviewed how factors such as supply and demand outlooks, the pace and extent of energy transition in different energy sources and markets, and macroeconomic conditions are considered when developing Shell's short and long-term price assumptions. The AC also discussed with the external auditor its independent analysis of price assumptions and external benchmarks for price assumptions.

FOCUS AREAS FOR 2021
continued

- **New business models and ventures** – The AC received a briefing from management regarding the governance approach to new business models and ventures, including R&ES portfolio companies. The AC and management discussed the activities in 2021 to govern the implementation of the Shell Control Framework in the R&ES portfolio companies and the status of such activities. Management also provided the AC with an overview of recent internal audit results. The AC reviewed with management the challenges and risks related to the R&ES businesses and the learnings and planned governance improvements to support the R&ES ambitions.
- **Contracting and Procurement (C&P)** – As part of a joint session with the Safety, Environment and Sustainability Committee (SESCo), the AC was briefed on Shell's C&P programme. This included an overview of how (i) C&P and business lines work together to procure services and goods, (ii) C&P digital tools are designed to ensure that potential risks relating to procurement contracts, such as credit risks, regulatory requirements and ethics and compliance matters, are appropriately addressed at individual and Group level, and (iii) through its procurement activities, Shell manages stakeholders' expectations that Shell will positively influence third parties in environmental and social issues; such as climate change, conserving natural resources and biodiversity, and promoting human rights, worker welfare, safety, and diversity. C&P leaders, the AC and SESCo discussed efforts to ensure continued competitive performance and resilience amid increasing volatility, rising inflation and supply chain disruption. In response to a request from the AC, the C&P leaders provided the supply chain risks matrix and how each risk is being managed.
- **Trading and Supply's (T&S) control framework** – Noting the continued regulatory demands in this area, the AC met with T&S leaders, including the Risk Officer, to gain a deeper understanding of the controls and processes enhancements undertaken in 2021. The AC was briefed on the Integrated Risk Management Framework being developed and the capabilities and systems improvements identified through the market risk road map. The AC and T&S leaders also discussed the progress on strengthening IT general controls, front and mid-office controls and compliance functions. T&S leaders briefed the AC on the structural organisational changes being made to enable effective implementation of systems and processes enhancement while managing the risks arising from a volatile commodity price environment and the impact of Reshape.
- **Pensions** – Treasury leaders provided the AC with an overview of Shell's pension plans which cover around 230,000 current and past employees in 46 countries. The AC reviewed the governance arrangements and operating model for Shell's pension plans that result from their independent trust structures in different jurisdictions. The AC was briefed on pension risks and risk management governance, actuarial and investment management, operational oversight, and assurance activities undertaken by two centres of expertise which support Shell's pension plans. The AC gained insights into the control framework, standards, modelling and guidelines that are designed to ensure appropriate measurement and reporting of pension liabilities, assets, and annual payments.

In January 2022, the AC conducted a virtual visit to Shell's Houston, Texas offices. As part of this visit, the AC received briefings on how the US businesses are implementing Shell's Powering Progress strategy through an overview of various energy transition projects and initiatives. The AC also was informed of the initiatives under the Racial DEI Plan, which focuses on inclusion, representation and outreach, and planned activities focused on issues of race, ethnicity, which also include diversity, equity, and inclusion as it relates to gender, LGBT+, and people with disabilities. The AC also gained insight into the cyber-security defence and risk operations; the regional advancement of the energy transition in the USA; the integrated Power approach between Trading and Supply and R&ES businesses; and engaged with staff on how Shell is powering lives. The AC also conducted a virtual visit to Shell's Geismar chemicals facility in Baton Rouge, Louisiana, which is the centre of a suite of potential projects that are focused on infrastructure and emissions mitigations to deliver low-carbon products to its customers. As part of this virtual facility visit, the AC reviewed risk management through the deep-water Gulf of Mexico lens of dealing with COVID-19, rapid and significant oil price declines and Hurricane Ida.

In February 2022, the AC undertook a virtual visit to Shell's Energy Transition Campus in Amsterdam. As part of this visit, the AC and Project and Technology (P&T) leaders discussed P&T's business risk management and risk matrix. The AC was also provided with an overview of P&T's portfolio, including those that support the energy transition and Shell's net-zero emissions target, and was briefed on a current P&T project.

As part of its review of new business models and ventures, the AC had intended to visit one of Shell's new ventures in 2021. Due to COVID-19 travel restrictions, this visit has now been rescheduled to take place in 2022.

Site visits are a welcome addition to the AC's annual work plan, as they provide the opportunity for the AC to gain a deeper understanding of the various businesses and functions at each location, the local external environment within which those activities take place and how they contribute to Shell achieving its strategic ambitions. In addition to in-depth examinations of specific business areas, these visits enable the AC members to interact with a diverse group of staff and learn about their experiences, challenges they face and their opportunities for career development. The AC is also briefed on the impact of the energy transition at a local level, how risks associated with climate change are managed, and the results of the Shell People Survey.

RISK MANAGEMENT AND INTERNAL CONTROL



of AC time and activities

The AC assists the Board in fulfilling its responsibilities in relation to risk management and internal control. In order to monitor the effectiveness of the procedures for internal control over financial reporting, compliance and operational matters, the AC reviews reports on risks, controls and assurance, including the annual assessment of the system of risk management and internal control. This annual assessment includes the AC's review of outcomes from the Group Assurance Letter process. The Group Assurance Letter process involves each Executive Director conducting a structured internal assessment of compliance with legal and ethical requirements and the Shell Control Framework. The AC also reviews the Company's evaluation of the internal control over financial reporting as required under Section 404 of the Sarbanes-Oxley Act (SOX 404). The AC updated the Board on compliance with internal controls across the Shell Group and on any major matters for which action or improvement was recommended.

Activities performed	Frequency
Risk Management and Internal Control	
Review the policies and practices and monitor the effectiveness relating to Shell's risk management and internal control system.	P
Receive briefings on regulatory developments.	P
Review management's SOX 404 assessment.	A
Discuss significant matters arising from completed internal audits with the Chief Internal Auditor, management and the external auditors.	Q
Assess management's responses to significant audit findings, recommendations and notable control weaknesses, including potential improvements and agreed actions.	P
Review significant legal matters with Shell's Legal Director.	Q
Review the oil and gas reserves control framework.	A
Review Shell's information risk management.	P
Review Shell's tax function, key tax risks and Shell's approach to the evolving area of tax transparency.	P

Committee Activity Key: A Annually Q Quarterly P Periodically

Throughout the year, the AC and management discuss the Company's overall approach to risk management and internal control, including compliance, tax, and information risk management matters and the adequacy of disclosure controls and procedures. The AC receives quarterly reports from the EVP Taxation and Controller on the status of actions to address control weaknesses identified via business control incidents and the trends in other measures used to monitor the robustness of the risk management framework and internal control systems. The AC is also briefed on litigation matters (see "Governance" on page 198 and Note 26 to the "Consolidated Financial Statements" on pages 278-279.

The AC regularly reviews the status of management's SOX 404 testing of controls and remediation actions to address any identified weaknesses. Similar to 2020, for 2021, these reviews included consideration of how the COVID-19 pandemic affected the controls and assurance landscape, including the financial reporting process. The AC and management discussed the steps taken to maintain an effective control environment, to demonstrate "management in control" during the pandemic and to address any new or emerging risks due to the working-from-home setting.

The AC was also briefed on how management was monitoring and addressing any impacts on the control environment from the organisational restructuring from Reshape.

It is important that the AC monitor and learn about evolving external developments in a timely fashion. Accordingly, the AC was informed of developments in the legal, regulatory and financial reporting landscape that could affect the Company. The AC's briefings in this area were supplemented by the overview of the ESG reporting landscape provided as part of its non-financial reporting focus topic for 2021.

In 2021, the AC dedicated time to the following topics:

- **Tax risks** – In addition to the regular review of Shell's tax provisions, the AC and management discussed the Tax function's operational performance and key developments and challenges for a global company like Shell operating across many differing tax jurisdictions. The AC was briefed on the tax integrated assurance model which is designed to ensure compliance with applicable tax, disclosure and accounting requirements. Management outlined for the AC the potential implications of the current external tax environment and increasing demand for scrutiny and transparency. These included expected higher compliance burden, increased risk of double taxation, tax challenges arising from the digitalisation of the economy, and potential upward pressures on effective tax rates.
- **Information risk management** – The CIO briefed the AC on the diverse risk landscape and the steps being taken to manage the increased external threats observed. The AC was informed of the investments made to build a robust cyber-security framework over the last decade with enhanced cyber-incident detection, response and recovery capabilities, and expanded monitoring and data protection. The AC and CIO also discussed the transformation occurring in Shell's IT systems as part of the Powering Progress strategy, reflecting the evolving portfolio of businesses and the greater number of digital products for customers.
- **Oil and gas reserves control framework** – The AC annually reviews the framework that supports Shell's internal reporting and external disclosures of oil and gas reserves. The AC also reviews the processes and controls that prevent and/or mitigate the risks of non-compliance with regulatory reporting requirements. This annual review of Shell's oil and gas reserves control framework supports the AC's review of Shell's reported proved oil and gas reserves discussed later in this report.

In addition to the above, the AC also had quarterly discussions with the Chief Internal Auditor regarding the Company's risk management and internal control system, significant matters arising from the internal audit assurance programme and management's response to significant audit findings and notable control weaknesses, including planned improvements and agreed actions.

The AC similarly holds discussions with EY on a quarterly basis regarding how risks to audit quality are addressed, key accounting and audit judgements, results from audit procedures and management's response to any significant audit findings and any material communications between EY and management.

FINANCIAL REPORTING



of AC time and activities

The AC receives comprehensive reports from management and the external auditor on quarterly financial reporting, accounting policies and significant judgements and reporting matters.

Activities performed	Frequency
Financial Reporting	
Review Shell's accounting policies and practices, including compliance with accounting and reporting standards.	Q
Assess the appropriateness of key judgements and the interpretation and application of accounting principles.	Q
Review the potential impact on the consolidated financial statements of the implementation of the Company's strategy, climate change and the energy transition	Q
Consider the integrity of the year-end financial statements and recommend to the Board whether the audited financial statements should be included in the Annual and statutory reports.	A
Consider the integrity of the half-yearly report and quarterly financial statements.	Q
Review management's assessment of going concern and longer-term viability.	Q
Review Shell's policies with respect to earnings releases; financial and non-financial performance information and earnings guidance; and significant financial reporting matters.	Q
Review Shell's policies with respect to oil and gas reserves accounting and reporting including the outcome of the oil and gas reserves booking/debooking process.	A
Review the internal controls for financial reporting.	P
Advise the Board of the AC's view on whether, taken as a whole, the Annual Report is fair, balanced and understandable and provides the information necessary for shareholders to assess Shell's position and performance, business model and strategy.	A

Committee Activity Key: A Annually Q Quarterly P Periodically

The AC reviewed the Company's 2021 quarterly unaudited interim financial statements, half-yearly report and Annual Report with management and the external auditor.

Shell uses alternative performance measures (APMs) to provide greater insights into its financial and operating results. The AC regularly considers the APMs used in Shell's reporting, the reconciliations to IFRS financial statements and explanations for changes from the previous quarter. The AC reviews the overall presentation of APMs with management to ensure they are not given undue prominence. The AC discusses adjusting items with management including any changes to methodology.

In 2021, the AC was briefed on a new APM: Adjusted EBITDA on a FIFO and CCS basis. The APMs disclosed by Shell are subject to the same internal controls process as for other financial reporting.

Fair, balanced and understandable assessment

The AC advised the Board that in its view the 2021 Annual Report including the financial statements for the year ended December 31, 2021, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess Shell's position and performance, business model and strategy (see "Governance" on page 198). To arrive at this conclusion, the AC critically assessed drafts of the 2021 Annual Report including the financial statements and discussed with management the process undertaken to ensure that the relevant requirements were met. This process included: verifying that the contents of the 2021 Annual Report are consistent with the information shared with the Board during the year to support their assessment of Shell's position and performance; ensuring that consistent materiality thresholds are applied for favourable and unfavourable items; considering observations from the external auditor; and receiving assurance from the Executive Committee (EC).

Going concern and viability statement

The AC reviewed and considered the Directors' half-year and full-year statements with respect to the going concern basis of accounting. As noted in the viability statement, the Board also reviews the strategic plan which takes account of longer-term forecasts and a wide range of outlooks. Key assumptions included: the impact of commodity prices; exchange rates; future carbon costs; agreements like liquid natural gas contract renewals; production levels and product demand, schedules of growth programmes; the financial framework; Shell's business portfolio developments including consideration of the impacts of various possible energy pathways and scenarios for changes in societal expectations in relation to climate change and Shell's commitment to the Paris Agreement goals; the project funnel to support future growth; and using severe but possible scenarios to run models of the financial impact if certain of Shell's principal risks materialised. The AC reviewed management's determination that the associated material impacts from climate change and energy transition risk, including the recent Dutch court ruling, were appropriately considered in the context of the three-year viability statement period. The AC considered the mitigating measures and sensitivities that management had applied to the modelling of scenarios when evaluating the viability statement and noted that assumptions do go well beyond the three-year period and do take into account climate change and energy transition. The AC also considered the merits of extending the viability statement beyond a period of three years and concluded that the three-year period selected by the Board for the review of Shell's prospects, in line with the operating plan, remained appropriate. The AC supported the going concern basis of accounting and the inclusion of Shell's viability statement in "Governance" on page 199 and considered such statement to be in line with best practice guidance issued by the Financial Reporting Council (FRC).

FINANCIAL REPORTING
continued

SIGNIFICANT ACCOUNTING AND REPORTING CONSIDERATIONS

The AC assessed the following significant accounting and reporting areas, including those related to Shell's 2021 Consolidated Financial Statements. The AC was satisfied with how each of the areas below was addressed. As part of this assessment, the AC received reports, requested and received clarifications from management, and sought assurance and received input from the internal and external auditors.

Issue	AC activity and outcome
Climate change and energy transition	
Climate change and energy transition related risks are continually monitored to ensure impacts are reflected within Shell's financial statements. After a claim by Milieudefensie (Friends of the Earth Netherlands), other NGOs and a group of private individuals, in May 2021 the District Court in The Hague ruled that Shell must reduce its global net carbon emissions by 45% by 2030 compared with 2019 levels. The external landscape related to non-financial disclosures continues to change at unprecedented speed. In the absence of one global standard for climate related reporting there are growing demands from various regulatory and voluntary bodies all with their own expectations for disclosures.	The AC was briefed on key regulatory requirements including (but not limited to) the FRC, SEC and EU disclosure requirements and their implications for Shell's external disclosures. The AC reviewed the new Note 4 of the financial statements summarising the key climate risks impacts on the Financial Statements as well as the new impairment sensitivity disclosures using price outlooks based on different climate change scenarios, including external scenarios. See Note 4 to the "Consolidated Financial Statements" on pages 242-245. The AC has considered the impact of the Dutch climate court case ruling on financial reporting. As at the second quarter of 2021 it agreed with management's conclusion that the outcome of the case had no impact on the 2021 interim financial statements. In the third quarter 2021 Shell announced absolute GHG emissions reduction target of 50% on all Scope 1 and 2 emissions under Shell's operational control by 2030, compared to 2016 levels on a net basis. This target has been reflected in the operating plan as reviewed by the Board. The AC sought assurance from management that assumptions used for the preparation of the consolidated financial statements are consistent with the operating plan. The AC was briefed on the non-financial reporting external landscape developments and regulatory requirements. In doing so, the AC considered the potential implications required for Shell's external disclosures going forward (see Shell Powering Progress on pages 6-11). The AC reviewed the TCFD disclosure in the Energy Transition and Climate Change section and other non-financial disclosures as part of the Annual Report review and was briefed on the new EU taxonomy voluntary disclosures included as supplementary information to the Annual Report. Updates regarding climate change and energy transition have been included in the risk factors section on pages 75-98.
Impairment and impairment reversals	
The carrying amount of an asset should be tested for impairment or impairment reversal whenever events or changes in circumstances indicate that the carrying amount for that asset may have changed, for example if there is a change in the outlook for commodity prices or refining margin assumptions, or revisions to future activity plans and developments. On classification as held for sale, the carrying amounts of property, plant and equipment (PP&E) and intangible assets must also be reviewed.	The AC reviewed the impairment assessments that were performed each quarter, and the methodology applied in conducting impairment assessments. The AC reviewed the changed estimation technique to determine the value in use for impairment testing, including the change to a post-tax WACC based methodology and the appropriateness of the resulting new discount rate applied. The AC considered the updated oil and gas price and refining margin outlooks against market developments and benchmarks. The 2022 short term oil and gas price assumptions have been updated to reflect the current market environment. Notwithstanding the current buoyant oil and gas commodity markets, the long-term oil and gas price assumptions have not materially changed and therefore there have been no impairment or impairment reversal triggers. The AC also reviewed other impairment triggers, including for exploration and evaluation assets, held-for-sale classification for asset disposals (e.g. Puget Sound and Deer Park) and plans to convert refineries into energy and chemicals parks. The AC review of impairments covered a significant proportion of the balance sheet. See Notes 2, 8, 9 and 10 to the "Consolidated Financial Statements" on pages 233-241 and 249-254.
Taxation	
The determination of tax assets and liabilities requires the application of judgement as to the ultimate outcome, which can change over time. In particular, tax exposures and the recognition of deferred tax assets require management to make assumptions regarding future profitability. As a result they are inherently uncertain.	The AC considered the uncertain tax positions and discussed management's assumptions of future taxable profits, including the impact of foregone future profits due to disposals. The AC also evaluated the appropriateness of the recognition of deferred tax assets and tax liabilities. The AC acknowledged that assumptions regarding future taxable profits are inherently uncertain because they involve assessing factors such as the pace of economic recovery in different countries and the potential impacts of climate change and energy transition. The AC deemed the assessments of uncertain tax exposures and the recognition of deferred tax assets and tax liabilities to be reasonable. The AC also assessed the accounting judgments made regarding the treatment of tax provision releases relating to Nigeria. The AC also reviewed the impact on tax balances and disclosures as a result of the simplification of Shell's structure in 2021 and aligning Shell's tax residence with its country of incorporation in the UK. See Notes 2 and 17 to the "Consolidated Financial Statements" on pages 233-241 and 259-261.

FINANCIAL REPORTING
continued

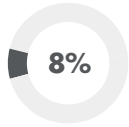
Issue	AC activity and outcome
Portfolio activities	
In implementing the Powering Progress strategy, several portfolio developments occurred in 2021. In particular, there was rationalisation of the refinery portfolio, divestment of Upstream assets and investments in Renewables and Energy Solutions.	The AC discussed the accounting implications of these decisions and the recognition of: (i) decommissioning and restoration provisions; (ii) deferred tax balances; (iii) impairment; and (iv) assets held for sale. The AC also considered the complex accounting treatments associated with some of the new business arrangements, such as the Amazon transaction and Hollandse Kust Noord CrossWind. The AC provided support for projects to develop detailed accounting guidance for these types of transaction. See Notes 2 and 19 to the "Consolidated Financial Statements" on pages 233-241 and 267.
Reshape restructuring provisions	
A comprehensive portfolio and organisational review, Reshape, was implemented during 2021 with related redundancy provisions, pension curtailments and charges recognised in the 2021 Consolidated Financial Statements.	During Q1 2021 the AC considered the accounting implications and whether the criteria to recognise a restructuring provision as per IAS 37.72 were fulfilled. The AC concurred with management that the criteria had been met by March 31, 2021 and that it was appropriate to recognise the restructuring provision. The AC also considered the effect of Reshape, received updates and reviewed associated accounting implications as Reshape activities progressed throughout the year. See Notes 2 and 19 to the "Consolidated Financial Statements" on pages 233-241 and 267.
Decommissioning and restoration provisions	
Decommissioning and restoration provisions are one of the main components of balance sheet liabilities. The quantification of these provisions requires judgements on input parameters which include, but are not limited to, estimated future decommissioning and restoration costs and discount rates.	Following the AC's 2020 review of the decommissioning and restoration process, in 2021 the AC reviewed the input parameter assumptions and judgements used in arriving at the provisions. The AC reviewed the appropriateness of updates to the discount rate for provisions in Q4 2021 and shorter expected average duration of decommissioning and restoration outflows. See Note 19 to the "Consolidated Financial Statements" on page 267.
Retirement benefit obligations	
Retirement benefits are an important component of both balance sheet assets and liabilities. The quantification of these assets and liabilities requires judgements on input parameters which include, but are not limited to, actuarial assumptions and discount rates.	The AC was briefed on the management and risks in relation to retirement benefits in 2021, including financial, operational, and regulatory developments. The AC reviewed the key assumptions and sensitivities as part of the Annual Report review and the enhanced disclosures made in the 2021 Annual Report. See Note 18 to the "Consolidated Financial Statements" on pages 261-266.
Trading and Supply, derivatives accounting and expected credit losses	
External events during the year such as the Texas winter storm and developments in gas and power markets in the second half of 2021 affected trading activities. The impacts on financial outcomes of Integrated Gas and Renewable and Energy Solutions included, for example, expected credit losses in the first quarter, and mark-to-market fluctuations and derivative cash flows in the third and fourth quarters.	The AC was briefed on Trading and Supply activities and developments. The AC reviewed the expected credit losses in Q1 relating to the Texas winter storm. In Q3 and Q4 the AC reviewed the impact of volatile gas and power markets including the impact on mark-to-market valuation of derivatives, IFRS and Adjusted Earnings, as well as the resulting cash flows movements.
New reporting segments 2022	
To align external disclosures with the Powering Progress strategy and the way Shell's CEO reviews and assesses performance, management reassessed Shell's segment reporting. Starting on January 1, 2022, Shell's reportable segments will consist of Marketing, Renewables and Energy Solutions, Chemicals and Products, Integrated Gas, Upstream and Corporate.	The AC assessed the appropriateness of the planned reportable segments for 2022 and received updates on implementation readiness to ensure the integrity of the reportable segments in Q1 2022. The AC also discussed with management implications for future impairment testing of the cash generating units including testing of goodwill relative to the new reportable segments.
Alternative performance measures (APMs) and improved financial disclosures	
The use of APMs is reviewed throughout the year to consider attributes such as usefulness to stakeholders, how easy they are to understand and reconciliation transparency.	The AC undertook its regular monitoring and assessment in the use of APMs, for example Adjusted Earnings (including identified items during the quarters and the identified items policy update in Q1 2021), CFFO excluding working capital, and Net Debt and Gearing.
To further improve the quality of insights provided by Shell's financial disclosures, improvements were made during the year for example around enhanced data disclosures and the disclosure of assets held for sale on the balance sheet.	The AC reviewed the appropriateness of the financial disclosure improvements made during Q1 2021 including the changes to the MD&A in the Quarterly Results Announcement, the enhance disclosures in the Quarterly Date Book, and the introduction of adjusted EBITDA on a CCS and FIFO basis as APMs. As a result of the Permian sale announcement in Q3 2021, the AC reviewed the appropriateness of the Asset Held for Sale classification in the balance sheet.

Other matters

The AC reviewed: the year-end reported proved oil and gas reserves, including management judgements and adjustments made to reflect changes in geological, technical, contractual and economic information (including yearly average price assumptions) and the effectiveness of financial controls.

On February 28, 2022, Shell announced its intention to exit its ventures in Russia with Gazprom and related entities. Subsequently, on March 8, 2022, Shell announced its intention to withdraw from its involvement in all Russian hydrocarbons in a phased manner, including shut its service stations, aviation fuels, and lubricant operations in Russia. These announcements have been included as non-adjusting post balance sheet events (PBSE) in the Consolidated Financial Statements and have been reviewed by the AC (see note 32 on page 283).

COMPLIANCE AND GOVERNANCE



of AC time and activities

Activities performed	Frequency
Compliance and Governance	
Monitor the receipt, retention, investigation and follow-up actions of complaints received, including those from the Shell Global Helpline.	P
Review with the Chief Ethics and Compliance Officer the implementation and effectiveness of the ethics and compliance programme and function.	A
Discuss compliance with applicable external legal and regulatory requirements.	P
Perform an evaluation of the AC's performance and effectiveness and report the results to the Board.	A
Review and update the AC's Terms of Reference.	A
Review the Chief Financial Officer's significant business and investment transactions for potential conflicts or related party transactions.	A
Assess the Chief Financial Officer's performance.	A

Committee Activity Key: A Annually Q Quarterly P Periodically

Ethics and compliance

In 2021, the AC received an update from the Chief Ethics and Compliance Officer on how a range of macro factors and external trends and developments, the continued effect of COVID-19 and changes as a result of Reshape were affecting conduct risk at Shell. The Chief Ethics and Compliance Officer summarised the specific emerging conduct risks and management's actions to manage and mitigate them. The Chief Ethics and Compliance Officer briefed the AC on communications to staff from both senior leaders and mid-level management reinforcing the importance of adherence to and affirming Shell's commitment to the Ethics and Compliance framework and Code of Conduct throughout the pandemic.

With staff returning to the workplace and the roll-out of the Future of Work initiative, the AC and the Chief Ethics and Compliance Officer discussed the potential challenges of hybrid work environments. These included the risk of employees feeling disadvantaged by working remotely and the possible loss of the informal learning and development that occurs when employees are together in the workplace. The Chief Ethics and Compliance Officer informed the AC of management's considerations to address these challenges, which include using digital technology, novel approaches to training, and developing bite-sized and focused training to give staff targeted information.

As part of the annual assessment of the system of risk management and internal control, the AC discussed with the Chief Ethics and Compliance Officer his annual report on compliance matters. The report included an overview of the effectiveness of the Shell ethics and compliance programme in managing ethics and compliance risk in Shell's business activities, regulatory developments and compliance activities. The AC also discussed investigations of cases involving ethics and compliance concerns. The AC discussed management's findings in such cases to satisfy itself that a rigorous process had been followed, and that appropriate disciplinary action had been taken where necessary and management had embedded learnings into Shell's systems and controls.

Whistleblowing investigations

The AC is responsible for establishing and monitoring the implementation of procedures for the receipt, retention, investigation and follow-up actions of complaints received, including those from the Shell Global Helpline. The AC reviewed whistleblowing reports and internal audit reports and considered management's responses to the findings in these reports.

Regulatory developments

The AC was briefed on regulatory developments in areas including sustainable finance (in particular management's work on the EU Sustainable Finance Taxonomy); non-financial reporting (in particular management's assessment of the EU Non-Financial Reporting Directive Revision); accounting and reporting; environmental liabilities and treasury activities.

In March 2021, the UK Government's Department for Business, Energy & Industrial Strategy (BEIS) launched a consultation paper entitle "Restoring trust in audit and corporate governance". This paper contained wide ranging proposed reforms to strengthen the UK's audit and corporate governance regime. The AC and management discussed the proposed reforms, including implications for the Company, the Board and the AC. The AC reviewed management's proposed responses to certain topics in the consultation paper. The AC supports the Company's response to BEIS.

AC annual evaluation

The AC undertakes an annual evaluation of its performance and effectiveness. Consistent with the Board's annual performance evaluation for 2021, the AC's performance evaluation was facilitated by Lintstock Limited, a London-based corporate advisory firm. Each AC member responded to a confidential questionnaire about the AC's performance with questions on: the management of the AC in areas such as the annual cycle of work, agenda for meetings and time and input in meetings; the quality of the information provided to the AC; the value of the briefings provided to the AC on specific topics; the effectiveness of the AC's oversight in areas such as financial reporting, risk management and internal control, compliance and governance and the work of internal and external audit; rating the AC's performance in reviewing and assessing significant accounting and reporting judgements; and how to improve the AC's performance.

In assessing its progress against 2020 goals, the AC concluded it had achieved the 2021 priorities identified in the 2020 evaluation discussion (including the planned visits to Shell's Houston offices and to Shell's Energy Transition Campus in Amsterdam, reviews related to pensions, new business models and ventures, non-financial reporting, oil and gas pricing methodology, regulatory developments, C&P, and integrated risk management). The AC discussed the outcome of this review as part of its annual evaluation. The AC concluded that its performance in 2021 had been effective and that it had fulfilled its role in accordance with its Terms of Reference.

In preparing its workplan for 2022, the AC has agreed to the following focus areas in addition to the standing items: joint venture and non-operated ventures controls and governance; update on regulatory developments (including in relation to climate change and energy transition); portfolio activities (refineries) and managing post-completion rights and obligations; the GHG reporting and assurance framework; and the Asset Management System. As noted earlier, the AC also plans to visit one of Shell's new ventures in 2022 as a continuation of its focus on new business models and ventures in 2021.

INTERNAL AUDIT



of AC time and activities

Activities performed	Frequency
Internal Audit	
Evaluate the quality, efficiency and effectiveness of the internal audit function including the competence, qualifications, expertise, compensation and budget.	A
Review and approve the internal audit function's remit, charter and audit plan.	A
Assess the performance of the Chief Internal Auditor.	A

Committee Activity Key: A Annually Q Quarterly P Periodically

Quarterly, the AC discusses with the Chief Internal Auditor the Company's risk management and internal control system, any significant matters arising from the internal audit assurance programme and management's response to significant audit findings and notable control weaknesses including planned improvements and agreed actions. The AC also regularly holds private sessions separately with the Chief Internal Auditor without members of management, except for the Legal Director, being present. The AC's time for these activities is included in Risk Management and Internal Control described earlier in this report. Outside of the formal AC meetings, the AC Chair meets regularly with the Chief Internal Auditor.

Internal audit remit

The internal audit function is an independent assurance function which supports Shell's continuous efforts to improve its overall control framework. The internal audit function contributes to the maintenance of a systematic and disciplined approach to evaluate and improve the design and effectiveness of Shell's risk management, control and governance processes. The primary role of the internal audit function's assurance and investigation activities is to safeguard value by protecting Shell's assets, reputation and sustainability in relation to the organisation's defined goals and objectives.

The AC defines the responsibility and scope of the internal audit function and approves its annual plan. The Chief Internal Auditor reports functionally to the Chair of the AC and administratively to the Chief Financial Officer. The Chair of the AC approves, in consultation with the Chief Financial Officer, all decisions regarding the performance evaluation, appointment or removal of the Chief Internal Auditor.

Annual internal audit plan and assessment of internal audit's effectiveness

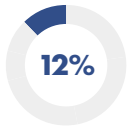
The AC considered and approved the internal audit function's annual audit plan, including focus areas for 2021 consisting of:

- talent and capability (professional audit development and technical capabilities);
- quality (developing first-line staff competence and clarity on self-verification and supervisory controls);
- alignment (improved integration of risk management and alignment of assurance processes across Shell); and
- engagement (mainly in the area of keeping staff and Shell stakeholders engaged and informed on effective risk management and internal control).

Beginning August 2021, audits of the Health, Safety, Security, Environment and Social Performance Control Framework were added to internal audit's remit, creating a unified internal audit function. Recognising that 2021 was a transition year for internal audit due to Reshape, the Chief Internal Auditor updated the AC quarterly on the approved 2021 internal audit plan and discussed whether the plan remained fit for purpose in addressing the most critical areas of risk in a year of transition. The AC assessed the performance of the internal audit function as effective. The AC also assessed the performance of the Chief Internal Auditor as effective.

The Chief Internal Auditor periodically assesses whether the purpose, authority and responsibilities of the internal audit function continue to enable it to accomplish its objectives. The results of this periodic assessment are communicated to the EC and AC. The Chief Internal Auditor maintains an internal quality assurance and improvement programme. This covers all aspects of internal audit's activities and evaluates whether they conform with the standards of the Chartered Institute of Internal Auditors. The Chief Internal Auditor conducts an annual assessment of the efficiency and effectiveness of internal audit's activities, identifying opportunities for improvement. The Chief Internal Auditor discusses the results of this annual assessment with the EC and AC. The Chief Internal Auditor also confirms to the AC of the continued validity of the charter of the internal audit function or puts forward proposals for updates to it. At least every five years, the effectiveness and quality of the internal audit function are independently assessed externally, and the Chief Internal Auditor reviews the report with the AC. An independent assessment of internal audit was conducted in 2018. The next such external assessment is planned to take place in 2022, one year ahead of the five-year review cycle.

EXTERNAL AUDITOR



of AC time and activities

Activities performed	Frequency
External Audit	
Review and approve the engagement letter for EY's annual audit of the Company's consolidated and parent company financial statements.	A
Approve the remuneration for audit and non-audit services, including pre-approval of permissible non-audit services.	Q
Consider the annual external audit plan and monitor the execution and results of the audit.	P
Monitor the qualifications, expertise, resources and independence of EY.	A
Review the Company's representation letter prior to signing by management.	A
Assess the performance, objectivity and effectiveness of EY, the audit process, the quality of the audit, EY's handling of key judgements, and EY's response to questions from the AC.	P
Recommend to the Board that the reappointment of EY be put to the Company's shareholders for approval at the AGM.	A

Committee Activity Key: A Annually Q Quarterly P Periodically

Annual external audit plan and assessment of external audit's effectiveness

EY reviewed with the AC its audit strategy, scope and plan for the 2021 audit, highlighting any areas which would receive special consideration. In particular, the AC and EY discussed how the audit would take into consideration risks associated with:

- the uncertainties from climate change and energy transition;
- the organisational restructuring aspects of Reshape; and
- Shell's Powering Progress strategy.

The AC considered the annual audit plan, which included assessing whether the planned materiality levels and proposed resources to execute the audit plan were consistent with the scope of the audit.

EY regularly updated the AC on the status of their procedures and preliminary findings, providing an opportunity for the AC to monitor the execution and results of the audit. The AC and EY discussed how risks to audit quality were addressed, key accounting and audit judgements, material communications between EY and management and any issues arising from them. Quarterly, the AC met privately with EY representatives without management being present in order to encourage open and transparent feedback from both parties. In addition, the AC Chair meets separately with the external auditor on a regular basis.

As part of its oversight of the external auditor, the AC annually assesses the performance and effectiveness of the external auditor and the audit process. This includes assessing the quality of the audit, how the auditor handled key judgements, and the auditor's response to the AC's questions. The assessment also involves the AC evaluating the objectivity and independence of EY and the quality and effectiveness of the external audit process.

The AC's evaluation of the performance and effectiveness of the external auditor and the audit process includes the following key criteria:

- professionalism in areas including competence, integrity and objectivity;
- EY's quality assurance procedures and internal quality control procedures;
- audit quality priorities and actions taken as part of maintaining a sustainable audit quality programme;
- constructive challenge of management and key judgements;
- efficiency, covering aspects such as service level and innovation in the audit process, use of data analytical and digital audit tools, and opportunities for improvement;
- the orderly transition of the recent partner rotation;
- the most recent EY Transparency Report;
- thought leadership and actions, especially in the areas of climate change, and value added; and
- compliance with relevant legislative, regulatory and professional requirements.

In addition to reflecting on its own experiences, including interactions with the external auditor throughout the year, the AC considered and discussed the results of management's internal survey relating to EY's performance over the financial year 2021, which reflected a broadly comparable performance to 2020 and the views and recommendations from management and the Chief Internal Auditor.

Taking into account the above, the AC is satisfied that EY has continued to provide a high-quality and effective audit in its sixth year as auditor and has maintained its independence and objectivity. As required under UK and US auditing standards, the AC received a letter from EY confirming its independence. As required by applicable regulations, EY also informed the AC in writing and discussed with the AC any significant relationships and matters that may reasonably be thought to affect its objectivity and independence.

In July 2021, the AC was informed by EY that non-audit services prohibited by the FRC's Ethical Standard were provided to a Shell subsidiary in Denmark in May 2021. The services involved the provision of XBRL tagging services for local statutory 2020 accounts, and were performed by EY Denmark personnel that are not part of the audit engagement team and represented less than two hours of work. EY did not charge any fees to Shell for the performed services. The Shell subsidiary in Denmark was subsequently disposed of in July 2021. Based on the facts presented and discussion with EY, the AC noted that the provision of such services did not create a mutual or conflicting interest between EY and Shell; place EY in a position of auditing its own work; result in EY acting as management or an employee of Shell; or place EY in a position of being an advocate for Shell. Accordingly, the AC determined that EY continued to be able to exercise objective and impartial judgment on all issues encompassed within the audit engagement. This breach of the FRC's Ethical Standard is reported by EY in its UK audit report issued pursuant to International Standards on Auditing (UK) and applicable law.

EXTERNAL AUDITOR
continued

During 2021, there was no review of EY's audits of Shell's Consolidated Financial Statements by the Audit Quality Review (AQR) team of the FRC.

Reappointment
The AC is responsible for considering whether there should be a rotation of the independent registered public accounting firm in order to ensure continuing auditor quality and/or independence, including consideration of the advisability and potential impact of conducting a tender process for the appointment of a different independent public accounting firm. The AC is also responsible for recommending to the Board whether it should ask the Company's shareholders to appoint, reappoint or remove the external auditor at the AGM.

At the AGM in May 2021, the shareholders approved a resolution to reappoint EY as external auditor until the conclusion of the next AGM. EY was first appointed at the AGM in May 2016 after a competitive tender process. This means that 2021 represents EY's sixth year as the Company's external auditor. Under UK legal requirements, the Company may retain EY as its external auditor for 20 years. For the 2021 financial year, the Company has complied with The Statutory Audit Services for Large Companies Market Investigation (Mandatory Use of Competitive Tender Processes and Audit Committee Responsibilities) Order 2014.

In its oversight of the external audit, the AC considered whether it would be appropriate to conduct an audit tender at this time. The AC took into account:
- its continued satisfaction with the quality and independence of EY's audit;
- any new external auditor would need a transition period to develop sufficient understanding of the business given Shell's size and complexity;
- frequent changes of external auditor would be inefficient and could lead to increased risk and the loss of cumulative knowledge;
- a change in auditor would be expected to have a significant impact on Shell, including on the Finance function; and
- any change in auditor should be scheduled to limit operational disruption.

The AC also considered the orderly rotation to Mr Gary Donald as the new audit partner for the 2021 audit and EY's leadership and activities in the area of climate change.

After due consideration the AC determined that it would not be appropriate to re-tender for the external audit at this time. The AC has recommended to the Board that at the 2022 AGM the Board should propose that EY be reappointed as the external auditor of the Company for the year ending December 31, 2022. The AC's recommendation is free from third-party influence and there are no contractual obligations that restrict the AC's ability to make such a recommendation.

The AC acknowledges the UK legal requirements relating to mandatory audit rotation (maximum 20-year engagement) and audit tendering under which the Company will be required to tender for the audit no later than the financial year 2026. The AC regularly reviews auditor performance and may decide to conduct the tender earlier than the financial year 2026 if it considers this to be in the interests of the Company's shareholders.

NON-AUDIT SERVICES
The AC maintains an auditor independence policy (AIP) in respect of the provision of services by the external auditor. The AC regularly reviews this policy for necessary changes in response to changes in related standards and regulatory requirements.

This policy is designed to safeguard auditor objectivity and independence. It includes rules on the provision of audit services, audit-related services and other non-audit services and stipulates which services require specific prior approval by the AC.

The policy also defines prohibited services that are not to be provided by the auditor because they represent a risk to the external auditor's independence. Prohibited services are any that relate to management decision-taking or any other service that could compromise auditor independence or be perceived to compromise auditor independence. These prohibited services include all services listed as prohibited in the UK and US auditor independence rules. For certain services that are not prohibited, because of the knowledge and experience of the external auditor and/or for reasons of confidentiality, it can be more efficient or prudent to engage the external auditor rather than another party. This is particularly the case with audit-related assurance services that are closely connected to the audit function where the external auditor has the benefit of knowledge gained from work already performed as part of the audit.

Under the AIP, the AC will only approve services to be carried out by the external auditor or its affiliates where such services do not present a conflict of interest risk in fact or in appearance. The AC reviews quarterly reports from management on the audit and non-audit services reported in accordance with the policy or for which specific prior approval from the AC is being sought. To the extent that the fee value of an additional audit service contract does not individually exceed $500,000, no prior approval of the AC is required. All non-audit services where the fee for an individual contract exceeds $100,000, including audit-related services, require individual prior approval by the AC. In each case where the audit or non-audit service contract does not exceed the relevant threshold, the matter is approved by management by delegated authority from the AC and is subsequently presented for approval by the AC at the next quarterly AC meeting. The AC is mindful of the overall proportion of fees for audit and non-audit services in determining whether to approve such services.

The scope of the non-audit services contracted with the external auditor in 2021 consisted mainly of interim reviews and other audit-related assurance services. The associated compensation for these audit-related services and other non-audit services amounted to 5% and 5%, respectively, of the external auditor's audit and audit-related remuneration.

FEES
After due consideration, the AC approved the auditor's remuneration, satisfying itself that the level of fees payable in respect of the audit and non-audit services provided was appropriate and that an effective, high-quality audit could be conducted for such fees.

Note 29 to the "Consolidated Financial Statements" on page 281 provides details of the auditor's remuneration.

DIRECTORS' REMUNERATION REPORT

"It has been a year of impressive financial performance and strong strategic progress."

Pay outcomes for Executive Directors
Annual bonus: €2,560,000 CEO and €1,600,000 CFO (129% of target).

Long-term Incentive Plan (LTIP): below-target vesting of 49% based on three-year performance.

Single-figure outcome: €7.4m (26% increase from 2020) for the CEO and €4.6m (24% increase from 2020) for the CFO.

THIS REPORT

This Directors' Remuneration Report for 2021 has been prepared in accordance with relevant UK corporate governance and legal requirements, in particular Schedule 8 of The Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008 (as amended). The Board has approved this report. This report consists of two further sections:

- the Annual Report on Remuneration (describing 2021 remuneration and the planned implementation of the Directors' Remuneration Policy in 2022); and
- the Directors' Remuneration Policy, which was approved by shareholders at the 2020 AGM.



Dear Shareholders,
It has been a year of impressive financial performance and strong strategic progress.

Shell delivered a very strong set of financial results in 2021, generating more than $45 billion of cash flow from operations (CFFO) including working capital and $40 billion of free cash flow (FCF). This reflects the strength of Shell's integrated business and the ongoing development of a strong and resilient portfolio. Together with robust operational performance in 2021, this enabled Shell to capitalise on dynamic energy markets and improved prices in the second half of the year. The strong financial performance in 2021 allowed Shell to reduce net debt, increase our quarterly dividend and start share buybacks again. The remaining $5.5 billion of proceeds from the divestment of our US Permian business that have been allocated for share buybacks will be distributed to shareholders in the first half of 2022.

Over the year, Shell also delivered a number of key strategic milestones to accelerate the transition to being a net-zero emissions business, including:

- launching of our updated strategy, Powering Progress in February 2021;
- being the first energy company to ask shareholders to cast an advisory vote on its energy transition strategy, achieving support of 88.74% votes cast in May 2021;
- implementing a simpler, more cost-effective organisation needed to support delivery of our strategic ambitions under Powering Progress, in August 2021;
- setting a new target, in October 2021, for Shell to halve the absolute emissions from our operations and the energy it uses to run them by 2030, compared with 2016 levels on a net basis;
- proposing to simplify the share structure and increase the speed and flexibility of capital and portfolio actions. In December 2021, 99.77% of shareholder votes cast were in support of amending the required Articles of Association of Shell plc (then named Royal Dutch Shell plc) to enable the changes. The alignment of Shell's tax residence with its country of incorporation took place in December 2021, including relocating the Chief Executive Officer (CEO) and Chief Financial Officer (CFO) to the UK. The corporate name change and implementation of a single line of shares, eliminating the complex A/B share structure, occurred in early 2022.

Among this success, however, we were also deeply saddened by a number of tragic deaths that occurred as the result of three separate incidents during the year. Six contractor colleagues working under Shell operational control were deliberately killed in an attack by gunmen in Nigeria. In Pakistan, a lorry driver died during a refuelling accident, and in Indonesia, a contractor died following a construction accident. Later in this letter, I will share the REMCO's assessment of these incidents and how we have reflected on them in determining the final pay outcomes.

I also reflect on REMCO's assessment of Shell's wider performance and its progress in adapting to the energy transition, when considering the pay outcomes for 2021 and the year ahead.

NEIL CARSON
Chair of the Remuneration Committee

2021 PERFORMANCE AND REMUNERATION DECISIONS

Annual bonus

Summary of scorecard outcome: the overall mathematical outcome of the annual bonus scorecard was above target, at 1.32. But after reflecting on safety performance, in particular the number of fatalities, the REMCO used downwards discretion to determine the final outcome for Executive Directors to be 1.29. Taking into account the impact of the fatalities on the formulaic outcome and the discretionary adjustment, the total reduction in bonus outcome as a result of the fatalities was equal to 10% of base salary.

This brings our 10-year average scorecard outcome to 1.03.

The complete scorecard with all targets, ranges and weightings is set out on page 174.

Financial delivery (35%): robust operational performance and a strong portfolio have led to very strong cash generation. CFFO (including working capital) of $45.1 billion exceeded our outstanding performance threshold of $34 billion, leading to a maximum outcome on this measure.

It is worth repeating that the REMCO has long had a policy of not adjusting remuneration measures to take account of changes in energy prices and currency fluctuations. This means Senior Management also experience the ups and downs of the macroeconomic environment that affect our business and shareholders. In engagements with our largest shareholders, many have appreciated the transparency that this brings.

Operational excellence (35%): Powering Progress emphasises operational excellence and the delivery of value over volume. In 2021, the REMCO updated the scorecard to reflect this by removing measures based on hydrocarbon production. The focus now is on ensuring Shell operates its assets efficiently and to plan, and that material projects are delivered on time and on budget. Performance was mixed across the segments. Downstream availability was better than target, as was delivery of projects against schedule. But Upstream and midstream availability was lower than plan, and aggregated project costs exceeded budget. Overall, the outcome was below target.

Progress in the energy transition (15%): Powering Progress sets out a strategy to accelerate our transition to net-zero emissions. We linked this to the scorecard in 2021 by focusing on our operational emissions. The outcome was broadly on target.

- On greenhouse gas (GHG) emissions intensity, performance has been mixed. Intensities from the Chemicals business were better than target, partly because of higher utilisation at Bukom and Deer Park. But shutdowns in the Gulf of Mexico from Hurricane Ida and operational difficulties in Nigeria led to a below-threshold result for the combined Upstream and Integrated Gas intensity measure. Refining intensities were also below target due to the impact of Hurricane Ida and the February freeze on our refineries in the USA.
- GHG abatement tracks the implementation of identified projects that will reduce absolute GHG emissions. Shell made excellent progress in 2021, with a score that was close to outstanding, reflecting the cumulative effect of a wide range of actions taken across the portfolio to reduce absolute emissions, including abatement projects in QGC Australia and Pearl GTL in Qatar.

Safety (15%): overall, the outcome on safety was slightly above target.

- Process safety continues to be measured through the number of Tier 1 and 2 operational safety incidents and was above target for 2021, meaning a better than expected safety performance was achieved.
- In 2021, Serious Injury and Fatality Frequency (SIF-F) was introduced as the measure of personal safety performance which focuses on the incidents with the most serious consequences. The outcome was consistent with our expectations based on the number of serious incidents experienced across our businesses in recent years, but not our aspirations.

REMCO REFLECTIONS ON SAFETY

Safety is Shell's number one priority. The Powering Progress strategy is underpinned by our focus on safety, and it is critical that our day-to-day operations run safely, and the well-being of all our people is ensured. As a result, the REMCO and the Safety, Environment and Sustainability Committee (SESCo) have carefully considered the fatalities which occurred in the year, paying attention to both the nature of the incidents and Shell's wider progress on safety.

Nigeria is a high-risk country, in which we review our larger contractors' safety plans, including those for moving personnel to sites in the Delta. These plans are then implemented by the contractors. At times, there have been up to around 4,500 escorted personnel movements per month for Shell companies in Nigeria. The number is significantly larger for our contractor movements. Existing safety protocols have been effective in supporting these movements. The 2021 incident in Nigeria was unprecedented. The attack on a routine personnel transport was perpetrated by a criminal group which operates for extortion. The criminal group's leader has been arrested and has admitted responsibility. The extreme violence of the attack has been shocking to Shell and the local community. A review is ongoing, which given the deteriorating security situation in Nigeria, may lead to some changes.

Sadly, two contractors also died following separate incidents at retail sites in Pakistan and in Indonesia. In Pakistan, a contractor colleague died after a fire at a dealer-operated retail site. Another contractor lost his life when a wall fell over during demolition work at a retail site in Indonesia.

In addition to reflecting on these tragedies, the REMCO also considered safety performance as a whole over the year. The REMCO noted that, in an industry where road safety continues to present one of the single most material risk areas, we passed 1 billion kilometres of road journeys without a recordable fatality in our operated assets. The REMCO also noted that in 2021, the ongoing transition of the Safety refresh programme reached full implementation, creating the bedrock for the changes aimed at eradicating fatalities and life-changing incidents from Shell's business. Our updated approach to safety is rooted in a consistent focus on human performance, and the way people, culture, equipment, work systems and processes all interact. People are key to completing complex tasks and to finding solutions to problems. To deliver the Safety refresh, Shell aims to apply a learner mindset, believing people can always improve, enhance their capabilities, learn from mistakes and successes, and speak up freely. The REMCO acknowledges the commitment and contributions of the Executive Directors in embracing a learner mindset and driving this cultural change across the organisation. The Safety refresh also included the introduction of the Serious Injury and Fatality Frequency (SIF-F) metric designed to ensure we focus on those incidents with the potential to cause most harm. This metric ensures a heavy weighting is given to fatalities in determining the scorecard outcome, in a manner that was not captured by Total Recordable Case Frequency (TRCF) metrics.

The REMCO carefully considered the fatalities in the context of Shell's overall safety performance in 2021. It took account of the impact the fatalities had on the formulaic outcome. Without the fatalities, the overall scorecard outcome would have been 1.37, not 1.32, reflecting the heavy emphasis that SIF-F rightly gives to serious incidents. The REMCO determined that the overall scorecard outcome should be further adjusted downwards to 1.29. The overall reduction in the bonus outcome for the CEO and CFO as a result of fatalities is equal to 10% of their base salary.

Vesting of the 2019 LTIP awards

Overall LTIP vesting outcome: Overall, the mathematical outcome of the LTIP was 49%. For the avoidance of doubt, no LTIP targets were adjusted as a result of the COVID-19 pandemic or any other reason.

CFFO (22.5%): In absolute terms, 2021 performance was very strong with CFFO at $45 billion, including working capital. The LTIP, though, does not consider the absolute value of CFFO. Instead, it looks at growth from a base year, in this case 2018, when Shell's CFFO performance was also exceptional with more than $50 billion generated. The LTIP compares the growth of Shell's CFFO with the increases in CFFO of the other energy majors (BP, Chevron, Exxon and TotalEnergies). On this basis, Shell ranked fifth, resulting in a nil vesting for this measure.

Total shareholder return (TSR) (22.5%): Over the performance period, Shell returned more than $43 billion to shareholders in the form of dividends and share buybacks. However, similarly to CFFO, TSR is measured on a relative basis, compared with the other energy majors, Shell ranked fourth, resulting in a nil vesting for this measure.

Return on average capital employed (ROACE) (22.5%): Shell's absolute 2021 ROACE for LTIP purposes was 7.8% (note ROACE for the LTIP calculation is based on disclosed net income and is not adjusted for the after tax interest expense and therefore differs from disclosed ROACE). Again performance is measured on a relative basis against the 2018 base year when Shell had ROACE (for LTIP purposes) of 8.3% and on growth Shell ranked fifth, resulting in a nil vesting.

FCF (22.5%): Performance is assessed on an absolute basis over the three-year performance period. Strong performance in 2021 has more than offset the impacts of the COVID-19 pandemic, with FCF of $87.5 billion generated over the three years, above the target of $82 billion. This resulted in a 137% vesting outcome on this measure.

Energy transition (10%): The vesting of the 2019 LTIP also marks the first time that we have vested an element under the LTIP energy transition performance condition.

Shell was the first major energy company, that we are aware of, to include such a comprehensive metric, which measures progress in transforming Shell's businesses for a lower-carbon future, within long-term pay frameworks. This is a broad metric that assesses performance against a range of strategic business developments, as well as measuring our ultimate success in reducing the net carbon intensity of all energy products sold.

The first set of metrics were focused on laying the foundations for Shell's future growth, building the customer base and developing the organisational capability to deliver against the key strategic ways of decarbonising Shell's business: growing a power business, developing lower-carbon energy products and developing emission sinks. The REMCO has been pleased with the tangible progress shown over the performance cycle, with management demonstrating that it can create a pipeline of new business opportunities and mature projects through to investment. This includes reaching new customers through our growing power business, with acquisitions like ERM in Australia, developing renewables projects such as CrossWind, and investment in ventures such as Enerkem Varennes, which will produce low-carbon fuels and renewable chemicals products from non-recyclable waste, and LanzaJet, which converts ethanol from waste materials into low-carbon jet fuel. While many of these projects are small in comparison to some of Shell's existing businesses, they lay the foundations for future growth.

The REMCO paid particular attention to the metric of net carbon intensity of all energy products sold. This provides a concrete marker of Shell's success in decarbonising, with Shell the only major energy producer which has sought to connect executive pay with an intensity reduction target based on the full Scope 1, 2 and 3 emissions from all energy products sold. The REMCO noted that the target for this had also been met with a reduction of 2.5% against the target range of 2-3%. The REMCO is pleased to see this target met over the performance period.

Taking everything into account, the REMCO determined that the final vesting outcome of the element of the 2019 LTIP weighted to the energy transition should vest at 180%.

Based on the above outcomes, the overall LTIP vesting outcome was 49%. This brings the ten-year average vesting outcome to 97%. This is broadly aligned with our target grant, although there have been a number of high and low-vesting outcomes over the last 10 years. The REMCO believes this illustrates the fundamental effectiveness of the LTIP and the close alignment between pay and performance the structure has provided over time.

Finalising the 2021 pay outcomes

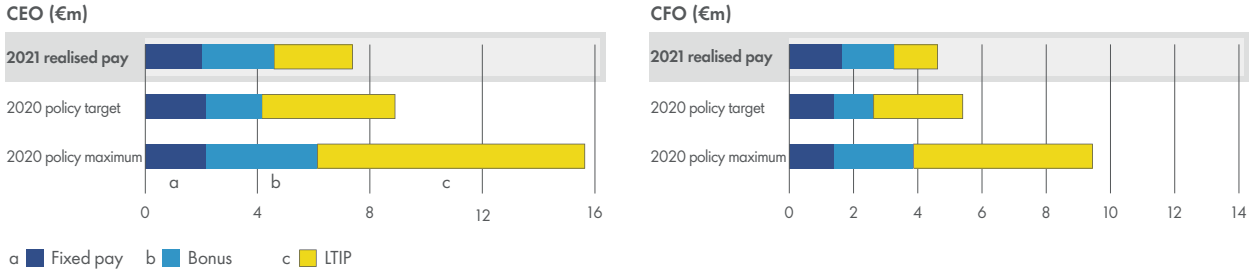
In finalising pay outcomes, the REMCO considered the wider performance of Shell during 2021 and the LTIP performance period. It paid particular attention to:

- safety performance, in particular the eight fatalities within Shell's operational control which occurred in three incidents and the downward adjustment to the annual bonus scorecard resulting in an overall bonus reduction equivalent to 10% of base salary of the Executive Directors;
- the strong financial and operational performance in 2021, with more than $45 billion of CFFO, including working capital, and $40 billion of FCF generated in the year;
- the work to accelerate Shell's progress in the energy transition, including setting out our Powering Progress strategy, reshaping the organisation, simplifying the share structure, aligning Shell's tax residence with its country of incorporation and setting targets for reducing absolute emissions;
- the shareholder experience, including the decline and extent of recovery in the share price over the LTIP performance period, as well as shareholder feedback provided during my engagements with major shareholders during March and April 2021;
- the reduction in net debt, which has supported the restart of share buybacks in 2021, and the progressive dividend policy;
- the employee experience, where the REMCO noted that the Group scorecard for all employees was set at 1.50 following an upwards management adjustment in recognition and appreciation of the extraordinary contributions made by our employees over a challenging period, and the Performance Share Plan, used to make discretionary share awards below senior executive level, which vested at 67%;
- the year-on-year comparison between single figure outcomes in 2020 and 2021, noting that the REMCO had decided there would be no 2020 annual bonuses for Executive Directors and Senior Management and year-on-year increases are primarily as a result of a 2021 bonus being awarded; and
- the ten-year average outcomes of the annual bonus scorecard (1.0) and LTIP (97%), which demonstrate the effectiveness of the current reward structures in aligning pay outcomes with targets over the longer term.

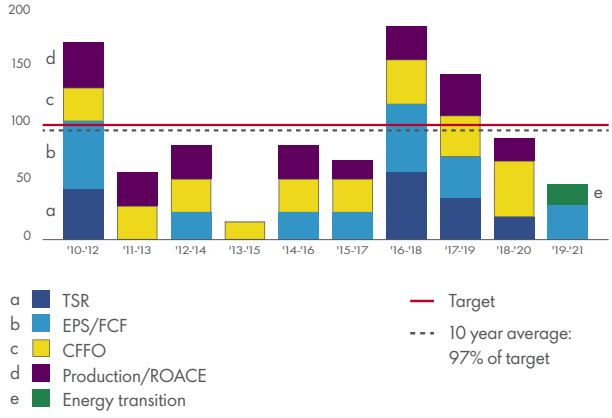
This resulted in a single-figure outcome of €7.4m for the CEO, an increase of 26% from 2020. The CFO's single-figure outcome was €4.6m, a 24% increase from 2020. The REMCO was satisfied that the remuneration policies had operated as intended, and these outcomes were appropriate in the context of Company performance and the target pay opportunity under the shareholder-approved Remuneration Policy.

2021 pay outcomes summary

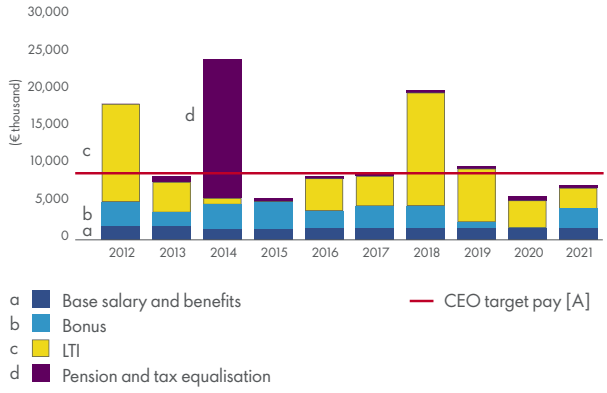
2021 pay compared with policy [A]



ten-year LTIP vesting



ten-year CEO single figure outcomes



[A] Policy target and maximum based on the scenarios as published on page 194.

UPDATING REMUNERATION IN LINE WITH OUR DEVELOPING STRATEGY

Relocation of the CEO and CFO to London

The CEO and CFO relocated to the UK, effective from December 31, 2021. Their transition to the UK is being supported in line with our existing shareholder-approved Directors' Remuneration Policy, including the Group's international mobility policies:

- There is no change to the target pay opportunity as a percentage of base salary. Base salaries have been converted from euros to pounds sterling using a 12-month average exchange rate.
- Target annual bonus and long-term incentive awards are unchanged.
- The CEO has moved from his Dutch pension plan to the standard UK Shell pension. This provides a contribution level of up to 20% of base salary, which is the same as that available to the general Shell employee population in the UK. This is less than the benefits provided under the CEO's Dutch arrangements.
- The CFO will remain within her existing US pension arrangements. The REMCO manages this membership prudently as the annual bonus continues to be not pensionable for the CFO while it is for other US employees.
- The CEO and CFO will be responsible for their own taxes in the UK, except for some limited benefits such as relocation.
- In line with our Group-wide International Mobility policies, the CEO and CFO will receive support with temporary commuting costs such as travel and accommodation for the first six months, while their families remain in the Netherlands as their children complete their respective school years. The CEO will receive relocation benefits for his family's move to the UK in due course.
- The CEO will receive a gross housing allowance for a time-limited period of 24 months from when his family relocates. This is a reduced benefit from Shell's usual arrangements as Shell's International Mobility policy would normally provide for housing throughout the overseas position where the employee is asked to move at the Company's request.
- The approach the REMCO has taken is within the confines and provisions of the existing approved remuneration policy and the REMCO has taken a prudent approach in applying elements of Shell's International Mobility policies.

Appointment of new CFO

On March 1, 2022 Shell announced that Sinead Gorman will replace Jessica Uhl as CFO with effect from April 1, 2022. Mrs Gorman will be based in London and will receive an annual base salary of £900,000 from appointment as CFO. There will be no change to the current target bonus and LTIP awards for the CFO of 120% (annual bonus) and 270% (LTIP). Mrs Gorman's pension provision is aligned with the standard UK pension arrangement for new employees in the UK, with an employer contribution of 20% which she has elected to receive as a cash allowance. A further announcement regarding the terms of Mrs Uhl's departure will be made in due course.

Other changes to 2022 remuneration

To ensure that Shell's remuneration structures continue to be closely aligned with strategy, we will make the following changes to the 2022 annual bonus scorecard:

- The progress in the energy transition measure has to date focused on managing and reducing our operational emissions. However, succeeding in the energy transition requires us to change what we sell. To date, this has been reflected in pay through the LTIP's energy transition performance condition. Starting in 2022, we will widen the scope of the progress in the energy transition measure on the annual bonus scorecard, to be based on three key themes:
  - Selling lower-carbon products – as an energy supplier, we help customers to reduce their emissions by supplying lower-carbon products. We will measure our success at this according to the earnings share of our Marketing business from low- and no-carbon products.
  - Reducing our emissions – as an energy user, our target is to achieve a 50% reduction by 2030; and this measure will be based on reducing our Scope 1 and 2 operational emissions.
  - Partnering to decarbonise – as a partner, we work with our customers to help them reduce their emissions. In 2022, we will measure success in this area in terms of our progress in rolling out our electric vehicle charging network.
- Powering Progress emphasises the importance of building on our strong customer relationships to help transform Shell in the energy transition. To emphasise the importance of becoming increasingly customer-led, we will introduce a new customer excellence measure for 2022 under operational excellence. This will be based on our customer satisfaction scores, and the extent to which people prefer Shell over competitor brands, measured via brand preference scores. The customer excellence measure will combine elements of business-to-business and business-to-customer performance.

LOOKING AHEAD

The year ahead promises to be another busy one, as the REMCO continues to make changes that will help Shell succeed in the energy transition and finalises proposals for the 2023 Directors' Remuneration Policy, ahead of a vote at the 2023 AGM. I look forward to ongoing dialogue with our shareholders in the coming months.

NEIL CARSON
Chair of the Remuneration Committee
March 9, 2022

ANNUAL REPORT ON REMUNERATION

The Annual Report on Remuneration sets out:
the REMCO's responsibilities and activities, page 171;
- remuneration at a glance, page 172;
- Directors' remuneration for 2021, page 173; and
- the statement of the planned implementation of policy in 2022, page 186.

The base currency in this Annual Report on Remuneration is the euro, as this is the currency of the base salary of the Executive Directors to December 30, 2021. From December 31, 2021, base salaries and Non-executive Director fees are given in British pound sterling (GBP). Where amounts are shown in other currencies, an average exchange rate for the relevant year is used, unless a specific date is stated, in which case the average exchange rate for the specific date is used.

REMUNERATION COMMITTEE


Neil Carson


Euleen Goh


Catherine Hughes


Gerrit Zalm

Biographies are given on pages 121-127; and the REMCO meeting attendance is set out below:

Committee Member	Member since	Maximum possible meetings	Number of meetings attended	% of meetings attended
Neil Carson (Chair)	June 1, 2019	8	8	100%
Euleen Goh	May 20, 2020	8	8	100%
Catherine Hughes	July 26, 2017	8	8	100%
Gerrit Zalm [A]	May 21, 2014	8	7	88%

[A] Mr Zalm was unable to attend one meeting due to the short notice with which it had been scheduled.

The REMCO's key responsibilities include determining:

	Senior Management		
	Executive Directors	Executive Committee	Company Secretary and EVP Taxation and Controller
Performance framework	✓	✗	✗
Remuneration policy	✓	✓	✗
Actual remuneration and benefits	✓	✓	✓
Annual bonus and long-term incentive measures and targets	✓	✓	✓

The REMCO is also responsible for determining the Chair of the Board's remuneration. The REMCO monitors the level and structure of remuneration for senior executives below Senior Management and makes recommendations if appropriate to ensure consistency and alignment with Shell's remuneration objectives. When setting the policy for Executive Director remuneration, the REMCO reviews and considers workforce remuneration and related policies, and how pay and benefits align with culture.

In exercising its responsibilities, the REMCO takes into account a variety of stakeholder considerations.

The REMCO operates within its Terms of Reference, which are reviewed annually. They were last updated on December 7, 2021, and are available on www.shell.com.

Advice from within Shell was provided by:
- Ben van Beurden, Chief Executive Officer (CEO);
- Ronan Cassidy, Chief Human Resources and Corporate Officer and Secretary to the REMCO; and
- Stephanie Boyde, Executive Vice President Performance and Reward.

The Chair of the Board was consulted on remuneration proposals affecting the CEO. The CEO was consulted on proposals relating to the Chief Financial Officer (CFO) and Senior Management.

The REMCO met eight times in 2021 and its activities included:
- determining vesting of the 2018 Long-term Incentive Plan (LTIP) award for Senior Management;
- determining 2021 target bonuses and 2021 LTIP awards for Senior Management;
- approving the 2020 Directors' Remuneration Report;
- setting 2021 annual bonus and LTIP performance measures and targets;
- considering matters relating to the updated strategy and the transition of our business to net-zero emissions, and the potential implications for the 2022 annual bonus and LTIP performance measures and targets;
- setting exit and appointment remuneration for changes in the Executive Committee;
- setting terms for the relocation, and pay arrangements of the Executive Directors from the Hague to London; and
- monitoring external developments and assessing their impact on the Directors' Remuneration Policy.

After a competitive tender process, in 2021 Deloitte was chosen to provide external advice on Shell's remuneration structures and developments in market practice around remuneration. The choice was based on ability to assess the risk profile of policies, knowledge of investors' expectations and familiarity with international market practices. Deloitte is a member of the Remuneration Consultants Group and operates according to the group's code of conduct when advising clients. REMCO is satisfied that the advice provided was objective and independent. The total fees in relation to the advice were £55,000 (excluding value-added tax). Deloitte provided other consultancy and accountancy services to Shell during the year, but the REMCO is satisfied that this did not compromise the independence of the advice on executive remuneration. The REMCO also reviewed benchmarking data and analysis prepared by Shell's internal HR function on market developments in executive pay.

PRINCIPLES

The principles that underpin the REMCO's approach to executive remuneration are set out on page 189.

The REMCO considered the provisions of the UK Corporate Governance Code when deciding 2021 pay outcomes. It also sought to reflect the principles of clarity, simplicity, risk management, predictability, proportionality and alignment with culture.

Shell has a consistent global reward and performance philosophy that sets clear expectations of employees. The annual bonus scorecard and LTIP are designed to ensure that remuneration is clearly aligned with Shell's operating plan and strategic ambitions. The same measures apply to Executive Directors and Senior Management and to a significantly broader employee base. This provides alignment throughout the organisation with Shell's culture and strategy. The annual operating plan translates into targets on the annual bonus scorecard, and a quarterly update on performance against scorecard targets is provided to employees. The LTIP is largely based on outperforming the competition. Employees receive regular updates on Shell's performance against competitors. To assist in the mitigation of reputational risk and to ensure proportionality, the REMCO will use discretion to ensure the highest pay outcomes are delivered only for outstanding performance.

ANNUAL REPORT ON REMUNERATION continued

REMUNERATION AT A GLANCE

2021

FIXED PAY AND SHAREHOLDING

Base salary

€1,588,000 Ben van Beurden (CEO)

€1,035,000 Jessica Uhl (CFO)

Pension

Executive Directors participate in the same home-country pension arrangements as other employees

Benefits

Typically include car allowance, transport between home and office, and medical insurance

Shareholding

Target levels, % of base salary at December 31, 2021

700% CEO

500% CFO

Actual levels, % of base salary at December 31, 2021

972% CEO

555% CFO

ANNUAL BONUS

2021 annual bonus

€2,560,000 CEO

€1,600,000 CFO

2021 bonus scorecard outcome

Mathematical outcome

1.32

Given the eight fatalities in 2021, this was reduced to:

1.29

No individual performance factor used in bonus calculation

Bonus Delivery

50% delivered in cash | **50%** delivered in shares

Shares are subject to a three-year holding period which extends beyond an Executive Director's tenure

LONG-TERM INCENTIVE PLAN

2019 – 2021 LTIP vesting outcome

€2,812,302 CEO

$1,539,732 CFO

Vesting outcome

Measures	Outcome	Vesting
TSR	1 2 3 **4** 5	0%
CFFO	1 2 3 4 **5**	0%
ROACE	1 2 3 4 **5**	0%
FCF		31%
Energy transition		18%
		49% (out of a 200% maximum)

Shares are subject to a three-year holding period which extends beyond an Executive Director's tenure

2022

FIXED PAY AND SHAREHOLDING

Base salary

£1,420,000 Ben van Beurden

↑ **3.5%**

£921,000 Jessica Uhl

↑ **3%**

£900,000 Sinead Gorman

Pension

Following his relocation to the UK, the CEO's pension was aligned to the standard UK pension offered to all new employees with an employer contribution of 20%. Sinead Gorman was offered participation in the same arrangement. Both have elected to receive this as a cash allowance. There was no change to Jessica Uhl's pension provision from 2021.

Benefits

Following relocation to the UK, the CEO and CFO will receive support with temporary commuting costs such as travel and accommodation for the first six months while their families complete the school year. The CEO will also receive relocation support for his family's move to the UK in due course, and a housing allowance for a time-limited period of 24 months.

Shareholding

Target levels, % of base salary 2021

700% CEO

500% CFO

Actual levels, % of base salary March 4, 2022

904% CEO

693% CFO

ANNUAL BONUS

Target % of base salary

Target

125% CEO

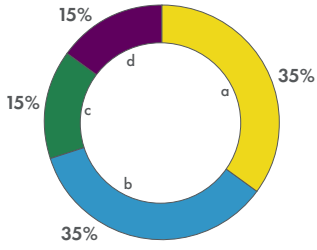
120% CFO

Maximum

250% CEO

240% CFO

Scorecard architecture



a **Cash flow from operations** (weighted 35%)

b **Operational excellence** (Asset management excellence 15%, project delivery excellence 10%, customer excellence 10%)

c **Progress in the energy transition** (Selling no/low-carbon products 5%, operational emissions reduction 5%, partnering to decarbonise 5%)

d **Safety** (SIF-F 7.5%, Tier 1 and 2 process safety 7.5%)

LONG-TERM INCENTIVE PLAN

Target awards % of base salary

Target – policy

300% CEO

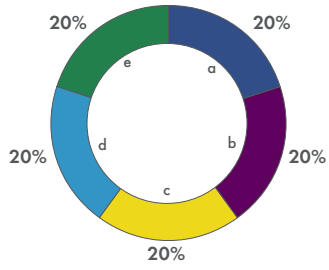
270% CFO

Maximum

600% CEO

540% CFO

Performance conditions



a **TSR**

b **ROACE**

c **CFFO**

d **FCF**

e **Energy transition**

DIRECTORS' REMUNERATION FOR 2021

Single total figure of remuneration for Non-executive Directors (audited)

€ thousand

	Fees		Taxable benefits [A]		Total	
	2021	2020	**2021**	2020	**2021**	2020
Dick Boer [B]	**167**	98	–	–	**167**	98
Neil Carson	**192**	184	–	–	**192**	184
Ann Godbehere	**212**	206	**1**	–	**213**	206
Euleen Goh	**224**	201	**1**	–	**225**	201
Charles O. Holliday [C]	**324**	850	**61**	69	**385**	919
Catherine J. Hughes	**185**	180	**1**	–	**186**	180
Martina Hund-Mejean [D]	**165**	98	**1**	–	**166**	98
Jane Holl Lute [E]	**99**	–	**1**	–	**100**	–
Sir Andrew Mackenzie [F]	**582**	37	**17**	–	**599**	37
Abraham Schot [G]	**152**	38	–	–	**152**	38
Sir Nigel Sheinwald [H]	**69**	184	–	–	**69**	184
Gerrit Zalm	**177**	177	–	–	**177**	177

[A] UK regulations require the inclusion of benefits where these would be taxable in the UK, on the assumption that Directors are tax residents in the UK. On this premise, the taxable benefits include the cost of a Non-executive Director's occasional business-required partner travel. Shell also pays for travel between home and the head office, where Board and committee meetings are typically held, and related hotel and subsistence costs. For consistency, business expenses for travel between home and the head office are not reported as taxable benefits because for most Non-executive Directors this is international travel and hence would not be taxable in the UK.
[B] Appointed as a Director with effect from May 20, 2020.
[C] Stepped down as a Director with effect from May 18, 2021. Benefits include the use of a Shell-provided apartment while in The Hague (2021: €27,848, 2020: €68,942).
[D] Appointed as a Director with effect from May 20, 2020.
[E] Appointed as a Director with effect from May 19, 2021.
[F] Appointed as a Director with effect from October 1, 2020, and as Chair with effect from May 18, 2021.
[G] Appointed as a Director with effect from October 1, 2020.
[H] Stepped down as a Director with effect from May 18, 2021.

Single total figure of remuneration for Executive Directors (audited)

€ thousand

	Ben van Beurden		Jessica Uhl	
	2021	2020	**2021**	2020
Salaries [A]	**1,588**	1,588	**1,035**	1,035
Taxable benefits [B]	**17**	16	**323**	418
Pension [C]	**402**	540	**281**	288
Total fixed remuneration	**2,007**	2,144	**1,639**	1,741
Annual bonus [D]	**2,560**	–	**1,600**	–
LTIP [E]	**2,812**	3,698	**1,388**	1,993
Total variable remuneration	**5,372**	3,698	**2,988**	1,993
Total remuneration	**7,380**	5,841	**4,627**	3,734
in dollars	**8,728**	6,671	**5,473**	4,264
in sterling	**6,344**	5,197	**3,978**	3,322

[A] As disclosed in the 2020 Directors' Remuneration Report, the REMCO maintained Ben van Beurden's base salary for 2021 at €1,588,000 (+0.0% compared with 2020), and Jessica Uhl's base salary at €1,035,000 (+0.0% compared with 2020).
[B] For Ben van Beurden these include motoring allowance (€14,400) and transport between home and the office (€2,494). Jessica Uhl's benefits include tax equalisation (€292,334), medical insurance and risk benefits (€17,047), transport between home and the office (€10,051) and international mobility benefits (€3,391). Jessica Uhl's benefits include tax equalisation of pension contributions to foreign pension plan(s), when they are taxable above a certain pensionable salary threshold or once a double tax treaty exemption ceases, under Dutch law. Tax equalisation is applied for the loss of pension relief for members of a foreign pension plan(s) in their host country. Jessica Uhl's benefits also include tax equalisation of employer contributions to benefits and certain US social taxes that are taxable in the Netherlands.
[C] For Ben van Beurden, the amount reported for pension consists of a net pay-defined contribution amount of €402,311. The amount to be reported for his defined benefit pension accrual is 0 calculated in accordance with UK reporting requirements. For Jessica Uhl, the amount reported for pension consists of a defined contribution amount of €99,816 and a defined benefit pension accrual €181,363.
[D] The full value of the bonus, comprising both the 50% delivered in cash and 50% bonus delivered in shares. For 2021, the market price of shares on February 21, 2022 for Amsterdam listed shares (€23.34) and on February 24, 2022 for London listed shares (£19.528), was used to determine the number of shares delivered, resulting in 29,677 ordinary shares for Ben van Beurden and 18,551 ordinary shares for Jessica Uhl, net of tax. This was split between the Netherlands and UK due to the relocation of the Directors on December 31, 2021.
[E] Remuneration for performance periods of more than one year, comprising the value of released LTIP awards. The amounts reported for 2021 relate to the 2019 LTIP award, which vested on March 3, 2022, at the market price of €24.79 and $52.85 for ordinary shares and ADSs respectively. The value in respect of the LTIP is calculated as the product of: the number of shares of the original award multiplied by the vesting percentage; plus accrued dividend shares; and the market price of ordinary shares or ADSs at the vesting date. The market price of ADSs is converted into euros using the exchange rate on the respective date. Share price depreciation accounted for -€229,832 for Ben van Beurden and -$244,395 for Jessica Uhl.

ANNUAL REPORT ON REMUNERATION continued

Notes to the table: Single total figure of remuneration for Executive Directors (audited)

Annual bonus

As disclosed on pages 190-191, the annual bonus is intended to reward delivery of short-term operational targets.

All targets are derived from Shell's annual operating plan.

Determination of the 2021 annual bonus

The table below summarises the 2021 annual bonus scorecard measures including their weightings, targets and outcomes. The mathematical scorecard outcome for 2021 was 1.32. This was adjusted downwards by the REMCO to reflect the number of fatalities in the year to 1.29. Please refer to pages 166-167 for a commentary on the scorecard outcome.

2021 annual bonus scorecard measures and weightings

Performance Measures	Weighting	Unit	Threshold	Target	Outstanding	Outcome	Score
Financial delivery 35%	**Cash flow from operations [A]** 35%	$ – bn	22	**28**	34	45	**2.00**
Operational excellence 35%	**Asset management excellence [B]** 25%	Availability – %	**See note B**				**0.77**
	Project delivery excellence [C] 10%	Projects delivered on schedule and budget – %	30/110	**65/103**	100/96	87/104	**1.24**
Progress in the energy transition 15%	**Greenhouse gas emissions intensity [D]** 10%	Tonne CO_2e intensity	**See note D**				**0.48**
	Greenhouse gas abatement 5%	Thousand Tonne CO_2e	168	**224**	280	279	**1.98**
Safety 15%	**Personal safety** 7.5%	Serious Injury & Fatality Frequency (SIF-F) cases per 100 million working hours	9.7	**6.9**	4.1	6.9	**1.00**
	Process safety 7.5%	Number of events	130	**105**	80	102	**1.12**
						Mathematical performance outcome	1.32
						Adjusted outcome	**1.29**

[A] Including working capital adjustments.
[B] Upstream controllable availability: Target: 88.1% (Threshold 86.1%, Outstanding 90.1%), midstream availability: 89.2% (87.2%/91.2%), Downstream (Refining and Chemicals) availability: 95.2% (94.2%/96.2%). Full-year outcomes were 87.8%, 87.3% and 95.6% respectively. Performance assessment is equally weighted between Upstream, midstream and Downstream availability.
[C] Performance assessment is equally weighted between project schedule and budget.
[D] Upstream/midstream (Tonne CO_2 equivalent per Tonne of hydrocarbon production available for sale): Target 0.152 (0.160/0.144); Refining GHG (Tonne CO_2 equivalent per Solomon's Utilised Equivalent Distillation Capacity): Target 1.03 (1.08/0.98); Chemicals (tonne CO_2 equivalent per tonne of steam cracker high-value chemicals production): Target 0.97 (1.07/0.87). Full-year outcomes were: 0.172, 1.05 and 0.95 respectively. Performance assessment is split 4% Upstream/midstream, 4% Refining and 2% Chemicals.

Accordingly, the REMCO decided the final bonus outcome for the CEO should be €2,560,000, which is 129% of target and 64% of maximum. The REMCO decided the final bonus outcome for the CFO should be €1,600,000, which is 129% of target and 64% of maximum.

2021 bonus outcome calculation

Ben van Beurden

Target bonus: €1,588,000 (base salary) x 125% = **€1,985,000** × 2021 scorecard result 1.29 = **€2,560,000** [A]

Jessica Uhl

Target bonus: €1,035,000 (base salary) x 120% = **€1,242,000** × 2021 scorecard result 1.29 = **€1,600,000** [A]

[A] Rounded down to the nearest €5,000. Half was delivered in shares subject to a three-year holding period which extends beyond the Executive Director's tenure.

LTIP Vesting

In 2019, Ben van Beurden was granted a conditional LTIP award of 340% (maximum 680%) of base salary and Jessica Uhl an award of 270% (maximum 540%), excluding share price movement and dividends.

In making the vesting decision, the REMCO considered Shell's performance over the three-year vesting period. On the relative measures, Shell ranked fourth on total shareholder return (TSR), and fifth on cash flow from operations (CFFO) and return on average capital employed (ROACE), leading to a nil vesting outcome on each of the relative measures. On the absolute measures, Shell exceeded the free cash flow (FCF) target of $82 billion, generating $87.5 billion over the performance period, and substantively met all of the four energy transition performance targets. (See below for more details.)

The REMCO also noted the impact of the decline in share price between award and vesting on the overall outcome. The REMCO further reflected on the overall single outcome for the CEO. The REMCO decided that the outcome was consistent with the target opportunity and intended operation of the plan under the remuneration policy and no adjustment to the vesting outcomes was required.

Accordingly, the REMCO decided that the LTIP should vest at 49% without the use of discretion. This is illustrated below.

See page 168 for more detail.

2019 LTIP vesting outcomes – performance measures

CFFO **0%** + TSR **0%** + ROACE **0%** + FCF **31%** + Energy transition **18%** + Total formulaic vesting outcome **49%**

Performance Measures		Weighting	Threshold performance	Maximum performance	Outcome (out of the maximum 200%)
Relative Performance ranked against the other energy majors: BP, Chevron, ExxonMobil and TotalEnergies	CFFO	22.5%	Third	First	Fifth 0%
	TSR	22.5%	Third	First	Fourth 0%
	ROACE	22.5%	Third	First	Fifth 0%
Absolute Performance assessed against internal financial and strategic targets	FCF	22.5%	$73bn	$97bn	$87.5bn 137%
	Energy transition	10%	1/4 target areas	4/4 target areas	180%

Formulaic vesting outcome **49%**

The REMCO reviewed Shell's performance over the vesting period, considering financial and safety performance, whether there had been any breaches of ethics and compliance standards or other events that might damage Shell's reputation, and individual performance. The REMCO decided that the LTIP outcome was a fair reflection of performance and should vest without discretionary adjustment.

Final vesting outcome **49%**

Vesting of the energy transition performance condition

The energy transition condition supports delivery of Shell's net carbon intensity (NCI) target (measured by Shell's Net Carbon Footprint (NCF) methodology). This is a broad metric which consists of a mix of strategic measures that set the foundations for Shell achieving our longer-term ambitions in the energy transition, as well as Shell's success in reducing the NCI of all energy products sold. The outcome was intended to be determined holistically by the REMCO, after taking advice from the Safety, Environment and Sustainability Committee (SESCo), taking account of performance against quantifiable targets but also with regard to Shell's wider progress in the energy transition beyond the defined measures.

The metrics for the first LTIP cycle (2019-2021) were focused on laying the foundations for Shell's future growth, building the customer base and developing the organisational capability to deliver against the key strategic ways of decarbonising Shell's business: growing a power business, developing lower-carbon energy products and developing emission sinks.

Build a material Power business: The first cycle of the LTIP was orientated toward creating the foundations on which a material power business can be built: entering new markets to access customers, and developing new commercial pathways by creating a funnel of renewable power capacity options and then converting those options to realised investments. The REMCO considered that this target had substantively being met. Noting the movement into new markets for direct power sales to end customers through acquisitions such as ERM in Australia (now trading as Shell Energy), and the expansion of the North American renewables power business with the acquisition of Inspire. Strong progress has also been made on renewables, with a funnel of installed renewable capacity and pipeline of options well ahead of what was expected in 2019 following the acquisition of solar and energy storage developer, Savion. Demonstrable progress was made on converting those options into the renewable energy projects that a lower-carbon energy future will require, for example with the CrossWinds joint venture in the Netherlands.

Advanced biofuels technology: Biofuels are expected to play an important role in energy transition, providing a key decarbonisation lever for sectors that will continue to need to use liquid fuels. This element of the LTIP measure reflects our strategy, which is to prove multiple technology platforms that can be subsequently replicated at pace, with performance assessed based on Shell developing or taking an equity position in commercial scale biofuels projects. The initial target was focussed on taking the first steps to implement this strategy, and the REMCO considered this had been met in full through Enerkem Varennes, a biofuels plant in Québec, Canada, that will produce low-carbon fuel and chemicals from non-recyclable waste, and LanzaJet, which will produce jet fuel from ethanol from a plant in Georgia in the US.

Developing emissions sinks: The development of systems that capture and absorb carbon are required as part of the global response to climate change. The target for the first LTIP cycle was based on setting the foundations to develop future commercial value chains and REMCO considered this element of the LTIP measure had been met in full. This was through the Northern Lights project in Norway, with the REMCO noting that this project provided the opportunity to build the commercial knowledge and organisational capacity for future carbon capture projects. The REMCO also took account of the significant progress made on investment in the nature based solutions (NBS), which will make a big contribution to Shell reaching net-zero emissions, with nine investments in NBS projects that are verified by recognised carbon credit standards over the performance period.

Net carbon intensity: Finally, the REMCO paid particular attention to the outcome on the metric based on the NCI reduction. This a comprehensive metric covering the Scope 1, 2 and 3 emissions from all energy products sold by Shell and provides a concrete marker of Shell's success in decarbonising. The REMCO believes that Shell remains the only major energy company to tie executive pay to a target for reducing the Scope 1, 2 and 3 emissions intensity from the sale of all energy products. The outcome of this metric is a reduction of 2.5% against a target range of 2-3%. This target has evolved over time to reflect the decarbonisation actions necessary to meet our longer-term NCI targets (NCI reduction targets for later LTIP cycles are 2020-2022: 3-4%, 2021-2023: 6-8%, 2022-2024 9-12%, compared to the 2016 base year).

Further detail is available on page 94.

The REMCO considered the alignment to the financial statements and the enhancement of the quality of our emissions data when making their decision.

After taking advice from the SESCo REMCO decided the energy transition performance condition should vest at 180%.

The overall vesting outcome, including an illustration of the impact of share price movement and accrued dividends, is set out below. The CEO and CFO's vested awards are subject to a further three-year holding period which extends beyond their tenure as Executive Director.

2019 LTIP vesting outcome

CEO

Vesting outcome: [A]		**Change in share price:** [B]		**Accrued dividends:** [C]		**Total LTIP Vesting:** [C][D]
194,625 x 49% = 95,366 Ordinary shares **€2,593,955**	+	95,366 x -€2.41 **-€229,832**	+	18,079 Ordinary shares **€448,178**	=	113,445 Ordinary shares **€2,812,302**

CFO

Vesting outcome: [A]		**Change in share price:** [B]		**Accrued dividends:** [C]		**Total LTIP Vesting:** [C][D]
49,927 x 49% = 24,464 ADS **$1,537,318**	+	24,464 x -$9.99 **-$244,395**	+	4,670 ADS **$246,810**	=	29,134 ADS **$1,539,732**

[A] Based on the share price at award of €27.20 for CEO and $62.84 for CFO.
[B] Calculated based on the opening share price March 3, 2022 minus the share price at the date of award for CEO €24.79 - €27.20 = -€2.41 and for CFO: $52.85 – $62.84 = -$9.99.
[C] Based on the opening share price on March 3, 2022 of €24.79 for CEO and $52.85 for CFO.
[D] Vested shares are subject to a three-year holding period, which extends beyond tenure as an Executive Director.

In determining the final pay outcomes, the REMCO also considered the personal performance of the Executive Directors.

Personal performance 2019 – 2021

It has been a challenging period for business as the world has grappled with the challenges of the COVID-19 pandemic and, for the energy sector in particular, as society accelerates towards a future of cleaner energy. Responding to these challenges has demanded strong leadership which both the CEO and CFO have provided. The REMCO acknowledges the exceptional personal contributions made by both the CEO and CFO in delivering a very strong set of financial results, coupled with a number of key strategic and organisational developments in 2021. This includes an updated strategy, Powering Progress, the first shareholder advisory vote on Shell's Energy Transition Report and the implementation of a new organisational structure (Project Reshape). This culminated with the simplification, an important step, which the Board believes will strengthen Shell's competitiveness and accelerate both shareholder distributions and delivery of its strategy to become a net-zero emissions energy business.

Ben van Beurden	Jessica Uhl
Against a backdrop of transformational strategic and organisational change, the strength of Shell integrated business, quality of portfolio and operational delivery allowed Shell to capitalise on improved prices to deliver adjusted earnings of $19.3bn and generated an outstanding $45.1bn of CFFO (including working capital). The work has also continued to reshape Shell's portfolio with the delivery of divestment proceeds of $15.1bn in 2021, far beyond target. These operating cash flows and divestment proceeds significantly contributed to reducing net debt to $52.6 billion at the end 2021, down from $75.4 billion at the end of 2020. This strong financial performance has enabled Shell to deliver on our commitment to increase shareholder distributions in keeping with our successful net debt reduction. Starting from Q2 2021, we rebased our quarterly dividend to 24 US cents per share and started share buybacks. The REMCO acknowledges the fundamental role the CEO's strategic and operational leadership has played in enabling these financial outcomes and delivery of shareholder returns. Tackling climate change is an urgent challenge. This is why Shell has set a target to become a net-zero emissions energy business by 2050, in step with society and our customers. The CEO has led the development of Shell's updated strategy, Powering Progress, which sets out a comprehensive strategy on how Shell intends to decarbonise energy customers while running legacy businesses for value rather than volume, integrating business and investment decisions with Shell's longer-term ambitions. This was supported by the implementation of the new organisation (Project Reshape) necessary to support this updated strategy, which was completed in August 2021 without operational disruption. Externally, the CEO has played a leading role in the energy transition debate through such initiatives as the first joint statement with institutional shareholders, encouraging other companies to adopt the net carbon intensity methodology. He has been instrumental in galvanising coalitions to start action on sectoral decarbonisation. His personal role, for example in the Aviation Clean Skies Initiative, is recognised by both customers and external stakeholders. His interventions have helped in shifting the climate agenda towards the practical measures that will be needed for creating sustained demand for lower-carbon products. The refreshed safety programme was rolled out and a new personal safety measure designed to focus attention on the most serious incidents was introduced. To deliver the safety refresh Shell aims to apply a learner mindset, believing people can always improve, enhance their capabilities, learn from mistakes and successes, and speak up freely. The REMCO recognise the work across the leadership team at Shell, from the CEO down, in embracing a learner mindset and driving this across the organisation.	The REMCO recognises the leadership of the CFO in delivering a number of key enterprise initiatives over the course of 2021. Notably this included the successful delivery of the simplification of Shell plc. This was a complex and challenging undertaking that involved the establishment of a single line of shares to eliminate the complexity of Shell's A/B share structure and aligning Shell's tax residence with its country of incorporation in the UK. Shell's strong financial results were underpinned by discipline on capital, operating and lease expenditure and by the delivery of a divestment programme in excess of $15 billion. This enabled a reduction in net debt by $23 billion over the course of 2021. Dividends were increased twice in the year and share buybacks commenced, accelerating the pace of shareholder distributions. The CFO played a critical role in guiding the company through the implementation of an updated capital allocation framework to balance growth and shareholder distributions. To support ongoing transparency for shareholders, the CFO led the introduction of significantly improved external financial and operational quarterly disclosures in 2021 with positive feedback from the market. Over the performance period, the CFO has made significant progress maturing the internal management systems relating to carbon dioxide (CO_2) and ensuring these are reflected in decisions about portfolio, planning and resource allocation. In 2021, this included the delivery of carbon budgets within the annual business planning cycle for the first time. From the 2021 Annual Report, improved disclosure in the Annual Report. The CFO led the delivery of the Shell Energy Transition Strategy publication, which is part of our continuing work to implement the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). The report sets out how Shell plans to be resilient to expected changes in the energy system and how its strategy helps it to thrive as the world transitions to lower-carbon energy culminating in the first shareholder advisory vote at the 2021 AGM in May (88.74% of votes cast were in favour).

The REMCO considered the single-figure outcomes for the CEO and CFO. It noted that the overall remuneration outcomes were higher than in 2020, by 26% for the CEO and 24% for the CFO. The REMCO was satisfied that these single-figure outcomes represented a fair level of remuneration.

In finalising its remuneration decisions for 2021, the REMCO considered a range of factors, including:

- Shell's performance in 2021 and over the LTIP performance period 2019-2021;
- The impact of the fatalities on the formulaic scorecard outcome, and further downwards adjustment applied by the REMCO on the bonus scorecard;
- the ongoing leadership shown by the CEO and CFO in continuing to set out a clear strategic direction for Shell in the energy transition and delivering the organisational redesign necessary to deliver on those strategic promises;
- a range of other factors taking account of Shell's performance beyond the formulaic outcomes of defined pay architecture, including safety, ethics and compliance, and feedback from the Audit Committee and the Safety, Environment and Sustainability Committee (SESCo);
- the final LTIP vesting outcome;
- the CEO's and CFO's remuneration compared with the variable pay outcomes for the general workforce;
- the alignment of the CEO and CFO with the shareholder experience through their high shareholding requirements; and
- the personal performance of the Executive Directors.

After reflecting on the above factors, the REMCO was satisfied that the remuneration policies had operated as intended.

Pension

In 2021, Ben van Beurden's pension arrangements comprised a defined benefit plan with a maximum pensionable salary of €100,861; and a net pay defined contribution pension plan with a 2021 employer contribution of 27% of salary in excess of €100,861. He has the option of taking cash as an alternative to pension contributions (in either case subject to income tax). He elected to take his benefit in the form of contributions up to and including November 2021.

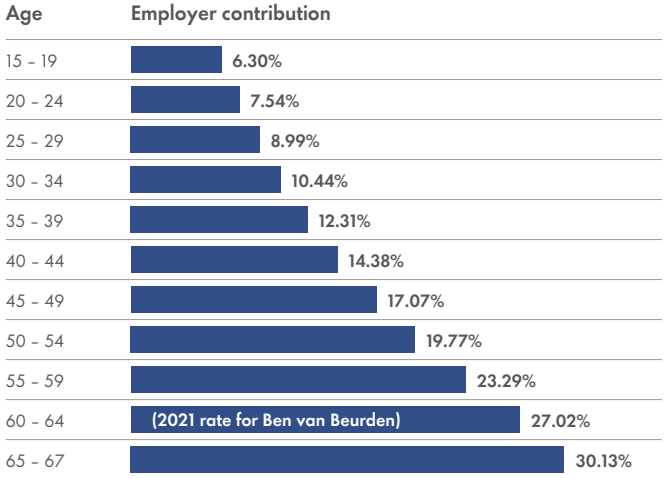
The employer contribution levels were in line with those applicable to other Netherlands-based employees. Under the Dutch pension regulations applicable to the pension arrangement in which the CEO participates, the contribution rate increases with age and is shown below. At December 31, 2021, the average employer contribution rate for Netherlands employees who participate in the net pay defined contribution pension arrangement on the same terms as Ben van Beurden was 22%.

After relocating to the UK, from December 31, 2021, the CEO is eligible to participate in the UK Shell Pension Plan, with a contribution rate of 20%, or to take this as a pension cash alternative. The UK Shell Pension Plan and associated pension cash alternative are available to new employees in the UK at the same contribution levels and currently around half of the UK employees participate in these arrangements. The majority of the remainder participate in a legacy defined benefit plan which closed to new members from March 2013.

Jessica Uhl is a member of the Shell US retirement benefit arrangements, which include the Shell Pension Plan (a defined benefit plan), and a defined contribution plan where she receives an employer contribution of 10% of salary. This is the same as the average employer contribution rate for US employees, which was 10%. As for all other pre-2013 members of the Shell Pension Plan, she has an annual choice of two accrual formulas with different forms of benefits, one in the form of a lifetime annuity and the other allowing for a lump-sum payment. She elected to accrue benefits for 2021 under the former. Around 9,000 out of 15,000 Shell US employees have the option of choosing between the two formulas. These arrangements are the same for all employees who joined Shell US at the same time as Jessica Uhl. The difference in Jessica Uhl's pension provision, compared with other employees who joined before 2013, is that because she is an Executive Director her bonus is not pensionable. For other relevant US employees the bonus is pensionable. She also has a deferred Dutch defined benefit pension plan, as a result of a previous Shell assignment on local Dutch terms and conditions.

The REMCO believes these arrangements are aligned with corporate governance developments in the UK which emphasise the desirability of Executive Directors' pension arrangements being the same as those for the general employee population.

Shell Netherlands Pension Stichting net pay defined contribution ladder



Scheme interests awarded in 2021

Scheme interests awarded to Executive Directors in 2021 (audited)

				Potential amount vesting	
Scheme interest type	Type of interest awarded	End of performance period	Target award [A]	Minimum performance (% of shares awarded) [B]	Maximum performance (% of shares of the target award) [A]
LTIP	Performance shares	December 31, 2023	Ben van Beurden: 231,679 A shares, equivalent to 2.645 x base salary or €4,200,344. Jessica Uhl: 69,972 A ADS shares, equivalent to 2.485 x base salary or €2,572,119	0%	Maximum number of shares vesting is 200% of the shares awarded, before dividends.

[A] The award for Ben van Beurden was based on the closing market price on the date of grant, March 5, 2021, for A shares of €18.13. The award for Jessica Uhl was based on the closing market price on the date of grant, March 5, 2021, for A ADSs of $43.85.

[B] Minimum performance relates to the lowest level of achievement, for which no reward is given.

The measures and weightings applying to LTIP awards made in 2021 were: energy transition (20%), FCF (20%), TSR (20%), ROACE growth (20%) and growth in cash flow from operating activities (20%).

Absolute measures

Energy transition

The energy transition condition supports the delivery of Shell's net carbon intensity (NCI) target (calculated using Shell's Net Carbon Footprint (NCF) methodology).

The condition consists of a mix of leading and lagging measures that help establish the basis for achieving Shell's longer-term strategic ambitions. They are as follows:

Lagging measure – a measure of our progress in meeting our ambition:

- Reducing the carbon intensity of all energy products sold: a target for reducing the NCI of the energy products Shell sells (a carbon intensity measure that takes into account the full life-cycle emissions of products, including customers' emissions associated with using them).

Leading measures – Shell will use these to reduce our NCI in the future:

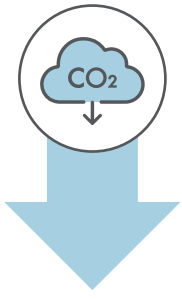
- The growth of our Power business: all scenarios recognise that one of the main ways to cut greenhouse gas emissions is to use more electricity, produced via lower-carbon means such as renewables and gas-fired power generation. Our ambition is to expand our Power business through selective investments in generation and by reselling power generated by others.
- Offer more lower-carbon energy products: biofuels are expected to play a valuable role in the changing energy mix. They are likely to be one of the main ways to reduce carbon emissions in sectors that need to keep using liquid fuels for a significant number of years, such as some segments of transport and industry.
- The development of systems to capture and absorb carbon: carbon capture usage and storage (CCUS) and carbon sinks, such as nature-based solutions, need to be part of the global response to climate change.

Shell has set targets for each element. Progress in the energy transition is not expected to be linear because it will reflect the pace of change of society as a whole and the speed at which Shell makes progress with its strategic business objectives. As a result, targets have been set as ranges. These targets are commercially sensitive, so they will not be disclosed until the end of the performance period (or until they are no longer considered commercially sensitive). An update on our performance in relation to the measures set for the 2019 LTIP is provided on page 180.

The vesting outcome for the part of the LTIP weighted to the energy transition condition ranges from 0% to 200% of award. The REMCO, at its sole discretion, will determine vesting outcomes after considering achievement against the target ranges and feedback from the SESCo. The REMCO will consider, in relation to each element, progress over the performance period relative to short-term aims that encourage progress towards Shell's long-term NCI ambition. The starting point for determining the vesting outcome will be how many of the targets have been met for each of the four areas. One out of four will equal 40%, two will equal 100%, three will equal 150%, and 200% will be awarded for scoring four out of four. It is important to note that performance against these elements will serve simply as a starting point for the REMCO, which will also take into account any other considerations it deems appropriate, including (without limitation) the relative importance of these elements in meeting the long-term ambition announced by Shell. For example, the REMCO may decide to allocate a greater importance to overall performance in relation to the NCI than the other three elements. The REMCO believes this approach is appropriate, given the uncertainties around the speed and direction of progress in the energy transition. The REMCO will fully disclose and explain the application of any discretion.

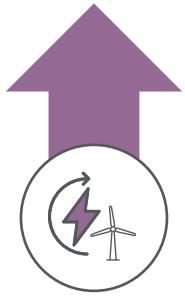
2021 energy transition performance condition – measures

Performance is assessed based on our reduction in the carbon intensity of all energy products sold and progress on the key strategic means of achieving decarbonisation:



Reducing the carbon intensity of all energy products sold

- Reduction in net carbon intensity vs. base year measured by Net Carbon Footprint



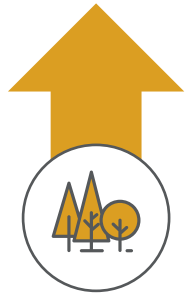
Build a material Power business

- Total power sales
- Reduce the carbon intensity of the Power portfolio
- Renewable power generation capacity



Grow new lower-carbon energy product offerings

- Electric vehicle charging network
- Advanced biofuels
- Deployment of low-carbon fuels
- Hydrogen business development



Develop emission sinks

- Nature-based solutions
- Carbon capture, utilisation and storage

Quantitative targets are set for each metric. Vesting will be based on how many of the four targets are met. 1/4 equals 40%, 2/4 equals 100%, 3/4 equals 150% and 4/4 equals 200%. The REMCO will apply judgement in determining the final outcome after taking advice from the SESCo.

FCF

The FCF performance condition supports the delivery of our cash flow priorities, which are to service and reduce debt, pay dividends, buy back shares and make future capital investments.

The target for FCF, along with the ranges for threshold and outstanding performance, will be set by reference to Shell's annual operating plans, being the aggregate of our plan FCF targets over the three-year performance period. Given that FCF is heavily influenced by the volatility of oil and gas prices, the annual operating plans are updated each year to set an annual target to reflect a changing oil price premise. As a result, FCF targets are set annually for each annual operating plan and will only be disclosed in aggregate retrospectively after the three-year period. The REMCO has considered setting a three-year target at the outset, but it believes such an approach would require adjustments for the oil and gas price premise and other matters at the end of the period, given the unpredictability and volatility in oil and gas prices. The REMCO has a long-standing no-adjustments policy which leads it to believe that a more appropriate approach is to set the target based on the aggregation of the annual operating plans.

The amounts payable under this measure will range from 20% of the available maximum, for threshold performance, to full vesting for outstanding performance. A straight-line vesting schedule will apply for performance between threshold and outstanding.

Relative measures

The relative measures are based on our performance on a number of key financial measures against the our closest comparators.

For relative measures, we rank growth based on the data points at the end of the performance period compared with those at the beginning of the period, using publicly reported data.

- TSR, calculated in US dollars using a 90-day averaging period, 45 days either side of the start and end of the performance period;
- ROACE growth. For this purpose, to facilitate the comparison, the calculation of ROACE differs from that described in "Performance indicators" on page 36 because there is no adjustment for after-tax interest expense; and
- growth in cash flow from operating activities.

Each relative measure affects vesting independently, with the amounts payable ranging from 0% to 200%, in accordance with the following vesting schedule:

- ranking first equals 200% vesting for the LTIP element weighted to that measure;
- ranking second equals 150% vesting for the LTIP element weighted to that measure;
- ranking third equals 80% vesting for the LTIP element weighted to that measure; and
- ranking fourth or fifth equals 0% vesting for the LTIP element weighted to that measure.

TSR Underpin

If the TSR ranking is fourth or fifth, the level of the award that can vest on the basis of the other measures will be capped at 50% of the maximum.

Performance update on FCF

2020 LTIP award

At December 31, 2021, FCF performance is above target, with a below-threshold outcome for 2020 of $20.8 billion (target $38 billion) balanced by a strong performance in 2021 of $40.3 billion (target $9 billion). As one year of FCF performance remains, and 77.5% of the award is subject to relative and energy transition performance conditions, this does not reflect the potential vesting of the award.

2021 LTIP award

At December 31, 2021, FCF performance, $40.3 billion for 2021, is above target ($9 billion). As two years of FCF performance remain, and 80% of the award is subject to relative and energy transition performance conditions, this does not reflect the potential vesting of the award.

Statement of Directors' shareholding and share interests (audited)

Shareholding guidelines

The REMCO believes that Executive Directors should align their interests with those of shareholders by holding shares in Shell plc (the Company). The CEO is expected to build a shareholding with a value of 700% of base salary, and the CFO 500%. The shareholding requirement extends post employment, such that Executive Directors will be required to maintain their shareholding requirement, or the number of shares actually held if this is less than the shareholding requirement, for a period of two years post employment. There is a Company-sponsored nominee account which allows for restrictions to be applied on the sale or transfer of shares that are subject to holding periods and individual shareholding requirements. The restrictions remain in force beyond the Executive Director's employment.

Only unfettered shares count. Shares delivered that are subject to holding requirements also count towards the guidelines. The values of shares counting towards the shareholding guideline (as a percentage of base salary) were 904% for the CEO and 693% for the CFO at March 4, 2022.

Executive Directors' shareholding (audited)

	Shareholding guideline (% of base salary)	Value of shares counting towards guideline (% of base salary at December 31, 2021) [A]
Ben van Beurden	700%	972%
Jessica Uhl	500%	555%

[A] Following the sale of 190,000 ordinary shares by Ben van Beurden on February 7, 2022, the delivery of half the 2021 annual bonus in shares and the vesting of the 2019 LTIP on March 4, 2022, their respective holdings are Ben van Beurden 904% and Jessica Uhl 693%.

Non-executive Directors are encouraged to hold shares with a value equivalent to 100% of their fixed annual fee and to maintain that holding during their tenure.

Directors' share interests

The interests, in shares of the Company or calculated equivalents, of the Directors in office during 2021, including any interests of their connected persons, are set out in the table below.

Directors' share interests (audited)

	January 1, 2021		December 31, 2021	
	A shares	B shares	A shares	B shares
Executive Directors [A]				
Ben van Beurden	866,433 [B]	–	973,533	
Jessica Uhl	240,557 [C]	–	299,283 [D]	
Non-executive Directors				
Dick Boer	10,000	–	10,000	–
Neil Carson	16,000	–	16,000	–
Ann Godbehere	–	10,000 [E]	–	10,000 [E]
Euleen Goh	–	12,895	–	12,895
Charles O. Holliday	–	50,000 [F]	–	50,000 [G]
Catherine J. Hughes	4,080	51,904 [H]	4,080	51,904 [H]
Martina Hund-Mejean		20,000 [I]	–	20,000 [I]
Jane Holl Lute	–	[J]	–	5,002 [K]
Sir Andrew Mackenzie	–	20,732	–	27,623
Abraham Schot [L]	–	–	–	–
Sir Nigel Sheinwald	–	1,124	–	1,124 [M]
Gerrit Zalm	2,026	–	2,026	–

[A] Includes vested LTIP awards subject to holding conditions. Excludes unvested interests in shares awarded under the LTIP.
[B] Includes 174,000 RDS A shares pledged with Van Lanschot N.V.
[C] Held as 26,590 RDS A shares and 44,789 ADS (RDS.A ADS). Each RDS.A represents two A shares.
[D] Held as 35,201 RDS A shares and 132,041 ADS (RDS.A ADS). Each RDS.A represents two A shares
[E] Held as 5,000 ADSs (RDS.B ADS). Each RDS.B represents two B shares.
[F] Held as 25,000 ADS (RDS.B. ADS). Each RDS.B represents two B shares
[G] Interests at May 18, 2021, when he stood down as a Director. Held as 25,000 ADS (RDS.B. ADS). Each RDS.B represents two B shares
[H] Held as 46,904 RDS B shares and 2,500 ADS (RDS.B. ADS). Each RDS.B represents two B shares
[I] Held as 10,000 ADSs (RDS.B ADS). Each RDS.B represents two B shares.
[J] Interests at May 19, 2021, when she was appointed as a Director.
[K] Held as 2,501 ADSs (RDS.B ADS). Each RDS.B represents two B shares
[L] On August 17, 2020, Bram Schot purchased 5,500 certificates Shell Turbo Long 7,5 BNP Paribas Markets (previously called: Royal Dutch Shell A Turbo Long 8,2 BNP Paribas Markets) (ISIN: NL0009558519) at a price of €5.37 per certificate. These certificates are cash settlement instruments the value of which is linked to the share price of Shell Shares (until January 29, 2022, RDS A Shares). In this case, the ratio of the turbo is 1:1 and accordingly 5,500 certificates represent 5,500 Shell shares. As at February 23, 2022, the leverage is 1.42 but fluctuates depending on the share price. If the share price increases, the leverage will decrease. The finance level is 6.91 and the stop-loss level is 7.5. The finance level is adjusted on the 15th of every month. Finance costs are 2.45% on an annual basis. With a turbo long, there is a finance level and a stop-loss level. If the underlying share price drops below the stop-loss level, the turbo long is terminated. The investor then receives the value of the difference between the finance level and the level on which the counterparty, in this case BNP Paribas, can close the turbo. Take for example a turbo with a stop-loss level of 10 and a finance level of 8. When the underlying share price drops below 10, which is the stop-loss level, the buyer will still receive the amount 10-8=2. But if the share price would suddenly drop to 8 or below, the buyer will receive nothing and the total investment is lost. In most cases, the turbo would be terminated at the stop-loss level, and the buyer receives the amount of the difference between the finance level and the stop-loss level. The actual amount will be determined by BNP. In addition, on August 27, 2020, Bram Schot purchased 100 Leonteq Express Euro Denominated Certificates on ING, Shell, Unilever (previously called: Leonteq Express Euro Denominated Certificates on ING, Royal Dutch Shell, Unilever) (ISIN: CH0470808913), with a nominal value of €1,000 each at a price of €515 per certificate. These certificates are cash settlement instruments of which payment of a conditional coupon depends for 1/3 on the development of the price of the Shell Shares on Euronext Amsterdam and, as such, is a financial instrument linked to the Shell Shares. Both transactions took place before Bram Schot became a Director of the Company.
On February 12, 2021, Bram Shot purchased (i) an additional 2,500 certificates Shell Turbo Long 7,5 BNP Paribas Markets (ISIN: NL0009558519) at a price of €7.69 per certificate; and (ii) an additional 50 Leonteq Express Euro Denominated Certificates on ING, Shell, Unilever (ISIN: CH0470808913), with a nominal value of €1,000 each at price of €715 per certificate.
[M] Interests at May 19, 2020, when he stood down as a Director.

The Directors share interests converted into ordinary shares or ADS, as appropriate, following the assimilation of Shell's A and B shares into a single class of share on January 29, 2022.

The changes to Directors' shareholdings as at March 4, 2022 are that Ben van Beurden sold 190,000 ordinary shares on February 7, 2022, and after the delivery of half the 2021 annual bonus in shares and the vesting of the 2019 LTIP award, Ben van Beurden's share interests increased by 90,998 ordinary shares, and Jessica Uhl's by 15,096 ADS and 18,551 ordinary shares. Jane Lute purchased 903 ADS on February 11, 2022.

At March 4, 2022, the Directors and Senior Management (pages 121-130) of the Company beneficially owned, individually and in aggregate (including shares under option), less than 1% of Company shares. These shareholdings are not considered sufficient to affect the independence of the Directors.

Directors' scheme interests

The table below shows the aggregate position for Directors' interests under share schemes at December 31, 2021. These are RDS A shares for Ben van Beurden and RDS.A ADS for Jessica Uhl. During the period from December 31, 2021, to March 4, 2022, scheme interests have changed as a result of the vesting of the 2019 LTIP on March 3, 2022, and because of the 2022 LTIP awards made on February 4, 2022, as described on pages 176 and 178 respectively.

Directors' scheme interests (audited)

	Share plan interests [A]	
	LTIP subject to performance conditions [B]	
	2021	2020
Ben van Beurden [C]	**691,227**	662,751
Jessica Uhl [D]	**196,751**	179,565

[A] Includes unvested long-term incentive awards and notional dividend shares accrued at December 31. Interests are shown on the basis of the original awards. The shares subject to performance conditions can vest at between 0% and 200%. Dividend shares accumulate each year on an assumed notional LTIP award. Such dividend shares are disclosed and recorded on the basis of the number of shares conditionally awarded but, when an award vests, dividend shares will be awarded only in relation to vested shares as if the vested shares were held from the award date. Shares released during the year are included in the "Directors' share interests" table.
[B] Total number of unvested LTIP shares at December 31, 2021, including dividend shares accrued on the original LTIP award.
[C] Ordinary shares.
[D] ADS.

Dilution

In any 10-year period, no more than 5% of the issued ordinary share capital of the Company may be issued or issuable under executive (discretionary) share plans adopted by the Company, or 10% when aggregated with awards under any other employee share plan operated by the Company. To date, no shareholder dilution has resulted from these plans, although it is permitted under the rules of the plans, subject to these limits.

Payments to past Directors (audited)

No payments to past Directors were made in 2021.

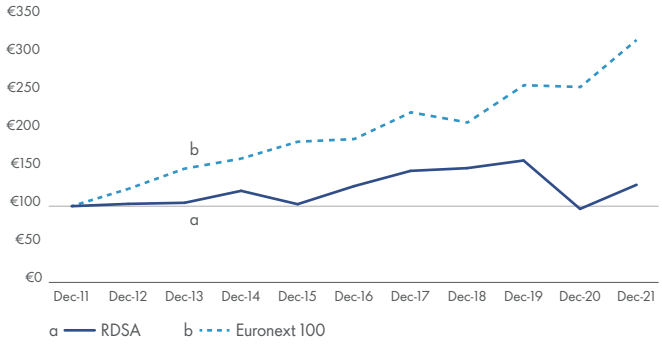
Payments below €5,000 are not reported as they are considered de minimis.

TSR performance and CEO pay

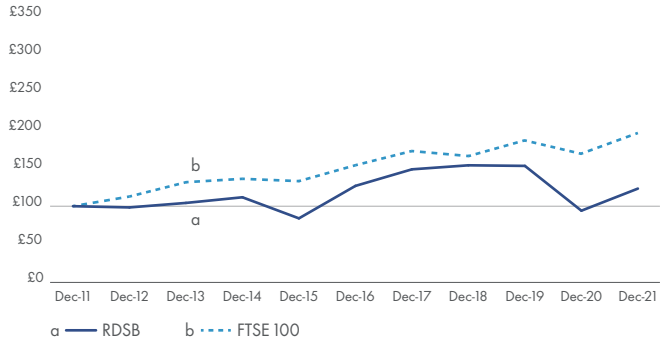
Performance graphs

The graphs compare the TSR performance of Shell plc over the past 10 financial years with that of the companies comprising the Euronext 100 and the FTSE 100 share indices. The Board regards these indices as appropriate broad market equity indices for comparison, because they are the leading market indices in Shell plc's home markets. Data shown is for the performance of RDS A and RDS B shares prior to the assimilation of Shell's shares to a single line of ordinary shares on January 29, 2022.

Historical TSR performance (RDSA)
Value of hypothetical €100 holding



Historical TSR performance (RDSB)
Value of hypothetical £100 holding



CEO pay outcomes

The following table sets out the single total figure of remuneration, the annual bonus payment and long-term incentive (LTI) vesting rates compared with the respective maximum opportunity, for the CEO for the past 10 years.

CEO pay outcomes

Year	CEO	Single total figure of remuneration (€000)	Annual bonus award against maximum opportunity	LTI vesting against maximum opportunity
2021	Ben van Beurden	7,380	64%	25%
2020	Ben van Beurden	5,841	0%	45%
2019	Ben van Beurden	9,963	21%	74%
2018	Ben van Beurden	20,138	79%	95%
2017	Ben van Beurden	8,909	81%	35%
2016	Ben van Beurden	8,593	66%	42%
2015	Ben van Beurden	5,576	98%	8%
2014	Ben van Beurden [A]	24,198	94%	49%
2013	Peter Voser	8,456	44%	30%
2012	Peter Voser	18,246	83%	88%

[A] Ben van Beurden's single total figure for 2014 was impacted by the increase in pension accrual (€10.695 million) calculated under the UK reporting regulations and tax equalisation (€7.905 million) as a result of his promotion and prior assignment to the UK.

Percentage change in remuneration of Directors and employees

As Shell plc does not have any direct employees, the table below compares the remuneration of the Directors of Shell plc with an employee comparator group consisting of local employees in the Netherlands, the UK and the USA. The local employee population of these countries is considered to be a suitable employee comparator group because: these are countries with a significant Shell employee base; a large proportion of senior managers come from these countries; and the REMCO considers remuneration levels in these countries when setting base salaries for Executive Directors. For the purposes of comparison, the change in employee remuneration is calculated by reference to the change in salary scale, benefits and annual bonus for a notional employee in each of the base countries, not by reference to the actual change in pay for a group of employees.

Taxable benefits are those that align with the definition of taxable benefits applying in the respective country. In line with the "Single total figure of remuneration for Executive Directors" table, the annual bonus is included in the year in which it was earned.

Percentage change in remuneration of Directors and employees [A]

		2020-2021	2019-2020
Employees [B]			
UK, USA and the Netherlands	Salaries/fees	0.6%	3.0%
	Benefits	–%	–%
	Bonus	N/A	(100.0)%
Executive Directors			
CEO	Salaries/fees	–%	2.0%
	Benefits	8.6%	(23.7)%
	Bonus	N/A	(100.0)%
CFO	Salaries/fees	–%	2.0%
	Benefits	(22.8)%	28.1%
	Bonus	N/A	(100.0)%
Non-executive Directors [C]			
Dick Boer	Salaries/fees	70.4%	N/A
	Benefits	–%	N/A
Neil Carson	Salaries/fees	4.3%	85.6%
	Benefits	–%	–%
Ann Godbehere	Salaries/fees	2.9%	15.8%
	Benefits	N/A	–%
Euleen Goh	Salaries/fees	11.4%	0.2%
	Benefits	N/A	–%
Jane Holl Lute	Salaries/fees	N/A	N/A
	Benefits	N/A	N/A
Charles O. Holliday	Salaries/fees	(61.9)%	–%
	Benefits	(11.6)%	(2.4)%
Catherine J. Hughes	Salaries/fees	2.8%	(10.0)%
	Benefits	N/A	–%
Martina Hund Mejean	Salaries/fees	68.4%	N/A
	Benefits	N/A	N/A
Sir Andrew Mackenzie	Salaries/fees	1,473.0%	N/A
	Benefits	N/A	N/A
Abraham Schot	Salaries/fees	300%	N/A
	Benefits	N/A	N/A
Sir Nigel Sheinwald	Salaries/fees	(62.5)%	(1.7)%
	Benefits	N/A	(100.0)%
Gerrit Zalm	Salaries/fees	–%	–%
	Benefits	N/A	–%

[A] In a number of instances the value for the preceding year was zero. In these cases, N/A is recorded.
[B] As Shell plc does not have any employees, the change in pay for an employee comparator group from the UK, USA and the Netherlands is shown.
[C] Non-executive directors do not receive any short-term incentives.

ANNUAL REPORT ON REMUNERATION continued

Relative importance of spend on pay

The table below sets out distributions to shareholders by way of dividends and share buybacks, and remuneration paid to or receivable by employees for the last five years, together with annual percentage changes.

Relative importance of spend on pay

	Dividends and share buybacks [A]		Spend on pay (all employees) [B]	
Year	$ billion	Annual change	$ billion	Annual change
2021	9.1	–%	12.1	–%
2020	9.1	-64%	12.1	-8%
2019	25.4	26%	13.2	-1%
2018	20.2	29%	13.4	-6%
2017	15.6	4%	14.3	-9%

[A] Dividends paid, which includes the dividends settled in shares via our Scrip Dividend Programme and repurchases of shares as reported in the "Consolidated Statement of Changes in Equity".
[B] Employee costs, excluding redundancy costs, as reported in Note 26 to the "Consolidated Financial Statements".

Spend on pay can be compared with the major costs associated with generating income by referring to the "Consolidated Statement of Income". Over the last five years, the average spend on pay was 5% of the major costs of generating income. These costs are considered to be the sum of: purchases; production and manufacturing expenses; selling, distribution and administrative expenses; research and development; exploration; and depreciation, depletion and amortisation.

Total pension entitlements (audited)

During 2021, Ben van Beurden and Jessica Uhl accrued retirement benefits under defined benefit plans. The pensions accrued under these plans at December 31, 2021, are set out below. The exchange rates used for conversion into euros and dollars are at December 31, 2021.

Accrued pension (audited)

Thousand	Local	€	$
Ben van Beurden [A]	1,189	1,189	1,345
Jessica Uhl [B]	1,247	1,102	1,247

[A] The accrued benefits are disclosed on a per annum basis. Note that in 2021, Ben van Beurden entered into a pension sharing agreement with his former spouse, the amount disclosed reflects Mr van Beurden's entitlements after that agreement.
[B] Jessica Uhl has an annual choice between two accrual formulas with different forms of benefits. One is in the form of a lifetime annuity and the other allows for a lump-sum payment. She elected to accrue benefits up to 2018 under the arrangement for a lump-sum payment, and the eventual lump-sum benefit is shown. From 2019, she elected to accrue benefits as a lifetime annuity. The value of this accrued benefit at December 31, 2021, was $12,430 per annum plus a lump sum of $361,413. She also has a deferred Dutch defined benefit pension plan, as a result of a prior Shell assignment on local Dutch terms and conditions. The age at which Jessica Uhl can receive any pension benefit without an actuarial reduction under this Dutch plan is 60. The value of the deferred pension benefit is €3,427 per annum.

The age at which Ben van Beurden can receive any pension benefit without an actuarial reduction is 68. It is 65 for Jessica Uhl under her US pension plan. Any pension benefits on early retirement are reduced using actuarial factors to reflect early payment. No payments were made in 2021 regarding early retirement or in lieu of retirement benefits.

Please refer to page 178 for further details (Pension).

External appointments

Ben van Beurden joined the Supervisory Board of Daimler AG as a Non-executive Director in April 2021. Jessica Uhl joined the Board of Goldman Sachs Group as Non-executive Director in July 2021.

Statement of voting at 2021 AGM

Shell's 2021 AGM was held on May 18, 2021, in the Netherlands. The result of the poll in respect of Directors' remuneration was as follows:

Approval of Directors' Remuneration Report

Votes	Number	Percentage
For	3,567,342,830.00	95.86%
Against	153,872,670.00	4.14%
Total cast	3,721,215,500 [A]	100.00%
Withheld [B]	54,753,918	

[A] Representing 47.66% of issued share capital.
[B] A vote withheld is not a vote under English law and is not counted in the calculation of the proportion of the votes for and against a resolution.

The result of the poll in respect of the Directors' Remuneration Policy last approved at the 2020 AGM was as follows:

Approval of Directors' Remuneration Policy

Votes	Number	Percentage
For	3,567,342,830	92.91%
Against	153,872,670	7.09%
Total cast	3,988,673,865 [A]	100.00%
Withheld [B]	24,979,832	

[A] Representing 51.09% of issued share capital.
[B] A vote withheld is not a vote under English law and is not counted in the calculation of the proportion of the votes for and against a resolution.

Directors' employment arrangements and letters of appointment

Executive Directors are employed for an indefinite period. Non-executive Directors, including the Chair, have letters of appointment. Details of Executive Directors' employment arrangements can be found in the Directors' Remuneration Policy on page 195.

Further details of Non-executive Directors' terms of appointment can be found in the "Other Regulatory and Statutory Information" on page 205 and the "Governance framework" report on page 136.

Compensation of Directors and Senior Management

During the year ended December 31, 2021, Shell paid and/or accrued compensation totalling $48 million (2020: $36 million) to Directors and Senior Management for services in all capacities while serving as a Director or member of Senior Management, including $3 million (2020: $3 million) accrued to provide pension, retirement and similar benefits. The amounts stated are those recognised in Shell's income on an IFRS basis. See Note 28 to the "Consolidated Financial Statements". Personal loans or guarantees were not provided to Directors or Senior Management.

CEO pay ratio

	Option	25th percentile pay ratio	Median pay ratio	75th percentile pay ratio
2021	A	97:1	57:1	37:1
Total pay and benefits:		£65,123	£111,912	£170,289
Salary:		£43,550	£68,238	£101,000
2020	A	93:1	57:1	38:1
Total pay and benefits:		£55,584	£90,972	£136,007
Salary:		£49,117	£75,365	£118,291
2019	A	147:1	87:1	54:1
Total pay and benefits:		£59,419	£100,755	£161,717
Salary:		£40,417	£56,721	£79,991
2018	A	202:1	143:1	92:1
Total pay and benefits:		£88,112	£124,459	£193,027
Salary:		£53,528	£80,407	£96,074

Shell has chosen to use option A to calculate the CEO pay ratio in accordance with guidance from the UK government that this is the preferred approach and the most statistically accurate method for identifying the ratios. Under option A, a comparable single total figure for all UK employees has been calculated in order to identify the employees whose pay and benefits are at the 25th, 50th (median) and 75th percentiles for comparison with the CEO. Employee pay has been calculated based on the total pay and benefits paid in respect of 2021 for all employees who were employed on December 31, 2021. For part-time workers and joiners in the year, pay and benefits have been annualised based on the proportion of their working time in the UK during the year. This is calculated with an approach consistent with the methodology for determining annual bonuses. The REMCO believes that this provides a fair and reasonable calculation of the pay ratios for Shell employees in the UK.

The ratio of the CEO's pay to the median UK worker is 57. The global pay ratio, calculated by comparing the CEO's single figure with the average employee headcount cost, is 64. The ratio at median is unchanged for 2021 from that reported for 2020. This follows a decline in the ratios since 2018, this is due to a decrease in the variable pay outcomes for the CEO. The pay and benefits for the 25th, 50th and 75th percentile employees have increased in relation to 2020, primarily because there was a strong bonus outcome for all employees in 2021 and employees also did not receive an annual bonus for 2020. The REMCO believes this outcome is appropriate and consistent with Shell's philosophy of pay for performance.

Workforce engagement

The REMCO bases its decisions about remuneration on a wide range of factors including a careful consideration of the pay and conditions of the general workforce. In 2021, the REMCO considered factors that included the following:

- The one-off award of Shell shares to all eligible employees globally under the Powering Progress Share Award plan. Powering Progress provides a blueprint for generating value at Shell, but it is our employees who will deliver this strategy. To support engagement with our Powering Progress strategy and to help employees benefit from its successful delivery, all eligible employees, regardless of job grade or location, were granted $1,000 of Shell shares in June 2021 (for the avoidance of doubt, the CEO and CFO did not receive this award also).
- Remuneration markers such as the CEO pay ratio and gender pay reporting under the UK Equality Act 2010 (Gender Pay Gap Information) Regulations, and voluntary ethnicity pay reporting in the UK narrowed slightly in 2021 to 17.8% from 18% in 2020, continuing the positive trend since 2017 (22.2%). This is due to a continued upward trend in the proportion of women in our upper and upper middle pay quartiles. The REMCO has confidence in Shell policies that aim to increase the representation of women at all levels in the organisation.
- The planned general employee salary increases in the UK, USA and the Netherlands (when the REMCO was reviewing 2022 base salaries and target remuneration packages).
- The scorecard and Performance Share Plan (PSP) outcomes for employees (when the REMCO was determining the 2021 variable pay outcomes for Executive Directors). In particular, the REMCO noted the decision by management to adjust upwards the annual bonus scorecard for employees in recognition and appreciation of the extraordinary contributions made by our employees over a challenging period.

Executive remuneration structures in Shell are strongly aligned with Shell's broader policy on pay:

- In recent years the Group scorecard architecture has been identical to the Executive Committee and Senior Executive scorecard in terms of measures, weightings and targets.
- Executive Directors and Executive Committee members participate in the LTIP. Around 150 senior executives participate in the same plan. The measures and metrics for that plan also apply to 50% of the PSP awarded to around 16,500 employees.
- All employees in the Group participate in the relevant pension plan for their country based on their date of joining. Shell does not operate separate executive pension arrangements.

This consistency means that less explanation of executive remuneration structures is required than in companies where alignment is not the default practice. Employee engagements aimed to create an ongoing dialogue about how pay outcomes for all employees are linked to delivering the Powering Progress strategy. As part of this process, articles on Shell's internal intranet explored the Powering Progress Share Award and how the refreshed bonus scorecard connects with Shell's strategy and priorities. These articles generated a high level of interest among employees. Engagement scores, as measured by the number of page views, comments, likes and shares, were well above the average for Shell's intranet.

STATEMENT OF PLANNED IMPLEMENTATION OF POLICY IN 2022

The Directors' Remuneration Policy as detailed on pages 189-197 took effect from May 19, 2020, after it was approved by shareholders at the 2020 AGM. It will be effective until the 2023 AGM, unless a further policy is proposed by Shell and approved by shareholders before then. This section describes elements of the policy that will apply for 2022.

Executive Directors

Salaries

No salary increases were made for 2021. Effective from December 31, 2021, the date at which they transferred to UK employment, the base salaries were set at £1,420,000 for Ben van Beurden and at £921,000 for Jessica Uhl. Both base salaries were set in accordance with the shareholder-approved 2020 Remuneration Policy and included a 3.5% increase for the CEO and 3% for the CFO. The REMCO decided these salary increases in acknowledgement of the significant personal contributions made by the CEO and CFO to the Shell Group in delivering the strategic progress over 2021. In particular, the simplification of Shell, which entailed establishing a single line of shares to eliminate the complexity of Shell's A/B share structure and aligning Shell's tax residence with its country of incorporation in the UK. These are measures which the Board believes will strengthen Shell's competitiveness and accelerate both shareholder distributions and delivery of its strategy, and the salary increases are consistent with the principles for managing the development of employee remuneration across the Group in cases where individuals make significant personal contributions in the year. The REMCO also paid close attention to the benchmarking analysis from the defined comparator groups. No specific benchmark position is defined, but the REMCO were satisfied that the positioning was appropriate against the benchmark groups following the increases. Finally, the REMCO noted that the salary increases were broadly consistent with the increases provided to the general workforce in the key markets of the UK, USA, and Netherlands (average 2.4%).

Sinead Gorman's base salary will be set at £900,000 on appointment as CFO, effective April 1, 2022.

Annual bonus

To ensure that the scorecard remains well aligned with our strategic and operational priorities, the REMCO has reviewed the structure of the 2022 scorecard. The REMCO will continue to focus on four key areas: financial delivery, operational excellence, progress in the energy transition, and safety.

Cash flow from operations (CFFO) remains the measure we will use to judge financial delivery. CFFO reflects our ability to generate the cash necessary to fund investment in our future business and distributions to our shareholders.

Reflecting the ongoing importance of operational delivery, performance will be assessed on the basis of three measures:

- asset management excellence: measures the availability of Upstream, midstream and Downstream facilities, each equally weighted, so we maintain a strong focus on operating assets to plan, delivering scheduled downtime activities on time and minimising unscheduled shutdowns;
- project delivery excellence: our ability to successfully deliver large and complex projects remains essential, and we will continue measuring the delivery of material projects on time and to budget; and
- customer excellence: Powering Progress emphasises the importance of our customer relationships, and from the start of 2022 we will measure performance in this area using scores for customer satisfaction and brand preference.

Succeeding in the energy transition and accelerating our transition to net-zero emissions means updating our business models and changing what we sell. From the start of 2022, we will reflect these ambitions in the progress in the energy transition section of the scorecard, using three measures:

- selling lower-carbon products – based on the share of earnings from our marketing business that can be attributed to low- and no-carbon products;
- reducing our emissions – an absolute emissions reduction target; and
- partnering to decarbonise – measured against progress towards an annual target for the global number of EV charging points.

Our commitment to safety remains at the heart of everything we do. The measures relating to safety are as follows:

- personal safety: Serious Injury and Fatality Frequency (SIF-F), which ensures we focus our attention and learning on those incidents with the potential to cause the most serious harm; and
- process safety: based on the number of Tier 1 and 2 operational safety incidents.

The performance measures, weightings and link to strategy for the 2022 performance year are set out below:

2022 annual bonus scorecard measures and weightings

Performance measure	Weighting
Financial	35%
Operational excellence	35%
Progress in the energy transition	15%
Safety	15%
	Link to strategy
Financial ▪ Cash flow from operating activities	Aligned with our financial priorities, reflecting our ability to generate cash to service and reduce debt, pay dividends and repurchase shares and fund capital investment.
Operational excellence ▪ Asset management excellence ▪ Project delivery excellence ▪ Customer excellence	These measures show the effectiveness with which we operate our assets and serve our customers. This operational performance underpins the successful delivery of our financial framework and ambitions to progress in the energy transition.
Progress in the energy transition ▪ Selling lower-carbon products ▪ Reducing our emissions ▪ Partnering to decarbonise	These measures focus on the business transformations necessary to succeed in the energy transition and deliver the ambitions of Powering Progress.
Safety ▪ Serious Injury and Fatality Frequency ▪ Tier 1 and 2 process safety	These metrics are designed to ensure an ongoing focus on personal and operational safety.

Annual bonus scorecard targets are not disclosed prospectively because to do so in a meaningful manner would require the disclosure of commercially sensitive information. Scorecard targets will be disclosed in the subsequent Directors' Remuneration Report when they are no longer deemed to be commercially sensitive.

Long-term Incentive Plan

On February 4, 2022, a conditional award of performance shares under the LTIP was made to the Executive Directors resulting in 209,131 Shell plc shares being conditionally awarded to Ben van Beurden and 61,242 Shell plc American Depositary Shares (ADSs) being conditionally awarded to Jessica Uhl. The award had a face value of 300% (maximum performance outcome 600%) of the base salary for the CEO and 270% (maximum performance outcome 540%) of the base salary for the CFO, excluding potential share price appreciation and dividends.

For LTIP awards made in 2022, performance will be assessed over a three-year period based on four financial measures and an energy transition condition, each equally weighted.

The target for the FCF measure over the three-year performance period will be based on the annual operating plan and shareholder guidance. These targets are considered commercially sensitive and will be disclosed retrospectively, with annual updates on progress.

For the energy transition performance condition, the NCI target range for the 2022-2024 LTIP grant is set as a 9-12% reduction from the 2016 NCF of 79 grams of CO_2 equivalent per megajoule. For the leading indicators, we will assess performance according to three sets of measures:

- establishing the foundations of a material Power business;
- offering more lower-carbon energy products; and
- developing emissions sinks.

The targets for these leading energy transition measures are commercially sensitive, and will be disclosed retrospectively where possible. It is also important to note that performance against these elements will serve simply as a starting point for the REMCO, which will also take into account any other considerations it deems appropriate.

2022 LTIP measures and vesting schedule

■ Absolute measures
□ Relative measures

Energy transition	**20%**				
Free cash flow		**20%**			
TSR			**20%**		
ROACE growth				**20%**	
CFFO growth					**20%**

Link to strategy	Vesting schedule (% of initial LTIP award)
Energy transition Measures focused on the strategic business transformations that will seek to enable long-term success in the energy transition.	Measures: a. NCI reduction target b. Build the foundation of a material Power business c. Grow new lower-carbon energy product offerings d. Develop emission sinks Vesting based on how many targets are achieved: 1/4 = 40% 3/4 = 150% 2/4 = 100% 4/4 = 200% REMCO may take into account other appropriate considerations.
Free cash flow Recognition of the importance of generating cash after net capital expenditure to service and reduce debt, pay dividends, buy back shares and make future capital investments.	Maximum – 200% Target – 100% Threshold – 40% Below threshold – 0%
TSR Assessment of actual value created for shareholders.	1st – 200% 2nd – 150% 3rd – 80% 4th or 5th – nil
ROACE growth Indicator of capital discipline.	
CFFO growth Source of capital expenditure commitments which support sustainable growth based on portfolio and cost management.	
TSR underpin If TSR is in fourth or fifth, vesting is capped at 50% of maximum.	
Holding period Three years post vesting, which remains in force post tenure.	

Discretion, adjustment (malus) and recovery (clawback)

Variable-pay elements are subject to adjustment (malus) and recovery (clawback) provisions. The REMCO may adjust an award, for example by lapsing part or all of it, reducing the number of shares which would otherwise vest, by imposing additional conditions on it, or imposing a new holding period or applying clawback.

Please refer to the policy section on pages 189, 191 and 193 for a full description of the circumstances under which discretion, malus and clawback might be applied to a variable pay award.

Pension

After his relocation to the UK on December 31, 2021, Ben van Beurden no longer participates in the Dutch retirement benefit plans. Instead, he was offered participation in the UK Shell Pension Plan. This is the same pension arrangement as offered to all new employees in the UK. It is a defined contribution pension scheme which provides an employer contribution of up to 20% of salary. Sinead Gorman was also offered participation in the same plan. Employees who may potentially exceed the UK fiscal limits on pension contribution (the annual allowance and/or the lifetime allowance) may voluntarily opt to receive a cash allowance in lieu of a contribution to the pension plan at the same rate. Ben van Beurden and Sinead Gorman have both chosen to receive a cash allowance.

Jessica Uhl's US retirement benefit arrangements include the Shell Pension Plan, a defined benefit plan, and a defined contribution plan with an employer contribution of 10% of salary. She also has a deferred Dutch defined benefit pension plan, as a result of a prior Shell assignment on local Dutch terms and conditions.

Further details of Executive Director pension arrangements can be found on page 178.

Benefits

In line with our Group-wide international mobility policies, the CEO and CFO will receive support with temporary commuting costs such as travel and accommodation for up-to six months from their date of relocation to the UK while their families remain in the Netherlands to complete their respective school years. The CEO will receive relocation benefits for his family's move to the UK in due course, and he will also receive a gross housing allowance for a time-limited period of 24 months from when their families relocate.

Executive Directors are provided with a chauffeured car for business travel, including home to office commuting. Other benefits, such as medical and other risk-benefits are in-line with those provided to the general workforce (including in some cases benefits provided to employees working outside their home country).

Non-executive Directors' fees

Non-executive Directors' fees 2022

	£	Other fees
Chair of the Board	785,000	Non-executive Directors receive an additional fee of £4,000 for any Board meeting involving intercontinental travel – except for one meeting a year held in a location other than London.
Non-executive Director	120,000	
Senior Independent Director	49,000	
Audit Committee		
Chair [A]	53,000	
Member	22,000	
Safety, Environment and Sustainability Committee		
Chair [A]	31,000	
Member	15,000	
Nomination and Succession Committee		
Chair [A]	22,000	
Member	11,000	
Remuneration Committee		
Chair [A]	36,000	
Member	15,000	

[A] The chair of a committee does not receive an additional fee for membership of that committee.

REMCO reviewed the competitive positioning of the Chair's fee, and for 2022 set this at £785,000, a 1.3% increase. This is the first increase since 2015 and recognises the positioning of the fee relative to other major FTSE and European companies. The Chair of the Board does not receive any additional fee for chairing the Nomination and Succession Committee or attending any other Board committee meeting.

The Non-executive Directors receive a basic fee. There are additional fees for the Senior Independent Director, a Board committee chair or a Board committee member. Non-executive Directors receive an additional fee of £4,000 for most Board meetings involving intercontinental travel. Business expenses (including transport between home and office and occasional business-required partner travel) and associated tax are paid or reimbursed by Shell.

The Board reviews Non-executive Directors' fees periodically to ensure that they are aligned with those of other major listed companies. During these reviews the Board uses the largest 30 companies by market capitalisation listed on the FTSE and the European comparator group as its primary points of reference. The last general review was in 2021. Other than the adjustment to the Chair's fee, fees will remain unchanged for 2022. Following the relocation of Shell's headquarters from the Netherlands to the UK, Non-executive directors fees have been converted from euros to pounds sterling, using the average EUR/GBP exchange rate for 2020 (this rate was chosen as the data used by the Board to review the competitive positioning was largely sourced from 2020 pay disclosures), rounded downwards to the nearest £1,000.

DIRECTORS' REMUNERATION POLICY

The Directors' Remuneration Policy sets out:

- A summary of proposed changes to the Directors' Remuneration Policy, page 189;
- Executive Directors' Remuneration Policy, pages 190-196; and
- Non-executive Directors' Remuneration Policy, pages 196-197.

This section describes the Directors' Remuneration Policy (Policy) which, following shareholder approval at the 2020 Annual General Meeting (AGM), came into effect from May 19, 2020, and will be effective until the 2023 AGM, unless a further policy is proposed by Shell plc (the Company) and approved by shareholders in the meantime.

The principles underpinning the REMCO's approach to executive remuneration are the foundation for everything we do, and are:

- Alignment with Shell's strategy: the Executive Directors' compensation package should be strongly linked to the achievement of stretching targets that are seen as indicators of the execution of Shell's strategy;
- Pay for performance: the majority of the Executive Directors' compensation, (excluding benefits and pensions), should be linked directly to Shell's performance through variable pay instruments;
- Competitiveness: remuneration levels should be determined by reference internally against Shell's Senior Management and externally against companies of comparable size, complexity and global scope;
- Long-term creation of shareholder value: Executive Directors should align their interests with those of shareholders by holding shares in Shell;
- Consistency: the remuneration structure for Executive Directors should generally be consistent with the remuneration structure for Shell's Senior Management. This consistency builds a culture of alignment with Shell's purpose and a common approach to sharing in Shell's success;
- Compliance: decisions should be made in the context of the Shell General Business Principles and Code of Conduct. The REMCO also seeks to ensure compliance with applicable laws and corporate governance requirements when designing and implementing policies and plans; and
- Risk assessment: the remuneration structures and rewards should meet risk-assessment tests to ensure that shareholder's interests are safeguarded and that inappropriate actions are avoided.

The Executive Directors' remuneration structure is made up of a fixed element of basic pay and two variable elements: the annual bonus (50% delivered in shares) and the Long-term Incentive Plan (LTIP). Variable pay outcomes are conditional on the successful execution of the operating plan in the short term and the delivery of strategic goals and financial outperformance over the longer term. The award of shares under the bonus and LTIP, along with significant shareholding requirements, are intended to ensure executives have a sizeable shareholding in Royal Dutch Shell plc (the Company) and experience the same outcomes as shareholders.

During 2018 and 2019, the REMCO reviewed the Remuneration Policy to ensure that the Policy continues to be aligned with Shell's strategy, including delivery of shareholder returns. REMCO determined that while the current policy remains appropriate in many respects, certain changes will support the REMCO to simplify remuneration structures and address the management of quantum. For each area of the policy, the REMCO has considered market practice, the corporate governance environment and feedback from shareholders. The Safety, Environment and Sustainability Committee (SESCo) has provided input to the development of the sustainable development and energy transition metrics. Any potential conflict of interest is mitigated by the independence of the REMCO members and the REMCO Terms of Reference.

A summary of the main changes to the Policy for the Executive Directors is outlined below. No significant changes were made to the Policy for Non-executive Directors.

Remuneration element	Proposed Changes to Policy	Rationale for the change
Annual Bonus	▪ Reduction of the CEO's target bonus from 150% to 125%; and ▪ Removal of the individual performance factor for Executive Directors.	▪ Simplification: the asymmetry in the CEO's bonus structure and the inclusion of individual performance factors were creating undue complexity; and ▪ Transparency: The annual bonus is now solely linked to the performance of Shell to support clarity and transparency of outcomes.
Long-Term Incentive Plan	▪ Reduction of the target LTIP grant from 400% to 300% of base salary; and ▪ Inclusion of an energy transition metric.	▪ Management of Quantum: To moderate the quantum of pay and assist the REMCO in managing the range of outcomes; and ▪ Alignment to Strategy: Inclusion of the energy transition metric strengthens the LTIP's alignment to the strategy and purpose.
Discretion, Malus and Clawback	▪ After reviewing the single figure outcomes for the year, the REMCO will consider an adjustment for the purposes of managing remuneration quantum, taking into account performance, the operation of the remuneration structures and any other relevant considerations. An explanation of any discretionary adjustment would be set out in the relevant Director's Remuneration Report; ▪ Alignment of malus and clawback provisions so that these are the same. Inclusion of corporate failure as an adjustment event; and ▪ Amendment of provisions in the share plan such that for future grants, awards may be adjusted for any reason.	▪ Corporate Governance: Assist the REMCO in managing the risks from behavioural-based incentive schemes; and ▪ Management of Quantum: To assist the REMCO in managing the range of outcomes.
Pension	▪ New Executive Directors who are members of a defined benefit pension arrangement will have their pensionable salary capped at the salary applicable immediately prior to appointment, with the exception of existing US base country participants who will have the bonus removed from the definition of pensionable base salary instead. The Executive Director will join a defined contribution scheme in their base country for contributions made in respect of salary above the defined benefit pensionable salary, or in exceptional circumstances, receive a cash allowance equivalent to the contribution above the cap; and ▪ For recruitment: Explicit confirmation that new appointees, whether internally promoted or newly hired, will be provided with a pension in line with the wider workforce in their base country.	▪ Management of Quantum: To moderate the quantum of pay and assist the REMCO in managing the range of outcomes; and ▪ Corporate Governance: To adopt best practice in line with external guidelines.
Shareholding Requirement	▪ CFO requirement increased to 500% of base salary; and ▪ Extended so it applies for a period of two years post-employment (at the lower of the shareholding requirement or the number of shares held at departure).	▪ Alignment with Shareholders: Further aligns executives with the long-term interests of shareholders.

DIRECTORS' REMUNERATION POLICY continued

EXECUTIVE DIRECTORS

Executive Directors' remuneration policy table

Purpose and link to strategy	Maximum opportunity	Operation and performance management
Salary and pensionable base salary		
Provides a fixed level of earnings to attract and retain Executive Directors.	€2,000,000	Reviewed annually with adjustments effective from January 1. In making salary determinations, the REMCO will consider: ▪ the market positioning of the compensation packages; ▪ comparison with Senior Management salaries; ▪ the employee context, and planned average salary increase for other employees across the Netherlands, the UK and the USA; ▪ the experience, skills and performance of the Executive Director, or any change in the scope and responsibility of their role; ▪ general economic conditions, Shell's financial performance, and governance trends; and ▪ the impact of salary increases on pension benefits and other elements of the package. For Executive Directors employed outside their base country, euro base salaries are translated into their home currency for pension purposes. Pensionable base salaries are maintained in line with euro base salaries taking into account exchange rate fluctuations and other factors as determined by the REMCO.
Benefits		
Provides benefits, in line with those applicable to the wider workforce, in order to attract and retain Executive Directors.	The maximum opportunity is the cost of providing the benefit under Shell's standard policy. These costs can vary. For certain benefits, for example, relocation and tax equalisation, the maximum opportunity will be the grossed-up cost of meeting the specific Executive Director's costs.	Typical benefits include car allowances and home-to-office transport, risk benefits (for example ill-health, disability or death-in-service), security provision, and employer contributions to insurance plans (such as medical). Precise benefits will depend on the Executive Director's specific circumstances. Post-retirement benefits such as healthcare and ongoing security provision may be applicable. Shell's mobility policies may apply, such as for relocation and tax return preparation support, as may tax equalisation related to expatriate employment prior to Board appointment, or in other limited circumstances to offset double taxation. The REMCO may adjust the range and scope of the benefits offered in the context of developments for other employees in relevant countries. Personal loans or guarantees are not provided to Executive Directors.
Annual bonus		
Rewards the delivery of short-term operational targets as derived from Shell's operating plan. To reinforce alignment with shareholder interests, 50% is delivered in cash and 50% is delivered in shares. The shares are subject to a three-year holding period, which applies beyond an Executive Director's tenure.	Maximum bonus (as a percentage of base salary): ▪ Chief Executive Officer (CEO): 250% ▪ Chief Financial Officer (CFO): 240% Target levels (as a percentage of base salary): ▪ CEO: 125% ▪ CFO: 120%	▪ The bonus is determined by reference to performance from January 1 to December 31 each year; ▪ Annual bonus = base salary x target bonus % x scorecard result (0–2); ▪ Taking the Shell operating plan into consideration, REMCO sets stretching scorecard targets and weightings which support the delivery of the strategy. Measures are related to financial performance, operational excellence and sustainable development. Indicative weightings are 30%, 50% and 20% respectively. This balance ensures that the achievement of short-term financial performance does not undermine future shareholder value creation; ▪ Scorecard targets will be disclosed in a subsequent Directors' Remuneration Report when they are no longer deemed to be commercially sensitive; ▪ There are no prescribed thresholds or minimum levels of performance that equate to a prescribed payment under the Policy and this structure can result in no bonus being awarded; ▪ The annual bonus is subject to malus provisions before it is delivered and to clawback provisions thereafter; ▪ The REMCO retains the ability to adjust performance measure targets and weightings year-by-year within the overall target and maximum payouts approved in the Policy; and ▪ In the event that another Executive Director joins the Board, the REMCO will determine their target and maximum bonus, which will not exceed the target and maximum for the CEO.

Executive Directors' remuneration policy table continued

Purpose and link to strategy	Maximum opportunity	Operation and performance management
Long-term Incentive Plan (LTIP)		
Rewards longer-term value creation linked to Shell's strategy. The measures predominantly focus on financial growth and increases in value compared with the other oil majors, supported by measures focused on the achievement of Shell's ambitions in the energy transition. To reinforce alignment with shareholder interests, shares delivered from vested LTIP awards are subject to a three-year holding period, which applies beyond an Executive Director's tenure.	Target award of 300% base salary. Awards may vest at up to 200% of the shares originally awarded, plus dividends.	▪ Award levels are determined annually by the REMCO within the approved policy maximum; ▪ Awards may vest between 0% and 200% of the initial award, depending on Shell's performance assessed on either an absolute basis against strategic targets or on a relative basis against the other oil majors; ▪ Performance metrics and targets are set by the REMCO at the beginning of the relative performance period. When setting performance targets, the REMCO allocates weightings to each metric as it considers appropriate, taking into account strategic priorities; ▪ For 2020, performance is assessed over three years based 90% on financial metrics (TSR, ROACE, FCF and CFFO) which support our strategic ambition to provide a world-class investment case and 10% on a measure focused on thriving in the energy transition; ▪ Additional shares are released representing the value of dividends payable on the vested shares, as if these had been owned from the award date; ▪ LTIP awards (net of tax) must be held for a further three years to align with Shell's longer-term time horizon and strategy; ▪ The LTIP award is subject to malus provisions before it is delivered and to clawback provisions thereafter; ▪ The REMCO may adjust or change the LTIP measures, targets and weightings to ensure continued alignment with Shell's strategy; and ▪ In the event that another Executive Director joins the Board, the REMCO will determine their award level.
Discretion, Malus and Clawback		
Enables the management of risks from behavioural-based incentive schemes and the REMCO to manage the range of pay outcomes.	Adjustment events exist for the purposes of applying malus and clawback. The REMCO retains discretion to adjust pay outcomes.	The REMCO retains the discretion to adjust mathematical outcomes of the annual bonus scorecard and / or LTIP vesting for any Executive Director if and to the extent that it considers this appropriate at their sole discretion. The use of any discretion will be disclosed and explained. The REMCO may adjust pay outcomes for the purposes of managing quantum. This would be done at the REMCO's discretion after considering single figure outcome for the year, taking into account Shell's performance, the operation of the remuneration structures and any other relevant considerations. Please refer to page 193 for a summary of the defined adjustment events.
Pension		
Provides a competitive retirement provision under the individual's base country benefits policy, to attract and retain Executive Directors.	Determined by the rules of the base country pension plan of which the Executive Director is a member.	Executive Directors' retirement benefits are maintained in line with those of the wider workforce in their base country. Only base salary is pensionable, unless country plan regulations specify otherwise and cannot legally be disapplied. The rules of the relevant plans detail the pension benefits which members can receive. The REMCO retains the right to amend the form of any Executive Director's pension arrangements where appropriate, for example in response to changes in legislation to ensure the original objective of this element of remuneration is preserved. New Executive Directors, whether internal appointees or external hires, will be provided with a retirement benefit in line with the wider workforce in their base country. For individuals who are members of a defined benefit pension arrangement: ▪ The pensionable salary will be capped at the salary applicable immediately prior to appointment, with the exception of existing US base country participants who will have the bonus removed from the definition of pensionable base salary instead; and ▪ The Executive Director will join a defined contribution scheme in their base country for contributions made in respect of salary above the defined benefit pensionable salary, or in exceptional circumstances, receive a cash allowance equivalent to the contribution above the cap.
Shareholding requirement		
Aligns interests of Executive Directors with those of shareholders by creating a connection between individual wealth and Shell's long-term performance.	Shareholding (% of base salary): ▪ CEO: 700% ▪ CFO: 500%	Executive Directors are expected to build up their shareholding to the required level over a period of five years from appointment and, once reached, to maintain this level for the full period of their appointment. The intention is for the shareholding guideline to be reached through retention of vested shares from share plans. The REMCO will monitor individual progress and retains the ability to adjust the guideline in special circumstances on an individual basis. The Executive Director will be required to maintain their shareholding requirement (or existing shareholding if lower) for a period of two years from the date they cease to be an employee. In the event that another Executive Director joins the Board the REMCO will determine their Shareholding requirement level, which will not be less than 200% in line with corporate governance best practice.

DIRECTORS' REMUNERATION POLICY continued

Notes to the Executive Directors' remuneration policy table

Comparator group

The benchmarking comparator group consists of the other oil majors (BP, Chevron, ExxonMobil, and Total) and a selection of major Europe-based companies.

The comparator companies are reviewed by the REMCO as part of the Remuneration Policy review every three years. The last review took place in 2019 in preparation for the 2020 Directors' Remuneration Policy vote. No changes to the comparator group are proposed.

The other oil majors are included in the comparator group as these represent our closest direct competitors operating in similar market conditions. The Europe-based companies are selected based on their size, complexity and global reach. The REMCO uses benchmark data from these companies only as a guide to the competitiveness of the remuneration packages. We do not seek to position our remuneration at any defined point against the benchmarked positions.

The REMCO retains the right to alter the comparator group as it sees fit in order to ensure it remains an appropriate and relevant benchmark.

2020 European comparator group

Allianz	Daimler	Rio Tinto
AstraZeneca	Diageo	Roche
BAT	GlaxoSmithKline	Siemens
Bayer	Nestle	Unilever
BHP Billiton	Novartis	Vodafone

Benefits

Benefits for Executive Directors deemed taxable in the UK are included as taxable benefits in the single total figure of remuneration table. These elements may include transport to and from home and office, the provision of home security, and occasional business-required partner travel, which are generally considered legitimate business expenses rather than components of remuneration.

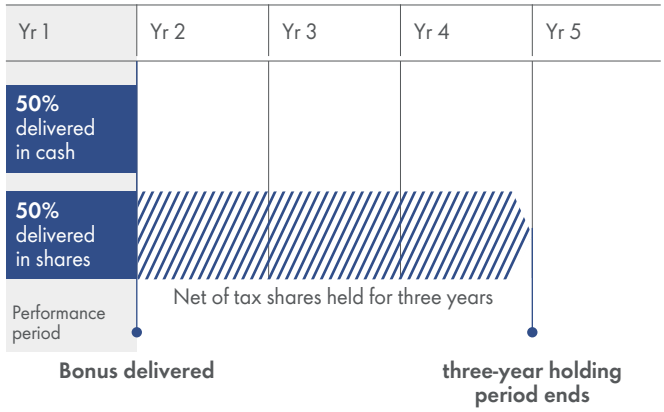
Annual bonus

For the 2020 performance year, the scorecard framework will consist of cash flow from operating activities (30% weight), operational excellence (50% weight) and sustainable development (20% weight). Targets are derived from the annual business plan. These measures are designed to drive focus on the financial and operational performance critical to our success as a world-class investment case and to maintain a strong licence to operate, underpinned by our commitment to safety and journey to thrive in the energy transition. The REMCO believes it is important for annual variable pay to remain balanced, with operational and environmental components, complementing the LTIP's focus on longer-term financial and strategic outcomes. The same annual bonus scorecard applies to the majority of group employees, supporting consistency of remuneration and alignment of objective across employees and senior management.

For future years, the specific measures and weightings for the annual bonus scorecard will be reviewed annually by the REMCO and adjusted accordingly to evolve with Shell's strategy and circumstances. The annual review will also consider the scorecard target and outcome history over a decade to ensure that the targets set remain stretching but realistic.

The REMCO retains the right to exercise its judgement to adjust the mathematical bonus scorecard outcome to ensure that the bonus scorecard outcome for Executive Directors reflects other aspects of Shell's performance which the REMCO deems appropriate for the reported year.

Annual bonus – time horizon



Long-term Incentive Plan

The LTIP rewards longer-term performance linked to Shell's strategy, which includes cash generation, capital discipline, value created for shareholders as well as progress towards meeting our ambition to thrive in the energy transition.

For 2020, the absolute measures will be FCF and energy transition, and relative growth compared with our peers will be based on: TSR, ROACE and CFFO. The relative measures, which focus on outperforming our closest competitors on key financial metrics, are supported by the absolute FCF metric which provides cash to service and repay debt, make shareholder distributions and fund capital investment. These are aligned with our strategic ambition to be a world-class investment case, and are supported by an energy transition measure focused on thriving in the energy transition and delivering our NCF target.

For the relative measures, 200% vests for first position, 150% for second, 80% for third and 0% for ranking fourth or fifth. The comparator group consists of four of the strongest companies in our industry (BP, Chevron, ExxonMobil and Total). Outperforming Shell's closest competitors on key financial metrics is challenging. A vesting outcome of 80% for median performance (40% of maximum) in a small comparator group is considered appropriate by the REMCO. The REMCO is aware that vesting for median performance is generally set at a limit of 25% of maximum for other UK companies. However, these are typically applied against a larger comparator group.

The REMCO will regularly review the measures, weightings and comparator group, and retains the right to adjust these to ensure that the LTIP continues to serve its intended purpose with a stretching level of challenge. If the REMCO was to propose any material changes to the LTIP performance metrics, it would consult with major shareholders.

TSR underpin

If the TSR ranking is fourth or fifth, the level of the award that can vest on the basis of the other measures will be capped at 50% of the maximum payout for the LTIP.

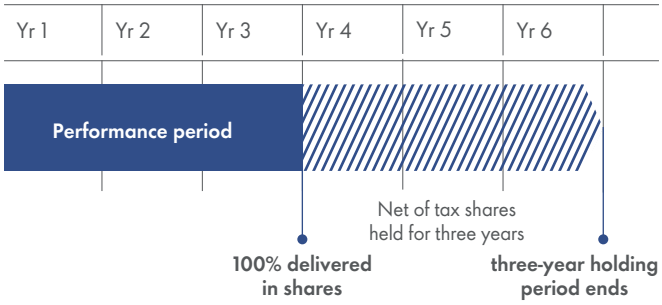
The detailed weightings and metrics applicable to the 2021 bonus scorecard are set out on page 174.

The detailed weightings and metrics applicable to the 2021 grant are set out on page 178.

Performance Period

LTIP performance is assessed over a three-year period. Vested shares from the LTIP are subject to a further three-year holding period post-vesting. This holding period commences on the date of vesting and remains in force beyond an Executive Director's tenure. This time horizon is deemed to be suitable for incentive purposes but is recognised as short relative to some of Shell's operations. However, the REMCO believes that it provides for broad alignment with shareholder interests when coupled with significant shareholding requirements.

LTIP time horizon



Discretion, malus and clawback

Variable pay awards may be made subject to adjustment events. At the discretion of REMCO, such an award may be adjusted before delivery (malus) or reclaimed after delivery (clawback) if an adjustment event occurs.

Adjustment events will be specified in award documentation and it is intended that they will, for example, relate to restatement of financial statements due to material non-compliance with a financial reporting requirement; misconduct by an Executive Director or misconduct through their direction or non-direction; any material breach of health and safety or environment regulations; serious reputational damage to Shell; material failure of risk management; corporate failure; or other exceptional events as determined at the discretion of the REMCO. The REMCO retains the right to alter the list of adjustment events in respect of future awards.

In addition, the REMCO retains the discretion to adjust mathematical outcomes if and to the extent that it considers this appropriate. This power to adjust the outcomes is broad and includes adjusting the outcomes to zero. For example, an adjustment might be made if the REMCO considers:

- The mathematical outcomes do not reflect the wider financial or non-financial performance of RDS or the participant over the performance period;
- The LTIP vesting percentage is not appropriate in the context of circumstances that were unexpected or unforeseen at award; and
- There is any other reason why an adjustment is appropriate.

It is not anticipated that discretion would be used for upwards adjustment. If, in exceptional circumstances, it was considered, this would be done only after consultation with major shareholders.

Performance outcomes and/or share price appreciation make it difficult to predict the final amounts delivered under the LTIP at the time of award. In years where the vesting outcome makes the total remuneration inappropriate for any Executive Director, the REMCO will consider an adjustment to the annual bonus outcome or the LTIP vesting outcome for the purposes of managing remuneration quantum. In making any adjustment to the annual bonus or LTIP vesting outcome for this purpose REMCO will consider the overall level of remuneration for the Executive Director, the operation of the annual bonus, the operation of the LTIP, the wider performance of Shell over the performance periods, as well as the internal context for other employees.

An explanation of any discretionary adjustment would be set out in the relevant Directors' Remuneration Report.

Treatment of outstanding awards

Awards granted prior to the approval and implementation of this Policy and/or prior to an individual becoming an Executive Director will continue to vest and be delivered in accordance with the terms of the original award even if this is not consistent with the terms of this Policy.

As at March 10, 2020, this applies to Executive Directors Ben van Beurden and Jessica Uhl who each have outstanding awards under the LTIP.

Shareholding

The REMCO believes significant shareholding by Executive Directors is an important way of ensuring that shareholders and Executive Directors share the same priorities. Shareholding is one of Shell's core remuneration principles as it creates a balanced connection between individual wealth and Shell's long-term performance. This will support effective governance and an ownership mindset. Significant shareholding requirements reflect the performance timescales of Shell and are aligned with absolute shareholder return.

The CEO is expected to build up a shareholding of seven times their base salary over five years from appointment. The CFO is expected to build up a shareholding of five times their base salary over the same period. In the event of an increase to the guideline multiple of salary, for every additional multiple of salary required, the director will have one extra year to reach the increased guideline, subject to a maximum of five years from the date of the change.

Executive Directors will be required to maintain their shareholding requirement (or their existing shareholding if less than the guideline) for a period of two years post-employment.

The holding periods for LTIP vested shares and shares delivered as part of the annual bonus continue to apply after Executive Directors leave employment.

Differences for Executive Directors from other employees

The remuneration structure and approach to setting remuneration levels is consistent across Shell, with consideration given to location, seniority and responsibilities. However, a higher proportion of total remuneration is tied to variable pay for Executive Directors and members of Senior Management.

The salary for each Executive Director is determined based on the indicators in the "Executive Directors' remuneration policy table", which reflect the international nature of the Executive Directors' labour market. The salary for other employees is normally set on a country basis.

DIRECTORS' REMUNERATION POLICY continued

Executive Directors are eligible to receive the standard benefits and allowances provided to other employees. The provisions which are not generally available for other employees are described in "Benefits".

The methodology used for determining the annual bonus for Executive Directors is broadly consistent with the approach for Shell employees generally. However, bonuses for the majority of Shell employees are determined taking into account individual and business performance, whereas bonuses for Executive Directors are based solely on business performance. Although the makeup and weightings scorecard used for the majority of Shell employees is currently aligned with the scorecard, these scorecards may differ if required to support the achievement of business objectives. All Executive Directors and Executive Committee members receive 50% of their annual bonus in shares, which are subject to a three-year holding period.

Executive Directors are not eligible to receive new awards under employee share plans other than the LTIP, although awards previously granted will continue to vest in accordance with the terms of the original award. Selected employees participate in the Performance Share Plan (PSP). The operation of the PSP is similar to the LTIP, but currently differs, for example, in some performance measures and their relative weightings. As at March 2020, around 51,000 employees participate in one or more of Shell's global share plans and/or incentive plans, further supporting alignment with shareholder interests.

Executive Directors' retirement benefits are maintained in line with those of the wider workforce in their base country.

Illustration of potential remuneration outcomes

The charts on this page represent estimates under four performance scenarios ("Minimum", "On-target", "Maximum" and "Maximum, assuming a 50% share price appreciation between award and vest") of the potential remuneration outcomes for each Executive Director resulting from the application of 2020 base salaries to awards made in accordance with the proposed Policy. The majority of Executive Directors' remuneration is delivered through variable pay elements, which are conditional on the achievement of stretching targets.

The REMCO will review the formulaic Single Figure outcome relative to the quality of performance outcomes and adjust these, taking into account Shell's performance, shareholder experience, the operation of the remuneration structures and any other relevant factors, to ensure that the highest variable pay outcomes are only achieved in years with the highest quality performance.

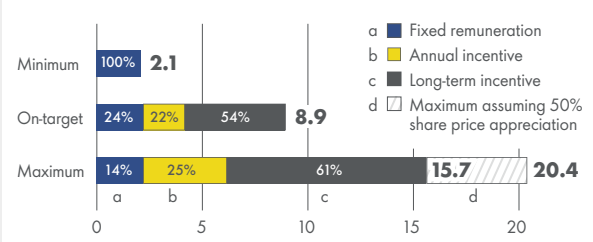
The scenario charts are based on future Policy award levels and are combined with projected single total figures of remuneration. The pay scenarios are forward-looking and only serve to illustrate the future Policy. For simplicity, the minimum, on-target and maximum scenarios assume no share price movement and exclude dividend accrual, for the portion of the bonus paid in shares and the LTIP, although dividend accrual during the performance and holding period applies. The scenarios are based on the current CEO (Ben van Beurden) and CFO (Jessica Uhl) roles.

Performance scenarios

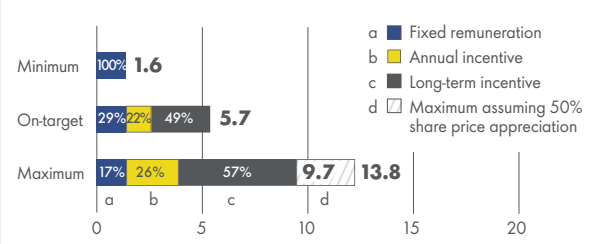
	Minimum	Target	Maximum[A]
Base salary (2020)	✓	✓	✓
Benefits (2019 actual)	✓	✓	✓
Pension (2020 estimate)	✓	✓	✓
Bonus	NIL	125% CEO	250% CEO
		120% CFO	240% CFO
LTIP	NIL	300% CEO	600% CEO
		270% CFO	540% CFO

[A] Maximum assuming 50% share price appreciation.

CEO pay scenarios (€m)



CFO pay scenarios (€m)



Recruitment

The REMCO determines the remuneration package for new Executive Director appointments. These appointments may involve external or internal recruitment or reflect a change in role of a current Executive Director.

When determining remuneration packages for new Executive Directors, the REMCO will seek a balanced outcome which allows Shell to:

- attract and motivate candidates of the right quality;
- take into account the individual's current remuneration package and other contractual entitlements;
- seek a competitive pay position relative to our comparator group, without overpaying;
- encourage relocation if required; and
- honour entitlements (for example, variable remuneration) of internal candidates before their promotion to the Board. The REMCO will follow the approach set out in the table below when determining the remuneration package for a new Executive Director.

Recruitment – Remuneration package

Component	Approach	Maximum
Ongoing remuneration	The salary, benefits, annual bonus, long-term incentives and pension benefits will be positioned and delivered within the framework of the Executive Directors' remuneration policy.	As stated in the "Executive Directors' remuneration policy table".
Compensation for the forfeiture of any awards under variable remuneration arrangements	To facilitate external recruitment, one-off compensation in consideration for forfeited awards under variable remuneration arrangements entered into with a previous employer may be required. The REMCO will use its judgement to determine the appropriate level of compensation by matching the value of any lost awards under variable remuneration arrangements with the candidate's previous employer. This compensation may take the form of a one-off cash payment or an additional award under the LTIP. The compensation can alternatively be based on a newly created long-term incentive plan arrangement where the only participant is the new director. The intention is that any such compensation would, as far as possible, align to the duration and structure of the award being forfeited.	An amount equal to the value of the forfeited variable remuneration awards, as assessed by the REMCO. Consideration will be given to appropriate performance conditions, performance periods and clawback arrangements.
Replacement of forfeited entitlements other than any awards under variable remuneration arrangements	There may also be a need to compensate a new Executive Director in respect of forfeited entitlements other than any awards under variable remuneration arrangements. This could include, for example, pension or contractual entitlements, or other benefits. On recruitment, these entitlements may be replicated within the Executive Directors' remuneration policy or valued by the REMCO and compensated in cash. In cases of internal promotion to the Board, any commitments made which cannot be effectively replaced within the Executive Directors' remuneration policy may, at the REMCO's discretion, continue to be honoured.	An amount equal to the value of the forfeited entitlements, as assessed by the REMCO.
Exceptional recruitment incentive	Apart from the ongoing annual remuneration package and any compensation in respect of the replacement of forfeited entitlements, there may be circumstances in which the REMCO needs to offer a one-off recruitment incentive in the form of cash or shares to ensure the right external candidate is attracted (e.g. to the industry). The REMCO recognises the importance of internal succession planning but it must also have the ability to compete for talent with other global companies. The necessity and level of this incentive will depend on the individual's circumstances. The intention will be that this is only used in genuinely exceptional circumstances.	Subject to the limits set out in the "Executive Directors' remuneration policy table".
Pension	New appointees will be provided with a pension in line with the wider workforce in their base country. For defined benefit members: ▪ The pensionable salary is capped at executive committee level pay for defined benefit purposes (with the exception of participants in the US plan where the bonus is removed from the definition of pensionable pay; and ▪ The member joins an appropriate base country defined contribution mechanism in excess of the cap, or exceptionally a pension cash allowance equivalent to the defined contribution level is payable in excess of the cap.	In accordance with the pension provision applicable to the wider workforce in the base country.

Executive Directors' employment arrangements and letters of appointment

The Dutch Executive Directors are employed for an indefinite period. Executive Directors with the Netherlands as their base country will be employed on the basis of a contract of employment governed by Dutch employment law. For Executive Directors with a base country other than the Netherlands, REMCO will determine their employment arrangements based on a number of considerations, including Dutch immigration requirements and base country retirement benefits. Executive Directors' employment arrangements are available for inspection at the AGM or on request. For further details on appointment and re-appointment of Directors, see the "Governance Framework" on page 135 and "Other Regulatory and Statutory Information" on page 205.

End of employment

Notice period

Employment arrangements of Executive Directors can generally end by either the employee or the employer providing one month's notice, or the applicable statutory notice period. For example, under Dutch law, the statutory notice period for the employer will vary in line with the length of service, with the maximum being four months' notice. Under Dutch law, termination payments are not linked to the contract's notice period.

The Netherlands statutory end-of-employment compensation

With effect from July 1, 2015, employment legislation in the Netherlands introduced statutory end-of-employment compensation. Under this legislation, every termination (other than following retirement or for cause) of a Dutch employment contract that has continued for a minimum of two years will give rise to an obligation to pay the departing employee transition compensation ("transitievergoeding"). The statutory compensation is capped at one times the annual salary, which is deemed to include variable pay such as the annual bonus. Executive Directors are expected not to claim transition compensation or any other applicable statutory compensation over and above the agreed compensation for loss of office as set out in the "End of employment" table on page 196.

Outstanding entitlements

In cases of resignation or dismissal for cause, fixed remuneration (base salary, benefits, and employer pension contributions) will cease on the last day of employment, variable remuneration elements will generally lapse and the Executive Director is not eligible for compensation for loss of office.

The information, on page 196, generally applies to termination of employment by Shell giving notice, by mutual agreement, or in situations where the employment terminates because of retirement with Shell consent at a date other than the normal retirement date, redundancy or in other similar circumstances at the REMCO's discretion.

DIRECTORS' REMUNERATION POLICY continued

End of employment

Provision	Policy
Compensation for loss of office	For Executive Directors appointed between January 1, 2011 and December 31, 2016, employment contracts include a cap on termination payments of one times annual pay (base salary plus target bonus). Delivery of compensation is mitigated by a contractual obligation for the Executive Director to seek alternative employment and Shell's ability to implement phased payment terms. For Executive Directors appointed on or after January 1, 2017, the REMCO may offer a termination payment of up to one times base salary (target bonus will not be included). However, REMCO may be obligated to pay statutory compensation over and above the compensation for loss of office to a departing Executive Director who asserts a statutory claim thereto. Delivery of compensation is mitigated by a contractual obligation for the Executive Director to seek alternative employment and Shell's ability to implement phased payment terms. The provision of standard end-of-employment benefits such as repatriation costs, security provision and outplacement support may also be included, as deemed reasonable by the REMCO. The REMCO may adjust the termination payment for any situation where a full payment is inappropriate, taking into consideration applicable law, corporate governance provisions, the applicability of any statutory compensation and the best interests of Shell and shareholders as a whole.
Annual bonus	Any annual bonus in the year of departure is prorated based on service. Depending on the timing of the departure, the REMCO may consider the latest scorecard position or defer payment until the full-year scorecard result is known. Bonuses delivered in shares represent the bonus which a participant has already earned and carry no further performance conditions; therefore, these shares will be unrestricted at the conclusion of the normal deferral or holding period respectively and no proration will apply.
LTIP	Outstanding awards are prorated on a monthly basis, by reference to the Executive Director's service within the performance period. They will generally survive the end of employment and will remain subject to the same vesting performance conditions, and malus and clawback provisions, as if the Executive Director had remained in employment. The three-year holding period will also remain in force for any awards made on or after January 1, 2017. If the participant dies before the end of the performance period, the award will vest at the target level on the date of death. In case of death after the end of the performance period, the award will vest as described in this Policy.

NON-EXECUTIVE DIRECTORS

Non-executive Directors' remuneration policy table

Fee structure	Approach to setting fees	Other remuneration
Non-executive Directors (NEDs) receive a fixed annual fee for their directorship. The size of the fee will differ based on the position on the Board: Chair of the Board fee or standard Non-executive Director fee. Additional annual fee(s) are payable to any Director who serves as Senior Independent Director, a Board committee chair, or a Board committee member. A NED receives either a chair or member fee for each committee. This means that a chair of a committee does not receive both fees. NEDs receive an additional fee for any Board meeting involving intercontinental travel – except for one meeting a year held in a location other than The Hague.	The Chair's fee is determined by the REMCO. The Board determines the fees payable to NEDs. The maximum aggregate annual fees will be within the limit specified by the Articles of Association and in accordance with the NEDs' responsibilities and time commitments. The Board reviews NED fees periodically to ensure that they are aligned with those of other major listed companies.	Business expenses incurred in respect of the performance of their duties as a NED will be paid or reimbursed by Shell. Such expenses could include transport between home and office and occasional business-required partner travel. NEDs may receive a token of recognition on retirement from the board. The maximum value for this is €300. Where required, the Chair is offered Shell-provided accommodation in The Hague. The REMCO has the discretion to offer other benefits to the Chair as appropriate to their circumstances. Where business expenses or benefits create a personal tax liability to the Director, Shell may cover the associated tax. The Chair and the other NEDs cannot receive awards under any incentive or performance-based remuneration plans, and personal loans or guarantees are not granted to them. NEDs do not accrue any retirement benefits as a result of their non-executive directorships with Shell. NEDs are encouraged to hold shares with a value equivalent to 100% of their fixed annual fee and maintain that holding during their tenure.

Non-executive Directors' letters of appointment

NEDs, including the Chair, have letters of appointment. NEDs' letters of appointment are available for inspection at the AGM or on request. For further details on appointment and re-appointment of Directors, see the "Governance Framework" on page 135 and "Other Regulatory and Statutory Information" on page 205.

Non-executive Director recruitment

The REMCO's approach to setting the remuneration package for NEDs is to offer fee levels and specific benefits (where appropriate) in line with the "Non-executive Directors' remuneration policy table" and subject to the Articles of Association. NEDs are not offered variable remuneration or retention awards.

When determining the benefits for a new Chair, the individual circumstances of the future Chair will be taken into account.

Non-executive Director termination of office

No payments for loss of office will be made to NEDs.

Consideration of overall pay and employment conditions

When setting the Policy, no specific employee groups were consulted. However, Shell seeks to promote and maintain good relations with employee representative bodies as part of its employee engagement performance as required.

When determining Executive Directors' remuneration structure and outcomes, the REMCO reviews a set of information, including relevant reference points and trends, which includes internal data on employee remuneration (for example, employee relations matters in respect of remuneration and average salary increases applying in the Netherlands, UK and the USA). During the Policy review, pay and employment conditions of the wider Shell employee population were taken into account by adhering to the same performance, rewards and benefits philosophy for the Executive Directors, as well as overall benchmarking principles. Furthermore, any potential differences from other employees (see "Differences for Executive Directors from other employees") were taken into account when providing the REMCO with advice in the formation of this Policy.

Dialogue between management and employees is important, with the annual Shell People Survey being one of the principal means of gathering employee views on a range of matters. The Shell People Survey includes questions inviting employees' views on their pay and benefit arrangements. Shell also encourages share ownership among employees, and many are shareholders who are able to participate in the vote on the Policy at the AGM.

The REMCO is kept informed by the CEO, the Chief Human Resources & Corporate Officer and the Executive Vice President Remuneration and HR Operations on the bonus scorecard and any relevant remuneration matters affecting other senior executives, extending to multiple levels below the Board and Executive Committee.

Consideration of shareholder views

The REMCO engages with major shareholders on a regular basis throughout the year and this allows it to hear views on Shell's remuneration approach and test proposals when developing or evolving the Policy. Recent examples of the REMCO responding to shareholder views include: considering the quantum of executive pay and the use of alternative reward structures; introducing the Energy Transition metric to the LTIP in line with our strategic ambitions; removing the individual performance modifier from the calculation of annual bonus outcomes to make remuneration structures simpler and more transparent to shareholders; reducing the CEO's target bonus from 150% to 125%; reducing the CEO's LTIP grant; and enabling the broader use of discretion to manage remuneration outcomes.

The REMCO will review the Policy regularly to ensure it continues to reinforce Shell's long-term strategy and remains closely aligned with shareholders' interests.

Additional policy statement

The REMCO reserves the right to make payments outside the Policy in limited exceptional circumstances, such as for regulatory, tax or administrative purposes or to take account of a change in legislation or exchange controls, and only where the REMCO considers such payments are necessary to give effect to the intent of the Policy.

Signed on behalf of the Board

/s/ Linda M. Coulter

LINDA M. COULTER
Company Secretary
March 9, 2022

OTHER REGULATORY AND STATUTORY INFORMATION

This section of the Annual Report contains the remaining information which the Directors are required to report on each year and for the year ended December 31, 2021. There are other matters that are required to be reported on and that have been disclosed in other sections of the Annual Report, as summarised below:

Management Report	This Directors' Report, together with the Strategic Report, serves as the Management Report for the purpose of Disclosure Guidance and Transparency Rule 4.1.8R. Both the Directors' Report and Strategic Report have been presented in accordance with and reliance on English law, and the liabilities of the Directors in connection with those reports shall be subject to the limitations and restrictions provided by such law.	Directors' Report: pages 131-197 Strategic Report: pages 2-119
Corporate governance	The Company's statement on corporate governance, as required by DTR7.2.3R, is incorporated in this Directors' Report by way of reference.	Directors' Report: pages 131-197
Business relationships [A]	A statement, summarising the Directors' business relationships with suppliers, customers and others.	Strategic Report: pages 2-119
Employee engagement	Information on how Directors have engaged with employees.	Workforce engagement: pages 145-146
Directors' interests [B]	The interests (in shares of the Company or calculated equivalents) of the Directors in office at the end of the year, including any interests of a "connected person". Changes in Directors' share interests during the period from December 31, 2021, to March 9, 2022.	Annual Report on Remuneration: page 171
Likely future developments	Information relating to likely future developments.	Provided throughout the Strategic Report: pages 2-119
Research and development	Information relating to Shell's research and development, including expenditure.	Shell Powering Progress: pages 6-11
Diversity and inclusion	Information concerning diversity and inclusion. This includes information on the equal opportunities in recruitment, career development, promotion, training and rewards for all our people, including those with disabilities.	Our people: pages 114-119
Employee communication and involvement	Information concerning employee communication and involvement.	Our people: pages 114-119
Corporate social responsibility	A summary of Shell's approach to corporate social responsibility. Further details will be available in the Shell Sustainability Report 2021.	Environment and society: pages 99-113 Our people: pages 114-119
Branches	A list of our subsidiaries, joint ventures and associates. Our activities and interests are operated through subsidiaries, branches of subsidiaries, joint ventures and associates which are subject to the laws and regulations of many different jurisdictions.	Additional Information, Appendix 1: pages 331-346
Greenhouse gas emissions	Information relating to greenhouse gas emissions.	Climate change and energy transition: pages 75-98
Risk management	Detail on risk factors. Information on emerging risks.	Risk Factors: pages 22-33 Other Regulatory and Statutory Information: pages 198-206
Financial risk management, objectives and policies	Descriptions of the use of financial instruments and Shell's financial risk management objectives and policies, and exposure to market risk (including price risk), credit risk and liquidity risk.	Consolidated Financial Statements: Note 19, page 267
Listing rule information [C]	Information concerning the amount of interest capitalised by Shell.	Consolidated Financial Statements: Note 6, pages 249
Listing rule information [C]	The Remuneration Committee Report.	Directors' Remuneration Report: pages 166-170
Listing rule information [C]	Details of the Company's long-term incentive schemes as required by LR 9.4.3R	Directors' Remuneration Report: pages 166-170
Significant shareholdings	Information concerning significant shareholdings.	Shareholder information: pages 321-325

[A] This meets the purposes of Schedule 7 to The Companies (Miscellaneous Reporting) Regulations 2018.
[B] "Connected person" has the meaning given to "person closely associated" within the Market Abuse Regulation.
[C] This information is given in accordance with Listing Rule 9.8.4R. Further information in connection with Listing Rule 9.8.4R is contained in the remainder of "Other Statutory Information" which follows on 199-206.

MODERN SLAVERY ACT STATEMENT

We have continued to prioritise buying from and encouraging local providers by procuring goods and services from local suppliers who meet the standards we require. The standards include those relating to human rights, labour practices and business integrity and are governed by the Shell Supplier Principles. Monitoring is undertaken centrally in connection with the preparation of the Shell Group's Modern Slavery Act (MSA) Statement which is prepared by taking proposed inputs from Shell companies in scope of the MSA as to their steps taken to ensure modern slavery does not occur in their supply chain or organisation. The Shell Group Statement is approved by the Board of Shell plc, after approval by the boards of Shell companies which are in scope of the MSA.

DISCLOSURE OF INFORMATION TO AUDITORS

In accordance with section 418 of the Companies Act 2006, each of the persons who is a Director at the date of approval of this Report confirms that, so far as the Director is aware, there is no relevant audit information of which the Company's auditor is unaware. The Director has taken all steps that he or she ought to have taken as a Director in order to make himself or herself aware of any relevant audit information and to establish that the Company's auditor is aware of that information.

FINANCIAL STATEMENTS, DIVIDENDS AND DIVIDEND POLICY

The "Consolidated Statement of Income" and "Consolidated Balance Sheet" can be found on pages 229 and 230 respectively.

Subject to Board approval, Shell aims to grow the dividend per share by around 4% every year, and Shell will target the distribution of 20-30% of its cash flow from operations to shareholders. The Board may choose to return cash to shareholders through a combination of dividends and share buybacks. When setting the level of shareholder remuneration, the Board looks at a range of factors, including the macro environment, the underlying business earnings and cash flow of the Shell Group, the current balance sheet, future investment and divestment plans, and existing commitments.

Interim dividends are currently declared by the Board and paid on a quarterly basis. Shell does not currently pay a "final" dividend, which would need to be voted on by shareholders, requiring the introduction of a resolution at the AGM. This would delay the payment of the fourth quarter dividend (currently paid in late March) until after the AGM, which is towards the end of May, a delay of around seven weeks. Our approach to dividend payments is not uncommon for companies distributing returns to shareholders on a quarterly basis.

Shell pays its dividend in USD, EUR or GBP fully electronically either in CREST or via interbank transfers.

The Directors have announced a fourth quarter interim dividend payable on March 28, 2022, to shareholders on the Register of Members at the close of business on February 18, 2022. The closing date for dividend currency elections was March 4, 2022 [A] and the euro and sterling equivalents announcement date is March 14, 2022.

[A] A different dividend currency election date may apply to shareholders holding shares in a securities account with a bank or financial institution ultimately through Euroclear Nederland. This may also apply to other shareholders who do not hold their shares either directly on the Register of Members or in the corporate sponsored nominee arrangement. Such shareholders can contact their broker, financial intermediary, bank or financial institution for the election deadline that applies.

2021 VIABILITY STATEMENT AND GOING CONCERN STATEMENT

The "Strategic Report" includes information about Shell's strategy, financial condition, cash flows and liquidity, as well as the factors, including the principal risks, likely to affect Shell's future development. It also describes Shell's business model, including competitive advantages and key strengths. The Directors assess Shell's prospects both at an operating and strategic level, each involving different time horizons. To this end, the Directors assess Shell's portfolio and strategy against a wide range of outlooks, including assessing the potential impacts of various possible energy transition pathways and scenarios for changes in societal expectations in relation to climate change. Shell recognises in its strategy that the world is transitioning to a lower-carbon energy system (see "Climate change and energy transition").

The Risk Factors section (see page 22-33) provides an overview of the principal risks Shell is exposed to in its operations. We have assessed which scenarios linked to the principal risks could lead to a severe but possible outcome. Consideration was given to the climate change and energy transition risk, however the associated material impacts are of a longer-term nature, outside the three-year viability statement period. Therefore, it was not assessed as a stress case scenario for the viability statement. However, it is worth noting that key assumptions that underpin the amounts recognised in the consolidated balance sheet, such as future oil and gas prices, discount rates, future costs of decommissioning and restoration, and tax rates, all go well beyond 3 years and do take climate change and energy transition into account.

We have also assessed the impact of the announcement of Shell's intention to exit its ventures in Russia with Gazprom and related entities, as well as end its involvement in the Nord Stream 2 pipeline project (for more details see Note 32 on page 283). We concluded that these events are covered by the scenario on "unplanned shutdown of major cash-generating asset" for viability statement assessment purposes.

Viability Statement Process

Throughout the year, the Board received regular updates on the financial framework

The Board approved the detailed three-year operating plan which includes Shell's cash flows and ability to service financing requirements [A]

We identified and modelled five severe but possible scenarios that could potentially impact Shell's viability

We assessed and concluded on the long-term viability of the Company (we have deemed a three-year period of assessment to be appropriate)

[A] Shell's three-year operating plan contains assumptions in relation to internal and external parameters, including recovery from the impacts of the COVID-19 pandemic. Some of the key assumptions include the impact of commodity prices, exchange rates, future carbon costs, agreements like LNG contract renewals, production levels and product demand and schedules of growth programmes.

SCENARIOS AND RISKS

Scenario	Link to principal risks	Severity of Impact
Unplanned shutdown of a major cash-generating asset (for the viability statement period i.e. three years)	[A]	Low
A low oil and gas price environment (Brent at 2022: $50, 2023: $50, 2024: $50)	[B] and [D]	Medium
A significant HSSE event	[A]	Medium
Global macroeconomic uncertainties (including those from a pandemic) – low oil and gas price environment, negative impact on oil product and chemical margins, and long-term demand reduction	[B], [C] and [D]	Medium
A significant HSSE event and a low oil and gas price environment	[A], [B] and [D]	Higher

A. The nature of our operations exposes us, and the communities in which we work, to a wide range of health, safety, security and environment risks.
B. We are exposed to macroeconomic risks including fluctuating prices of crude oil, natural gas, oil products and chemicals.
C. We are exposed to treasury and trading risks, including liquidity risk, interest rate risk, foreign exchange risk and credit risk. We are affected by the global macroeconomic environment and by financial and commodity market conditions.
D. We seek to execute divestments in pursuing our strategy. We may be unable to divest these assets successfully in line with our strategy.

OTHER REGULATORY AND STATUTORY INFORMATION continued

Conclusion

Taking account of Shell's position and principal risks at December 31, 2021, the Directors have a reasonable expectation that Shell will be able to continue in operation and meet its liabilities as they fall due over its three-year operating plan period.

GOING CONCERN

In assessing the appropriateness of the going concern assumption over the period to March 31, 2023 (the 'going concern period'), management have stress-tested Shell's most recent financial projections to incorporate a range of potential future outcomes by considering Shell's principal risks, further potential downside pressures on commodity prices and cash preservation measures, including reduced future operating costs, capital expenditure and dividend distributions. This assessment confirmed that Shell has adequate cash, other liquid resources and undrawn credit facilities to enable it to meet its obligations as they fall due in order to continue its operations during the going concern period. Therefore, the Directors consider it appropriate to continue to adopt the going concern basis of accounting in preparing the audited Consolidated Financial Statements.

NON-FINANCIAL INFORMATION STATEMENT

The Non-Financial Information Statement below forms part of the Strategic Report on pages 2-119.

Non-Financial Information Statement

Reporting requirement	Where to read more in this Report	Page
Business Model	Shell Powering Progress	6
Non-financial KPIs	Performance indicators	36
Environmental matters	Environment and society, Climate change and energy transition	99
		75
Employees	Our people and Directors' Report	114
		131
Social matters	Environment and society	99
Respect for human rights	Environment and society	99
Anti-corruption and anti-bribery matters	Our people	114

REPURCHASES OF SHARES

As announced on July 7, 2021, Shell will target the distribution of 20-30% of its cash flow from operations to shareholders. The Board may choose to return cash to shareholders through a combination of dividends and share buybacks. As part of this financial framework, Shell announced the distribution of $2 billion worth of capital to shareholders via share buybacks on July 29, 2021, which were completed on November 19, 2021.

In addition, Shell announced on September 20, 2021, that after the Shell Group's divestment of the Permian assets, it would distribute $7 billion worth of capital to shareholders. This was subsequently confirmed to be via share buybacks and at pace. The first tranche of up to $1.5 billion was announced on December 2, 2021, and completed on January 28, 2022. On February 3, 2022, Shell announced an additional buyback programme of $8.5 billion, comprising the additional $5.5 billion of Permian divestment proceeds and $3.0 billion as part of the Company's capital allocation framework. In the first tranche of this programme the Company has entered into an irrevocable, non-discretionary arrangement for the purchase of up to $4.0 billion of shares in the period up to and including May 4, 2022.

To ensure that the Company had the necessary authority to continue to buy back its shares when the time is considered appropriate, at the 2021 AGM, shareholders granted an authority for the Company to repurchase up to a maximum of 780 million of its shares (excluding purchases for employee share plans). This authority expires on the earlier of the close of business on August 18, 2022, or the end of the 2022 AGM. This means that, as at close of February 21, 2022, 589 million further shares could still be repurchased under the current AGM authority.

The Board continues to regard the ability to repurchase issued shares in suitable circumstances as an important part of Shell's financial management. A new resolution will be proposed at the 2022 AGM to renew the authority for the Company to purchase its own share capital, up to specified limits, for a further year. This proposal will be described in more detail in the 2022 Notice of Annual General Meeting.

BOARD OF DIRECTORS

The names of the Directors who held office during the year can be found on pages 121-128. Information on the Directors who are seeking reappointment is included in the Notice of Annual General Meeting.

SIMPLIFICATION

At a General Meeting, on December 10, 2021, the shareholders of the Company supported a resolution to amend Shell's Articles of Association (Articles) to enable the simplification of the Company. The simplification entailed establishing a single line of shares to eliminate the complexity of Shell's A/B share structure; and aligning the Company's tax residence with its country of incorporation in the UK; and consequently, changing the Company's name from Royal Dutch Shell plc to Shell plc.

On December 20, 2021, the Board decided to proceed with the simplification. The alignment of the Company's tax residence with its country of incorporation in the UK resulted in recognition in 2021 of a taxable deemed disposal gain fully offset by taxable losses in the Netherlands.

On December 31, 2021, at a Board meeting held in the UK the Board approved the key steps required to move the Company's tax residence to the UK.

On January 21, 2022, the Company changed its name from Royal Dutch Shell plc to Shell plc.

On January 29, 2022, one line of shares was established through assimilation of each A share and each B share into one single line of ordinary shares of the Company. This assimilation had no impact on voting rights or dividend entitlements.

As stated in the Notice of Meeting and Circular and subsequent announcements, the Board believes that the simplification will strengthen Shell's competitiveness and accelerate both shareholder distributions and delivery of its strategy to become a net-zero emissions energy business.

QUALIFYING THIRD-PARTY INDEMNITIES

The Company has entered into a Deed of Indemnity (Deed) with each Director of the Company who served during the year. The terms of each of these Deeds are identical and they reflect the statutory provisions on indemnities contained in the Companies Act 2006 (CA 2006). Under the terms of each Deed, the Company has agreed to indemnify the Director, to the fullest extent permitted by the CA 2006, against any loss, liability or damage, howsoever caused (including in respect of a Director's own negligence), suffered or incurred by a Director in respect of their acts or omissions while or in the course of acting as a Director or employee of the Company, any associated company or affiliate (within the meaning of the CA 2006). In addition, the Company shall lend funds to Directors as required to meet reasonable costs and expenses incurred or to be incurred by them in defending any criminal or civil proceedings brought against them in their capacity as a Director or employee of the Company, associated company or affiliate, or, in connection with certain applications brought under the CA 2006. The provisions in the Company's Articles relating to arbitration and exclusive jurisdiction are incorporated, mutatis mutandis, into the Deeds entered into by each Director and the Company.

The Company has provided both indemnities and Directors' and officers' insurance to the Directors in connection with the performance of their responsibilities. Copies of these indemnities and the Directors' and officers' insurance policies are open to inspection. A copy of the form of these indemnities has been previously filed with the US Securities and Exchange Commission.

RELATED PARTY TRANSACTIONS

Save as set out below and other than disclosures given in Notes 10 and 28 to the "Consolidated Financial Statements" on pages 254 and 280, there were no transactions or proposed transactions that were material to either the Company or any related party. Nor were there any transactions with any related party that were unusual in their nature or conditions.

On February 11, 2022, Shell Pipeline Company LP, a subsidiary of the Company, announced that it made a non-binding offer to purchase all remaining common units held by the public representing limited partner interests in Shell Midstream Partners, L.P. (Shell interest 68.5%)(SHLX) for $12.89 per common unit in cash. The proposed transaction is subject to a number of contingencies, including the approval of the board of directors of SHLX and the satisfaction of any conditions to the consummation of a transaction set forth in any definitive agreement concerning the transaction. No definitive documentation has yet been executed.

POLITICAL CONTRIBUTIONS

No donations were made by the Company or any of its subsidiaries to political parties or organisations during the year. Shell USA, Inc. administers the non-partisan Shell Oil Company Employees' Political Awareness Committee (SEPAC), a political action committee registered with the US Federal Election Commission. Eligible employees may make voluntary personal contributions to the SEPAC. All employees' contributions comply with federal and state law and are publicly reported in accordance with US election laws. Shell USA, Inc. does not exercise control over SEPAC's funding decisions.

RECENT DEVELOPMENTS AND POST-BALANCE SHEET EVENTS

See Note 32 to the "Consolidated Financial Statements" on page 283.

SHARE CAPITAL

The Company's issued share capital at December 31, 2021, is set out in Note 21 to the "Consolidated Financial Statements" on page 274. The percentage of the total issued share capital represented by each class of share is given below. On January 29, 2022, an assimilation of the Company's A and B shares was effected. More information on how this has impacted the share capital of the Company can be found on page 200.

Share capital percentage as at December 31, 2021

Share class	%
A	53.37
B	46.63
Sterling deferred	de minimis

TRANSFER OF SECURITIES

There are no restrictions on transfer or limitations on the holding of the ordinary shares other than under the Articles, restrictions imposed by law or regulation (for example, insider trading laws) or pursuant to the Company's Share Dealing Code.

SHARE OWNERSHIP TRUSTS AND TRUST-LIKE ENTITIES

Shell has three primary employee share ownership trusts and trust-like entities: a Dutch foundation (stichting) and two US Rabbi Trusts. The shares held by the Dutch foundation are voted by its Board and the shares in the US Rabbi Trusts are voted by the Voting Trustee, Newport Trust Company. Both the Board of the Dutch foundation and the Voting Trustee are independent of Shell.

The UK Shell All Employee Share Ownership Plan has a separate related share ownership trust. Shares held by the trust are voted by its trustee, Computershare Trustees Limited, as directed by the participants.

AUDITOR

A resolution relating to the appointment of Ernst & Young LLP as auditor for the financial year 2022 will be proposed at the 2022 AGM.

ANNUAL GENERAL MEETING

The AGM will be held on May 24, 2022, at Central Hall Westminster, Storey's Gate, Westminster, London, SW1H 9NH, United Kingdom. The Notice of Annual General Meeting will include details of the business to be put to shareholders at the AGM.

CONFLICTS OF INTEREST

In accordance with the Act and the Company's Articles, the Board may authorise any matter that otherwise may involve any Directors breaching their duty to avoid conflicts of interest. The Board has adopted a procedure to address these requirements. Detailed conflict of interest questionnaires are reviewed by the Board and, if considered appropriate, authorised. Conflicts of interest as well as any gifts and hospitality received by and provided by Directors are kept under review by the Board. Further information relating to conflicts of interest can be found in the Articles, available on the Shell website.

SIGNIFICANT COMMITMENTS OF THE CHAIR

The Chair's other significant commitments are given in his biography on page 121.

SHELL GENERAL BUSINESS PRINCIPLES

The Shell General Business Principles define how Shell subsidiaries are expected to conduct their affairs and are underpinned by the Shell core values of honesty, integrity and respect for people. These principles include, among other things, Shell's commitment to support fundamental human rights in line with the legitimate role of business and to contribute to sustainable development. They are designed to mitigate the risk of damage to our business reputation and to prevent violations of local and international legislation. They can be found at www.shell.com/sgbp. See "Risk factors" on pages 22-33.

SHELL CODE OF CONDUCT

Directors, officers, employees and contract staff are required to comply with the Shell Code of Conduct, which instructs them on how to behave in line with the Shell General Business Principles. This Code clarifies the basic rules and standards they are expected to follow and the behaviour expected of them. These individuals must also complete mandatory Code of Conduct training.

Designated individuals are required to complete additional mandatory training on antitrust and competition laws, anti-bribery, anti-corruption and anti-money laundering laws, financial crime, data protection laws and trade compliance requirements (see "Risk factors" on page 22-33). The Shell Code of Conduct can be found at www.shell.com/codeofconduct.

CODE OF ETHICS

Executive Directors and Senior Financial Officers of Shell must also comply with the Code of Ethics. This Code is specifically intended to meet the requirements of Section 406 of the Sarbanes-Oxley Act. It can be found at www.shell.com/codeofethics.

OTHER REGULATORY AND STATUTORY INFORMATION continued

INDEPENDENT PROFESSIONAL ADVICE

All Directors may seek independent professional advice in connection with their role as a Director. All Directors have access to the advice and services of the Company Secretary. The Company has provided both indemnities and Directors' and officers' insurance to the Directors in connection with the performance of their responsibilities. Copies of these indemnities and the Directors' and officers' insurance policies are open to inspection. A copy of the form of these indemnities has been previously filed with the US Securities and Exchange Commission.

RESULTS PRESENTATIONS AND ANALYSTS' MEETINGS

The planned dates of the quarterly, half-yearly and annual results presentations, as well as all major analysts' meetings, are announced in advance on the Shell website and through a regulatory release.

Generally, presentations are broadcast live via webcast and teleconference. Other meetings with analysts or investors are not normally announced in advance, nor can they be followed remotely by webcast or any other means. Procedures are in place to ensure that discussions in such meetings are always limited to non-material information or information already in the public domain.

Results and meeting presentations can be found at www.shell.com/investor. This is in line with the requirement to ensure that all shareholders and other parties in the financial market have equal and simultaneous access to information that may influence the price of the Company's securities.

RISK MANAGEMENT AND CONTROLS

The Board is responsible for maintaining a sound system of risk management and internal control, and for regularly reviewing its effectiveness.

A single overall control framework exists for the Company and its subsidiaries. This is designed to manage rather than eliminate the risk of failure to achieve our business objectives. It provides reasonable, but not absolute assurance against material misstatement or loss.

The Control Framework (see diagram) encompasses the key components – "foundation elements", "management processes" and "structural" – that together establish the structure and context within which Shell companies operate. "Foundation elements" consist of the principles and rules that underpin and establish boundaries for Shell activities. "Management processes" define our critical processes. These include how strategy, planning and appraisal are used to improve performance and how risks are to be managed, such as through the application of effective controls and assurance. The "structural" component defines the organisational structures and key governance principles that are applied to facilitate the achievement of the Shell Group's overall business objectives.

Risk management

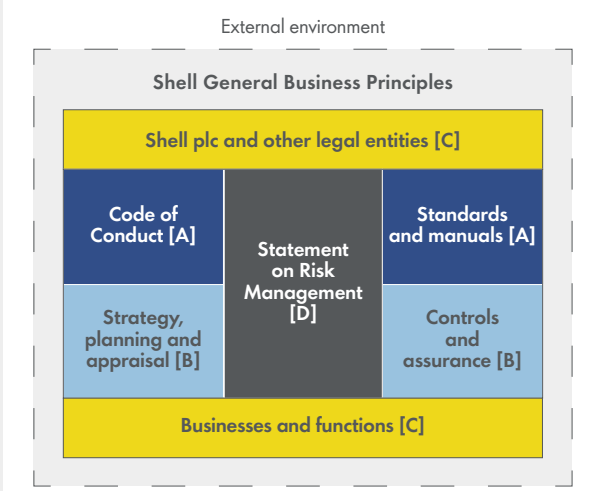
The "Statement on Risk Management" is a foundation element of the Shell Control Framework and a key enabler of many of its management processes.

Risk identification

We identify and define risks across the Shell Group from three distinct perspectives:

- Strategic risks: we consider current and future portfolio issues, examining parameters such as country concentration or exposure to higher-risk countries. We also consider long-range developments in order to test key assumptions or beliefs in relation to energy markets.
- Operational risks: we consider material operational exposures across Shell's entire value chain which provide a more granular assessment of key risks facing the organisation.
- Conduct and culture risks: we consider how our policies and practices align with our purpose, core values and desired mindset and behaviours.

CONTROL FRAMEWORK



[A] The **foundation** elements of the Shell Control Framework define the principles that underpin the Shell Group's activities.

[B] The **management processes** define activities critical to an effective control framework.

[C] The **structural** component defines how businesses and functions facilitate achievement of the Shell Group's overall business objectives, while respecting the separate legal identity of the individual Shell companies that implement them.

[D] A **foundation** element of the Shell Control Framework and a key enabler of many of its **management processes**.

These perspectives help us to maintain a comprehensive view of the different types of risks we face and the different time horizons in which they may affect us.

Risk assessment

To further understand the risks we face, we evaluate the impact and likelihood of each risk.

When assessing the potential impact of a risk, we consider the possible financial consequences. We also look at more qualitative issues such as the impacts on our reputation, our ability to comply with external regulations and impacts on health, safety and the environment.

When assessing the likelihood of a risk occurring, we consider several factors, such as the level of risk exposure, our ability to prevent the risk happening and whether the risk has materialised in the past.

To support risk assessments, we also seek to establish and articulate our risk appetite, which is the level of risk that we are willing to accept in pursuit of Shell's strategy and objectives. There are risks that Shell accepts, or does not seek to fully mitigate. The financial framework sets an overarching boundary condition for risk appetite. This is because Shell's financial resilience informs the aggregate level of risk appetite that could be sustained.

The impact and likelihood assessment, combined with risk appetite, determine the type of risk responses, such as controls and assurance activities, that may be required to manage each risk. The impact and likelihood assessments also help us to prioritise risks.

Risk response

A key foundation of the Shell Control Framework is Shell's standards and manuals, including the Code of Conduct. These establish requirements and guidance that help management design and develop controls to manage risks consistently across the Group.

Shell's principal risks and the broad array of measures used to manage each risk are described on pages 22-33.

During the year, management regularly reviews the principal risks and associated risk responses, implementing further remedial actions as appropriate. The Executive Committee and the Board regularly consider Group-level risks. They frame them in terms of strategic, operational or conduct and culture risks, and assess them alongside the relevant control mechanisms and risk responses. These periodic reviews are supplemented by dedicated reviews of specific risks, as needed.

In 2021, we continued to pay attention to our response to the COVID-19 pandemic and its varied impacts (see "Responding to the COVID-19 Pandemic" on page 204).

Examples of how some principal risks are managed

We operate in more than 70 countries that have differing degrees of political, legal and economic stability. This exposes us to a wide range of political developments that could cause changes to contractual terms, laws and regulations. We and our joint arrangements and associates also face the risk of litigation and disputes worldwide (see "Risk Factors" on page 22). We continually monitor geopolitical developments and societal issues relevant to our interests. Employees who engage with government officials are subject to specific training programmes, procedures and regular communications, as well as the Shell General Business Principles and Shell Code of Conduct. We are prepared to exit a country if we believe we can no longer operate there in accordance with our standards and applicable law, and we have done so in the past.

Many of our major projects and operations are conducted in joint arrangements or with associates, which may reduce our level of control and ability to identify and manage risks (see "Risk Factors" on page 22). In each case, Shell appoints a representative to manage its interests. This representative seeks to ensure that the projects operate under standards that are equivalent to Shell's for certain critical areas.

Climate change and risks resulting from greenhouse gas emissions are significant risk factors for Shell. They are monitored, like other significant risks, by the Executive Committee and the Board. Shell has a climate change risk management structure which is supported by standards, policies and controls (see "Risk factors" on page 22 and "Climate change and energy transition" on pages 75).

The system of risk management and internal control over financial reporting is an integral part of the Shell Control Framework. Regular reviews are performed to identify the significant risks to financial reporting and the key controls designed to address them. These controls are documented, responsibility is assigned, and they are monitored for design and operating effectiveness. Controls found to be ineffective are remediated.

Emerging risks

Management and the Board also consider emerging risks, defined as risks where the scope, impact and likelihood are still uncertain, but which could have a significant effect on achieving Shell's strategy and objectives in the future. These risks are identified through the monitoring of external developments, the status of risk indicators, learnings from incidents and assurance findings, and the appraisal of Shell's forward-looking plans. Once identified, we undertake activities to monitor, prepare for and reduce the future impact, where possible, should such emerging risks materialise.

Board review of principal and emerging risks

The Board confirms it has carried out a robust assessment of Shell's principal risks, including a robust process for identifying, evaluating and managing Shell's principal risks. The Board also confirms it has carried out a robust assessment of Shell's emerging risks. These assessments have been in place throughout 2021 and up to the date of this Report, are regularly reviewed by the Board and accords with the Financial Reporting Council guidance on risk management, internal control and related financial and business reporting.

Review of the effectiveness of the system of risk management and internal control

The Board has delegated authority to the Audit Committee to assist it in fulfilling its responsibilities in relation to the effectiveness of the risk management and internal control system, the integrity of financial reporting, and consideration of compliance matters (see "Audit Committee Report" on pages 153-165).

The Audit Committee receives regular reports from the Chief Internal Auditor on notable internal audits and those with a significant impact on the effectiveness of controls. The Committee reviews significant incidents involving financial, business and compliance controls and receives regular reports on business integrity issues. The Audit Committee also requests updates on specific financial, operational and compliance control issues throughout the year. The Audit Committee Chair provides an update to the Board after every Audit Committee meeting.

During and after such sessions, the Board has the opportunity to request further information and ask clarifying questions. The Chairs of the Safety, Environment and Sustainability Committee (SESCo) and the Nigeria Special Litigation Committee, an ad hoc Board committee, provide regular updates after each of their meetings. These updates cover, among other matters, the respective aspects of controls that they monitor in accordance with their Terms of Reference. The Board receives the approved minutes of the Audit Committee and SESCo minutes. They are incorporated into the Board minutes so all Directors can read and review them. This helps the Board with its ongoing monitoring and annual review of material controls. The Board is also helped with its monitoring and review responsibilities by the reports of:

- the Executive Vice President Taxation and Controller;
- the Chief Internal Auditor;
- the External Auditors;
- the Chairs of the Disclosure Committee and the Financial Reporting Control Committee;
- the Chief Ethics & Compliance Officer;
- as well as summaries of the Annual Proved Reserves Disclosure.

The Executive Committee and the Audit Committee conduct an annual review of the effectiveness of the system of risk management and internal control. This is based on their own insights and experience during the year and the outcomes of the Group-level risk reviews and the Group Assurance Letter process. In the Group Assurance Letter process, each Executive Director conducts a structured internal assessment of compliance with legal and ethical requirements and the Shell Control Framework.

OTHER REGULATORY AND STATUTORY INFORMATION continued

As part of their annual review, the Executive Committee and Audit Committee also consider input from the Chief Internal Auditor, Chief Ethics and Compliance Officer and the External Auditor. The Board reviews and discusses the insights and conclusions from this annual assessment.

The Board confirms that it has conducted its annual review of the effectiveness of Shell's system of risk management and internal control in respect of 2021, and that this review covered all material controls, including financial, operational and compliance controls.

Responding to the COVID-19 pandemic

Although recovery is under way in many parts of the world, the COVID-19 pandemic continues to affect people's lives, government policies, markets and businesses. In 2020, Shell implemented a broad, structured response to the pandemic. This aimed to ensure we supported our colleagues, suppliers, customers and the communities where we work. It also sought to maintain resilience in our day-to-day operations and our overall financial framework. Many of these responses remained in place throughout 2021 and were embedded in our day-to-day operational activities. For example:

- We took many steps to protect the health of our colleagues, including requiring or encouraging office-based staff to work from home, depending on the advice of local authorities. We provided support to ensure all our colleagues can work remotely each day. We maintained comprehensive return-to-site approaches for Shell's offices and these were reviewed and updated as necessary.
- We continued to enforce social distancing at our offshore platforms and onshore facilities. We conducted health screening and implemented procedures to allow the safe evacuation of any suspected cases of COVID-19 from our offshore platforms or onshore facilities.
- In our global network of retail service stations, we enforced social distancing and carry out deeper cleaning. We also used other protective measures, such as screens for till operators.
- Management at all levels continued to engage with staff to understand and respond to the stresses placed on them by the pandemic. A confidential counselling service was made available to help colleagues experiencing the psychological impact of the pandemic. We provided extra online resources to help people manage their physical and mental well-being.
- To sustain our operations and supply chains, which in turn support our suppliers and customers, we ensured business continuity plans were in place for all our businesses, functions and operating sites.
- We accelerated the adoption of digital technology (including the use of drones and robots) to monitor offshore and manufacturing equipment remotely.
- We strengthened our global web content filtering capability in response to the switch from office to remote working and added new measures to improve cyber-awareness.
- We continued to reiterate Shell's compliance rules (including the Code of Conduct) and the importance of adhering to them. The Crisis Management Standard was used to guide our operational risk responses.
- Our country chair network addressed specific challenges that arose at local levels.

As governments and society continue to adjust and recover from the pandemic, we monitor the changing external environment and emerging risks across Shell's entire operations. In this way, we seek to ensure we remain resilient and ready and able to respond to developments.

More detailed information about the impact of the pandemic on Shell's principal risks and our responses to these impacts is provided in "Risk Factors" on pages 22-33.

MANAGEMENT'S EVALUATION OF DISCLOSURE CONTROLS AND PROCEDURES OF SHELL

Shell's CEO and CFO have evaluated the effectiveness of Shell's disclosure controls and procedures at December 31, 2021. Based on that evaluation, they concluded that Shell's disclosure controls and procedures are effective.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING OF SHELL

Management, including the CEO and CFO, is responsible for establishing and maintaining adequate internal control over Shell's financial reporting and the preparation of the "Consolidated Financial Statements". It conducted an evaluation of the effectiveness of Shell's internal control over financial reporting and the preparation of the "Consolidated Financial Statements" based on the Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). On the basis of this evaluation, management concluded that, at December 31, 2021, the Company's internal control over financial reporting and the preparation of the "Consolidated Financial Statements" was effective.

THE TRUSTEE'S AND MANAGEMENT'S EVALUATION OF DISCLOSURE CONTROLS AND PROCEDURES FOR THE ROYAL DUTCH SHELL DIVIDEND ACCESS TRUST

The Trustee of the Royal Dutch Shell Dividend Access Trust (the Trustee) and Shell's CEO and CFO have evaluated the effectiveness of the disclosure controls and procedures in respect of the Dividend Access Trust (the Trust) at December 31, 2021. On the basis of this evaluation, these officers have concluded that the disclosure controls and procedures of the Trust are effective.

THE TRUSTEE'S AND MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING OF THE ROYAL DUTCH SHELL DIVIDEND ACCESS TRUST

The Trustee and the Company's management are responsible for establishing and maintaining adequate internal control over the Trust's financial reporting. The Trustee and the Company's management conducted an evaluation of the effectiveness of internal control over financial reporting based on the Internal Control – Integrated Framework (2013) issued by COSO. On the basis of this evaluation, the Trustee and management concluded that, at December 31, 2021, the Trust's internal control over financial reporting was effective.

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

There has not been any change in the internal control over financial reporting of Shell or the Trust that occurred during the period covered by this Report that has materially affected, or is reasonably likely to materially affect, the internal control over financial reporting of Shell or the Trust. Material financial information of the Trust is included in the "Consolidated Financial Statements" and is therefore subject to the same disclosure controls and procedures as Shell. See the "Royal Dutch Shell Dividend Access Trust Financial Statements" on pages 316-319 for additional information.

ARTICLES OF ASSOCIATION

The Company's Articles were adopted on December 20, 2021. The Articles may only be amended by a special resolution of the shareholders in a general meeting. A full version of the Company's Articles can be found at www.shell.com/investors.

MANAGEMENT AND DIRECTORS

The Company has a single-tier Board of Directors headed by a Chair, with management led by a CEO. See "The Board of Shell plc" on page 121 and Senior Management on page 129.

DIRECTORS' SHAREHOLDING QUALIFICATION

While the Articles do not require Directors to hold shares in the Company, the Remuneration Committee believes that Executive Directors should align their interests with those of shareholders by holding shares in the Company. The CEO is expected to build up a shareholding of seven times base salary over five years from appointment and the CFO is expected to build up a shareholding of five times base salary over the same period. In the event that another Executive Director joins the Board, the Remuneration Committee will determine their shareholding requirement, which will not be less than 200% of their base salary.

Executive Directors will be required to maintain their requirement (or existing shareholding if less than the guideline) for a period of two years post employment. Non-executive Directors are encouraged to hold shares with a value equivalent to 100% of their fixed annual fee and to maintain that holding during their tenure. Information on the Directors with shares in the Company can be found in the "Directors' Remuneration Report" on pages 166-170.

APPOINTMENT AND RETIREMENT OF DIRECTORS

The Company's Articles, the Corporate Governance Code and the Companies Act 2006 govern the appointment and retirement of Directors. Board membership and biographical details of the Directors are provided on pages 121 to 128. However, Directors follow the direction laid out in the Code and stand for re-election annually.

On May 18, 2021, following the conclusion of the AGM, Chad Holliday stepped down from the Board after more than 10 years' service as a Director, six years of which were as Chair of the Company. Sir Andrew Mackenzie succeeded him as Chair on the same day.

On May 19, 2021, Jane Holl Lute was appointed to the Board. On May 18, 2021, following the conclusion of the AGM, Sir Nigel Sheinwald stood down from the Board.

RIGHTS ATTACHING TO SHARES

The full rights attaching to shares are set out in the Company's Articles. The Company can issue shares with any rights or restrictions attached to them as long as this is not restricted by any rights attached to existing shares. These rights or restrictions can be decided either by an ordinary resolution passed by the shareholders or by the Board as long as there is no conflict with any resolution passed by the shareholders.

VOTING

Currently, the voting rights of each ordinary share carry one vote at a general meeting of the Company.

The sterling deferred shares are not ordinary shares and therefore have different rights and restrictions attached to them.

CHANGE OF CONTROL

There are no provisions in the Articles that would delay, defer or prevent a change of control.

DIRECTORS' RESPONSIBILITIES IN RESPECT OF THE PREPARATION OF THE ANNUAL REPORT AND ACCOUNTS

The Directors are responsible for preparing the Annual Report, including the financial statements, in accordance with applicable laws and regulations. These require the Directors to prepare financial statements for each financial year. As such, the Directors have prepared the (i) Consolidated Financial Statements in accordance with international accounting standards in conformity with the requirements of the UK Companies Act 2006, and therefore in accordance with UK-adopted international accounting standards; and (ii) Parent Company Financial Statements in accordance with international accounting standards in conformity with the requirements of the UK Companies Act 2006. In preparing these financial statements, the Directors have also elected to comply with IFRS as issued by the International Accounting Standards Board (IASB). The Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of Shell and the Company and of the profit or loss of Shell and the Company for that period. In preparing these financial statements, the Directors are required to:

- adopt the going concern basis unless it is inappropriate to do so;
- select suitable accounting policies and then apply them consistently;
- make judgements and accounting estimates that are reasonable and prudent; and
- state whether international accounting standards in conformity with the requirements of the UK Companies Act 2006, UK-adopted international accounting standards and International Financial Reporting Standards as issued by the IASB have been followed.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the transactions of Shell and the Parent Company and disclose with reasonable accuracy, at any time, the financial position of Shell and the Parent Company and to enable them to ensure that the financial statements comply with the Companies Act 2006 (the Act) and, as regards the Consolidated Financial Statements, with Article 4 of the IAS Regulation and therefore are in accordance with UK-adopted international accounting standards. The Directors are also responsible for safeguarding the assets of Shell and the Parent Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

OTHER REGULATORY AND STATUTORY INFORMATION continued

Each of the Directors, whose names and functions can be found on pages 121-128, confirms that, to the best of their knowledge:

- the financial statements, which have been prepared in accordance with international accounting standards in conformity with the requirements of the UK Companies Act 2006, and therefore in accordance with UK-adopted international accounting standards and International Financial Reporting Standards as issued by the IASB, give a true and fair view of the assets, liabilities, financial position and profit of Shell and the Company; and
- the Management Report includes a fair review of the development and performance of the business and the position of Shell, together with a description of the principal risks and uncertainties that it faces.

Furthermore, so far as each of the Directors is aware, there is no relevant audit information of which the auditors are unaware, and each of the Directors has taken all the steps that ought to have been taken in order to become aware of any relevant audit information and to establish that the auditors are aware of that information.

The Directors consider that the Annual Report, including the financial statements, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess Shell's position and performance, business model and strategy.

The Directors consider it appropriate to continue to adopt the going concern basis of accounting in preparing the financial statements.

The Directors are responsible for the maintenance and integrity of the Shell website (www.shell.com). Legislation in the UK governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Signed on behalf of the Board

/s/ Linda M. Coulter

LINDA M. COULTER
Company Secretary
March 9, 2022

FINANCIAL STATEMENTS **AND SUPPLEMENTS**

208	Independent Auditor's Report related to the Consolidated and Parent Company Financial Statements
228	Consolidated Financial Statements
284	Supplementary information – oil and gas (unaudited)
305	Parent Company Financial Statements
314	Independent Auditor's Report to Computershare Trustees of the Royal Dutch Shell Dividend Access Trust and the Board of Directors of Royal Dutch Shell plc
316	Royal Dutch Shell Dividend Access Trust Financial Statements



INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF SHELL PLC

1. OUR OPINIONS AND CONCLUSIONS ARISING FROM OUR AUDIT

1.1 Our unmodified opinion on the financial statements

In our opinion, the financial statements of Shell plc (the Parent Company) and its subsidiaries (collectively, Shell or Group):

- give a true and fair view of the state of Shell's and of the Parent Company's affairs as at December 31, 2021 and of Shell's income and the Parent Company's income for the year then ended;
- have been properly prepared in accordance with UK adopted international accounting standards and International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB); and
- have been prepared in accordance with the requirements of the Companies Act 2006.

1.2 What we have audited

We have audited the financial statements of Shell plc and its subsidiaries for the year ended December 31, 2021, which are included in the Annual Report and comprise:

Shell	Parent Company
Consolidated Balance Sheet as at December 31, 2021	Balance Sheet as at December 31, 2021
Consolidated Statement of Income for the year then ended	Statement of Income for the year then ended
Consolidated Statement of Comprehensive Income for the year then ended	Statement of Comprehensive Income for the year then ended
Consolidated Statement of Changes in Equity for the year then ended	Statement of Changes in Equity for the year then ended
Consolidated Statement of Cash Flows for the year then ended	Statement of Cash Flows for the year then ended
Related Notes 1 to 32 to the Consolidated Financial Statements, including a summary of significant accounting policies	Related Notes 1 to 15 to the Parent Company Financial Statements

The financial reporting framework that has been applied in their preparation is applicable law and UK adopted international accounting standards and IFRS as issued by the IASB.

2. BASIS FOR OUR OPINION

We conducted our audit in accordance with International Standards on Auditing (UK) (ISA (UK)) and applicable law. Our responsibilities under those standards are further described in the 'Our responsibilities for the audit of the financial statements' section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

3. INDEPENDENCE

We are independent of Shell and the Parent Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

The non-audit services prohibited by the FRC's Ethical Standard were not provided to the group or the parent company, with only one inconsequential exception and we remain independent of the group and the parent company in conducting the audit. This exception related to the provision of XBRL tagging services in May 2021 for local statutory 2020 accounts of an immaterial subsidiary in Denmark, which was subsequently disposed of in July 2021. The service was performed by EY Denmark and was less than two hours of work and no fees were charged. The provision of the service did not create a self-review threat as the subsidiary was immaterial, not part of the scope of the group audit and the individual who performed the service was not part of the audit engagement team. We informed the Audit Committee of the inadvertent breach in July 2021. We considered this to be a minor breach of the Ethical Standard and we consider that an objective, reasonable and informed third party would not conclude that our independence was impaired, and we remain independent of Shell and the Parent Company in conducting the audit.

4. CONCLUSIONS RELATING TO GOING CONCERN

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements of the Group and Parent Company are appropriate. Our evaluation of the directors' assessment of the Shell Group and Parent Company's ability to continue to adopt the going concern basis of accounting included the following:

- we obtained an understanding of management's going concern evaluation process and the controls over management's evaluation. We then evaluated the design of these controls and tested their operating effectiveness. This included testing management's controls over the review and approval of the operating plan and the underlying economic assumptions that form the basis of management's assessment;
- we checked the consistency of information used in management's assessment with the operating plan and information obtained through auditing other areas of the business. We also considered the reasonableness of the estimated financial impact of each of the severe but possible scenarios that were identified by management on page 199, and the possible mitigation steps and assumptions regarding the availability of future funding options, including credit lines, debt facilities, possible asset disposals, changing levels of shareholder returns, and the ability to raise future financing in line with the operating plan window. In checking the consistency of this information with the operating plan and information obtained through auditing other areas of the business, we challenged the central assumptions and sensitives applied. This included considering whether other scenarios should have been considered and the assumptions relating to climate change and the energy transition;
- given that management's operating plan go beyond March 31, 2023 (the going concern period), we have considered events and conditions beyond the period of management's assessment and any potential implications of these on Shell's going concern assessment;

- we verified that Shell's operating plan reflects the actions that management intend to take in order to achieve their stated Scope 1 and Scope 2 emissions reductions, as stated in Note 4 to the financial statements, including confirming that the operating and capital expenditure estimates to deliver the reductions are included in the operating plan;
- we tested the carbon price assumptions included in Shell's operating plan for 25 countries, including the 10 countries with the highest forecast Scope 1 and Scope 2 emissions, by comparing to a range of external carbon price assumptions. As a stress, we applied the stated IEA Net Zero Emissions carbon price assumptions;
- we considered the likelihood of there being a material cash outflow as a result of the various climate change claims and allegations involving Shell, including the maturity of climate change litigation;
- we considered how Shell's intention to exit their equity partnerships held with Gazprom entities could impact Shell's going concern assessment; and
- we conducted severe but plausible independent stress testing and a reverse stress test to determine the conditions under which Shell could potentially experience a liquidity shortfall. This included assuming lower Brent prices of $20/bbl for 2022 and 2023 and overlaying the assumptions that Shell will not achieve any further asset sales over this period, will not have access to new capital raising and no access to commercial paper programmes. Under this stress testing, we concluded that there would still be sufficient facilities available for Shell to continue as a going concern.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the Group's and Parent Company's ability to continue as going concerns until March 31, 2023.

In relation to the Group and Parent Company's reporting on how they have applied the UK Corporate Governance Code, we have nothing material to add or draw attention to in relation to the directors' statement on page 200 of the Annual Report and Accounts about whether the directors considered it appropriate to adopt the going concern basis of accounting.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant section of this report. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Group's or Company's ability to continue as a going concern.

5. OVERVIEW OF OUR AUDIT APPROACH

UPDATING OUR UNDERSTANDING OF SHELL'S BUSINESS AND ITS ENVIRONMENT	Our global audit team has deep industry experience through working for many years on the audits of large integrated international energy companies and commodity trading organisations. Our audit planning starts with updating our view on external market factors, for example geopolitical risk, the potential impact of climate change and the energy transition, commodity price risk and major trends in the industry. In 2021, the macro-economic environment stabilised, when compared to 2020. However, climate change and the energy transition continue to heighten estimation uncertainty and to elevate the risk of material misstatement of Shell's asset carrying values and liabilities recorded. These factors had a pervasive impact on Shell's financial statements and increased the risk around key areas of accounting judgement. As part of our risk assessment, we also updated our understanding of Shell's business environment. The factors that impacted our 2021 risk assessment included: ▪ Shell's "Powering Progress" strategy; ▪ Shell's announcement of an absolute emissions reduction target of 50% by 2030, compared to 2016 levels on a net basis, for all scope 1 and 2 emissions under Shell's operational control; ▪ the impact of the organisational review announced in 2020 (Project Reshape); ▪ heightened counterparty risks; and ▪ the operating environment within Nigeria. Our updated understanding of Shell's business and the environment in which it operates informed our risk assessment procedures.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF SHELL PLC continued

5. OVERVIEW OF OUR AUDIT APPROACH continued

ASSESSING MATERIALITY (SECTION 6)

We continued to believe that it was appropriate to base materiality on normalised Adjusted Earnings on a pre-tax basis. This approach removed both the effects of changes in oil price on inventory carrying amounts and non- recurring gains and charges disclosed as identified items that can significantly distort Shell's results in any one particular year. By applying a normalised Adjusted Earnings approach, we concluded that it was appropriate to maintain planning materiality at $1 billion, which is the same level as in the 2020 audit. Performance materiality for the 2021 audit was set at 75% of our overall materiality, which was set at 50% in 2020.

In summary, we adopted the following materiality measures in our 2021 audit:



We kept our assessment of materiality under review throughout the year.

DETERMINING THE SCOPE OF OUR AUDIT (SECTION 7)

Our scope was tailored to the circumstances of our audit of Shell and is influenced by our determination of materiality and our assessed risks of material misstatement. In comparison to the prior year, during the course of the 2021 audit, we did not make any substantial changes to our assessment of the components where we performed full or specific scope audit procedures, nor the number of IT applications to test; however, what did change was the nature and emphasis of our testing in response to our significant audit risks and areas of audit focus. By following this approach, our audit effort focused on higher risk areas, such as management judgements.

IDENTIFYING KEY AUDIT MATTERS (SECTION 8)

We identified the following key audit matters that, in our professional judgement, had the greatest effect on our overall audit strategy, the allocation of resources in the audit and in directing the global audit team's efforts:

- impact of climate change and the energy transition on the financial statements;
- estimation of oil and gas reserves;
- impairment assessment of property plant and equipment (PP&E) and joint ventures and associates (JVAs);
- exploration and evaluation (E&E) assets;
- decommissioning and restoration (D&R) provisions;
- recognition and measurement of deferred tax assets; and
- revenue recognition: the measurement of unrealised trading gains and losses.

6. OUR ASSESSMENT OF MATERIALITY

We apply the concept of materiality both in planning and performing our audit, as well as in evaluating the effect of identified misstatements on our audit and in forming our audit opinion.

Overall materiality

What we mean

We define materiality as the magnitude of an omission or misstatement that, individually or in the aggregate, could reasonably be expected to influence the economic decisions of the users of the financial statements. Materiality provides a basis for determining the nature and extent of our procedures.

Level set

Group materiality

We set our preliminary overall materiality for Shell's Consolidated Financial Statements at $1 billion (2020: $1 billion). We kept this under review throughout the year and reassessed the appropriateness of our original assessment in the light of Shell's results and external market conditions. We did not find it necessary to revise our level of overall materiality.

Parent Company materiality

We determined materiality for the Parent Company to be $1 billion (2020: $1 billion), which is 0.4% of equity (2020: 0.4%). We concluded that equity remains an appropriate basis to determine materiality for an investment holding company. The range we normally apply when determining materiality on an equity measurement basis is 1- 2%. We applied a lower percentage to align the materiality of the parent company with that of the group.

Our basis of determining materiality

Our assessment of overall materiality that we applied throughout the year was $1 billion. This was derived from an average of Shell's earnings, including an estimated result for 2021, on an Adjusted Earnings basis and that we have adjusted for an average effective tax rate. At the end of the year, we reassessed materiality based on the actual results for 2021. As disclosed on page 326 within non-GAAP measures reconciliations, the "Adjusted Earnings" measure aims to facilitate a comparative understanding of Shell's financial performance from period to period by removing the effects of oil price changes on inventory carrying amounts and removing the effects of identified items. Shell's identified items are discussed on page 327.

Our key criterion in determining materiality remains our perception of the needs of Shell's stakeholders. We consider which earnings, activity or capital-based measure aligns best with their expectations. In so doing, we apply a 'reasonable investor perspective', which reflects our understanding of the common financial information needs of the members of Shell as a group.

We continue to believe that these needs are best met by basing materiality on normalised Adjusted Earnings on a pre-tax basis. This approach removes both the effects of changes in oil price on inventory carrying amounts (current cost of supplies adjustment as defined on page 326) and non-recurring gains and charges disclosed as identified items on page 327 that can significantly distort Shell's results in any one particular year. Through applying a normalised earnings approach, large year-on-year swings in materiality are minimised. These swings would be driven primarily by price fluctuations rather than specific structural changes to Shell's business.

We have considered alternative benchmarks to Adjusted Earnings, including revenue, EBITDA, total assets and equity. These indicate a range of $1.0 billion to $1.9 billion, with the capital-based benchmarks being at the top end of this range.

We believe that a normalised Adjusted Earnings approach remains appropriate on the basis that:

- segment earnings are presented on an Adjusted Earnings basis, which is the earnings measure used by CEO for the purposes of making decisions about allocating resources and assessing performance;
- Adjusted Earnings exclude the effect of changes in the oil price on inventory carrying amounts, allowing investors to understand how management has performed despite the commodity price environment, as opposed to because of it;
- analyst forecasts predominately feature Adjusted Earnings, which exclude identified items, as the basis for earnings. The analyst consensus data supports our judgement that Adjusted Earnings remains the key indicator of performance from a reasonable investor perspective; and
- although this is an unprecedented time for Shell and the industry and there is uncertainty around the future price environment, views of economists and market participants was that demand would return during 2021 and that the supply/demand balance will be re-addressed over time.

By applying a normalised Adjusted Earnings approach, we have concluded that it is appropriate to maintain materiality at $1 billion, which is the same level as in the 2020 audit.

The Adjusted Earnings were as follows:

$ billion		2021	2020	2019
Adjusted Earnings (see page 326)		19.3	4.8	16.5
Estimated tax impact based on the average effective tax rate		10.7	1.2	11.7
Adjusted Earnings pre-tax		30.0	6.0	28.2
Materiality percentage on the average Adjusted Earnings pre-tax	2019-2021		4.7%	

Performance materiality

What we mean

Having established overall materiality, we determined 'performance materiality', which represents our tolerance for misstatement in an individual account. It is calculated as a percentage of overall materiality in order to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds overall materiality of $1 billion for Shell's financial statements as a whole. We assigned performance materiality to our various in-scope operating units. The performance materiality allocation is dependent on the size of the operating unit, measured by its contribution of earnings to Shell, or other appropriate metric, and the risk associated with the operating unit.

Level set

Our 2020 performance materiality was set at 50% of planning materiality, which was based on the potential impacts of remote working through the year-end close, heightened estimation uncertainty as a result of oil and gas price levels, together with significant increased uncertainty around future demand and supply, the potential impact on the control environment of Project Reshape and the level of anticipated audit errors. In our assessment for 2021, we considered the nature, number and impact of the audit differences identified in 2020 and the more stable price environment in 2021. We also noted the way in which management navigated the financial statement close throughout 2020, and the fact that we did not experience any notable increase in control deficiencies in the prior year audit, despite the remote working environment. Based on our assessment of these factors, our judgement was that performance materiality for the 2021 audit should be 75% of our overall materiality or $0.75 billion (2020: $0.5 billion).

The planning and performance materiality was kept under ongoing review, but the conclusion remained unchanged at our year-end re-assessment of materiality. The range of performance materiality allocated to operating units was $113 million to $488 million (2020: $75 million to $325 million).

Audit difference reporting threshold

What we mean

This is the amount below which identified misstatements are clearly trivial. The threshold is the level above which we collate and report audit differences to the Audit Committee. We also report differences below that threshold that, in our view, warrant reporting on qualitative grounds. We evaluate any uncorrected misstatements against both the quantitative measures of materiality discussed above and in the light of other relevant qualitative considerations in forming our opinion.

Level set

We agreed with the Audit Committee that we would report to the Committee all audit differences more than $50 million (2020: $50 million), as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF SHELL PLC continued

7. OUR SCOPE OF THE AUDIT OF SHELL'S FINANCIAL STATEMENTS

What we mean

We are required to establish an overall audit strategy that sets the scope, timing and direction of our audit. Audit scope comprises the physical locations, operating units, activities and processes to be audited that, in aggregate, are expected to provide sufficient coverage of the financial statements for us to express an audit opinion.

Criteria for determining our audit scope and selection of in-scope operating units

Our assessment of audit risk and our evaluation of materiality and our allocation of performance materiality determined our audit scope for each operating unit within Shell which, when taken together, enabled us to form an opinion on the financial statements. Our audit effort was focused towards higher risk areas, such as management judgements, and on operating units that we considered significant based upon size, complexity or risk.

We assessed our 2021 audit scope following the completion of our 2020 audit. We identified those Areas of Operation (AoOs or operating units) that were significant by virtue of their contribution to Shell's results or significant by virtue of their associated risk or complexity. In doing this we considered the history or expectation of unusual or complex transactions, potential for or history of material misstatements, the previous effectiveness of controls, our forensic assessment in relation to fraud, bribery or corruption, and internal audit findings. We then considered the adequacy of account coverage and remaining audit risk of AoOs not directly covered by audit procedures. Finally, we sense checked our scope to the prior year and also ensured that there was appropriate unpredictability in our scope and made the necessary changes where appropriate. We applied our Risk Scan analytics techniques, which consolidate internal and external data to inform us on higher risk components to be included in scope. This allowed us to risk rate the group's operating units. We identified 244 operating units where we believed that it was appropriate to carry out targeted testing.

By following this approach, our audit effort focused on higher risk areas, such as management judgements. Our group wide procedures enabled us to obtain audit evidence over the AoOs that were not full, specific or specified procedure scope.

We did not make any substantial changes to our 2020 assessment of the components where we performed full or specific scope audit procedures. Also, there were no significant changes to the number of IT applications we tested. However, what did change was the nature and emphasis of our testing in response to our significant audit risks and areas of audit focus.

We kept our audit scope under review throughout the year to reflect changes in Shell's underlying business and risks; however, no significant changes were required.

The table below illustrates the scope of work performed by our audit teams:

Operating units	2021	2020	No. of countries	Basis of inclusion	Extent of procedures
Full scope	13	17	9	Size or significant risk	Complete financial information
Specific scope	35	31	10	Significant risk	Individual account balances
Specified procedures[1]	45	45	21	Other risk factors	Individual transactions or processes
Other procedures	683	697	85	Residual risk of error	Supplementary audit procedures[2]
Total	776	790			

1 These procedures were performed by components and at the group level and included the testing of Shell's centralised activities addressing the implications of significant and complex accounting matters across all operating units, testing controls for the revenue and purchase to pay processes, including IT general and IT application controls, review of impairment or impairment reversal indicators by segments, procedures over the forecasts as they relate to deferred tax asset recoverability and review of pension scheme assumptions, procedures over unusual accounting transactions including acquisitions, divestments and redundancies and cash testing.

2 We performed supplementary audit procedures in relation to Shell's centralised group accounting and reporting processes. These included, but were not limited to, Shell's activities addressing the appropriate elimination of intercompany balances and the completeness of provisions for litigation and other claims, including those related to non-compliance with laws and regulations. We performed testing of both manual and consolidation journal entries throughout the year, homogenous processes and controls at the Business Service Centres (BSCs) and testing of group wide IT systems. We performed a disaggregated analytical review on each financial statement line item and also tested Shell's analytical procedures performed at a group, segment and function level. We also performed cash testing.

Coverage

Our coverage by full, specific, specified and group procedures is illustrated below. The summary is by Total Assets, Adjusted Earnings and Revenue. Overall, our full, specific and specified procedures accounted for 61% of Shell's absolute Adjusted Earnings reported by Shell in its quarterly results announcements and adjusted for an effective tax rate. The remaining Adjusted Earnings were covered by Group wide procedures.

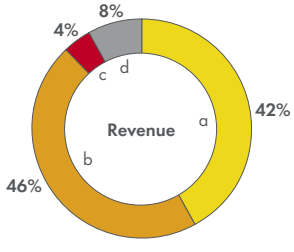
The Parent Company is located in the United Kingdom and audited directly by the Group engagement team

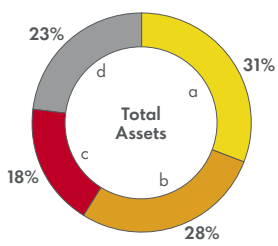
a Full scope

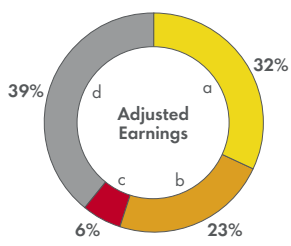
b Specific scope

c Specified procedures

d Covered by other procedures







Allocation of performance materiality to the in-scope operating units

The level of materiality that we applied in undertaking our audit work at the operating unit level, for the purpose of obtaining coverage over significant financial statements accounts, was determined by applying a percentage of our total performance materiality. This percentage is based on the significance of the operating unit relative to Shell as a whole and our assessment of the risk of material misstatement at that operating unit. In 2021 the range of materiality applied at the operating unit level was $113 million to $488 million (2020: $75 million to $325 million). The operating units selected, together with the ranges of materiality applied, were:

Location	Segment / Function	No. of operating units	Range of materiality applied $ million
Full scope operating units			
Qatar	Integrated Gas	1	150
Brazil, Nigeria, USA	Upstream	4	150-225
USA	Oil Products	1	225
Bahamas, Singapore, The Netherlands, UAE, UK, USA	Trading and Supply	7	112.5-487.5
Total full scope operating units		13	
Specific scope operating units			
Australia	Integrated Gas	3	150-225
Malaysia, UK	Upstream	3	150
Singapore, USA, Germany	Oil Products and Chemicals	7	150
Bermuda, The Netherlands, UK, USA	Corporate	11	150-225
Canada, Singapore, UAE, UK, USA	Trading and Supply	11	112.5-225
Total specific scope operating units		35	
Total full and specific scope operating units		48	

Group evaluation, review and oversight of component teams

The group engagement partner and Senior Statutory Auditor, Gary Donald, has overall responsibility for the direction, supervision and performance of the Shell audit engagement in compliance with professional standards and applicable legal and regulatory requirements. He is supported by 15 segment and function partners and associate partners, who are based in the Netherlands and the UK, and who together with related staff comprise the integrated group engagement team. This group engagement team established the overall group audit strategy, communicated with component auditors, performed work on the consolidation process, and evaluated the conclusions drawn from the audit evidence as the basis for forming EY's opinion on the group financial statements.

The group engagement team is responsible for directing, supervising, evaluating and reviewing the work of EY global network firms operating under their instruction (local EY teams) to assess whether:

- the local EY audit team had the appropriate level of experience;
- the work was performed and documented to a sufficiently high standard;
- the local EY audit team demonstrated that they had challenged management sufficiently and had executed their audit procedures with an appropriate level of scepticism; and
- there is sufficient appropriate audit evidence to support the conclusions reached.

The group engagement team provided detailed instructions to our component teams to drive the audit strategy and execution in a coordinated manner. Under normal circumstances, Gary Donald and other group audit partners and directors would visit all in-scope operating units and Shell's BSCs. Travel restrictions presented challenges to us exercising direction, supervision, oversight and review of our overseas EY audit teams; however, we were satisfied that we have had adequate involvement in their work and that we exercised sufficient and appropriate direction to the component teams.

In the absence of group team members being able to travel to visit local EY teams at component locations the process of oversight of component teams included maintaining a continuous and open dialogue with our global component teams, as well as holding formal closing meetings quarterly, to ensure that we were fully aware of their progress and results of their procedures. Between quarters, and during critical periods of the audit, we increased the use of online collaboration tools to facilitate team meetings, information sharing and the evaluation, review and oversight of component teams. We requested more detailed deliverables from component teams, and we utilised fully the interactive capability of EY Canvas, our global audit workflow tool, to review remotely the relevant underlying work performed.

Also, as this was Gary Donald's first year as the Senior Statutory Auditor, he met virtually with the engagement partners on the component teams where we carried out either full or specific scope procedures. In addition, Gary attended the component closing meetings with Australia (Integrated Gas), Brazil (Upstream), the Netherlands (Tax) and the US (Trading and supply). During the year, Gary joined the Upstream and Integrated Gas segment partners in meetings with the Executive Committee members for Upstream and Integrated Gas. From September to November 2021, with the easing of travel restrictions, Gary was based at Shell's offices in the Hague and in January 2022 in Shell's headquarters in London. These activities allowed Gary to build his knowledge of Shell's business and operations in order to identify the risks of material misstatement within Shell's financial statements and to determine the scope of the audit.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF SHELL PLC continued

7. OUR SCOPE OF THE AUDIT OF SHELL'S FINANCIAL STATEMENTS continued

Involvement with local EY teams

Shell has centralised processes and controls over key areas within its BSCs. Members of the group engagement team provide direct oversight, review, and coordination of our BSC audit teams. Our BSC teams performed centralised testing in the BSCs for certain accounts, including revenue, cash and payroll. In establishing our overall approach to the group audit, we determined the type of work that needed to be undertaken at each of the operating units or BSCs by the group engagement team or by auditors from other local EY teams.

The group engagement team performed procedures directly on 122 of the in-scope operating units. For the operating units where the work was performed by local EY auditors, we determined the appropriate level of involvement of the group engagement team to enable us to conclude that sufficient appropriate audit evidence had been obtained, as a basis for our opinion on the Group as a whole.

During the 2021 audit, the group team were able to carry out two physical site visits at Shell's US Upstream operations and Shell's US Trading and supply function. In addition, we performed virtual site visits in Brazil, Nigeria, Qatar, UK, USA, India, Malaysia, Philippines and Poland. These visits were carried out multiple times during the audit and were attended by either the Senior Statutory Auditor or other group audit partners or associate partners on the group engagement team. We also joined all the Audit Committee virtual site visits and deep-dives that are discussed in the Audit Committee report on pages 153 to 165.

Climate change

There has been increasing interest from stakeholders as to how climate change will impact Shell and to the steps that investors expect auditors to perform. Our audit efforts in considering climate change are described in Section 8, key audit matters, which includes details of our procedures and the key observations communicated to the Shell Audit Committee. We also challenged the Directors' considerations of climate change in their assessment of going concern (see section 4) and viability and associated disclosures (see section 9).

8. OUR ASSESSMENT OF KEY AUDIT MATTERS

Key audit matters (KAMs) are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those which had the greatest effect on the overall audit strategy, the allocation of resources in the audit and directing the efforts of the engagement team.

The key audit matters have been addressed in the context of the audit of Shell's Consolidated and Parent Company Financial Statements as a whole, and in forming our opinions thereon, and we do not provide a separate opinion on these matters. The table below describes the key audit matters, a summary of our procedures carried out and our key observations that we communicated to the Audit Committee.

In the current year, we have included Exploration and Evaluation (E&E) assets as a separate key audit matter given the heightened risk that these assets will not be developed because of the energy transition. In 2020, E&E was considered as part of the impairment of property plant and equipment KAM. Also, in 2020 we included KAMs for the estimation of future refining margins, the recoverable amount of investments held by the Parent company and the dividend distribution process. In 2021, our consideration of refining margins was included within impairment of property plant and equipment. We did not include the recoverable amount of investments held by the Parent company as a key audit matter in 2021 given both the improvement in commodity prices and Shell's share price. Also, we did not include the dividend distribution process as a key audit matter given that Shell returned to a net profit in the current year.

THE IMPACT OF CLIMATE CHANGE AND THE ENERGY TRANSITION ON THE FINANCIAL STATEMENTS

Description of the key audit matter	Our response to the risk
The financial statement and audit risks related to climate change and the energy transition remain an area of audit focus and the risk is elevated compared to 2020. This is due to the increased uncertainty surrounding the impact of climate change, and because climate change risks have a pervasive impact on many areas of accounting judgement and estimate and, therefore, our audit. **Climate related issues impact Shell in many ways, as set out in Climate change and energy transition on pages 75 to 98, within the Strategic report, which forms part of the "Other information" rather than the audited financial statements. Within this section, Shell have described how climate-related issues are considered when reviewing and guiding strategy, major plans of action and risk management policies, annual budgets, and business plans.** **As stated in Note 4 to the financial statements, in 2021 Shell launched their Powering Progress strategy to accelerate the transition of their business to net-zero emissions, including targets to reduce the carbon intensity of energy products they sell (scope 1, 2 and 3 emissions) by 6-8% by 2023, 20% by 2030, 45% by 2035 and 100% by 2050. Further in October 2021, Shell announced their target to reduce absolute scope 1 and scope 2 emissions by 50% by 2030, compared to 2016 levels. Also, in Note 4, Shell describe how they consider climate related impacts in key areas of the Consolidated Financial Statements and how this translates into the valuation of assets and measurement of liabilities.** **Shell has identified climate-related risks and opportunities, which are set out within the Climate change and energy transition section of the Strategic Report on pages 79 to 82 and in risk factors on pages 23 to 24, which form part of the "Other information," rather than the audited financial statements.**	**Overall response** In order to respond to the impact of climate change and the energy transition, we ensured that we had the appropriate skills and experience on the audit team. Our primary audit engagement team included professionals with significant experience in climate change, climate change litigation and energy valuations. Most of the audit procedures were performed by the primary audit engagement team. Where work was carried out by component teams, this was under the direction of team members with significant experience in climate change. In addition, during the planning phase of our audit, the primary audit engagement team, including climate change and sustainability specialists, held a series of climate change risk workshops. In these workshops, the team focused on industry and regulatory developments on climate change and how these developments apply to Shell's business. The team also assessed the physical and transition climate risks facing Shell's business, the audit risks associated with climate change and our planned audit response. An output from the workshops was a specific audit plan to address climate change risk in the 2021 audit, the key aspects of which are set out below. In designing our audit procedures, we also considered the content of the document entitled "Investor Expectations for Paris-aligned Accounts", published on 5 November 2020 by the Institutional Investors Group on Climate Change (IIGCC), which was reiterated in a letter that EY received from Sarasin and Partners on 1 November 2021 on Investor expectations: net zero-aligned accounts. The procedures we carried out included the following: **Alignment of statements made in Strategic Report with the financial statements** ▪ in connection with our audit of the financial statements, we read the Other information in the Annual Report and Accounts (as defined in section 9) and, in doing so, considered whether the Other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appeared to be materially misstated; ▪ we evaluated whether the effects of material climate risks, as disclosed in the Annual Report and Accounts on pages 23 to 24 and on pages 79 to 82, had been appropriately reflected in asset values and associated financial statement disclosures, and the timing, nature and measurement of liabilities recognised in accordance with IFRS, which is discussed further below; ▪ assessed the consistency of the assumptions used in preparing the financial statements with the Other information in the Annual Report and Accounts relating to energy transition and climate change;

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF SHELL PLC continued

8. OUR ASSESSMENT OF KEY AUDIT MATTERS continued

THE IMPACT OF CLIMATE RISK AND THE ENERGY TRANSITION ON THE FINANCIAL STATEMENTS continued

Description of the key audit matter	Our response to the risk
The related audit risks that we have considered in our audit are as follows: ■ the alignment of Shell's financial statements and their Strategic Report around material climate change with the Powering Progress strategy, which is described on pages 6 to 11; ■ the reflection of Shell's emissions reduction targets within their operating plan (see pages 242 and 245), which is forecasted for a 10-year period and updated every year, which would impact forecast cash flows, thereby impacting future income and estimated recoverable amounts of assets and measurement of liabilities; ■ whether material climate change risks are appropriately reflected in critical accounting estimates and judgements; and ■ whether the financial statements, including note disclosures, appropriately reflect known climate change-related litigation. The critical accounting judgements and estimates that are impacted by climate change and the energy transition include the following: ■ the estimation of oil and gas reserves and resources (see separate KAM on page 218); ■ the useful economic lives of PP&E and the estimation of depreciation, depletion, and amortisation (DD&A); ■ impairment assessments for PP&E and JVAs, including E&E assets. These assets may no longer be considered economic due to the impact of climate change and the energy transition on oil and gas prices, production volumes and increased cost exposure from increased adoption of carbon pricing in key markets (see separate KAMs on impairment of PP&E and E&E assets on pages 219 and 221). There is a risk that material impairments could have a direct impact on Shell's ability to pay dividends; ■ the recognition and measurement of decommissioning and restoration (D&R) provisions, including operations that historically have been assumed to have indefinite lives (see separate KAM on page 222); ■ the recognition and measurement of Deferred Tax Assets (see separate KAM on page 223); ■ climate change-related litigation brought against Shell that may lead to an outflow of resources or otherwise impact Shell's business; ■ the disclosure of information about the assumptions Shell makes that could, in the future, have a significant risk of material adjustments to the carrying amounts of assets and measurement of liabilities, including sensitivity disclosures; and ■ going concern and viability assessments and disclosures as increased stakeholder concern on climate change from Shell's investors and current and potential future providers of finance may pose a risk to Shell's ability to raise finance (see section 4 and section 9 of our opinion).	**Incorporation of emissions reduction assumptions within Shell's operating plan** ■ held discussions with Group Planning, Group Reporting and Shell's Carbon Strategy group to understand how transition and physical risks of climate change were being factored into Shell's 2021 operating plan; ■ tested management's internal controls over the accounting for and disclosure of the potential impacts associated with energy transition and climate change; ■ we performed procedures to understand how management intend to achieve their planned Scope 1 and 2 and Net Carbon Footprint reductions and whether these actions have been reflected in the operating plan and, ultimately, the areas where they impact Shell's financial statements and note disclosures, specifically in assessing impairment of PP&E and JVAs, E&E assets, D&R provisions, recognition and measurement of DTAs and the assessments of going concern and viability. This involved obtaining an understanding of Shell's processes to develop, challenge and approve the operating plan and the design and operating effectiveness of the controls over this process. The team carrying out this work included auditors with expertise in climate change risk in the energy industry; ■ assessed the appropriateness of the operating and capital expenditure assumptions that were assumed necessary to achieve the emission reductions. This also involved assessing the credibility of assumptions on acquisitions, divestments, investments in Carbon Capture Solutions (CCS) technologies and Nature Based Solutions (NBS), including whether such assumption is appropriately reflected in impairment assessments; ■ engaged our climate change and sustainability specialists to consider the appropriateness of the methodology adopted and the reasonableness of the carbon prices applied in 25 countries, including the 10 highest forecast carbon emitters. As part of this we independently determined our view of a range of acceptable carbon price assumptions. Where countries were outside of our benchmarking ranges, we performed sensitivity analysis to ensure the impact of these different assumptions was not material; ■ tested the carbon pricing included in cash flows and performed sensitivity analysis by using a range of carbon prices, such as those disclosed in the IEA Net Zero Emissions by 2050 scenario; **Reflection of material climate change risks within the critical accounting estimates, judgements and financial statement disclosures** ■ read Shell's disclosure in the financial statements of information about the assumptions Shell makes that could, in the future, have a significant risk of material adjustments to the carrying amounts of assets and measurement of liabilities, including sensitivity disclosures in Note 4 in the financial statements; ■ considered specifically the extent to which management's mid-price outlook and production assumptions incorporated the potential impact of climate change and the energy transition; ■ evaluated the reasonableness of Shell's refining margin assumptions, by comparing Shell's assumptions to external benchmarks, in light of the expected impact on demand for oil products in a transition to a net zero economy. Refining margin assumptions underpin the recoverable amount of refineries; ■ read and challenged management's disclosures in Note 4. We audited the sensitivity disclosures in Note 4 of the carrying value of Shell's Upstream and Integrated Gas PP&E assets to a range of future oil and gas price assumptions, reflecting reduced demand scenarios due to climate change and the energy transition, including the IEA Net Zero Emissions by 2050 scenario. This included considering whether the downside sensitivities could have reduced the level of Shell's distributable profits such that their 2021 dividend would not have been in compliance with the Companies Act; ■ in order to identify assets that are carbon intensive, where there may be a higher risk of the reserves not ultimately being produced (stranded assets), we analysed those assets that are currently forecast to be producing beyond 2030 and estimated the carbon intensity of the most significant fields that are expected to be producing after 2030. We estimated the net book value of assets currently recognised that will not have been fully depreciated by 2030 in order to assess the risk of material stranded assets; ■ we analysed further the carbon intensity per barrel of those fields. For the assets where forecast emissions were highest, we evaluated whether Shell's operating plan assumptions included planned actions and associated expenditures to reduce the carbon emissions of these projects;

THE IMPACT OF CLIMATE RISK AND THE ENERGY TRANSITION ON THE FINANCIAL STATEMENTS continued

Description of the key audit matter	Our response to the risk
	Climate change related legal claims ■ involving EY lawyers that specialise in climate change risk in the energy industry, we gained an understanding of how Shell are defending the various climate change claims and allegations, considered legal advice and contra evidence. We assessed whether the various climate change litigations represented obligations where the likelihood of a cash outflow was probable and therefore requiring provision. Also, we considered the appropriateness of the disclosures within Note 26, Legal proceedings and other contingencies, by comparing the disclosures to our understanding of the claims and allegations. The audit procedures were performed principally by the group engagement team. Our audit response relating to oil and gas reserves, the impairment assessment of PP&E and JVAs, E&E assets, D&R provisions and DTAs is included in the KAMs on pages 218-223.

Key observations communicated to the Shell Audit Committee

We reported to the Audit Committee the key procedures that we had performed and the results of those procedures, which are set out below:

Alignment of statements made in Strategic Report with the financial statements

- We reported that we had not identified any material inconsistencies between Shell's disclosures in Note 4 on the material impacts of climate-related matters, included within the Other information, and the financial statements.

Incorporation of Shell's emissions reduction targets within Shell's operating plan

- We reported that Shell's operating plan reflected the expected financial impact of management's current planned actions to address these risks. This included confirming that the operating and capital expenditure estimates to deliver the emissions reductions are included in the operating plan, including assumptions on acquisitions, divestments, investments in CCS technologies and NBS, and that it is appropriate to include these assumptions in impairment assessments performed in accordance with applicable accounting standards.
- With support from our climate change and sustainability specialists, we concluded an appropriate methodology had been adopted to forecast carbon prices and, through our independent testing verified that Shell's forecast carbon prices were within a reasonable range, or where the assumptions applied were outside of this range, they did not have a material impact on Shell's forecast cash flows.

Reflection of material climate change risks within the critical accounting estimates, judgements and financial statement disclosures

- We reported that management's controls over the accounting for, and disclosure of, the potential financial statement impacts associated with climate change and energy transition were designed and operating effectively.
- We confirmed that the material climate risks that impact Shell's critical accounting estimates, judgements and financial statement disclosures have been appropriately reflected by Shell in the preparation of their financial statements.
- We audited Shell's long-term oil and gas price assumptions and concluded they are reasonable and represent management's current best estimate of the range of economic conditions that will exists in the foreseeable future. We have included our observations on Shell's price assumptions, including refining margins, within the impairment of PP&E key audit matter.
- With regards to the sensitivity analysis provided by Shell in Note 4 to the financial statements, we were satisfied that the description of the sensitivity reflected the sensitivity performed. Also, the prices applied by Shell in their calculations were agreed to the scenarios as described. We reperformed the sensitivities and were satisfied that the ranges disclosed by Shell in Note 4 were materially correct, including the illustrative disclosures on the impact of prices averaged from four two-Celsius or less external climate scenarios.
- We reported to the Audit Committee that it is reasonable to assume that the proved reserves recognised beyond 2030 will be recoverable and that they should be included in management's best estimates. This was based on the likelihood of extracting reserves beyond 2030 being supported by macro factors, including demand from emerging markets and the speed and scale of government and regulatory changes globally.
- Our estimate of the net book value of assets currently recognised that will not have been fully depreciated by 2030 was around $20 billion of the Upstream and IG PP&E as at 31 December 2021, which is based on 29% of SEC reserves being left by 2030. We reported that, for the assets we regarded as having the highest estimated carbon intensity, there was sufficient evidence to indicate that these proved reserves will be produced. Given we estimated that over 80% of Shell's current Upstream and Integrated Gas PP&E will be fully depreciated by 2030, and the evidence that the remaining reserves will be recoverable, we reported that, based on evidence that exists today, the risk that there will be material stranded assets is low.
- We reported to the Audit Committee that we had considered Shell's dividend resilience statement in Note 4. Had Shell applied the averaged from four two-Celsius or less external climate scenarios commodity prices, and had this impairment directly reduced the carrying value of investments within Shell plc, this would not have impacted the distributable reserves available to Shell from which to pay dividends in 2021. This is on the basis that the Shell parent company had a merger reserve of $234 billion and any impairments would first be charged to the income statement and then transferred to the merger reserve, as opposed to impacting distributable reserves.
- Our audit observations relating to oil and gas reserves, impairment assessment of PP&E and JVAs, E&E assets, deferred tax assets and D&R provisions are included in the KAMs on pages 218-223.

Climate change related legal claims

- We reported that, given the relatively early maturity of climate change litigation, we were satisfied that there was not a higher risk of a material provision being omitted and that we were satisfied that the various climate change litigations did not represent obligations where the likelihood of a cash outflow is probable. We also reported that, based on our understanding of the claims and allegations, we were satisfied with the disclosures within Note 26, Legal proceedings and other contingencies.

Cross-reference: See the Audit Committee Report on page 160 for details on how the Audit Committee reviewed climate change and energy transition. See the Strategic Report on pages 79 to 82 for details on energy transition strategy. Also, see Notes 2, 4, 9. 10 and 26 to the Consolidated Financial Statements.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF SHELL PLC continued

8. OUR ASSESSMENT OF KEY AUDIT MATTERS continued

THE ESTIMATION OF OIL AND GAS RESERVES

Description of the key audit matter	Our response to the risk
This is a forecast-based estimate. Oil and gas reserves estimates are used in the calculation of depreciation, depletion and amortisation (DD&A), impairment testing and in the estimation of decommissioning and restoration (D&R) provisions. The risk is the inappropriate recognition of proved reserves that impacts these accounting estimates. Given the current environment, there may be a heightened risk of proved reserves with a high carbon intensity not ultimately being produced (also see climate change and energy transition key audit matter). **As described in Note 9 to the Consolidated Financial Statements, at December 31, 2021, production assets amounted to $118.4 billion and had an associated DD&A charge of $15.8 billion. Also, as described in Note 9, exploration and evaluation assets amounted to $7.1 billion at December 31, 2021. As further described in Note 9, impairment charges of $1.5 billion of production and E&E assets and impairment reversals of $0.2 billion of E&E were recorded during the year. As described in Note 19 to the Consolidated Financial Statements, D&R provisions amounted to $22.1 billion.** If proved reserves are recognised that are not ultimately produced, depreciation will be understated, and the recoverable amount of assets may be overstated. In-year reserve movements are driven by revisions of previous estimates resulting from reclassifications, changes to recovery assumptions, extensions and discoveries and purchases and sales of reserves in place. Revisions generally arise from new information, for example additional drilling results, changes in production patterns and changes to development plans, which are an input to the cash flows used in the measurement of production assets and D&R provisions. Auditing the estimation of oil and gas reserves is complex, as there is significant estimation uncertainty in assessing the quantities of reserves and resources in place. The estimates are based on the Company's central group of experts' assessments of petroleum initially in place, production curves and certain other inputs, including forecast production volumes, future capital and operating cost assumptions and life of field assumptions, all of which are inputs used by reservoir engineers to estimate oil and gas reserves. Estimation uncertainty is further elevated given the transition to a low-carbon economy, which could impact life-of-field assumptions and increase the risk of underutilised or stranded oil and gas assets. Also, given the estimation of oil and gas reserves is complex, there is a risk that inappropriate management bias influences the estimate.	We obtained an understanding of the controls over Shell's oil and gas reserves' estimation process. We then evaluated the design of these controls and tested their operating effectiveness. For example, we tested management's controls over review of changes to year-on-year estimated oil and gas reserves volumes. We involved professionals with substantial oil and gas reserves audit experience, including a partner with relevant qualifications in energy economics, to assist us in evaluating the key assumptions and methodologies applied by management. Our procedures included, amongst others: ▪ testing that significant additions or reductions in reserves had been made in the period in which the new information became available by understanding the change in circumstance that drove the change; ▪ verifying that they were in compliance with Shell's reserves and resources guidance; ▪ evaluating the professional qualifications and objectivity of management's experts (internal reservoir engineers) who performed the detailed preparation of the reserve estimates and those who are primarily responsible for providing independent review and challenge, and ultimately endorsement of, the reserve estimates; ▪ evaluating management's estimation of the point at which the operating cash flow from a project becomes negative (the economic limit), as this impacts DD&A and impairment. Where relevant, we assessed whether the economic limit test incorporated Shell's estimate of future carbon costs to reflect the potential impact of climate change and the energy transition; ▪ evaluating the completeness and accuracy of the inputs used by management in estimating the oil and gas reserves by agreeing the inputs to source documentation; ▪ performing backtesting of historical data to identify indications of estimation bias over time; and ▪ evaluating management's development plan for compliance with SEC rules that undrilled locations must be scheduled to be drilled within five years, unless specific circumstances justify a longer period. This evaluation was made by assessing the consistency of the development projections with Shell's development plans and capital allocation framework. Also, where reserves are recognised beyond current licence terms, we obtained evidence to support the assumption that the licence would be renewed. Our procedures were led by the group engagement team, with input from our teams in Australia, Brazil, Canada, Kazakhstan, Norway, Nigeria, Qatar, Russia and the USA.

Key observations communicated to the Shell Audit Committee

We reported to the Audit Committee in January 2022 that we did not identify any significant errors in the oil and gas reserves and concluded that the inputs and assumptions used to estimate reserves and resources were reasonable. We reported that we had verified that significant additions to or reductions in reserves had been recorded in the appropriate period, and that they were in compliance with Shell's reserves and resources guidance.

Also, we have not identified any impairment triggers as a result of any of the movements in reserves during the year. Please see key audit matter on the impact of climate change and the energy transition on the financial statements for details of our considerations on the carbon intensity associated with reserves expected to be produced beyond 2030.

In our view, Shell follows a robust process for recognising oil and gas reserves. We saw no evidence that the recognition of the reserve volumes expected to be lifted beyond 2030 results in the overstatement of Shell's balance sheet by overstating the recoverable amounts of Shell's assets or understatement of D&R liabilities.

Cross-reference: See the Audit Committee Report on page 160 for details on how the Audit Committee reviewed assurances for oil and gas reserves. Also, see Notes 2, 4, 9 and 19 to the Consolidated Financial Statements,and Supplementary information – oil and gas (unaudited) on page 284.

IMPAIRMENT OF PROPERTY PLANT AND EQUIPMENT (PP&E) AND JOINT VENTURES AND ASSOCIATES (JVA)

Description of the key audit matter

This is a forecast-based estimate. The risk is that potential impairments are not identified on a timely basis, including whether the impacts of climate change and the energy transition have been considered in Shell's impairment trigger assessments (also see climate change and energy transition key audit matter).

As described in Notes 9 and 10 to the Consolidated Financial Statements, at December 31, Shell recognised $118.4 billion of production assets, $49.1 billion of manufacturing, supply and distribution assets (refineries) and $23.4 billion of joint ventures and associates (JVAs). As disclosed in Note 9, Shell recognised $0.3 billion impairment charges and $0.2 billion impairment reversals relating to production assets and $2.3 billion impairment charges relating to manufacturing, supply and distribution assets. As discussed in Note 10, Shell recognised no impairment charges relating to JVAs.

As Shell recorded pre-tax impairment charges of $26.7 billion of PP&E and JVAs in 2020, the carrying values are sensitive to smaller changes in key assumptions, which increases the risk of indicators of impairment or impairment reversal not being identified. Our audit effort has therefore focused on the completeness and timely identification of indicators of impairment charges or impairment reversals.

Auditing the impairment of PP&E and JVAs is subjective due to the significant amount of judgement involved in determining whether indicators of impairment or impairment reversal exist, particularly for longer term assets. Indicators should reflect significant upward or downward revisions in assumptions impacting the future potential long-term value of an asset, rather than drivers of short-term fluctuations in value.

Key judgements in determining whether indicators of impairment or impairment reversal exist include changes in forecast commodity price and refining margin assumptions, movements in oil and gas reserves, changes in asset performance and future development plans and, the expected useful lives of assets. In performing our audit, we are mindful of the risk of management override in the assessment of whether or not impairment indicators exist.

As described in Note 2, the most complex of these judgements relate to management's view on the long-term oil and gas price outlook. Forecasting future prices is inherently difficult, as it requires forecasts that reflect developments in demand such as global economic growth, technology efficiency, policy measures and, on the supply side, consideration of investment and resource potential, cost of development of new supply and behaviour of major resource holders. These judgements are particularly difficult because of increased demand uncertainty and pace of decarbonisation due to climate change and the energy transition.

Our response to the risk

We obtained an understanding of the controls over Shell's asset impairment process. We then evaluated the design of these controls and tested their operating effectiveness. For example, we tested the controls over management's identification of indicators of impairment and reversals of impairment and the approval of oil and gas prices and refining margins.

Indicators of impairment or impairment reversal
We evaluated Shell's assessment of impairment and impairment reversal triggers, including changes in the forecast commodity price assumptions, movements in oil and gas reserves (see oil and gas reserves key audit matter), changes in asset performance, changes in Shell's operating plan assumptions, including those relating to Shell's carbon emissions reductions targets, and whether these are indicators of impairment or impairment reversal.

Separately from management, for material assets, we also assessed independently whether or not indicators of impairment or reversal triggers exist, considered the existence of other contradictory evidence that could indicate a significant increase or decrease in the recoverable amount of any of Shell's assets.

Our procedures included, amongst others:

Oil and gas price and refining margin assumptions
- assessing the reasonableness of future short and long-term oil and gas price assumptions by comparing these to an independently developed reasonable range of forecasts based on consensus analysts' forecasts and those adopted by other international oil companies;
- comparing Shell's oil and gas price scenarios to the IEA's Net Zero Emissions 2050 (NZE) and to the IEA's Announced Pledges Scenario (APS) price assumptions as potential contradictory evidence for best estimates of future oil and gas prices. The APS assumes that all climate commitments made by governments around the world, including Nationally Determined Contributions (NDCs) and longer-term net zero targets, will be met in full and on time;
- evaluating the reasonableness of Shell's refining margin assumptions by comparing these to independent market and consultant forecasts. We also involved our oil and gas valuations specialists to assess the reasonableness of Shell's refining margin estimation methodology and assumptions;
- given the continued improvement in commodity prices and short-term refining margins, assessing whether or not these higher price markers represented a trigger for impairment reversal;
- performing benchmarking to determine whether Shell's oil and gas company peers reflected changes in oil and gas price and refining margin assumptions as indicators of impairment or impairment reversal;

Carbon intensity
- in order to determine whether there is any risk that reserves recognised will not be produced, we estimated the carbon intensity of Shell's Upstream and Integrated Gas fields, focussing on the most carbon intensive assets. We assessed Shell's plans to reduce the carbon intensity of these assets, therefore reducing the risk of potential impairment of the current carrying value, and verified that the costs associated with these activities were reflected in Shell's operating plans;

Operating plan outcomes
- evaluating the assumptions used in the preparation of the 2021 operating plan at a group, segment and asset level and compared the actual performance of assets to the forecasts made in the prior year;
- considered the existence of other contradictory evidence, such as the results of any comparable market transactions that could indicate a significant increase or decrease in the recoverable amount of any of Shell's assets, public comments or commitments made by Shell in relation to the Powering Progress strategy and whether these could impact the future potential value of any assets; and

Unplanned shutdowns
- assessing potential operational changes that have or are expected to have a significant adverse effect on an asset and whether such unplanned shutdowns should be considered as impairment triggers.

The audit procedures were performed primarily by our group engagement team as well as our local audit teams in Australia, Brazil, Malaysia, Nigeria, Qatar, the UK and the USA.

8. OUR ASSESSMENT OF KEY AUDIT MATTERS continued

IMPAIRMENT OF PP&E (INCLUDING EXPLORATION AND PRODUCTION ASSETS AND REFINERIES) AND JOINT VENTURES AND ASSOCIATES (JVA) continued

Key observations communicated to the Shell Audit Committee

In January 2022, we reported to the Audit Committee that management's review to determine whether or not any indicators of impairment were present had considered all relevant information available at the end of each reporting period. Also, that based on our independent assessment, we had not identified impairment triggers as a result of changes in commodity price or refining margin assumptions, any of the movements in reserves during the year, changes in the discount rate for D&R provisions, carbon intensity considerations, operating plan outcomes or unplanned shutdowns.

For the assets where management's impairment assessment resulted in an impairment charge, the charges were within an acceptable range. Also, we were satisfied that the impairment charges were recorded in the appropriate period.

In respect of our independent assessment of the existence of indicators of impairment, we reported in January 2022 the following:

Oil and gas price assumptions

- We obtained external evidence, including published price forecasts by banks, brokers, consultants and also our peer group analysis, to support the reasonableness of Shell's price assumptions. Overall, Shell's assumptions for Brent sat within the benchmarks that we had identified. Shell's Henry Hub, TTF and JKM gas price assumptions are at the bottom end of our benchmarks.
- We were satisfied that the short-term improvements in commodity prices do not represent potential impairment reversals triggers as Shell's long term commodity prices remain unchanged and the assets are of long term nature, thereby reducing the impact of short term fluctuations on asset values.
- Shell's oil and gas price assumptions are higher than the IEA Net Zero Emissions scenario; however, Shell's assumptions are more consistent with the IEA Announced Pledges Scenario (APS), being around 7% higher than the APS assumptions. The APS scenario assumes that all climate commitments made by governments around the world will be met in full and on time. Given governmental, societal and regulatory responses to climate change risks are still developing, and are interdependent upon each other, it is highly uncertain as to whether future prices will reflect the IEA Net Zero Emissions 2050 scenario. Nevertheless, management estimated the impact on the recoverable amount of Upstream and Integrated assets recognised as at 31 December 2021 of applying different price outlooks using prices from external climate change scenarios. We have recalculated the sensitivities included in Note 4 and these sensitivity ranges disclosed are reasonable.

Refining margins

- Given short term refining margin assumptions have improved in Shell's 2021 operating plan, compared to the 2020 operating plan, we challenged management as to whether this represented a trigger for impairment reversal. However, as the only asset in 2020 where an impairment charge was based on its value in use, rather than disposal proceeds, was a 50+ year refinery, we were satisfied that short term fluctuations in refining margins should not be viewed as an impairment reversal trigger.

Carbon intensity

- We did not identify any assets where the current or forecast carbon emissions intensity indicate that the assets are impaired.

Cross-reference: See the Audit Committee Report on page 160 for details on how the Audit Committee considered impairments. Also, see Notes 2, 4, 9 and 10 to the Consolidated Financial Statements.

EXPLORATION AND EVALUATION (E&E) ASSETS

Description of the key audit matter	Our response to the risk
This is an estimation based on uncertain outcomes. E&E activity carries inherent risk that projects do not progress to development, requiring the write-off or impairment of the related capitalised costs when the relevant IFRS criteria are met. Risk is elevated compared to 2020 because of energy transition (also see climate change and energy transition key audit matter). **As described in Note 9 to the Consolidated Financial Statements, at December, 31, 2021, Shell recognised $7.1 billion of E&E assets.** The risk is whether it is appropriate to continue carrying capitalised E&E costs. Auditing impairment assessments of E&E assets is inherently judgemental given the exploration for and evaluation of the resources has not always reached a stage at which information sufficient to estimate future cash flows is available. Given the current environment, and the capital allocation and emissions reductions decisions that Shell intend to take through the energy transition, there is a heightened risk that projects will no longer proceed, in which case they may need to be written off. As a result of these factors, there is significant judgement relating to the risk that certain E&E costs are not written off in the appropriate reporting period, which also represents a risk of potential management bias. During the year, management recorded $1.8 billion of E&E write offs and impairments (2020: $4.0 billion).	We obtained an understanding of the controls over Shell's E&E impairment assessment process. We then evaluated the design of these controls and tested their operating effectiveness. To test the completeness and appropriateness of the E&E asset write off and impairment charges recorded, our procedures included, amongst others: ▪ performing a licence-by-licence risk assessment of Shell's E&E assets to identify assets with a significant risk of impairment and assessing each significant licence area against the impairment criteria within IFRS 6 with a particular focus on those assets that were expected to be developed over the medium and long term, those assets where the dominant commodity that will be produced is oil, or highly carbon intensive projects; ▪ through this analysis, independently identifying the assets that we considered most at risk of not being developed by Shell or being divested as a consequence of Shell's emissions reductions strategies. We have challenged management on the likelihood of progressing the E&E assets, including the strategic fit of the assets, carbon intensity of the developments, planned capex and project economics and the expectation that sufficient cash resources will be available to fund the expected development of assets; ▪ corroborating key internal and external evidence relevant to the judgements made in respect of the group's E&E portfolio, including analysing evidence of further activity being included in Shell's operating plan and any contra evidence that suggests government or regulatory approvals will not be provided; ▪ in respect of E&E write offs and impairments recorded during the year, considering whether evidence about current project activity, forecast future expenditure and operational plans was consistent with the decisions taken by management to write off or impair these assets; and ▪ considering the disclosure of E&E asset write offs and impairments. The audit procedures were performed principally by the group engagement team and our component teams in Australia, Brazil, Trinidad and Tobago, the UK and USA.

Key observations communicated to the Shell Audit Committee

In January 2022, we reported to the Audit Committee that we had challenged management's assessment of the existence of indicators of impairment for Shell's E&E asset portfolio and identified the E&E assets that we believed were most at risk of not being developed by Shell or being divested, and therefore potentially being written off or impaired. Whilst the E&E impairment assessment involves significant judgement about future actions of management and other stakeholders, we satisfied ourselves that sufficient evidence existed at the balance sheet date to support the carrying value of the E&E assets based on planned capex in Shell's operating plan, expected final investment decision dates, first production estimates and expected break-even prices.

Cross-reference: See the Audit Committee Report on page 160 for details on how the Audit Committee considered impairments. Also, see Notes 2, 4 and 9 to the Consolidated Financial Statements.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF SHELL PLC continued

8. OUR ASSESSMENT OF KEY AUDIT MATTERS continued

DECOMMISSIONING AND RESTORATION (D&R) PROVISIONS

Description of the key audit matter	Our response to the risk
This is an estimation based on uncertain outcomes. The risk is the expected timing of decommissioning activity and the estimated cost of activities that are expected to occur in the future. **As described in Note 19 to the Consolidated Financial Statements, at December 31, 2021, Shell recognised $22.1 billion in D&R provisions.** Auditing D&R provisions is complex because management's estimation of future cash outflows involves significant judgement. As explained in Note 2 to the Consolidated Financial Statements, the estimate is based on current legal and constructive obligations, technology and price levels. However, the extent and timing of the actual outflows incurred in the future may differ due to changes in laws, regulations, public expectations, technology, prices and conditions at the time of decommissioning, and can take place many years in the future. There is a risk of management bias in the determination of both the timing of activity and estimation of the costs that will be incurred. The timing of estimated future decommissioning activity is also a key judgement with the energy transition increasing the risk that oil and gas fields will be decommissioned earlier than anticipated (also see climate change and energy transition key audit matter). The key factor in determining the timing will be the life of field assumptions, which is discussed in our oil and gas reserves key audit matter. In respect of Oil Products and Chemicals operations, the key judgement is management's views on the expected useful lives of manufacturing and production assets and, where an asset's life is expected to extend far into the future, that it is not possible to make an estimate of the obligation that is sufficiently reliable to use in recognising a D&R provision. Contingent liabilities are disclosed by Shell in respect of refineries where decommissioning would generally be more than 50 years away and the amount of the obligation cannot be measured with sufficient reliability. These refineries are integrated with chemicals facilities and are expected to out-perform refineries that are not. This is driven by the expectation that chemicals demand will continue to grow, and as demand for oil products decreases, more advanced refineries are expected to continue much longer into the energy transition. Shell has D&R provisions in respect of six production and manufacturing facilities, with contingent liabilities disclosed for the remaining six energy parks within the Oil Products and Chemicals portfolio.	We obtained an understanding of the controls over Shell's process for the estimation of decommissioning and restoration provisions. We then evaluated the design of, and tested the operating effectiveness of, controls over the estimation of the D&R provision. For example, we tested controls over the review of the estimation and completeness of cost estimates. Our audit procedures included, amongst others: ▪ assessing changes in D&R cost estimates, and whether they reflected the latest regulatory requirements and technical developments; ▪ auditing cost assumptions relating to labour rates, rig type and rates, number of wells, well durations, and any contingencies applied by inspecting contracts. Also, evaluating whether the nature of the costs expected to be incurred were in accordance with the requirements of IAS 37; ▪ evaluating the expected timing of decommissioning by comparing these factors to the estimated life-of-field assumptions and considering the impact of energy transition and climate change. We also evaluated the estimated carbon intensity of the post 2030 production of Shell's assets, in order to identify assets where there may be a higher risk of the reserves not ultimately being produced (see oil and gas reserves key audit matter) as this may impact the estimated cessation of production date for these assets; ▪ testing the D&R accounting models and assumptions therein, including discount rates, and inflation rates. We validated the assumptions to external data sources and reconciled the assumptions with those used in other areas of measurement, such as impairment assessment; ▪ evaluating the timing of recognition of D&R liabilities related to contingent liabilities and D&R liabilities arising from assets previously disposed of, including assessing the counterparty risk associated with those disposals; ▪ evaluating management's assessment of the useful lives of manufacturing assets in the Oil Products and Chemicals portfolio in light of the changed supply and demand economics due to the energy transition. In particular, we evaluated whether D&R provisions were required for certain refineries and petrochemical facilities based on Shell's plans to rationalise their manufacturing portfolio and to convert or dismantle existing units. This included assessing management's ability to repurpose the units to increase production capabilities of refined products with lower carbon intensity; and ▪ assessing the disclosure of D&R provisions and contingent liabilities in the financial statements. We also evaluated management's re-assessment of the need for contingent liability disclosures in respect of certain manufacturing assets. The audit procedures were performed principally by the group engagement team and our component teams in Australia, Brazil, Trinidad and Tobago, the UK and USA.

Key observations communicated to the Shell Audit Committee

In January 2022, we reported that the D&R provisions recorded at December 31, 2021 were fairly stated and that changes in D&R provisions during the year, had been reflected appropriately in the financial statements. Also, we saw no evidence that the recognition of the reserve volumes expected to be lifted beyond 2030 results in the understatement of D&R liabilities for Shell's oil and gas assets.

In respect of Oil Products and Chemicals assets, we remain satisfied that the accounting treatment adopted appropriately reflects the expected useful lives of the Group's refineries and chemicals parks. In reaching this conclusion, where an asset's life is expected to extend far into the future, it is not possible to make an estimate of the obligation that is sufficiently reliable to use in recognising a D&R provision and therefore a contingent liability is disclosed. This is on the basis that the settlement dates are indeterminate and other inputs, such as extremely long-term discount rates for which there is no observable measure, are not reliable.

Cross-reference: See the Audit Committee Report on page 161 on how the Audit Committee reviewed D&R provisions. Also see Notes 19 and 26 to the Consolidated Financial Statements.

RECOGNITION AND MEASUREMENT OF DEFERRED TAX ASSETS

Description of the key audit matter	Our response to the risk
This is an estimation based on uncertain outcomes. The risk is that forecast taxable profits that support certain deferred tax assets do not materialise. **As described in Note 17 to the Consolidated Financial Statements, at December 31, 2021 Shell recognised gross DTAs of $29.4 billion, which are recognised on the balance sheet as either DTAs or as an offset against deferred tax liabilities (DTLs), depending on the overall tax position in a particular jurisdiction.** Auditing the recognition and measurement of DTA balances is subjective because the estimation requires significant judgement, including the timing of reversals of DTLs and the availability of future profits against which tax deductions represented by the DTA can be offset. In addition, auditing the recognition of DTA balances that are supported by the expectation of future taxable profits arising beyond Shell's regular forecast planning horizon required significant audit judgement, which is heightened in complexity given the future demand and price uncertainty due to climate change and the energy transition (also see climate change and energy transition key audit matter). A key judgement applied by management in assessing whether it is appropriate to recognise certain DTAs includes the expectation of probable taxable profits arising beyond Shell's 10-year planning horizon. There is greater uncertainty regarding future taxable profits that exist outside the 10-year planning period and where future taxable profits relate to new and emerging businesses with less history and therefore greater forecasting uncertainty. There is a risk of management bias relating to the use of inappropriate assumptions regarding the future profitability of businesses.	We obtained an understanding of the controls over Shell's processes for the recognition and measurement of DTAs. We then evaluated the design of these controls and tested their operating effectiveness. For example, we tested controls over projections of future taxable income and the deferred tax calculations that support the recognition of DTAs. Our audit procedures included, amongst others: ▪ assessing management's determination of the expected timing of utilisation of the DTAs, including the application of relevant tax laws that apply to the utilisation of tax losses; ▪ testing management's forecasted timing of the reversal of taxable temporary differences by evaluating the projected sources of taxable income and considering the nature of the temporary differences and the relevant tax law. ▪ performing sensitivity analyses over Shell's risk-weighted future taxable profits by jurisdiction, which take into account potential costs of decarbonisation, and reconciled the forecast to that used in other areas of analysis, such as impairment; ▪ evaluating management's negative stress test to assess the tolerance of the estimation uncertainty to further risking. This included specific risking of profits forecast to be generated through new and growing business activities, including biofuels and electric vehicle (EV) charging in jurisdictions; and ▪ involving EY auditors with expertise in renewable businesses, including EV charging, in challenging management's assumptions and the outcome of the stress testing performed. Our audit procedures over the recognition and valuation of DTAs were performed by our tax specialist teams in Australia, Brazil, Canada, the Netherlands, Nigeria, Qatar, Singapore, the UK and USA. We also performed specified procedures over the recognition and valuation of DTAs in Albania, China, Egypt, France, Germany, Indonesia, Kazakhstan, Malaysia, Mexico, Norway, Oman, Switzerland, Trinidad & Tobago and Tunisia.

Key observations communicated to the Shell Audit Committee

In January 2022, we reported to the AC that the majority of the DTAs are either offset against DTLs or are expected to be recovered from forecast profits within the operating planning horizon. In aggregate, these factors supported 95% of the recognised DTAs. Our audit effort focussed on $0.8 billion of DTAs that are supported by forecast Oil Products and Chemicals taxable profits beyond Shell's planning horizon, as these are significantly more judgemental than setting the DTAs against DTLs or using forecast taxable profits from Shell's operating plan to utilise the DTAs. Whilst the application of risking is judgemental, we satisfied ourselves that management's risking of forecast profit was appropriate to reflect the uncertainty throughout the forecast period.

We have concluded that there is sufficient evidence to support Shell's recognition of DTAs, although there is a greater degree of judgement required in respect of the $0.8 billion of DTAs where profits beyond Shell's operating plan planning horizon are necessary to support the asset recognition.

Cross-reference: See the Audit Committee Report on page 160 for details on how the Audit Committee reviewed certain tax matters, in particular the recoverability of deferred tax assets. Also see Notes 2, 4 and 17 to the Consolidated Financial Statements.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF SHELL PLC continued

8. OUR ASSESSMENT OF KEY AUDIT MATTERS continued

REVENUE RECOGNITION: THE MEASUREMENT OF UNREALISED TRADING GAINS AND LOSSES

Description of the key audit matter	Our response to the risk
This is an estimation based on complex and uncertain valuations. There is a risk of error in revenue due to the complexity of Shell's trading and supply function and the volume and complexity of trades that are executed. There is an inherently higher risk of error, of unauthorised trading activity or of deliberate misstatement of the group's overall trading position. **As described in Note 5 of the Consolidated Financial Statements, at December 31, 2021 Shell recognised $262 billion of revenue. As described in Note 20, Shell recognised derivative financial instrument assets of $12.2 billion and derivative financial instrument liabilities of $17.2 billion.** Shell's trading and supply function is integrated within the Oil Products, Chemicals, Integrated Gas and Upstream segments and is spread across multiple regions. Auditing unrealised trading gains and losses is complex because of the significant judgement used in determining the key assumptions used in valuing the trades, the risk of error, of unauthorised trading activity or of deliberate misstatement of Shell's trading positions. Trading is not always carried out in active markets where prices are readily available, increasing subjectivity used in determining the pricing curve and volatility assumptions, which are key inputs to valuing the trades. Identifying unrealised trading gains and losses is also complex due to the significant volume of transactions entered into by Shell and the lack of market transparency of executed deals. The deliberate misstatement of Shell's trading positions or mismarking of positions could result in understated trading losses, overstated trading profits and/or individual bonuses being manipulated through inappropriate inter-period profit/loss allocations.	We obtained an understanding of the controls over Shell's process for the recognition of revenue relating to unrealised trading gains and losses, including controls over management's processes around complex deal valuations. We then evaluated the design of these controls and tested their operating effectiveness. For example, we tested controls around the review of pricing curve and volatility assumptions applied in the valuation models. We involved professionals with significant experience auditing both large commodity trading organisations and financial institutions. Our audit procedures in respect of the measurement of trading positions included, amongst others: ▪ assessing Shell's valuation methodology against market practice, analysing whether a consistent framework was applied across the business and assessing the consistency of inputs used in deal valuations and other assumptions; ▪ testing the pricing curve and volatility assumptions in management's valuation models, including by comparing these to external broker quotes, market consensus providers, and our independent assessments; ▪ involving EY valuation specialists to assist us in performing independent testing of the valuation models of Level 3 contracts, including the valuation of long-dated offtake contracts and those with illiquid tenor or price components. Our valuations were established using independently sourced inputs, where available; ▪ evaluating contract terms and key assumptions against independent market information, including assessing complex deals for the existence of non-standard contractual terms or features; and ▪ gaining an understanding of the commercial rationale of complex deals by analyzing transaction documentation and agreements, and through discussions with management. In addressing the existence and completeness of open trading positions, we focused specifically on over the counter (OTC) physical and financial transactions. Our audit procedures included, amongst others: ▪ obtaining external confirmation of a sample of open trading positions with brokers and counterparties and, where necessary, testing the existence of the position by agreement to signed contracts; ▪ performing additional confirmation testing by obtaining confirmations from key counterparties who had open positions in the prior trading year, but no reported trading positions in the current year; and ▪ performing procedures to identify unrecorded liabilities by comparing sales to trade receivables and purchases to trade payables that occurred near the end of the financial year to evaluate whether or not the transactions had been recorded appropriately and in the correct period. We assessed the Level 3 financial statement disclosures. The audit procedures were performed principally by the group engagement team and the UK and US component teams.

Key observations communicated to the Shell Audit Committee

In January 2022, we reported to the Audit Committee that:
- the valuation of derivative contracts as at December 31, 2021 was appropriate;
- the unrealised gains and losses had been recorded appropriately;
- our completeness testing did not identify any unrecorded liabilities or significant cut-off issues; and
- our testing did not identify any indications of unauthorised trading activity or deliberate misstatement of Shell's trading positions.

Cross-reference: See the Audit Committee Report on page 161 for details on how the Audit Committee reviewed the Trading and Supply's control framework. Also see Note 5 to the Consolidated Financial Statements.

9. OTHER INFORMATION AND MATTERS ON WHICH WE ARE REQUIRED TO REPORT BY EXCEPTION

The Other information comprises the information included in the Annual Report set out on pages 1 to 206 and 320 to 350 including the Strategic Report, Governance and Additional Information sections, other than the financial statements and our auditor's report thereon. The Directors are responsible for the Other information contained within the Annual Report.

Our opinion on the financial statements does not cover the Other information and, except to the extent otherwise explicitly stated in this report, we do not express any form of assurance conclusion thereon. In the table below, we have outlined our responsibility for the other information in the Annual Report or the matters on which we are required to report by exception.

OTHER INFORMATION

Our responsibility
In connection with our audit of the financial statements, our responsibility is to read the Other information and, in doing so, consider whether the Other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether this gives rise to a material misstatement in the financial statements or a material misstatement of the Other information. If, based on the work we have performed, we conclude that there is a material misstatement of the Other information, we are required to report that fact.

Our reporting
We have nothing to report in this regard.

STRATEGIC REPORT AND THE DIRECTORS' REPORT

Our responsibility
We are required to report whether, based on the work undertaken in the course of the audit:
- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and the directors' report have been prepared in accordance with applicable legal requirements.

We are required to report by exception whether, in the light of the knowledge and understanding of the Group and the Parent Company and its environment obtained in the course of the audit, we have identified material misstatements in the strategic report or the directors' report.

Our reporting
In our opinion, based on the work undertaken in the course of the audit, the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements and they have been prepared in accordance with applicable legal requirements.

We have nothing to report by exception.

DIRECTORS' REMUNERATION REPORT

Our responsibility
We are required to report whether the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006.

Under the Companies Act 2006, we are also required to report by exception whether certain disclosures of directors' remuneration specified by law are not made.

Our reporting
In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006.

We have nothing to report by exception.

CORPORATE GOVERNANCE STATEMENT

Our responsibility
We have reviewed the directors' statement in relation to going concern, longer-term viability and that part of the Corporate Governance Statement relating to the Group and Parent Company's compliance with the provisions of the UK Corporate Governance Code specified for our review by the Listing Rules.

Based on the work undertaken as part of our audit, we are required to consider whether each of the following elements of the Corporate Governance Statement is materially consistent with the financial statements or our knowledge obtained during the audit:
- Directors' statement with regards to the appropriateness of adopting the going concern basis of accounting and any material uncertainties identified set out on page 199;
- Directors' explanation as to its assessment of the company's prospects, the period this assessment covers and why the period is appropriate set out on page 199;
- Director's statement on whether it has a reasonable expectation that the group will be able to continue in operation and meets its liabilities set out on page 200;
- Directors' statement on fair, balanced and understandable set out on page 205;
- Board's confirmation that it has carried out a robust assessment of the emerging and principal risks set out on page 22;
- The section of the annual report that describes the review of effectiveness of risk management and internal control systems set out on page 203; and;
- The section describing the work of the Audit Committee set out on page 155.

Our reporting
Based on the work undertaken as part of our audit, we have concluded that each of these elements of the Corporate Governance Statement is materially consistent with the financial statements or our knowledge obtained during the audit.

OTHER REPORTING

Our responsibility
Under the Companies Act 2006, we are required to report to you by exception if, in our opinion:
- adequate accounting records have not been kept by the Parent Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Parent Company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns; or
- we have not received all the information and explanations we require for our audit.

Our reporting
We have nothing to report by exception.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF SHELL PLC continued

10. RESPONSIBILITIES OF THE DIRECTORS

As explained more fully in the statement of Directors' responsibilities set out on page 16, the Directors are responsible for the preparation of the Consolidated Financial Statements and for being satisfied that they give a true and fair view, and for such internal control as the Directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Directors are responsible for assessing Shell and the Parent Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Directors either intend to liquidate Shell or the Parent Company or to cease operations, or have no realistic alternative but to do so.

11. OUR RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISA (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

12. EXPLANATION AS TO WHAT EXTENT OUR AUDIT WAS CONSIDERED CAPABLE OF DETECTING IRREGULARITIES, INCLUDING FRAUD

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect irregularities, including fraud.

The risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion.

The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below. However, the primary responsibility for the prevention and detection of fraud rests with both those charged with governance of the entity and management.

Our approach was as follows:

- We obtained an understanding of the legal and regulatory frameworks that are applicable to Shell and determined that the most significant are those that relate to the reporting framework (UK adopted international accounting standards, Companies Act 2006, the UK Corporate Governance Code, the US Securities Exchange Act of 1934 and the Listing Rules of the UK Listing Authority) and the relevant tax compliance regulations in the jurisdictions in which Shell operates. In addition, we concluded that there are certain significant laws and regulations that may have an effect on the determination of the amounts and disclosures in the financial statements and those laws and regulations relating to health and safety, employee matters, environmental, and bribery and corruption practices.
- We understood how Shell is complying with those frameworks by making enquiries of management, internal audit, those responsible for legal and compliance procedures and the Company Secretary. We corroborated our enquiries through our review of Board minutes, papers provided to the Audit Committee and correspondence received from regulatory bodies and noted that there was no contradictory evidence.
- We assessed the susceptibility of Shell's Consolidated Financial Statements to material misstatement, including how fraud might occur, by embedding forensic specialists into our group engagement team. Our forensic specialists worked with the group engagement team to identify the fraud risks across various parts of the business. In addition, we utilised internal and external information to perform a fraud risk assessment for each of the countries of operation. We considered the risk of fraud through management override and, in response, we incorporated data analytics across manual journal entries into our audit approach. We also considered the possibility of fraudulent or corrupt payments made through third parties and conducted detailed analytical testing on third party vendors in high risk jurisdictions. Where instances of risk behaviour patterns were identified through our data analytics, we performed additional audit procedures to address each identified risk. These procedures included the testing of transactions back to source information and were designed to provide reasonable assurance that the financial statements were free from fraud or error. We also conducted specific audit procedures in relation to the risk of bribery and corruption across various countries of operation determined on a risk-based approach.
- Based on the results of our risk assessment we designed our audit procedures to identify non-compliance with such laws and regulations identified above. Our procedures involved journal entry testing, with a focus on journals meeting our defined risk criteria based on our understanding of the business; enquiries of legal counsel, group management, internal audit and all full and specific scope management; review of the volume and nature of complaints received by the whistleblowing hotline during the year; review of internal audit reports issued during the year; review of news releases published by external parties; and
- If any instances of non-compliance with laws and regulations were identified, these were communicated to the relevant local EY teams who performed sufficient and appropriate audit procedures, supplemented by audit procedures performed at the group level.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

13. OTHER MATTERS WE ARE REQUIRED TO ADDRESS

Following the recommendation of the Audit Committee, we were re-appointed by Shell plc's Annual General Meeting (AGM) on May 18, 2021, as auditors of Shell to hold office until the conclusion of the next AGM of the Company, and signed an engagement letter on May 25, 2021. Our total uninterrupted period of engagement is six years covering periods from our appointment through to the period ending December 31, 2021.

Our audit opinion is consistent with our additional report to the Audit Committee explaining the results of our audit.

14. USE OF OUR REPORT

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

/s/ Gary Donald (Senior Statutory Auditor)

GARY DONALD
Senior Statutory Auditor
for and on behalf of Ernst & Young LLP
London
March 9, 2022

CONSOLIDATED FINANCIAL STATEMENTS

229 Consolidated Statement of Income
229 Consolidated Statement of Comprehensive Income
230 Consolidated Balance Sheet
231 Consolidated Statement of Changes in Equity
232 Consolidated Statement of Cash Flows
233 Notes to the Consolidated Financial Statements
233 Note 1 Basis of preparation
233 Note 2 Significant accounting policies, judgements and estimates
241 Note 3 Changes to IFRS not yet adopted
242 Note 4 Climate change and energy transition
245 Note 5 Segment information
249 Note 6 Interest and other income
249 Note 7 Interest expense
249 Note 8 Intangible assets
250 Note 9 Property, plant and equipment
254 Note 10 Joint ventures and associates
254 Note 11 Investments in securities
255 Note 12 Trade and other receivables
256 Note 13 Inventories
256 Note 14 Cash and cash equivalents
256 Note 15 Debt and lease arrangements
259 Note 16 Trade and other payables
259 Note 17 Taxation
261 Note 18 Retirement benefits
267 Note 19 Decommissioning and other provisions
268 Note 20 Financial instruments
274 Note 21 Share capital
274 Note 22 Share-based compensation plans and shares held in trust
275 Note 23 Other reserves
277 Note 24 Dividends
277 Note 25 Earnings per share
277 Note 26 Legal proceedings and other contingencies
280 Note 27 Employees
280 Note 28 Directors and Senior Management
281 Note 29 Auditor's remuneration
281 Note 30 Assets held for sale
281 Note 31 Emission schemes and related environmental plans
283 Note 32 Post-balance sheet events

CONSOLIDATED STATEMENT OF INCOME

$ million

	Notes	2021	2020	2019
Revenue	5	261,504	180,543	344,877
Share of profit of joint ventures and associates	10	4,097	1,783	3,604
Interest and other income	6	7,056	869	3,625
Total revenue and other income		**272,657**	**183,195**	**352,106**
Purchases		174,912	117,093	252,983
Production and manufacturing expenses	5	23,822	24,001	26,438
Selling, distribution and administrative expenses	5	11,328	9,881	10,493
Research and development	5	815	907	962
Exploration	5	1,423	1,747	2,354
Depreciation, depletion and amortisation	5	26,921	52,444	28,701
Interest expense	7	3,607	4,089	4,690
Total expenditure		**242,828**	**210,162**	**326,621**
Income/(loss) before taxation		**29,829**	**(26,967)**	**25,485**
Taxation charge/(credit)	17	9,199	(5,433)	9,053
Income/(loss) for the period	5	**20,630**	**(21,534)**	**16,432**
Income attributable to non-controlling interest	5	529	146	590
Income/(loss) attributable to Shell plc shareholders	5	**20,101**	**(21,680)**	**15,842**
Basic earnings per share ($)	25	2.59	(2.78)	1.97
Diluted earnings per share ($)	25	2.57	(2.78)	1.95

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

$ million

	Notes	2021	2020	2019
Income/(loss) for the period	5	20,630	(21,534)	16,432
Other comprehensive income/(loss) net of tax				
Items that may be reclassified to income in later periods:				
Currency translation differences	23	(1,413)	1,179	344
Debt instruments remeasurements	23	(28)	23	29
Cash flow hedging gains/(losses)	23	21	(160)	(276)
Net investment hedging gains/(losses)	23	295	(423)	9
Deferred cost of hedging	23	(39)	100	66
Share of other comprehensive loss of joint ventures and associates	10	(109)	(42)	(76)
Total		**(1,273)**	**677**	**96**
Items that are not reclassified to income in later periods:				
Retirement benefits remeasurements		7,198	(2,702)	(2,102)
Equity instruments remeasurements		145	64	(30)
Share of other comprehensive income of joint ventures and associates	10	3	119	2
Total		**7,346**	**(2,519)**	**(2,130)**
Other comprehensive income/(loss) for the period		6,073	(1,842)	(2,034)
Comprehensive income/(loss) for the period		**26,703**	**(23,376)**	**14,398**
Comprehensive income attributable to non-controlling interest		468	136	625
Comprehensive income/(loss) attributable to Shell plc shareholders		**26,235**	**(23,512)**	**13,773**

CONSOLIDATED FINANCIAL STATEMENTS continued

CONSOLIDATED BALANCE SHEET

	Notes	Dec 31, 2021	$ million Dec 31, 2020
Assets			
Non-current assets			
Intangible assets	8	24,693	22,710
Property, plant and equipment	9	194,932	209,700
Joint ventures and associates	10	23,415	22,451
Investments in securities	11	3,797	3,222
Deferred tax	17	12,426	16,311
Retirement benefits	18	8,471	2,474
Trade and other receivables	12	7,065	7,641
Derivative financial instruments	20	815	2,805
		275,614	**287,314**
Current assets			
Inventories	13	25,258	19,457
Trade and other receivables	12	53,208	33,625
Derivative financial instruments	20	11,369	5,783
Cash and cash equivalents	14	36,970	31,830
		126,805	90,695
Assets classified as held for sale	30	1,960	1,259
		128,765	91,954
Total assets		**404,379**	**379,268**
Liabilities			
Non-current liabilities			
Debt	15	80,868	91,115
Trade and other payables	16	2,075	2,304
Derivative financial instruments	20	887	420
Deferred tax	17	12,547	10,463
Retirement benefits [A]	18	11,325	15,605
Decommissioning and other provisions	19	25,804	27,116
		133,506	**147,023**
Current liabilities			
Debt	15	8,218	16,899
Trade and other payables [A]	16	63,173	44,572
Derivative financial instruments	20	16,311	5,308
Income taxes payable [A]		3,254	3,111
Decommissioning and other provisions	19	3,338	3,622
		94,294	**73,512**
Liabilities directly associated with assets classified as held for sale	30	1,253	196
		95,547	**73,708**
Total liabilities		**229,053**	**220,731**
Equity			
Share capital	21	641	651
Shares held in trust		(610)	(709)
Other reserves	23	18,909	12,752
Retained earnings		153,026	142,616
Equity attributable to Shell plc shareholders		**171,966**	**155,310**
Non-controlling interest		3,360	3,227
Total equity		**175,326**	**158,537**
Total liabilities and equity		**404,379**	**379,268**

[A] As from January 1, 2021, the current "Retirement benefits" liability has been classified under non-current liabilities (previously separately presented within current liabilities) (see Note 18) and taxes payable not related to income tax are presented within "Trade and other payables" (previously "Taxes payable") (see Note 17). Prior period comparatives have been revised to conform with current year presentation.

Signed on behalf of the Board

/s/ Jessica Uhl

JESSICA UHL
Chief Financial Officer
March 9, 2022

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

$ million

	Equity attributable to Shell plc shareholders						
	Share capital (see Note 21)	Shares held in trust	Other reserves (see Note 23)	Retained earnings	Total	Non-controlling interest	Total equity
At January 1, 2021	**651**	**(709)**	**12,752**	**142,616**	**155,310**	**3,227**	**158,537**
Comprehensive income for the period	–	–	6,134	20,101	26,235	468	26,703
Transfer from other comprehensive income	–	–	(45)	45	–	–	–
Dividends (see Note 24)	–	–	–	(6,321)	(6,321)	(348)	(6,669)
Repurchases of shares [A]	(10)	–	10	(3,513)	(3,513)	–	(3,513)
Share-based compensation	–	99	58	93	250	–	250
Other changes in non-controlling interest	–	–	–	5	5	13	18
At December 31, 2021	**641**	**(610)**	**18,909**	**153,026**	**171,966**	**3,360**	**175,326**
At January 1, 2020	**657**	**(1,063)**	**14,451**	**172,431**	**186,476**	**3,987**	**190,463**
Comprehensive (loss)/income for the period	–	–	(1,832)	(21,397)	(23,229)	136	(23,093)
Transfer from other comprehensive income	–	–	270	(270)	–	–	–
Dividends (see Note 24)	–	–	–	(7,270)	(7,270)	(311)	(7,581)
Repurchases of shares	(6)	–	6	(1,214)	(1,214)	–	(1,214)
Share-based compensation	–	354	(143)	(230)	(19)	–	(19)
Other changes in non-controlling interest	–	–	–	566	566	(585)	(19)
At December 31, 2020	**651**	**(709)**	**12,752**	**142,616**	**155,310**	**3,227**	**158,537**
At January 1, 2019	**685**	**(1,260)**	**16,615**	**182,610**	**198,650**	**3,888**	**202,538**
Comprehensive income/(loss) for the period	–	–	(2,069)	15,842	13,773	625	14,398
Transfer from other comprehensive income	–	–	(74)	74	–	–	–
Dividends (see Note 24)	–	–	–	(15,198)	(15,198)	(537)	(15,735)
Repurchases of shares [A]	(28)	–	28	(10,286)	(10,286)	–	(10,286)
Share-based compensation	–	197	(49)	(613)	(465)	–	(465)
Other changes in non-controlling interest	–	–	–	2	2	11	13
At December 31, 2019	**657**	**(1,063)**	**14,451**	**172,431**	**186,476**	**3,987**	**190,463**

[A] Includes shares committed to repurchase under an irrevocable contract and repurchases subject to settlement at the end of the year. (See Note 21)

CONSOLIDATED FINANCIAL STATEMENTS continued

CONSOLIDATED STATEMENT OF CASH FLOWS

$ million

	Notes	2021	2020	2019
Income/(loss) before taxation for the period		29,829	(26,967)	25,485
Adjustment for:				
Interest expense (net)		3,096	3,316	3,705
Depreciation, depletion and amortisation		26,921	52,444	28,701
Exploration well write-offs	9	639	815	1,218
Net gains on sale and revaluation of non-current assets and businesses		(5,995)	(286)	(2,519)
Share of profit of joint ventures and associates		(4,097)	(1,783)	(3,604)
Dividends received from joint ventures and associates		3,929	2,591	4,139
(Increase)/decrease in inventories		(7,319)	4,477	(2,635)
(Increase)/decrease in current receivables		(20,567)	9,625	(921)
Increase/(decrease) in current payables		17,519	(9,494)	(1,223)
Derivative financial instruments		5,882	977	(1,484)
Retirement benefits		16	568	(365)
Decommissioning and other provisions		(76)	1,104	(686)
Other		803	8	(28)
Tax paid		(5,476)	(3,290)	(7,605)
Cash flow from operating activities		**45,104**	**34,105**	**42,178**
Capital expenditure		(19,000)	(16,585)	(22,971)
Investments in joint ventures and associates		(479)	(1,024)	(743)
Investment in equity securities		(218)	(218)	(205)
Proceeds from sale of property, plant and equipment and businesses		14,233	2,489	4,803
Proceeds from joint ventures and associates from sale, capital reduction and repayment of long-term loans [A]		584	1,240	2,599
Proceeds from sale of equity securities		296	281	469
Interest received		423	532	911
Other investing cash inflows		2,928	3,239	2,921
Other investing cash outflows		(3,528)	(3,232)	(3,563)
Cash flow from investing activities		**(4,761)**	**(13,278)**	**(15,779)**
Net increase/(decrease) in debt with maturity period within three months		14	(63)	(308)
Other debt:				
New borrowings		1,791	23,033	11,185
Repayments		(21,534)	(17,385)	(14,292)
Interest paid		(4,014)	(4,105)	(4,649)
Derivative financial instruments		(1,165)	1,157	(48)
Change in non-controlling interest		19	(42)	–
Cash dividends paid to:				
Shell plc shareholders [B]		(6,253)	(7,424)	(15,198)
Non-controlling interest		(348)	(311)	(537)
Repurchases of shares		(2,889)	(1,702)	(10,188)
Shares held in trust: net purchases and dividends received		(285)	(382)	(1,174)
Cash flow from financing activities		**(34,664)**	**(7,224)**	**(35,209)**
Effects of exchange rate changes on cash and cash equivalents		(539)	172	124
Increase/(decrease) in cash and cash equivalents		5,140	13,775	(8,686)
Cash and cash equivalents at beginning of year		31,830	18,055	26,741
Cash and cash equivalents at end of year	14	**36,970**	**31,830**	**18,055**

[A] As from 2021, renamed from "Proceeds from sale of joint ventures and associates".
[B] Cash dividends paid represents the payment of net dividends (after deduction of withholding taxes where applicable) and payment of withholding taxes on dividends paid in the previous quarter.

1 – BASIS OF PREPARATION

The Consolidated Financial Statements of Shell plc (formerly Royal Dutch Shell plc) (the "Company") and its subsidiaries (collectively referred to as "Shell") have been prepared in accordance with international accounting standards in conformity with the requirements of the UK Companies Act 2006 (the "Act"), and therefore in accordance with UK-adopted international accounting standards. As applied to Shell, there are no material differences from International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB); therefore, the Consolidated Financial Statements have been prepared in accordance with IFRS as issued by the IASB.

As described in the accounting policies in Note 2, the Consolidated Financial Statements have been prepared under the historical cost convention except for certain items measured at fair value. Those accounting policies have been applied consistently in all periods.

The Consolidated Financial Statements were approved and authorised for issue by the Board of Directors on March 9, 2022.

Simplification of share structure

On December 10, 2021, the shareholders of the Company supported the resolution to amend Shell's Articles of Association to enable the simplification of the Company. The simplification entailed the assimilation of the Company's shares into a single line, the alignment of the Company's tax residence with its country of incorporation in the UK and granting the Board the power to change the Company's name. On December 20, 2021, the Board decided to proceed with the proposal.

2 – SIGNIFICANT ACCOUNTING POLICIES, JUDGEMENTS AND ESTIMATES

This Note describes Shell's significant accounting policies, which are those relevant to an understanding of the Consolidated Financial Statements. It includes the measurement bases used in preparing the Consolidated Financial Statements. It allows an understanding as to how transactions, other events and conditions are reported. It also describes: (a) judgements, apart from those involving estimations, that management makes in applying the policies that have the most significant effect on the amounts recognised in the Consolidated Financial Statements; and (b) estimations, including assumptions about the future, that management makes in applying the policies. The sources of estimation uncertainty that have a significant risk of a material adjustment to the carrying amounts of assets and liabilities within the next financial year are specifically identified as a significant estimate.

The accounting policies applied are consistent with those of the previous financial year except for the adoption as from January 1, 2021, of amendments to IFRS 9 Financial Instruments (IFRS 9), IFRS 7 Financial Instruments: Disclosures (IFRS 7) and IFRS 16 Leases (IFRS 16).

The transition to the accounting pronouncements as listed below has no material impact.

IFRS 9 Financial Instruments, IFRS 7 Financial Instruments: Disclosures and IFRS 16 Leases Inter-Bank Offered Rate (IBOR) Reform – Phase 2

Amendments to IFRS 9, IFRS 7, and IFRS 16 complement those amendments effective from January 1, 2020, (IBOR Reform – Phase 1) and focus on the effects of the IBOR reform on a company's financial statements that arise when, for example, an IBOR used to calculate interest on a financial asset is replaced with an alternative benchmark rate.

In this phase the IASB amended requirements relating to: changes in the basis for determining contractual cash flows of financial assets, financial liabilities and lease liabilities; hedge accounting; and disclosures. These amendments apply only to changes required by the IBOR reform to financial instruments and hedging relationships.

The derivatives hedging Shell's fixed-rate debt will be affected by the market-wide replacement of the London Inter-Bank Offered Rate (LIBOR) with alternative risk-free reference rates, most significantly by reform of US dollar LIBOR.

Shell has established a Group-wide IBOR Transition Project, with oversight from the Group Treasurer. The project spans all business lines and has cross-functional senior governance which includes Legal, IT and Finance, including treasury, tax and accounting experts. During 2021, Shell has put in place detailed plans, processes and procedures to support the transition of the affected portfolio including making changes to systems, processes and risk management, as well as related tax and accounting implications. Shell is confident that it has the operational capability to process the transitions to risk-free rates for those interest rate benchmarks such as USD LIBOR that will cease to be available after 30 June 2023.

Nature of the Consolidated Financial Statements

The Consolidated Financial Statements are presented in US dollars (dollars) and comprise the financial statements of the Company and its subsidiaries, being those entities over which the Company has control, either directly or indirectly, through exposure or rights to their variable returns and the ability to affect those returns through its power over the entities. Information about subsidiaries at December 31, 2021, can be found in Appendix 1: Significant Subsidiaries and Other Related Undertakings.

Subsidiaries are consolidated from the date on which control is obtained until the date that such control ceases, using consistent accounting policies. All inter-company balances and transactions, including unrealised profits arising from such transactions, are eliminated. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Non-controlling interest represents the proportion of income, other comprehensive income and net assets in subsidiaries that is not attributable to the Company's shareholders.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

2 – SIGNIFICANT ACCOUNTING POLICIES, JUDGEMENTS AND ESTIMATES continued

Currency translation

Foreign currency transactions are translated using the exchange rate at the dates of the transactions or valuation where items are remeasured. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at quarter-end exchange rates of monetary assets and liabilities denominated in foreign currencies (including those in respect of inter-company balances, unless related to loans of a long-term investment nature) are recognised in income unless when recognised in other comprehensive income in respect of cash flow or net investment hedges. Foreign exchange gains and losses in income are presented within interest and other income or within purchases where not related to financing. Share capital issued in currencies other than the dollar is translated at the exchange rate at the date of issue.

On consolidation, assets and liabilities of non-dollar entities are translated to dollars at year-end rates of exchange, while their statements of income, other comprehensive income and cash flows are translated at quarterly average rates. The resulting translation differences are recognised as currency translation differences within other comprehensive income. Upon sale of all or part of an interest in, or upon liquidation of, an entity, the appropriate portion of cumulative currency translation differences related to that entity is generally recognised in income.

Revenue recognition

Revenue from sales of oil, natural gas, chemicals and other products is recognised at the transaction price to which Shell expects to be entitled, after deducting sales taxes, excise duties and similar levies. For contracts that contain separate performance obligations, the transaction price is allocated to those separate performance obligations by reference to their relative stand-alone selling prices.

Revenue is recognised when control of the products has been transferred to the customer. For sales by Integrated Gas and Upstream operations, this generally occurs when the product is physically transferred into a vessel, pipe or other delivery mechanism; for sales by refining operations, it is either when the product is placed onboard a vessel or offloaded from the vessel, depending on the contractually agreed terms; and for sales of oil products and chemicals, it is either at the point of delivery or the point of receipt, depending on contractual conditions.

Revenue resulting from hydrocarbon production from properties in which Shell has an interest with partners in joint arrangements is recognised on the basis of Shell's volumes lifted and sold. Revenue resulting from the production of oil and natural gas under production-sharing contracts (PSCs) is recognised for those amounts relating to Shell's cost recoveries and Shell's share of the remaining production. Gains and losses on derivative contracts and the revenue and costs associated with other contracts that are classified as held primarily for the purpose of being traded are reported on a net basis in the Consolidated Statement of Income. Purchases and sales of hydrocarbons under exchange contracts that are necessary to obtain or reposition feedstocks for oil products manufacturing facility operations are presented net in the Consolidated Statement of Income.

Revenue resulting from arrangements that are not considered contracts with customers is presented as revenue from other sources.

Research and development

Development costs that are expected to generate probable future economic benefits are capitalised as intangible assets. All other research and development expenditure is recognised in income as incurred.

Exploration costs

Hydrocarbon exploration costs are accounted for under the successful efforts method: exploration costs are recognised in income when incurred, except that exploratory drilling costs, including in respect of the recapitalisation of the depreciation, are included in property, plant and equipment pending determination of proved reserves. Exploration costs capitalised in respect of exploration wells that are more than 12 months old are written off unless: (a) proved reserves are booked; or (b) (i) they have found commercially producible quantities of reserves and (ii) they are subject to further exploration or appraisal activity in that either drilling of additional exploratory wells is under way or firmly planned for the near future or other activities are being undertaken to sufficiently progress the assessing of reserves and the economic and operating viability of the project.

Property, plant and equipment and intangible assets

Recognition

Property, plant and equipment comprise assets owned by Shell, assets held by Shell under lease contracts, and assets operated by Shell as contractor in PSCs. They include rights and concessions in respect of properties with proved reserves ("proved properties") and with no proved reserves ("unproved properties"). Property, plant and equipment, including expenditure on major inspections, and intangible assets are initially recognised in the Consolidated Balance Sheet at cost where it is probable that they will generate future economic benefits. This includes capitalisation of decommissioning and restoration costs associated with provisions for asset retirement (see "provisions"), certain development costs (see "research and development") and the effects of associated cash flow hedges (see "financial instruments") as applicable. Interest is capitalised as an increase in property, plant and equipment, on major capital projects during construction. The accounting for exploration costs is described separately (see "exploration costs"). Intangible assets include goodwill, liquefied natural gas (LNG) off-take and sales contracts obtained through acquisition, environmental certificates, software costs and trademarks.

Property, plant and equipment and intangible assets are subsequently carried at cost less accumulated depreciation, depletion and amortisation (including any impairment). Gains and losses on sale are determined by comparing the proceeds with the carrying amounts of assets sold and are recognised in income, within interest and other income.

An asset is classified as held for sale if its carrying amount will be recovered principally through sale rather than through continuing use, which is when the sale is highly probable, and it is available for immediate sale in its present condition subject only to terms that are usual and customary for sales of such assets. Assets classified as held for sale are measured at the lower of the carrying amount upon classification and the fair value less costs to sell. Assets classified as held for sale and the associated liabilities are presented separately from other assets and liabilities in the Consolidated Balance Sheet. Once assets are classified as held for sale, property, plant and equipment and intangible assets are no longer subject to depreciation or amortisation.

Depreciation, depletion and amortisation

Property, plant and equipment related to hydrocarbon production activities are in principle depreciated on a unit-of-production basis over the proved developed reserves of the field concerned, other than assets whose useful lives differ from the lifetime of the field which are depreciated applying the straight-line method. However, for certain Integrated Gas and Upstream assets, the use for this purpose of proved developed reserves, which are determined using the SEC-mandated yearly average oil and gas prices, would result in depreciation charges for these assets

which do not reflect the pattern in which their future economic benefits are expected to be consumed as, for example, it may result in assets with long-term expected lives having accelerated or being fully depreciated within one year. Therefore, in these instances, other approaches are applied to determine the reserves base for the purpose of calculating depreciation, such as using management's expectations of future oil and gas prices rather than yearly average prices, or total proved reserves to provide a phasing of periodic depreciation charges that more appropriately reflects the expected utilisation of the assets concerned. (See Note 9)

Rights and concessions in respect of proved properties are depleted on the unit-of-production basis over the total proved reserves of the relevant area. Where individually insignificant, unproved properties may be grouped and depreciated based on factors such as the average concession term and past experience of recognising proved reserves.

Property, plant and equipment held under lease contracts and capitalised LNG off-take and sales contracts are depreciated or amortised over the term of the respective contract. Other property, plant and equipment and intangible assets are depreciated or amortised on a straight-line basis over their estimated useful lives, except for goodwill, which is not amortised. They include oil products manufacturing facilities and chemical plants (for which the useful life is generally 20 years), retail service stations (15 years), and major inspection costs, which are depreciated over the estimated period before the next planned major inspection (three to five years).

On classification of an asset as held for sale, depreciation ceases.

Estimates of the useful lives and residual values of property, plant and equipment and intangible assets are reviewed annually and adjusted if appropriate.

Impairment

The carrying amount of goodwill is tested for impairment annually; in addition, assets other than unproved properties (see "exploration costs") are tested for impairment whenever events or changes in circumstances indicate that the carrying amounts for those assets may not be recoverable. If any such indication of impairment exists, the carrying amounts of those assets are written down to their recoverable amount, which is the higher of fair value less costs of disposal (see "fair value measurements") and value in use.

Value in use is determined as the amount of estimated risk-adjusted discounted future cash flows. For this purpose, assets are grouped into cash-generating units based on separately identifiable and largely independent cash inflows. Estimates of future cash flows used in the evaluation of impairment of assets are made using management's forecasts of commodity prices, market supply and demand, potential costs associated with operational greenhouse gas (GHG) emissions, mainly related to CO_2, and forecast product and refining margins. In addition, management takes into consideration the expected useful lives of the manufacturing facilities, exploration and production assets, and expected production volumes. The latter takes into account assessments of field and reservoir performance and includes expectations about both proved reserves and volumes that are expected to constitute proved reserves in the future (unproved volumes), which are risk-weighted utilising geological, production, recovery and economic projections. Cash flow projections are based on management's most recent operating plan that represents management's best estimate and are risked as appropriate. The discount rate is based on a nominal post-tax weighted average cost of capital (WACC). Prior to 2021, cash flow estimates were discounted at a rate based on Shell's marginal cost of debt. The change in discount rate to a nominal post-tax WACC has been reflected in a commensurate manner in the risk adjustments to cash flow projections. Using a post-tax discount rate to calculate value in use does not result in a materially different outcome than using a pre-tax discount rate. (See Note 9)

Impairments, except those related to goodwill, are reversed as applicable to the extent that the events or circumstances that triggered the original impairment have changed.

Impairment losses and reversals are reported within depreciation, depletion and amortisation.

Upon classification of an asset as held for sale, the carrying amount is impaired if this exceeds the fair value less costs to sell.

Judgements and estimates

Proved oil and gas reserves

Unit-of-production depreciation, depletion and amortisation charges are principally measured based on management's estimates of proved developed oil and gas reserves. Also, exploration drilling costs are capitalised pending the results of further exploration or appraisal activity, which may take several years to complete, and before any related proved reserves can be booked.

Proved reserves are estimated by a central group of reserves experts. The estimated proved reserves are determined by reference to available geological and engineering data and only include volumes for which access to market is assured with reasonable certainty. Yearly average oil and gas prices are applied in the determination of proved reserves. Estimates of proved reserves are inherently imprecise, require the application of judgement and are subject to regular revision, either upward or downward, based on new information such as from the drilling of additional wells, observation of long-term reservoir performance under producing conditions and changes in economic factors, including product prices, contract terms, legislation or development plans.

Changes to estimates of proved developed reserves affect prospectively the amounts of depreciation, depletion and amortisation charged and, consequently, the carrying amounts of exploration and production assets. Generally, in the normal course of business the diversity of the asset portfolio will limit the net effect of such revisions. The outcome of, or assessment of plans for, exploration or appraisal activity may result in the related capitalised exploration drilling costs being recognised in income in that period.

Judgement is involved in determining when to use an alternative reserves base in order to appropriately reflect the expected utilisation of the assets concerned (see "depreciation, depletion and amortisation").

Information about the carrying amounts of exploration and production assets and the amounts charged to income, including depreciation, depletion and amortisation and the quantitative impact of the use of an alternative reserves base, is presented in Note 9.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

2 – SIGNIFICANT ACCOUNTING POLICIES, JUDGEMENTS AND ESTIMATES continued

Judgements and estimates continued

Impairment

For the purposes of determining whether impairment of assets has occurred, and the extent of any impairment loss or its reversal, the key assumptions management uses in estimating risk-adjusted future cash flows for value in use measures are future oil and gas prices and refining margins. In addition, management uses other assumptions such as potential costs associated with operational GHG emissions and expected production volumes appropriate to the local circumstances and environment. These assumptions and the judgements of management that are based on them are subject to change as new information becomes available. Changes in assumptions could affect the carrying amounts of assets, and any impairment losses and reversals will affect income. Changes in economic conditions can affect the rate used to discount future cash flow estimates or the risk-adjustment in the future cash flows. Judgement is applied to conclude whether changes in assumptions or economic conditions are an indicator that an asset may be impaired or that an impairment loss recognised in prior periods may no longer exist, or may have decreased.

Expected production volumes, which comprise proved reserves and unproved volumes, are used for impairment testing because management believes this to be the most appropriate indicator of expected future cash flows. As discussed in "Proved oil and gas reserves" above, reserves estimates are inherently imprecise. Furthermore, projections about unproved volumes are based on information that is necessarily less robust than that available for mature reservoirs.

Estimation is involved with respect to the expected life of oil products manufacturing facilities and chemicals plants, and also including management's view on the future development of refining margins.

The determination of cash-generating units requires judgement. Changes in this determination could impact the calculation of value in use and therefore the conclusion on the recoverability of assets' carrying amounts when performing an impairment test.

Judgement, which is subject to change as new information becomes available, can be required in determining when an asset is classified as held for sale. A change in that judgement could result in impairment charges affecting income, depending on whether classification requires a write-down of the asset to its fair value less costs to sell.

In assessing the value in use, the estimated risk-adjusted future post-tax cash flows are discounted to their present value using a post-tax discount rate that reflects Shell's post-tax WACC. The discount rate applied does not reflect asset-specific risks for which future cash flow estimates have been adjusted.

Significant estimates

Future commodity price assumptions used in the impairment testing in Integrated Gas and Upstream (see Note 9) are regularly assessed by management, noting that management does not necessarily consider short-term increases or decreases in prices as being indicative of long-term levels.

Until 2019, management's estimate of longer-term refining margins used in the impairment testing in Oil Products was based on the reversion to mean methodology, unless a fundamental shift in markets had been identified, over the life of the oil products manufacturing facilities. Under this approach, it was assumed that refining margins would revert to historical averages over time. As from 2020, a different price methodology applies, based on Shell management's understanding and interpretation of demand and supply fundamentals in the near term and taking into account various other factors such as industry rationalisation and energy transition in the long term.

Future commodity prices and refining margins used in impairment testing provide a source of estimation uncertainty as referred to in paragraph 125 of IAS 1 Presentation of Financial Statements (IAS 1.125).

Information about the carrying amounts of assets and impairments and their sensitivity to changes in significant estimates is presented in Notes 8 and 9.

Leases

A contract, or part of a contract, that conveys the right to control the use of an identified asset for a period of time in exchange for payments to be made to the owners (lessors) is accounted for as a lease. Contracts are assessed to determine whether a contract is, or contains, a lease at the inception of a contract or when the terms and conditions of a contract are significantly changed. The lease term is the non-cancellable period of a lease, together with contractual options to extend or to terminate the lease early, where it is reasonably certain that an extension option will be exercised or a termination option will not be exercised.

At the commencement of a lease contract, a right-of-use asset and a corresponding lease liability are recognised, unless the lease term is 12 months or less. The commencement date of a lease is the date on which the underlying asset is made available for use. The lease liability is measured at an amount equal to the present value of the lease payments during the lease term that are not paid at that date. The lease liability includes contingent rentals and variable lease payments that depend on an index, rate, or where they are fixed payments in substance. The lease liability is remeasured when the contractual cash flows of variable lease payments change due to a change in an index or rate when the lease term changes following a reassessment.

Lease payments are discounted using the interest rate implicit in the lease. If that rate is not readily available, the incremental borrowing rate is applied. The incremental borrowing rate reflects the rate of interest that the lessee would have to pay to borrow over a similar term, with a similar security, the funds necessary to obtain an asset of a similar nature and value to the right-of-use asset in a similar economic environment.

In general, a corresponding right-of-use asset is recognised for an amount equal to each lease liability, adjusted by the amount of any pre-paid lease payment relating to the specific lease contract. The depreciation on right-of-use assets is recognised in income unless capitalised as exploration drilling cost (see "exploration cost") or capitalised when the right-of-use asset is used to construct another asset.

Where Shell is the lessor in a lease arrangement at inception, the lease arrangement will be classified as a finance lease or an operating lease. Classification is based on the extent to which the risks and rewards incidental to ownership of the underlying asset lie with the lessor or the lessee.

Where Shell, usually in its capacity as operator, has entered into a lease contract on behalf of a joint arrangement, a lease liability is recognised to the extent that Shell has primary responsibility for the lease liability. A finance sublease is subsequently recognised if the related right-of-use asset is subleased to the joint arrangement. This is usually the case when the joint arrangement has the right to direct the use and obtains substantially all of the economic benefits from using the asset.

Impairment of the right-of-use asset

Right-of-use assets are subject to existing impairment requirements as set out in "property, plant and equipment" (see Note 9).

Judgements and estimates

A lease term includes optional lease periods where it is reasonably certain Shell will exercise the option to extend or not exercise the option to terminate the lease. Determination of the lease term is subject to judgement and has an impact on the measurement of the lease liability and related right-of-use asset. When assessing the lease term at the commencement date, Shell takes into consideration the broader economics of the contract. Reassessment of the lease term is performed upon changes in circumstances that may affect the probability that an option to extend or to terminate the lease will be exercised.

Where the rate implicit in the lease is not readily available, an incremental borrowing rate is applied. This incremental borrowing rate reflects the rate of interest that the lessee would have to pay to borrow over a similar term, with a similar security, the funds necessary to obtain an asset of a similar nature and value to the right-of-use asset in a similar economic environment. Determination of the incremental borrowing rate requires estimation.

Joint arrangements and associates

Arrangements under which Shell has contractually agreed to share control (see "Nature of the Consolidated Financial Statements" for the definition of control) with another party or parties are joint ventures where the parties have rights to the net assets of the arrangement, or joint operations where the parties have rights to the assets and obligations for the liabilities relating to the arrangement. Investments in entities over which Shell has the right to exercise significant influence but neither control nor joint control are classified as associates. Information about incorporated joint arrangements and associates at December 31, 2021, can be found in Appendix 1: Significant Subsidiaries and Other Related Undertakings.

Investments in joint ventures and associates are accounted for using the equity method, under which the investment is initially recognised at cost and subsequently adjusted for the Shell share of post-acquisition income less dividends received and the Shell share of other comprehensive income and other movements in equity, together with any loans of a long-term investment nature. Where necessary, adjustments are made to the financial statements of joint ventures and associates to bring the accounting policies used into line with those of Shell. In an exchange of assets and liabilities for an interest in a joint venture, the non-Shell share of any excess of the fair value of the assets and liabilities transferred over the pre-exchange carrying amounts is recognised in income. Unrealised gains on other transactions between Shell and its joint ventures and associates are eliminated to the extent of Shell's interest in them; unrealised losses are treated similarly but may also result in an assessment of whether the asset transferred is impaired.

Shell recognises its assets and liabilities relating to its interests in joint operations, including its share of assets held jointly and liabilities incurred jointly with other partners.

Inventories

Inventories are stated at cost or net realisable value, whichever is lower. Cost comprises direct purchase costs (including transportation), and associated costs incurred in bringing inventories to their present condition and location, and is determined using the first-in, first-out (FIFO) method for oil, gas and chemicals and by the weighted average cost method for materials.

Taxation

The charge for current tax is calculated based on the income reported by the Company and its subsidiaries, as adjusted for items that are non-taxable or disallowed and using rates that have been enacted or substantively enacted by the balance sheet date.

Deferred tax is determined, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the Consolidated Balance Sheet and on unused tax losses and credits carried forward.

Deferred tax assets and liabilities are calculated using the enacted or substantively enacted rates that are expected to apply when an asset is realised or a liability is settled. They are not recognised where they arise on the initial recognition of goodwill or of an asset or liability in a transaction (other than in a business combination) that, at the time of the transaction, affects neither accounting nor taxable profit, or in respect of taxable temporary differences associated with subsidiaries, joint ventures and associates where the reversal of the respective temporary difference can be controlled by Shell and it is probable that it will not reverse in the foreseeable future.

Deferred tax assets are recognised to the extent that it is probable that future taxable profits will be available against which the deductible temporary differences, unused tax losses and credits carried forward can be utilised.

Income tax receivables and payables as well as deferred tax assets and liabilities include provisions for uncertain income tax positions/treatments.

Income taxes are recognised in income except when they relate to items recognised in other comprehensive income, in which case the tax is recognised in other comprehensive income. Income tax assets and liabilities are presented separately in the Consolidated Balance Sheet except where there is a right of offset within fiscal jurisdictions and an intention to settle such balances on a net basis.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

2 – SIGNIFICANT ACCOUNTING POLICIES, JUDGEMENTS AND ESTIMATES continued

Judgements and estimates

Tax liabilities are recognised when it is considered probable that there will be a future outflow of funds to a taxing authority. In such cases, provision is made for the amount that is expected to be settled, where this can be reasonably estimated. Provisions for uncertain income tax positions/treatments are measured at the most likely amount or the expected value, whichever method is more appropriate. Generally, uncertain tax treatments are assessed on an individual basis, except where they are expected to be settled collectively. It is assumed that taxing authorities will examine positions taken if they have the right to do so and that they have full knowledge of the relevant information. A change in estimate of the likelihood of a future outflow and/or in the expected amount to be settled would be recognised in income in the period in which the change occurs. This requires the application of judgement as to the ultimate outcome, which can change over time depending on facts and circumstances. Judgements mainly relate to transfer pricing, including inter-company financing, interpretation of PSCs, expenditure deductible for tax purposes and taxation arising on disposal.

Deferred tax assets are recognised only to the extent it is considered probable that those assets will be recoverable. This involves an assessment of when those assets are likely to reverse, and a judgement as to whether or not there will be sufficient taxable profits available to offset the assets when they do reverse. This requires assumptions regarding future profitability and is therefore inherently uncertain. To the extent assumptions regarding future profitability change, there can be an increase or decrease in the amounts recognised in respect of deferred tax assets as well as in the amounts recognised in income in the period in which the change occurs.

Taxation information, including charges and deferred tax assets and liabilities, is presented in Note 17. Income taxes include taxes at higher rates levied on income from certain Integrated Gas and Upstream activities.

Retirement benefits

Benefits in the form of retirement pensions and health care and life insurance are provided to certain employees and retirees under defined benefit and defined contribution plans.

Obligations under defined benefit plans are calculated annually by independent actuaries using the projected unit credit method, which takes into account employees' years of service and, for pensions, average or final pensionable remuneration, and are discounted to their present value using interest rates of high-quality corporate bonds denominated in the currency in which the benefits will be paid and of a duration consistent with the plan obligations. Where plans are funded, payments are made to independently managed trusts; assets held by those trusts are measured at fair value. Defined benefit plan surpluses are recognised as assets to the extent that they are considered recoverable, which is generally by way of a refund or lower future employer contributions.

The amounts recognised in income in respect of defined benefit plans mainly comprise service cost and net interest. Service cost comprises principally the increase in the present value of the obligation for benefits resulting from employee service during the period (current service cost) and also amounts relating to past service and settlements or amendments of plans. Plan amendments are changes to benefits and are generally recognised when all legal and regulatory approvals have been received and the effects have been communicated to members. Net interest is calculated using the net defined benefit liability or asset matched against the discount rate yield curve at the beginning of each year for each plan. Remeasurements of the net defined benefit liability or asset resulting from actuarial gains and losses, and the return on plan assets excluding the amount recognised in income, are recognised in other comprehensive income.

For defined contribution plans, pension expense represents the amount of employer contributions payable for the period.

Significant judgements and estimates

Defined benefit obligations and plan assets, and the resulting liabilities and assets that are recognised, require significant estimation as these are subject to volatility as (actuarial) assumptions regarding future outcomes and market values change. Substantial judgement is required in determining the actuarial assumptions, which vary for the different plans to reflect local conditions but are determined under a common process in consultation with independent actuaries. The assumptions applied in respect of each plan are reviewed annually and adjusted where necessary to reflect changes in experience and actuarial recommendations.

Actuarial assumptions applied in determining defined benefit obligations provide a source of estimation uncertainty as referred to in IAS 1.125.

Information about the amounts reported in respect of defined benefit pension plans, assumptions applicable to the principal plans and their sensitivity to changes in significant estimates is presented in Note 18.

Provisions

Provisions are recognised at the balance sheet date at management's best estimate of the expenditure required to settle the present obligation. Non-current amounts are discounted at a rate intended to reflect the time value of money. The carrying amounts of provisions and the discount rate applied are regularly reviewed and adjusted for new facts or changes in law, technology or financial markets.

Provisions for decommissioning and restoration costs, which arise principally in connection with hydrocarbon production facilities, oil products manufacturing facilities and pipelines, are measured on the basis of current requirements, technology and price levels; the present value is calculated using amounts discounted over the useful economic life of the assets. The liability is recognised (together with a corresponding amount as part of the related property, plant and equipment) once a legal or constructive obligation arises to dismantle an item of property, plant and equipment and to restore the site on which it is located and when a reasonable estimate can be made. The effects of changes resulting from revisions to the timing or the amount of the original estimate of the provision are reflected on a prospective basis, generally by adjustment to the carrying amount of the related property, plant and equipment. However, where there is no related asset, or the change reduces the carrying amount to nil, the effect, or the amount in excess of the reduction in the related asset to nil, is recognised in income.

Shell reviews its oil products manufacturing facilities and chemical plants on a regular basis to determine whether any changes in assumptions, including expected life, trigger the need to recognise a provision for decommissioning and restoration.

Redundancy provisions are recognised when a detailed formal plan identifies the business or part of the business concerned, the location and number of employees affected, a detailed estimate of the associated costs and an appropriate timeline, and the employees affected have been notified of the plan's main features.

An onerous contract provision is recognised when the unavoidable cost of meeting the obligations under the contract exceeds the economic benefits expected to be received under it. The unavoidable cost under a contract is the lower of the cost of fulfilling the contract and any compensation or penalties arising from failure to fulfil it. The cost of fulfilling a contract comprises the costs that relate directly to the contract. Before an onerous provision is recognised Shell first recognises any impairment loss that has occurred on assets dedicated to that contract.

Other provisions are recognised in income in the period in which an obligation arises and the amount can be reasonably estimated. Provisions are measured based on current legal requirements and existing technology where applicable. Recognition of any joint and several liability is based on management's best estimate of the final pro rata share of the liability. Provisions are determined independently of expected insurance recoveries. Recoveries are recognised when virtually certain of realisation.

Estimates
Estimates of provisions for future decommissioning and restoration costs are recognised and based on current legal and constructive requirements, technology and price levels. Because actual cash outflows can differ from estimates due to changes in laws, regulations, public expectations, technology, prices and conditions, and can take place many years in the future, the carrying amounts of provisions are regularly reviewed and adjusted to take account of such changes.

Significant estimate
The discount rate applied to reflect the time value of money in the carrying amount of provisions requires estimation. The discount rate applied is reviewed regularly and adjusted following changes in market rates.

The discount rate applied to determine the carrying amount of provisions provides a source of estimation uncertainty as referred to in IAS 1.125.

Information about decommissioning and restoration provisions and their sensitivity to changes in estimates is presented in Note 19.

Financial instruments
Financial assets and liabilities are presented separately in the Consolidated Balance Sheet except where there is a legally enforceable right of offset and Shell has the intention to settle on a net basis or realise the asset and settle the liability simultaneously.

Financial Assets
Financial assets are classified at initial recognition and subsequently measured at amortised cost, fair value through other comprehensive income or fair value through profit or loss. The classification of financial assets is determined by the contractual cash flows and where applicable the business model for managing the financial assets.

Debt instruments are measured at amortised cost, if the objective of the business model is to hold the financial asset in order to collect contractual cash flows and the contractual terms give rise to cash flows that are solely payments of principal and interest. It is initially recognised at fair value plus or minus transaction costs that are directly attributable to the acquisition or issue of the financial asset. Subsequently the financial asset is measured using the effective interest method less any impairment. Gains and losses are recognised in profit or loss when the asset is derecognised, modified or impaired.

All equity instruments and other debt instruments are recognised at fair value. For equity instruments, on initial recognition, an irrevocable election (on an instrument-by-instrument basis) can be made to designate these as at fair value through other comprehensive income instead of fair value through profit or loss. Dividends received on equity instruments are recognised as other income in profit or loss when the right of payment has been established, except when Shell benefits from such proceeds as a recovery of part of the cost of the financial asset, in which case such gains are recorded in other comprehensive income.

Investments in securities
Investments in securities ("securities") comprise equity and debt securities. Equity securities are carried at fair value. Generally, unrealised holding gains and losses are recognised in other comprehensive income. On sale, net gains and losses previously accumulated in other comprehensive income are transferred to retained earnings. Debt securities are generally carried at fair value with unrealised holding gains and losses recognised in other comprehensive income. On sale, net gains and losses previously accumulated in other comprehensive income are recognised in income.

Impairment of financial assets
The expected credit loss model is applied for recognition and measurement of impairments in financial assets measured at amortised cost or at fair value through other comprehensive income. The expected credit loss model is also applied for financial guarantee contracts to which IFRS 9 applies and which are not accounted for at fair value through profit or loss. The loss allowance for the financial asset is measured at an amount equal to the 12-month expected credit losses. If the credit risk on the financial asset has increased significantly since initial recognition, the loss allowance for the financial asset is measured at an amount equal to the lifetime expected credit losses. Changes in loss allowances are recognised in profit or loss. For trade receivables, a simplified impairment approach is applied recognising expected lifetime losses from initial recognition.

Cash and cash equivalents
Cash and cash equivalents comprise cash at bank and in hand, including offsetting bank overdrafts, short-term bank deposits, money market funds, reverse repos and similar instruments that generally have a maturity of three months or less at the date of purchase.

Financial Liabilities
Financial liabilities are measured at amortised cost, unless they are required to be measured at fair value through profit or loss, such as instruments held for trading, or Shell has opted to measure them at fair value through profit or loss. Debt and trade payables are recognised initially at fair value based on amounts exchanged, net of transaction costs, and subsequently at amortised cost except for fixed rate debt subject to fair value hedging which is remeasured for the hedged risk (see below). Interest expense on debt is accounted for using the effective interest method, and other than interest capitalised, is recognised in income. For financial liabilities that are measured under the fair value option, the change in the fair value related to own credit risk is recognised in other comprehensive income. The remaining fair value change is recognised at fair value through profit or loss.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

2 – SIGNIFICANT ACCOUNTING POLICIES, JUDGEMENTS AND ESTIMATES continued

Derivative contracts and hedges

Derivative contracts are used in the management of interest rate risk, foreign exchange risk, commodity price risk, and foreign currency cash balances. Derivatives that are not closely related to the host contract in terms of economic characteristics and risks and the host contract of which is not a financial asset are separated from their host contract and recognised at fair value with the associated gains and losses recognised in income.

Contracts to buy or sell a non-financial item that can be settled net in cash are accounted for as financial instruments, with the exception of those contracts that were entered into and continue to be held for the purpose of the receipt or delivery of a non-financial item in accordance with Shell's expected purchase, sale or usage requirements. Gains or losses arising from changes in the fair value of derivatives that are not designated as effective hedging instruments are recognised in income.

Certain derivative contracts qualify and are designated either: as a fair value hedge of the change in fair value of a recognised asset or liability or an unrecognised firm commitment; or as a cash flow hedge for the change in cash flows to be received or paid relating to a recognised asset or liability or a highly probable forecast transaction; or as a net investment hedge of the change in foreign exchange rates associated with net investments in foreign operations with a different functional currency than Shell's functional currency.

A change in the fair value of a hedging instrument designated as a fair value hedge is recognised in income, together with the consequential adjustment to the carrying amount of the hedged item. The effective portion of a change in fair value of a derivative contract designated as a cash flow hedge is recognised in other comprehensive income until the hedged transaction occurs; any ineffective portion is recognised in income. Where the hedged item is a non-financial asset or liability, the amount in accumulated other comprehensive income is transferred to the initial carrying amount of the asset or liability (reclassified to the balance sheet); a net investment hedge is accounted for similarly to a cash flow hedge. Gains or losses on the hedging instrument relating to the effective portion of the hedge are recognised in other comprehensive income while any gains or losses relating to the ineffective portion are recognised in the income statements. On disposal of the foreign operation, the cumulative value of any such gains or losses recorded in other comprehensive income is reclassified to the income statement.

The effective portion of a change due to retranslation at quarter-end exchange rates in the carrying amount of debt and the principal amount of derivative contracts used to hedge net investments in foreign operations is recognised in other comprehensive income until the related investment is sold or liquidated; any ineffective portion is recognised in income.

All relationships between hedging instruments and hedged items are documented, as well as risk management objectives and strategies for undertaking hedge transactions. The effectiveness of hedges is also continually assessed and hedge accounting is discontinued when there is a change in the risk management strategy.

Unless designated as hedging instruments, contracts to sell or purchase non-financial items that can be settled net as if the contracts were financial instruments and that do not meet expected own-use requirements (typically, forward sale and purchase contracts for commodities in trading operations), and contracts that are or contain written options, are recognised at fair value; associated gains and losses are recognised in income.

Derivatives that are held primarily for the purpose of trading are presented as current in the Consolidated Balance Sheet.

Judgements

Judgement is required to determine whether contracts to buy or sell LNG are capable of being settled on a net basis. Due to the limited liquidity in the LNG market and the lack of net settlement history, contracts to buy or sell LNG are not considered capable of being settled on a net basis. As a result, these contracts are accounted for on an accrual basis and not as a financial instrument.

Fair value measurements

Fair value measurements are estimates of the amounts for which assets or liabilities could be transferred at the measurement date, based on the assumption that such transfers take place between participants in principal markets and, where applicable, taking highest and best use into account.

Estimates

Where available, fair value measurements are derived from prices quoted in active markets for identical assets or liabilities. In the absence of such information, other observable inputs are used to estimate fair value. Inputs derived from external sources are corroborated or otherwise verified, as appropriate. In the absence of publicly available information, fair value is determined using estimation techniques that take into account market perspectives relevant to the asset or liability, in as far as they can reasonably be ascertained, based on predominantly unobservable inputs. For derivative contracts where publicly available information is not available, fair value estimations are generally determined using models and other valuation methods, the key inputs for which include future prices, volatility, price correlation, counterparty credit risk and market liquidity, as appropriate; for other assets and liabilities, fair value estimations are generally based on the net present value of expected future cash flows.

Share-based compensation plans

The fair value of share-based compensation expense arising from the Performance Share Plan (PSP) and the Long-term Incentive Plan (LTIP) – Shell's main equity-settled plans – is estimated using a Monte Carlo option pricing model and is recognised in income from the date of grant over the vesting period with a corresponding increase directly in equity. The model projects and averages the results for a range of potential outcomes for the vesting conditions, the principal assumptions for which are the share price volatility and dividend yields for Shell and four of its main competitors over the last three years and the last 10 years.

Shares held in trust

Shares in the Company, which are held by employee share ownership trusts and trust-like entities, are not included in assets but are reflected at cost as a deduction from equity as shares held in trust.

Acquisitions and sales of interests in a business

Assets acquired and liabilities assumed when control is obtained over a business, and when an interest or an additional interest is acquired in a joint operation which is a business, are recognised at their fair value at the date of the acquisition; the amount of the purchase consideration above this value is recognised as goodwill. When control is obtained, any non-controlling interest is recognised as the proportionate share of the identifiable net assets. The acquisition of a non-controlling interest in a

subsidiary and the sale of an interest while retaining control are accounted for as transactions within equity. The difference between the purchase consideration or sale proceeds after tax and the relevant proportion of the non-controlling interest, measured by reference to the carrying amount of the interest's net assets at the date of acquisition or sale, is recognised in retained earnings as a movement in equity attributable to Shell plc shareholders.

Emission schemes and related environmental programmes

Emission certificates, biofuel certificates and renewable power certificates (together "environmental certificates") held for trading purposes are recognised at cost or net realisable value, whichever is lower, and classified under inventory.

Emission trading schemes

Emission certificates acquired for compliance purposes are initially recognised at cost and classified under intangible assets. In the schemes where a cap is set for emissions, the associated emission certificates granted are recognised at cost, which may be zero. An emission liability is recognised under other liabilities when actual emissions occur that give rise to an obligation. To the extent the liability is covered by emission certificates held for compliance purposes, the liability is measured with reference to the value of these emission certificates held and for the remaining uncovered portion at market value. The associated expense is presented under "production and manufacturing expenses". Both the emission certificates and the emission liability are derecognised upon settling the liability with the respective regulator.

Biofuel programmes

Biofuel certificates acquired that are held for compliance purposes are initially recognised at cost under intangible assets. Self-generated biofuel certificates are recognised at nil value, as they primarily offset the obligation. A biofuel liability is recognised under other liabilities when the obligation arises under local regulations. To the extent covered by biofuel certificates held for compliance purposes, the liability is measured with reference to the value of these certificates held and for the remaining uncovered portion at market value. Biofuel certificates and the biofuel liability are both derecognised upon settling the liability with the respective regulator.

Renewable power programmes

Renewable power certificates acquired for compliance purposes are initially recognised at cost as an intangible asset. Self-generated renewable power certificates are generally transferred to the customer upon sales of electricity. A renewable power liability is recognised under other liabilities when electricity sales take place that give rise to an obligation to retire renewable power certificates. The associated cost is recognised in "Purchases" in the income statement. If the obligation relates to power consumed in business operations, it is presented in other liabilities with cost reflected in "Production and manufacturing expenses". To the extent covered by renewable power certificates held for compliance purposes, the liability is measured with reference to the value of these renewable power certificates and for the remaining uncovered portion at market value. Renewable power certificates and the renewable power liability are derecognised upon settling the liability with the respective regulator.

Consolidated Statement of Income presentation

Purchases reflect all costs related to the acquisition of inventories and the effects of the changes therein, and include associated costs incurred in conversion into finished or intermediate products. Production and manufacturing expenses are the costs of operating, maintaining and managing production and manufacturing assets. Selling, distribution and administrative expenses include direct and indirect costs of marketing and selling products.

3 – CHANGES TO IFRS NOT YET ADOPTED

Property, Plant and Equipment: Proceeds before Intended Use (Amendments to IAS 16 Property, plant and equipment (IAS 16))

From January 1, 2022, any proceeds and related costs from selling items produced while bringing property, plant and equipment classified as assets under construction to the location and condition necessary for it to be capable of operating in the manner intended by management are recognised in the Consolidated Statement of Income in accordance with applicable accounting policies.

These amendments are applied retrospectively, but only to items of property, plant and equipment on or after the beginning of the earliest period presented in the financial statements in which the entity first applies the amendments.

Based on the assessment performed, this accounting policy change has no material impact.

Deferred Tax related to Assets and Liabilities arising from a Single Transaction (Amendments to IAS 12 Income taxes (IAS 12))

In May 2021, amendments to IAS 12 were published to require companies to recognise deferred tax on particular transactions that, on initial recognition, give rise to equal amounts of taxable and deductible temporary differences. The amendments will typically apply to transactions where assets and liabilities are recognised from a single transaction, such as leases for the lessee and decommissioning and restoration obligations.

The amendments are effective for annual reporting periods beginning on or after January 1, 2023, and should be applied on a modified retrospective basis.

Shell is in the process of evaluating the impact of these amendments. They are not expected to have a significant effect on future financial reporting.

Onerous Contracts — Cost of Fulfilling a Contract (Amendments to IAS 37, Provisions, Contingent Liabilities and Contingent Assets (IAS 37))

The amendments to IAS 37 add additional clarity on which costs an entity includes when assessing whether a contract is onerous. The amendments specify that the cost of fulfilling a contract comprises the costs that relate directly to the contract. Those costs include both incremental costs and an allocation of other costs as long as these relate directly to fulfilling a contract.

The amendments are effective from January 1, 2022, and apply to all contracts within the scope of IAS 37. These amendments have no material impact.

IFRS 17 Insurance contracts (IFRS 17)

IFRS 17 was issued in 2017, with amendments published in 2020 and 2021, and is required to be adopted for annual reporting periods beginning on or after January 1, 2023. The IFRS 17 model combines a current balance sheet measurement of insurance contracts with recognition of profit over the period that services are provided. The general model in the standard requires insurance contract liabilities to be measured using probability-weighted current estimates of future cash flows, an adjustment for risk, and a contractual service margin representing the profit expected from fulfilling the contracts. Effects of changes in the estimates of future cash flows and the risk adjustment relating to future services are recognised over the period services are provided rather than immediately in profit or loss. Shell is in the process of evaluating the initial impact of this standard.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

4 – CLIMATE CHANGE AND ENERGY TRANSITION

In 2021, Shell launched its Powering Progress strategy to accelerate the transition of its business to net-zero emissions, including targets to reduce the carbon intensity of energy products sold (Scope 1, 2 and 3 emissions) by 6-8% by 2023, 20% by 2030, 45% by 2035, and 100% by 2050, in step with society. In October 2021, Shell announced a new target to halve the absolute emissions from its operations and the energy it buys to run them by 2030, compared with 2016 levels on a net basis. This additional target will help Shell to step up the pace of change to become a net-zero emissions energy business.

This note describes how Shell has considered climate-related impacts in some key areas of the financial statements and how this translates into the valuation of assets and measurement of liabilities as Shell makes progress in the energy transition.

Note 2 Significant accounting policies, judgements and estimates describes uncertainties, including those that have the potential to have a material effect on the Consolidated Balance Sheet in the next 12 months. This note describes the key areas of climate impacts that potentially have short- and longer-term effects on amounts recognised in the Consolidated Balance Sheet at December 31, 2021. Where relevant, this note contains references to other notes to the Consolidated Financial Statements and aims to provide an overarching summary.

Financial planning and assumptions

This section provides an overview of how key assumptions that underpin these financial statements interact with scenarios. Subsequently, the sensitivity of carrying amounts to commodity prices, if different assumptions were applied, is described.

There is no one single scenario that underpins the financial statements. Shell's scenarios are designed to challenge management's perspectives on the future business environment and stretch management to consider even events that may be only remotely possible. As a result, scenarios are not intended to be predictions of likely future events or outcomes and are not the basis for Shell's financial statements and operating plans.

Shell scenarios (see "About this Report" on page iii) and the range of possible outcomes inform the development of Shell's strategy and Shell's view on future oil and gas price outlooks. These oil and gas price outlooks are one of the key assumptions that underpin Shell's financial statements. Shell's scenarios inform high-, mid- and low-price outlooks. The mid-price outlook represents management's reasonable best estimate and is the basis for Shell's financial statements, operating plans and impairment testing.

Shell's targets to reduce absolute Scope 1 and 2 emissions by 50% by 2030, compared with 2016 levels on a net basis, and 20% reduction of net carbon intensity of Scope 3 emissions by 2030, have been included in Shell's operating plan. The operating plan also includes expected cost for evolving carbon regulations based on a forecast of Shell's equity share of emissions from operated and non-operated assets also taking into account the estimated impact of free allowances. Carbon cost estimates are forecasted on a country-by-country basis and range from around $25 to around $200 per tonne of GHG emissions in 2030.

The financial statements are based on reasonable and supportable assumptions that represent management's current best estimate of the range of economic conditions that may exist in the foreseeable future. Shell will continue to update its operating plan, pricing outlooks and assumptions that it uses, to take account of changes in the economic environment and the pace of the energy transition.

Property, plant and equipment and joint ventures and associates

Price sensitivities using climate pricelines

As noted, in accordance with IFRS, Shell's financial statements are based on reasonable and supportable assumptions that represent management's current best estimate of the range of economic conditions that may exist in the foreseeable future. The mid-price outlook informed by Shell's scenario planning represents management's best estimate. Impairment sensitivities of -10% or +10% to the mid-price outlook, as an average percentage over the full period are provided in Note 9 Property, plant and equipment. They would result in around $12-15 billion impairment or of some $6-9 billion impairment reversal respectively in Integrated Gas and Upstream.

The energy transition is expected to bring volatility and there is large uncertainty as to how commodity prices will develop over the next decades. Some price lines see a structural lower price during the transition period, while other price lines see structural higher commodity prices as a result of changes in both supply and demand. As the risk of stranded assets is prevalent with downside price risk in energy transition scenarios, sensitivities have only been undertaken for such downside scenarios. If different price outlooks from external and often normative climate change scenarios were used, this would impact the recoverability of certain assets recognised in the Consolidated Balance Sheet as at December 31, 2021. These external scenarios are not representative of management's mid-price reasonable best estimate.

Sensitivity of carrying amounts to prices described below is under the assumption that all other factors in the models used to calculate recoverability of carrying amounts remain unchanged. Changes to prices are applied because of the significant impact on Shell's business. It should be noted that a significant decrease in long-term forecasted prices would probably lead to further changes, such as in portfolio choices and cost levels.

Priceline 1 – Average prices from four 1.5-2 degrees Celsius external climate change scenarios: in view of the broad range of price outlooks across the various scenarios, the average of four external price outlooks was taken:

- IHS Markit / ACCS 2021 – under this scenario oil prices (real terms 2021 (RT21)) gradually decrease towards $20 per barrel (/b) in 2039, recovering to $46/b in 2046 and decreasing again towards $40/b in 2050. Gas prices (RT21) gradually increase towards 2050 to some $3 per million British thermal units (/MMBtu) for Henry Hub and $6/MMBtu for Asia and Europe.
- Woodmac WM AET-2 degree – under this scenario oil prices (RT21) gradually decrease towards $10/b in 2050. Gas prices (RT21) gradually increase towards 2050 to some $4/MMBtu for Henry Hub. For Asia and Europe, gas prices (RT21) increase to some $8/MMBtu around 2040, gradually decreasing towards 2050 to $6/MMBtu for Asia and $5/MMBtu for Europe.
- IEA NZE50 – under this scenario oil prices (RT21) gradually decrease towards $25/b in 2050. Gas prices (RT21) are around $2/MMBtu for Henry Hub. For Asia and Europe gas prices (RT21) decrease to some $4/MMBtu around 2040, with further slight decreases towards 2050.
- IEA SDS – under this scenario oil prices (RT21) gradually increase towards $56/b in 2030, and gradually decrease to $50/b in 2050. Gas prices (RT21) are around $2/MMBtu for Henry Hub. For Asia gas prices (RT21) decrease to around $5/MMBtu in 2050. For Europe gas prices (RT21) are slightly above $4/MMBtu for the whole period.

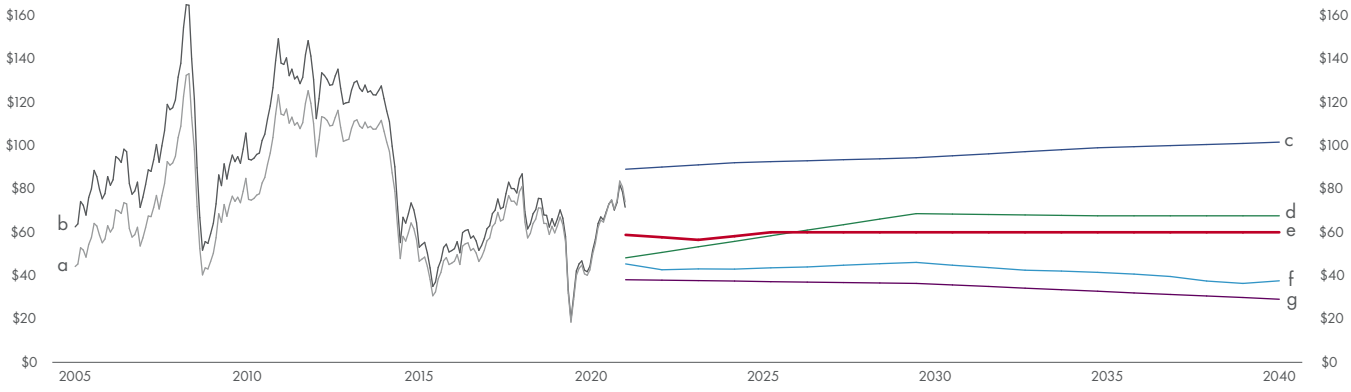
This priceline provides an external view of the development of commodity prices under 1.5-2 degrees Celsius external climate change scenarios over the whole period under review.

Applying this priceline to Integrated Gas assets of $65 billion and Upstream assets of $89 billion as at December 31, 2021, shows recoverable amounts that are $13-16 billion and $14-17 billion lower, respectively, than the carrying amounts as at December 31, 2021.

Priceline 2 – Hybrid Shell Plan and IEA NZE50: this priceline applies Shell's mid-price outlook for the next 10 years (see Note 9). Because of the greater uncertainty, the International Energy Agency (IEA) normative Net Zero Emissions scenario for the period after 10 years is applied. This weights less price-risk uncertainty to the first 10 years reflected in the operating plan period and applies more risk to the more uncertain subsequent periods.

Applying this priceline to Integrated Gas assets of $65 billion and Upstream assets of $89 billion as at December 31, 2021, shows recoverable amounts that are $10-12 billion and $5-6 billion lower, respectively, than the carrying amounts as at December 31, 2021.

Oil price assumptions



a — Monthly average price (actual on money of the day basis) b — Monthly average price (actual on real terms basis using US CPI all urban consumers) c — NGFS GCAM NZE 2050 [A]
d — IEA APS e — Shell mid-price f — Average prices from four 1.5-2 degrees Celsius external climate change scenarios g — IEA NZE50

[A] The Network for Greening the Financial System (NGFS) is a group of 65 central banks and supervisors and 83 observers committed to sharing best practices, contributing to the development of climate– and environment–related risk management in the financial sector and mobilising mainstream finance to support the transition toward a sustainable economy. This scenario results from the NGFS GCAM model. This model embodies certain assumptions on the relationships between economic and energy output and climate interactions. This NGFS scenario shows a decline in world oil demand relative to the current policies baseline, in part a response to substitution away from fossil fuels. At the same time prices increase due to supply constraints.
[B] All figures are presented on real-term 2021 basis unless noted differently.

The graph above shows the oil pricelines on a real-terms basis applied for the period until 2040 for Shell's mid-price outlook in comparison with the IEA Net Zero Emissions by 2050 scenario (IEA NZE50), the IEA announced pledges (IEA APS) scenario, the NGFS GCAM NZE 2050 scenario and the average prices from four 1.5-2 degrees Celsius external climate change scenarios (Priceline 1, above). The development of future oil prices is uncertain and oil prices have been subject to significant volatility in the past. Future oil prices may be impacted by future changes in macroeconomic factors, available supply, demand, geopolitical and other factors. The pricelines as per the scenarios NGFS GCAM NZE 2050, IEA NZE50 and the average prices from four 1.5-2 degrees Celsius external climate change scenarios differ from Shell's best estimate and view of the future oil price.

Sensitivity + 10% to the mid-price outlook

$ billion

	Carrying amount	Sensitivity	
Integrated Gas	65	3	5
Upstream	89	3	4
Total	154	6	9

Sensitivity - 10% to the mid-price outlook

$ billion

	Carrying amount	Sensitivity	
Integrated Gas	65	-8	-10
Upstream	89	-4	-5
Total	154	-12	-15

Average prices from four 1.5-2 degrees Celsius external climate change scenarios

$ billion

	Carrying amount	Sensitivity	
Integrated Gas	65	-13	-16
Upstream	89	-14	-17
Total	154	-27	-33

Sensitivity Hybrid Shell Plan + IEA NZE50

$ billion

	Carrying amount	Sensitivity	
Integrated Gas	65	-10	-12
Upstream	89	-5	-6
Total	154	-15	-18

4 – CLIMATE CHANGE AND ENERGY TRANSITION continued

Carrying value of Oil Products and Chemicals assets

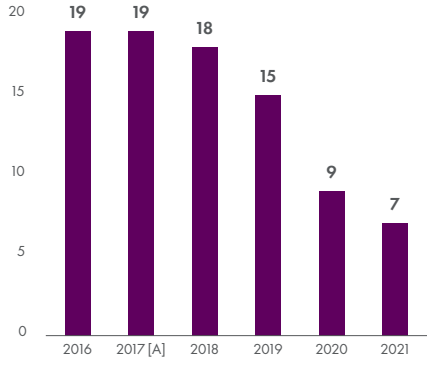
Refineries in the Oil Products segment (carrying amount as at December 31, 2021, $6 billion of which $5 billion related to refineries in the five energy and chemicals parks, excluding refineries classified as held for sale) may be impacted under a two-degrees-Celsius or less external climate scenario. In line with Shell's strategy, Shell's refining footprint is being transformed into five energy and chemicals parks that will provide feedstocks for the chemicals and lubricants business, as well as other low-carbon energy products, including biofuels and hydrogen. This transformation will involve investments in assets that are expected to be resilient in the energy transition, and hence may have stable or increasing carrying amounts.

Assets in the Chemicals segment and Marketing assets in the Oil Products segment are also resilient to the energy transition with products in chemicals, lubricants, biofuels, bitumen, electric vehicle charging and convenience retail having no or low Scope 3 emissions. The demand for these products is also expected to be increasing in many markets and as a result are not expected to be impacted by lower commodity price scenarios.

Portfolio changes

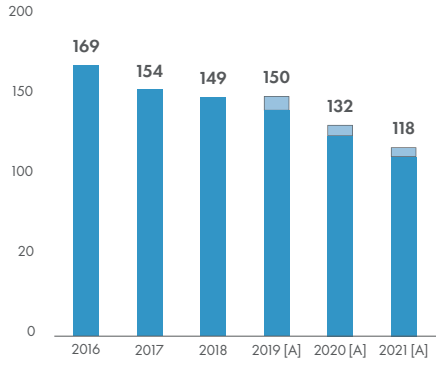
Since 2016, the carrying amount of production assets in Integrated Gas and Upstream decreased from $169 billion as at December 31, 2016, to $118 billion as at December 31, 2021. Over this period, depreciation was higher than additions for each year, and disposals of property, plant and equipment with a carrying amount of some $25 billion occurred. Since 2016, the carrying amount of joint ventures and associates decreased from $33 billion as at December 31, 2016, to $23 billion as at December 31, 2021. The carrying amount of capitalised exploration and evaluation expenses decreased from $19 billion as at December 31, 2016, to $7 billion at December 31, 2021. This is the result of final investment decisions and reclassifications to production assets and amounts charged to expenses exceeding additions (specifically significantly lower additions since 2020).

Carrying amount of exploration and evaluation assets
$ billion as at December 31



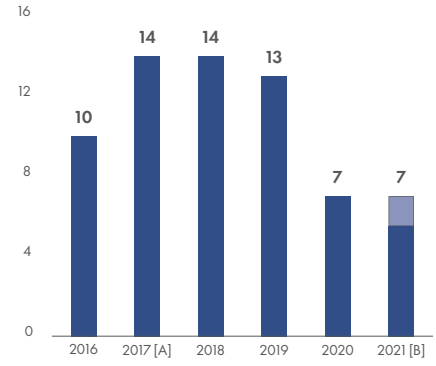
[A] In 2017 two refineries were acquired following dissolution of the Motiva joint venture in the USA.

Carrying amount of production assets
$ billion as at December 31



[A] Including right-of-use assets for the implementation of IFRS 16 Leases in 2019.

Carrying amount of refineries
$ billion as at December 31



[A] In 2017 two refineries were acquired following dissolution of the Motiva joint venture in the USA.
[B] Includes refineries held for sale ($1.5 billion).

Since 2016, Shell's Oil Products portfolio has evolved, shifting from 15 refineries at the end of 2016 towards five energy and chemicals parks. During that period Shell assumed the sole ownership of two refineries through the dissolution of the Motiva joint venture, and disposed of, converted or closed nine refineries (two of which are held for sale as at December 31, 2021). The carrying amount of refineries decreased from $10 billion as at December 31, 2016, to $6 billion as at December 31, 2021, (excluding refineries classified as held for sale). It is anticipated that Shell will continue to invest in the transformation of its refining portfolio into five energy and chemicals parks which produce chemicals and low- or no-carbon products.

Long term, it is expected that the current Shell portfolio will change and evolve with the energy transition. Decision-making on the future portfolio is guided by the pace of society's progress and the aim of being in step with society as it moves towards the goals of the Paris Agreement. Getting the energy system on a path to net-zero emissions will require unprecedented, coordinated action between energy providers, consumers and, crucially, governments. Shell has set out its strategy of how it will achieve its target to be a net-zero emissions energy business by 2050, in step with society.

Impact on remaining life of assets

The energy transition and the pace at which it progresses may impact the remaining life of assets. Integrated Gas and Upstream assets are generally depreciated using a unit-of-production methodology where depreciation depends on production of Securities and Exchange Commission (SEC) proved reserves (see Note 2). Based on production plans of existing assets, some 29%, 3% and 0% of SEC proved reserves as at December 31, 2021, would currently be left by 2030, 2040 and 2050, respectively. An analysis of Integrated Gas and Upstream production assets of $118 billion as at December 31, 2021, based on planned reserves depletion shows that these assets would be significantly further depreciated under the unit-of-production method by 2030 and fully depreciated by 2050, providing a further perspective on the risk of stranded assets carried in the Consolidated Balance Sheet as at December 31, 2021. For refineries in Oil Products, depreciation of assets is on a straight-line basis over the life of the assets over a period of 20 years (see Note 2). Over the course of the energy transition, the current carrying amount of refineries will be fully depreciated, offset by anticipated investments in assets that are expected to be resilient in the energy transition as described above.

Deferred tax assets

In general, it is expected that sufficient deferred tax liabilities and forecasted taxable profits within the planning period of 10 years are available for recovery of the deferred tax assets recognised at December 31, 2021. Integrated Gas and Upstream deferred tax assets recognised are expected to be recovered within the period of production of each asset. For deferred tax assets of $711 million as at December 31, 2021, mainly related to Brazil, Malaysia and Australia, this period extends beyond 10 years. Deferred tax assets in Oil Products to be recovered in more than 10 years are limited to $854 million as at December 31, 2021, and mainly relate to retail operations in Germany and France. In the light of the potential impact of the accelerated energy transition in Oil Products, cash flows in Oil Products beyond 10 years (for a maximum of an additional 10 years) were further risked to determine recoverability of deferred tax assets beyond 10 years (see Note 17).

Decommissioning and other provisions

The energy transition may result in decommissioning and restoration occurring earlier than expected. The risk on the timing of decommissioning and restoration activities for Integrated Gas and Upstream fields is limited, supported by production plans in the foreseeable future (see "Impact on remaining life of assets" above). Acceleration of decommissioning and restoration activities has also been reflected in the assessment of the appropriate discount rate. In 2021, the discount rate has been revised from a 30-year to a 20-year term in line with the average remaining life of Integrated Gas and Upstream assets.

Also, the current discount rate applied for calculating provisions (see Note 19) is equal to the inflation rate applied in estimation of provisions. As a result, a potential acceleration of decommissioning and restoration activities would have no time value of money impact for the decommissioning and restoration provision.

In Oil Products, it was industry practice not to recognise decommissioning and restoration provisions associated with manufacturing facilities in Oil Products and Chemicals. This was on the basis that these assets were considered to have indefinite lives, so it was considered remote that an outflow of economic benefits would be required. In 2020, Shell considered the changed macroeconomic fundamentals, together with Shell's plans to rationalise the Group's manufacturing portfolio. Shell also reconsidered whether it remained appropriate not to recognise decommissioning and restoration provisions for manufacturing facilities. In 2020, provisions of $899 million were recognised for certain shorter-lived manufacturing facilities (see Notes 19 and 26). The remaining five energy and chemicals parks are considered longer-lived facilities that are expected to be resilient in the energy transition, and decommissioning would generally be more than 50 years away.

Onerous contracts

Closure or early termination of activities may lead to supply contracts becoming onerous. Onerous contract provisions (see Note 19) have been recognised as at December 31, 2021, to reflect changes in expected future utilisation of certain assets. These include contracts in relation to unused terminals and refineries.

Dividend resilience

External stakeholders have requested disclosures on how climate change affects dividend-paying capacity. If a further impairment had been recognised in 2021 using any of the climate change scenarios described above, this would not have impacted the ability to pay dividends in this financial year because of the strong cash flow generation and financial reserves.

A forward-looking statement regarding future dividend-paying capacity cannot be provided because of unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements.

Physical risks

Mitigation of physical risks, whether or not related to climate change, are considered and embedded in the design and construction of assets and the associated costs are included in the initial recognition of assets in the Consolidated Balance Sheet. Over the past few years Shell has conducted studies aimed at expanding the understanding of physical risks. Shell continues to develop its understanding of all relevant aspects of climate resilience. Analyses have been performed addressing a range of typical climate change features for a select group of assets and it was concluded that currently any adaptation costs for those selected assets is not expected to be significant. Shell recognises the need to deepen and widen these analyses for a more comprehensive climate resilience assessment. Shell continues to monitor this and plans to conduct further analysis on other assets as well as assess long-term physical impacts.

Acute risks, such as flooding and droughts, wildfires and more severe tropical storms, could potentially impact Shell's operations and supply chains. The frequency of these hazards and impacts is expected to increase in certain high-risk locations. The physical risks are assessed at an asset level. Metocean (meteorology and oceanography) engineering experts assess and monitor the physical risks and logistic activities for certain of Shell's assets. These studies aim to ensure Shell's operations are safe and that Shell's facilities can be accessed safely under extreme conditions.

Extreme weather events could have a negative impact on earnings. Recent examples in 2021 include the Texas winter storm and Hurricane Ida. These had an impact on Shell's operations and an adverse impact on 2021 earnings of around $200 million and $400 million respectively.

5 – SEGMENT INFORMATION

General information

Shell is an international energy company engaged in the principal aspects of the oil and gas industry and reports its business through segments: Integrated Gas, Upstream, Oil Products, Chemicals and Corporate, reflecting the way Shell reviews and assesses its performance.

The Integrated Gas segment manages liquefied natural gas (LNG) activities and the conversion of natural gas into gas-to-liquids (GTL) fuels and other products, as well as the New Energies portfolio. It includes natural gas and liquids exploration and extraction, and the operation of the upstream and midstream infrastructure necessary to deliver gas and liquids to market. It markets and trades natural gas, LNG, electricity and carbon-emission rights, and also markets and sells LNG as a fuel for heavy-duty vehicles and marine vessels.

The Upstream segment explores for and extracts crude oil, natural gas and natural gas liquids. It also markets and transports oil and gas, and operates the infrastructure necessary to deliver them to market.

The Oil Products segment comprises the Refining and Trading, and Marketing classes of business. The Refining and Trading class of business turns crude oil and other feedstocks into a range of oil products which are moved and marketed around the world for domestic, industrial and transport use. The Marketing class of business includes the Retail, Lubricants, Business-to-Business (B2B), Pipelines and Biofuels businesses.

The Chemicals segment operates manufacturing plants and its own marketing network.

The Corporate segment covers the non-operating activities supporting Shell, comprising Shell's holdings and treasury organisation, its self-insurance activities and its headquarters and central functions.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

5 – SEGMENT INFORMATION continued

This note is presented on the basis of segments effective until December 31, 2021, and therefore does not reflect the revised segments effective from January 1, 2022.

Basis of segmental reporting

Sales between segments are based on prices generally equivalent to commercially available prices. Third-party revenue and non-current assets information by geographical area are based on the country of operation of the Group subsidiaries that report this information. Separate disclosure is provided for the UK as this is the Company's country of domicile.

Segment earnings are presented on a current cost of supplies basis (CCS earnings). On this basis, the purchase price of volumes sold during the period is based on the current cost of supplies during the same period after making allowance for the tax effect. CCS earnings therefore exclude the effect of changes in the oil price on inventory carrying amounts. CCS earnings attributable to Shell plc shareholders is the earnings measure used by the Chief Executive Officer for the purposes of making decisions about allocating resources and assessing performance.

Finance expense and income related to core financing activities, as well as related taxes, are included in the Corporate segment earnings rather than in the earnings of the business segments.

Information by segment on a current cost of supplies basis is as follows:

2021

						$ million	
	Integrated Gas	Upstream	Oil Products	Chemicals	Corporate	Total	
Revenue:							
Third-party	52,407	9,162	182,899	16,993	43	261,504	[A]
Inter-segment	7,883	36,325	11,835	6,362	–	62,405	
Share of profit of joint ventures and associates (CCS basis)	1,906	632	765	609	1	3,913	[B]
Interest and other income, of which:	1,787	4,602	328	(14)	353	7,056	
Interest income	4	37	39	–	431	511	
Net gains on sale and revaluation of non-current assets and businesses	1,595	4,140	277	(17)	–	5,995	
Other	188	425	12	3	(78)	550	
Third-party and inter-segment purchases (CCS basis)	41,888	9,152	172,314	17,740	(5)	241,089	
Production and manufacturing expenses	6,042	10,068	5,665	2,079	(32)	23,822	
Selling, distribution and administrative expenses	926	197	8,499	1,150	556	11,328	
Research and development expenses	158	339	212	106	–	815	
Exploration expenses	127	1,296	–	–	–	1,423	
Depreciation, depletion and amortisation charge, of which:	6,188	13,539	5,657	1,520	17	26,921	
Impairment losses	768	920	1,995	382	–	4,065	[C]
Impairment reversals	–	(213)	(1)	–	–	(214)	[D]
Interest expense	68	336	65	6	3,132	3,607	
Taxation charge/(credit) (CCS basis)	2,246	6,100	751	(41)	(665)	8,391	
CCS earnings	6,340	9,694	2,664	1,390	(2,606)	17,482	

[A] Includes $126 million of revenue from sources other than from contracts with customers, which mainly comprises the impact of fair value accounting of commodity derivatives. This amount includes both the reversal of prior losses of $4,824 million related to sales contracts and prior gains of $4,892 million related to purchase contracts that were previously recognised and where physical settlement has taken place during 2021.
[B] With effect from 2021, finance expense and income reported under Shell's share of earnings of joint ventures and associates are included in the earnings of the business segments. Prior period comparatives have not been revised on grounds of materiality.
[C] Impairment losses comprise Property, plant and equipment ($3,894 million) and Intangible assets ($171 million).
[D] See Note 9.

2020

	Integrated Gas	Upstream	Oil Products	Chemicals	Corporate	$ million Total
Revenue:						
Third-party	33,287	6,767	128,717	11,721	51	180,543 [A]
Inter-segment	3,410	21,564	6,213	2,850	–	34,037
Share of profit/(loss) of joint ventures and associates (CCS basis)	562	(7)	988	567	(268)	1,842
Interest and other income, of which:	14	542	(93)	–	406	869
Interest income	6	56	28	–	589	679
Net gains on sale and revaluation of non-current assets and businesses	218	55	(9)	(2)	24	286
Other	(210)	431	(112)	2	(207)	(96)
Third-party and inter-segment purchases (CCS basis)	21,112	4,505	113,177	9,969	8	148,771
Production and manufacturing expenses	5,723	10,521	5,942	1,787	28	24,001
Selling, distribution and administrative expenses	729	(23)	7,360	1,339	476	9,881
Research and development expenses	103	486	209	109	–	907
Exploration expenses	611	1,136	–	–	–	1,747
Depreciation, depletion and amortisation charge, of which:	17,704	23,119	10,473	1,116	32	52,444
Impairment losses	12,221	8,697	6,531	5	9	27,463 [B]
Interest expense	76	374	56	3	3,580	4,089
Taxation (credit)/charge (CCS basis)	(2,507)	(467)	(898)	7	(983)	(4,848)
CCS earnings	(6,278)	(10,785)	(494)	808	(2,952)	(19,701)

[A] Includes $10,008 million of revenue from sources other than from contracts with customers, which mainly comprises the impact of fair value accounting of commodity derivatives. This amount includes both the reversal of prior gains of $1,136 million related to sales contracts and prior losses of $539 million related to purchase contracts that were previously recognised and where physical settlement had taken place during 2020.
[B] Impairment losses comprise Property, plant and equipment ($26,676 million) and Intangible assets ($787 million).

2019

	Integrated Gas	Upstream	Oil Products	Chemicals	Corporate	$ million Total
Revenue:						
Third-party	41,322	9,482	280,460	13,568	45	344,877 [A]
Inter-segment	4,280	35,735	7,819	3,917	–	51,751
Share of profit/(loss) of joint ventures and associates (CCS basis)	1,791	379	1,179	546	(307)	3,588
Interest and other income, of which:	263	2,180	273	(7)	916	3,625
Interest income	–	–	–	–	899	899
Net gains on sale and revaluation of non-current assets and businesses	282	1,888	305	(8)	52	2,519
Other	(19)	292	(32)	1	(35)	207
Third-party and inter-segment purchases (CCS basis)	23,498	6,982	262,004	13,039	(6)	305,517
Production and manufacturing expenses	5,768	11,102	7,536	1,995	37	26,438
Selling, distribution and administrative expenses	716	29	7,976	1,323	449	10,493
Research and development expenses	181	450	219	112	–	962
Exploration expenses	281	2,073	–	–	–	2,354
Depreciation, depletion and amortisation charge, of which:	6,238	16,881	4,461	1,074	47	28,701
Impairment losses	579	2,576	622	5	–	3,782 [B]
Impairment reversals	–	–	(190)	–	–	(190) [C]
Interest expense	104	526	77	5	3,978	4,690
Taxation charge/(credit) (CCS basis)	2,242	5,878	1,319	(2)	(578)	8,859
CCS earnings	8,628	3,855	6,139	478	(3,273)	15,827

[A] Includes $3,760 million of revenue from sources other than from contracts with customers, which mainly comprises the impact of fair value accounting of commodity derivatives.
[B] Impairment losses comprise Property, plant and equipment ($3,639 million) and Intangible assets ($143 million).
[C] See Note 9.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

5 – SEGMENT INFORMATION continued

Reconciliation of CCS earnings to income for the period

$ million

	2021	2020	2019
Income/(loss) attributable to Shell plc shareholders	20,101	(21,680)	15,842
Income attributable to non-controlling interest	529	146	590
Income/(loss) for the period	20,630	(21,534)	16,432
Current cost of supplies adjustment:			
Purchases	(3,772)	2,359	(784)
Taxation	808	(585)	194
Share of profit of joint ventures and associates	(184)	59	(15)
Current cost of supplies adjustment	(3,148)	1,833	(605)
Of which:			
Attributable to Shell plc shareholders	(3,029)	1,759	(572)
Attributable to non-controlling interest	(119)	74	(33)
CCS earnings	17,482	(19,701)	15,827
Of which:			
CCS earnings attributable to Shell plc shareholders	17,072	(19,921)	15,270
CCS earnings attributable to non-controlling interest	410	220	557

Information by geographical area is as follows:

2021

$ million

	Europe	Asia, Oceania, Africa	USA	Other Americas	Total
Third-party revenue, by origin	78,549 [A]	87,070	73,647	22,238	261,504
Intangible assets, property, plant and equipment, joint ventures and associates at December 31	38,881 [B]	97,278	58,286	48,595	243,040

[A] Includes $21,846 million that originated from the UK.
[B] Includes $21,974 million located in the UK.

2020

$ million

	Europe	Asia, Oceania, Africa	USA	Other Americas	Total
Third-party revenue, by origin	50,138 [A]	65,139	50,856	14,410	180,543
Intangible assets, property, plant and equipment, joint ventures and associates at December 31	38,785 [B]	103,191	62,976	49,909	254,861 [C]

[A] Includes $12,958 million that originated from the UK.
[B] Includes $23,302 million located in the UK.
[C] As from 2021, assets classified as held for sale are presented separately. Prior period comparatives have been revised to conform with current year presentation. (See Note 30)

2019

$ million

	Europe	Asia, Oceania, Africa	USA	Other Americas	Total
Third-party revenue, by origin	98,455 [A]	139,916	83,212	23,294	344,877
Intangible assets, property, plant and equipment, joint ventures and associates at December 31	43,262 [B]	119,684	65,966	54,347	283,259 [C]

[A] Includes $41,094 million that originated from the UK.
[B] Includes $24,696 million located in the UK.
[C] As from 2021, assets classified as held for sale are presented separately. Prior period comparatives have been revised to conform with current year presentation.

6 – INTEREST AND OTHER INCOME

$ million

	2021	2020	2019
Interest income	511	679	899
Dividend income (from investments in equity securities)	91	22	23
Net gains on sale and revaluation of non-current assets and businesses	5,995	286	2,519
Net foreign exchange gains/(losses) on financing activities	118	(391)	5
Other	341	273	179
Total	7,056	869	3,625

In 2021, net gains on sale of non-current assets and businesses arose mainly in respect of gains on the sale of Integrated Gas assets in Australia and Norway, and Upstream assets in the USA and Nigeria.

In 2021 and 2020, "Other" income mainly related to amounts recognised in respect of sublease income from partners in joint operations.

In 2019, net gains on sale of non-current assets and businesses arose mainly in respect of gains on the sale of Integrated Gas assets in Australia, Upstream assets in the USA and Denmark, as well as Oil Products assets in Saudi Arabia and China.

7 – INTEREST EXPENSE

$ million

	2021	2020	2019
Interest incurred and similar charges	2,086	2,174	2,406
Interest expense related to leases	1,987	2,185	2,186
Less: interest capitalised	(917)	(799)	(752)
Other net losses on fair value and cash flow hedges of debt	1	32	132
Accretion expense	450	497	718
Total	3,607	4,089	4,690

The rate applied in determining the amount of interest capitalised in 2021 was 4.0% (2020: 4.5%; 2019: 4.5%).

8 – INTANGIBLE ASSETS

2021

$ million

	Goodwill	LNG off-take and sales contracts	Other	Total
Cost				
At January 1 [A]	15,101	10,030	7,927	33,058
Additions	1,546	–	3,674	5,220
Sales, retirements and other movements [A]	(464)	(197)	(1,978)	(2,639)
Currency translation differences	(66)	–	(197)	(263)
At December 31 [A]	16,117	9,833	9,426	35,376
Depreciation, depletion and amortisation, including impairments				
At January 1	1,062	4,668	4,618	10,348
Charge for the year	167	796	368	1,331
Sales, retirements and other movements	(23)	(197)	(670)	(890)
Currency translation differences	(9)	–	(97)	(106)
At December 31	1,197	5,267	4,219	10,683
Carrying amount at December 31 [A]	14,920	4,566	5,207 [B]	24,693

[A] As from 2021, assets classified as held for sale are presented separately and upon reclassification included in "Sales, retirements and other movements". Prior period comparatives have been revised to conform with current year presentation. (See Note 30)
[B] Includes $2,747 million related to environmental certificates held for compliance purposes (see Note 31) and $456 million related to software.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

8 – INTANGIBLE ASSETS continued

2020

$ million

	Goodwill	LNG off-take and sales contracts	Other	Total
Cost				
At January 1	14,973	10,211	6,866	32,050
Additions	247	–	1,581	1,828
Sales, retirements and other movements [A]	(176)	(181)	(714)	(1,071)
Currency translation differences	57	–	194	251
At December 31 [A]	15,101	10,030	7,927	33,058
Depreciation, depletion and amortisation, including impairments				
At January 1	768	4,014	3,782	8,564
Charge for the year [B]	276	835	851	1,962
Sales, retirements and other movements	–	(181)	(120)	(301)
Currency translation differences	18	–	105	123
At December 31	1,062	4,668	4,618	10,348
Carrying amount at December 31 [A]	14,039	5,362	3,309 [C]	22,710

[A] As from 2021, assets classified as held for sale are presented separately and upon reclassification included in "Sales, retirements and other movements". Prior period comparatives have been revised to conform with current year presentation. (See Note 30)
[B] Includes $787 million related to impairments, of which $472 million in "Other" related to Integrated Gas. (See Note 9)
[C] Includes $1,013 million related to environmental certificates held for compliance purposes (see Note 31) and $487 million related to software.

Goodwill at December 31, 2021, related principally to the acquisition of BG Group plc in 2016, allocated to Integrated Gas ($4,780 million) and Upstream ($5,525 million) at the operating segment level, and to Pennzoil-Quaker State Company ($1,612 million), a lubricants business in the Oil Products segment based largely in North America.

Additions to goodwill in 2021, ($1,546 million) related to a number of business acquisitions that Shell undertook for a total consideration of $2,300 million. This includes provisional goodwill of $1,167 million owing to the limited period since the acquisition date. The final amount will be reassessed in 2022 following the purchase price adjustments.

9 – PROPERTY, PLANT AND EQUIPMENT

2021

$ million

	Exploration and production		Manufacturing, supply and distribution	Other	Total
	Exploration and evaluation	Production			
Cost					
At January 1 [A]	14,484	298,882	107,876	32,402	453,644
Additions	1,216	8,942	7,917	3,644	21,719
Sales, retirements and other movements [A]	(3,014)	(20,005)	(9,607)	(455)	(33,081)
Currency translation differences	(7)	(1,916)	(2,004)	(1,586)	(5,513)
At December 31	12,679	285,903	104,182	34,005	436,769
Depreciation, depletion and amortisation, including impairments					
At January 1 [A]	5,258	167,711	58,242	12,733	243,944
Charge for the year	1,311	15,800	7,112	1,770	25,993
Sales, retirements and other movements [A]	(999)	(14,590)	(8,624)	(240)	(24,453)
Currency translation differences	10	(1,391)	(1,599)	(667)	(3,647)
At December 31	5,580	167,530	55,131	13,596	241,837
Carrying amount at December 31	7,099	118,373	49,051	20,409	194,932

[A] As from 2021, assets classified as held for sale are presented separately and upon reclassification included in 'Sales, retirements and other movements'. Prior period comparatives have been revised to conform with current year presentation. (See Note 30)

2020

$ million

	Exploration and production		Manufacturing, supply and distribution	Other	Total
	Exploration and evaluation	Production			
Cost					
At January 1 [A]	18,399	286,666	101,379	29,081	435,525
Additions	1,728	9,659	6,287	3,460	21,134
Sales, retirements and other movements [A]	(5,735)	(1,075)	(2,072)	(1,109)	(9,991)
Currency translation differences	92	3,632	2,282	970	6,976
At December 31	14,484	298,882	107,876	32,402	453,644
Depreciation, depletion and amortisation, including impairments					
At January 1 [A]	4,010	136,300	46,621	11,629	198,560
Charge for the year [B]	3,336	34,209	11,680	1,693	50,918
Sales, retirements and other movements [A]	(2,152)	(5,603)	(1,878)	(1,091)	(10,724)
Currency translation differences	64	2,805	1,819	502	5,190
At December 31	5,258	167,711	58,242	12,733	243,944
Carrying amount at December 31	9,226	131,171	49,634	19,669	209,700

[A] As from 2021, assets classified as held for sale are presented separately and upon reclassification included in "Sales, retirements and other movements". Prior period comparatives have been revised to conform with current year presentation. (See Note 30)
[B] Includes $26,676 million relating to impairment losses (see table "Impairments" below).

The carrying amount of property, plant and equipment at December 31, 2021, included $37,006 million (2020: $31,611 million) of assets under construction. This amount excludes exploration and evaluation assets.

The carrying amount of exploration and production assets at December 31, 2021, included rights and concessions in respect of proved and unproved properties of $8,849 million (2020: $11,485 million). Exploration and evaluation assets principally comprise rights and concessions in respect of unproved properties and capitalised exploration drilling costs.

The carrying amount of assets at December 31, 2021, for which an alternative reserves base was applied in the calculation of the depreciation charge (see Note 2), was $1,634 million (2020: $1,707 million). If no alternative reserves base had been used, the pre-tax depreciation charge for the year ended December 31, 2021, would have been $1,184 million higher (2020: $1,012 million, 2019: $77 million).

Contractual commitments for the purchase and lease of property, plant and equipment at December 31, 2021, amounted to $5,984 million (2020: $5,699 million).

Right-of-use assets

Within property, plant and equipment the following amounts relate to leases:

2021

$ million

	Exploration and production		Manufacturing, supply and distribution	Other	Total
	Exploration and evaluation	Production			
Cost					
At January 1	5	14,440	14,526	7,384	36,355
Additions	–	311	2,149	1,420	3,880
Sales, retirements and other movements	–	(365)	(868)	(259)	(1,492)
Currency translation differences	–	(64)	(59)	(514)	(637)
At December 31	5	14,322	15,748	8,031	38,106
Depreciation, depletion and amortisation, including impairments					
At January 1	–	6,997	5,013	1,793	13,803
Charge for the year	–	1,373	2,060	783	4,216
Sales, retirements and other movements	–	(400)	(1,093)	(157)	(1,650)
Currency translation differences	–	(35)	(34)	(146)	(215)
At December 31	–	7,935	5,946	2,273	16,154
Carrying amount at December 31	5	6,387	9,802	5,758	21,952

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

9 – PROPERTY, PLANT AND EQUIPMENT continued

2020

$ million

	Exploration and production		Manufacturing, supply and distribution	Other	Total
	Exploration and evaluation	Production			
Cost					
At January 1 [A]	5	15,213	13,478	5,759	34,455
Additions	–	502	1,570	1,580	3,652
Sales, retirements and other movements [A]	–	(1,370)	(579)	(75)	(2,024)
Currency translation differences	–	95	57	120	272
At December 31	5	14,440	14,526	7,384	36,355
Depreciation, depletion and amortisation, including impairments					
At January 1 [A]	–	5,761	2,907	1,164	9,832
Charge for the year	–	1,898	2,675	760	5,333
Sales, retirements and other movements [A]	–	(712)	(598)	(158)	(1,468)
Currency translation differences	–	50	29	27	106
At December 31 [A]	–	6,997	5,013	1,793	13,803
Carrying amount at December 31 [A]	5	7,443	9,513	5,591	22,552

[A] As from 2021, assets classified as held for sale are presented separately and upon reclassification included in "Sales, retirements and other movements". Prior period comparatives have been revised to conform with current year presentation. (See Note 30)

Impairments

$ million

	2021	2020	2019
Impairment losses			
Exploration and production	1,533	20,155	2,983
Manufacturing, supply and distribution	2,340	6,490	654
Other	21	31	2
Total [A]	3,894	26,676	3,639
Impairment reversals			
Exploration and production	213	–	–
Manufacturing, supply and distribution	–	–	190
Other	1	–	–
Total [A]	214	–	190

[A] See Note 5.

Impairment losses in 2021 were predominantly triggered by reclassifications of asset held for sale, portfolio developments or end of field life. They are mainly related to two refineries in the USA within Oil Products impaired on classification as held for sale ($1,357 million), exploration and evaluation assets both within Integrated Gas ($600 million) and Upstream ($373 million) and one site in the USA within Chemicals impaired on classification as held for sale ($180 million). Only one asset (in Upstream) was impaired because of an asset-specific trigger for which the recoverable amount was determined through value in use and an impairment of $97 million was recognised.

Impairment losses in 2020 were mainly triggered by Shell's revision of the mid- and long-term commodity price and refining margin outlook reflecting the expected effects of the macroeconomic environment and the COVID-19 pandemic as well as energy market demand and supply fundamentals. The impairment losses for exploration and production assets related primarily to Integrated Gas ($11,539 million), including the Queensland Curtis LNG and Prelude floating LNG operations, and Upstream ($8,629 million), including assets in the Gulf of Mexico, unconventional assets in North America, offshore assets in Brazil and Europe and a project in Nigeria (OPL 245). The impairment losses for manufacturing, supply and distribution related primarily to Oil Products ($6,493 million), including assets in Europe and the shutdown of the Convent oil products manufacturing facility in the USA.

Impairment losses in 2019 were mainly triggered by the revision to Shell's long-term oil and gas price outlook and change to future capital expenditure plans. The impairment losses related primarily to Upstream shale and deep-water properties in North and South America, in Integrated Gas to properties in Australia and in Oil Products to the refining portfolio.

For impairment testing purposes, the respective carrying amounts of property, plant and equipment and intangible assets were compared with their value in use. Cash flow projections used in the determination of value in use were made using management's forecasts of commodity prices, market supply and demand, potential costs associated with operational GHG emissions, product margins including forecast refining margins and expected production volumes (see Note 2).

In 2021, Shell changed its estimation technique to determine the value in use for impairment testing purposes. A key element is the update of the discount rate, which is now based on a nominal post-tax weighted average cost of capital (WACC) of 5% for Power activities and a nominal post-tax WACC of 6.5% for all other businesses. Prior to 2021 the rate used by Shell was the same for all activities and was based on a pre-tax discount rate reflecting the marginal cost of debt, current market assessments of the time value of money and residual risk (2021: 6%; 2020: 6%; 2019: 6%). The change in discount rate to a nominal post-tax WACC has been reflected in a commensurate manner in the risk adjustments to post-tax cash flow projections. The impact of the change in impairment valuation technique is not material to the impairment assessments performed in 2021 and it is not expected to result in a materially different outcome in future periods. The pre-tax discount rate used for goodwill testing ranged between 7-11%.

Oil and gas price assumptions applied for impairment testing are reviewed and, where necessary, adjusted on a periodic basis. Reviews include comparison with available market data and forecasts that reflect developments in demand such as global economic growth, technology efficiency, policy measures and, in supply, consideration of investment and resource potential, cost of development of new supply, and behaviour of major resource holders. The near-term commodity price assumptions applied in impairment testing in 2021 were as follows:

Commodity price assumptions [A]

	2022	2023	2024	2025
Brent crude oil ($/b)	60	60	60	63
Henry Hub natural gas ($/MMBtu)	2.75	2.75	2.75	3.00

[A] Money of the day.

For periods after 2025, the real-term price assumptions applied were $60 per barrel (/b) (2020: $60/b) for Brent crude oil and $3.00 per million British thermal units (/MMBtu) (2020: $3.00/MMBtu) for Henry Hub natural gas.

Until 2019, management's estimate of longer-term refining margins in Oil Products was based on the reversion to mean methodology, unless a fundamental shift in markets had been identified, over the life of the oil products manufacturing facilities. Under this approach, it was assumed that refining margins will revert to historical averages over time. As from 2020, a different price methodology has been applied, based on management's understanding and interpretation of demand and supply fundamentals in the near term and taking into account various other factors such as industry rationalisation and energy transition in the long term. This resulted in a downward revision of average long-term refining margins by around 30% from previous assumptions applied.

The main sensitivities in relation to impairment are the commodity price assumptions in Integrated Gas and Upstream and refining margins in Oil Products. A change of -10% or +10% in the commodity price assumptions over the entire cash flow projection period would ceteris paribus result in some $12-15 billion impairment or some $6-9 billion impairment reversal, respectively, in Integrated Gas and Upstream. A change of -10% or +10% in long-term refining margins over the entire cash flow projection period would ceteris paribus result in some $1-3 billion impairment or up to $2 billion impairment reversal, respectively, in Oil Products.

Capitalised exploration drilling costs

$ million

	2021	2020	2019
At January 1	3,654	5,668	6,629
Additions pending determination of proved reserves	1,024	1,016	2,036
Amounts charged to expense	(639)	(815)	(1,218)
Reclassifications to productive wells on determination of proved reserves	(577)	(1,385)	(1,655)
Other movements	(447) [A]	(830)	(124)
At December 31	3,015	3,654	5,668

[A] Includes $290 million disposal and $116 million impairment of capitalised exploration drilling costs.

	Projects		Wells	
	Number	$ million	Number	$ million
Between 1 and 5 years	17	1,189	33	821
Between 6 and 10 years	14	961	38	1,110
Between 11 and 15 years	5	184	21	366
Between 16 and 20 years	1	28	4	65
Total	37	2,362	96	2,362

Exploration drilling costs capitalised for periods greater than one year at December 31, 2021, analysed according to the most recent year of activity, are presented in the table above. These comprise $727 million relating to eight projects where drilling activities were under way or firmly planned for the future, and $1,635 million relating to 29 projects awaiting development concepts.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

10 – JOINT VENTURES AND ASSOCIATES

Shell share of comprehensive income of joint ventures and associates

$ million

	2021			2020			2019		
	Joint ventures	Associates	Total	Joint ventures	Associates	Total	Joint ventures	Associates	Total
Income for the period	1,955	2,142	4,097	629	1,154	1,783	1,121	2,483	3,604
Other comprehensive (loss)/income for the period	(106)	–	(106)	76	1	77	(82)	8	(74)
Comprehensive income for the period	1,849	2,142	3,991	705	1,155	1,860	1,039	2,491	3,530

Carrying amount of interests in joint ventures and associates

$ million

	Dec 31, 2021			Dec 31, 2020		
	Joint ventures	Associates	Total	Joint ventures	Associates	Total
Net assets	15,767	7,648	23,415	14,406	8,045	22,451

Transactions with joint ventures and associates

$ million

	2021 [A]	2020	2019
Sales and charges to joint ventures and associates	8,509	5,426	7,748
Purchases and charges from joint ventures and associates	13,584	8,262	11,581

[A] Includes 26% of sales and 16% purchases of transactions with one joint venture operating in the oil trading business.

These transactions principally comprise sales and purchases of goods and services in the ordinary course of business. Related balances outstanding at December 31, 2021, and 2020, are presented in Notes 12 and 16.

Other arrangements in respect of joint ventures and associates

$ million

	Dec 31, 2021	Dec 31, 2020
Commitments to make purchases from joint ventures and associates [A]	1,437	1,674
Commitments to provide debt or equity funding to joint ventures and associates	533	900

[A] Commitments to make purchases from joint ventures and associates mainly relate to contracts associated with LNG processing fees and transportation capacity. Shell has other purchase obligations related to joint ventures and associates that are not fixed or determinable and are principally intended to be resold in a short period of time through sales agreements with third parties. These include long-term LNG and natural gas purchase commitments and commitments to purchase refined products or crude oil at market prices.

11 – INVESTMENTS IN SECURITIES

Investments in securities

$ million

	Dec 31, 2021	Dec 31, 2020
Equity securities:	1,710	1,396
Equity securities at fair value through other comprehensive income	1,710	1,396
Debt securities:	2,087	1,826
Debt securities at amortised cost	4	12
Debt securities at fair value through other comprehensive income	1,306	1,165
Debt securities at fair value through profit or loss	777	649
Total	3,797	3,222
At fair value		
Measured by reference to prices in active markets for identical assets	1,909	1,637
Measured by reference to other observable inputs	177	68
Measured using predominantly unobservable inputs	1,707	1,505
Total	3,793	3,210
At cost	4	12
Total	3,797	3,222

As at December 31, 2021, investments included equity securities comprising interests in which Shell has no significant influence, debt securities principally comprising a portfolio required to be held by the Company's internal insurance entities as security for their activities, and assets held in escrow in relation to the Group's UK pension arrangements.

Investments in securities measured using predominantly unobservable inputs [A]

	$ million	
	2021	2020
At January 1	1,505	1,253
Gains recognised in other comprehensive income	44	45
Purchases	299	329
Sales	(17)	(60)
Other movements	(124)	(62)
At December 31	1,707	1,505

[A] Based on expected dividend flows, adjusted for country and other risks as appropriate and discounted to their present value.

12 – TRADE AND OTHER RECEIVABLES

				$ million
	Dec 31, 2021		Dec 31, 2020	
	Current	Non-current	Current	Non-current
Trade receivables	34,717	–	21,781	–
Lease receivables	228	1,285	186	1,380
Other receivables [A]	8,240	3,761	7,251	4,109
Amounts due from joint ventures and associates	1,048	499	726	829
Prepayments and deferred charges	8,975	1,520	3,681	1,323
Total	53,208	7,065	33,625	7,641

[A] "Other receivables" at December 31, 2021, included current income tax receivables of $550 million and non-current income tax receivables of $366 million (2020: current income tax receivables $412 million, non-current income tax receivables $882 million).

The fair value of financial assets included above approximates the carrying amount and was determined from predominantly unobservable inputs.

Other receivables at December 31, 2021, include receivables from certain governments in their capacity as joint arrangement partners of $1,225 million (2020: $1,357 million), after provisions for impairments, that are overdue in part or in full. Recoverability and timing thereof are subject to uncertainty, however, the ultimate risk of default on the carrying amount is considered to be low.

Provisions for impairments deducted from trade and other receivables amounted to $1,497 million at December 31, 2021 (2020: $968 million).

Allowance for expected credit losses – trade receivables

Shell uses a provision matrix to calculate expected credit losses (ECLs) for trade receivables. The provision matrix is initially based on Shell's historical observed default rates. Shell calculates the ECL to adjust the historical credit loss experienced with forward-looking information. The ECL at December 31, 2021, is $155 million (2020: $112 million), which represents 0.45-0.51% (2020: 0.27-0.51%) of all trade receivables.

A loss allowance provision of $876 million (2020: $349 million) was established, in addition to all other impairments to trade receivables as at December 31, 2021, that are outside of the provision matrix calculations.

Lease receivables

Lease contracts where Shell is the lessor are classified as finance leases or operating leases. Receivables for lease contracts classified as finance leases are as follows:

	$ million	
	Dec 31, 2021	Dec 31, 2020
Less than one year	278	262
Between 1 and 5 years	852	859
5 years and later	715	852
Total undiscounted lease payments receivable	1,845	1,973
Unearned finance income	339	407
Net investment in leases	1,506	1,566

In addition, at December 31, 2021, Shell is entitled to contractual payments under operating leases of $431 million (2020: $248 million).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

13 – INVENTORIES

$ million

	Dec 31, 2021	Dec 31, 2020
Oil, gas and chemicals [A]	22,145	16,710
Environmental certificates [A]	1,727	1,300
Materials [A]	1,386	1,447
Total	25,258	19,457

[A] As revised, following the reclassification of environmental certificates from "Oil, gas and chemicals" and "Materials". (See Note 31)

Inventories at December 31, 2021, include write-downs to net realisable value of $592 million (2020: $239 million).

14 – CASH AND CASH EQUIVALENTS

$ million

	Dec 31, 2021	Dec 31, 2020
Cash	5,849	4,831
Short-term bank deposits	4,416	2,220
Money market funds, reverse repos and other cash equivalents	26,705	24,779
Total	36,970	31,830

In 2021, cash continued to be invested with an emphasis on capital preservation. Information about credit risk is presented in Note 20. Included in cash and cash equivalents at December 31, 2021, were amounts totalling $113 million (2020: $65 million) subject to currency controls or other legal restrictions.

15 – DEBT AND LEASE ARRANGEMENTS

Debt

$ million

	Dec 31, 2021			Dec 31, 2020		
	Debt (excluding lease liabilities)	Lease liabilities	Total	Debt (excluding lease liabilities)	Lease liabilities	Total
Current debt:	4,080	4,138	8,218	12,756	4,143	16,899
Short-term debt	515	–	515	7,535	–	7,535
Long-term debt due within 1 year	3,565	4,138	7,703	5,221	4,143	9,364
Non-current debt	57,499	23,369	80,868	66,838	24,277	91,115
Total	61,579	27,507	89,086	79,594	28,420	108,014

Net debt

$ million

	(Asset)/liability				
	Current debt	Non-current debt	Derivative financial instruments	Cash and cash equivalents (see Note 14)	Net debt
At January 1, 2021	16,899	91,115	(798)	(31,830)	75,386
Cash flow	(17,887)	(1,842) [B]	(1,165)	(5,679)	(26,573)
Lease additions	899	2,889			3,788
Other movements	8,655 [A]	(9,034) [A]	688	–	309
Currency translation differences and foreign exchange (gains)/losses	(348)	(2,260)	1,715	539	(354)
At December 31, 2021	8,218	80,868	440	(36,970)	52,556
At January 1, 2020 [A]	15,058	81,294	724	(18,055)	79,021
Cash flow	(7,536)	13,121	1,157	(13,603)	(6,861)
Lease additions	870	2,268			3,138
Other movements	8,386 [A]	(8,288) [A]	(524)	–	(426)
Currency translation differences and foreign exchange losses/(gains)	121	2,720	(2,155)	(172)	514
At December 31, 2020	16,899	91,115	(798)	(31,830)	75,386

[A] As from 2021, liabilities associated with assets classified as held for sale are presented separately. Prior period comparatives have been revised to conform with current year presentation. (See Note 30)
[B] Includes $3,500 million of early repayment of non-current debt.

Capital management

In 2020, management announced its target to reduce net debt to $65 billion. This target was achieved in 2021. Management's current priorities for applying Shell's cash are, in order:

- Base cash capex and ordinary progressive dividend: $19-22 billion cash capex per annum to sustain our strategy, with approximately 4% dividend per share growth annually, subject to Board approval;
- AA credit metrics through the cycle: a net debt level to target AA credit metrics;
- Additional shareholder distributions: total shareholder distributions of 20–30% of CFFO comprise dividends and share buybacks; and
- Additional cash capex and continued balance sheet strengthening: measured, disciplined cash capex spend to execute our strategy at pace and further reduce net debt to achieve firm long-term AA credit metrics.

Gearing

	$ million, except where indicated	
	Dec 31, 2021	Dec 31, 2020
Net debt	52,556	75,386
Total equity	175,326	158,537
Total capital	227,882	233,923
Gearing	23.1%	32.2%

Gearing is a measure of Shell's capital structure and is defined as net debt (total debt less cash and cash equivalents) as a percentage of total capital (net debt plus total equity).

Shell has access to international debt capital markets via two commercial paper (CP) programmes, a Euro medium-term note (EMTN) programme and a US universal shelf (US shelf) registration. Issuances under the CP programmes are supported by a committed credit facility and cash.

Borrowing facilities and amounts undrawn

	$ million			
	Facility		Amount undrawn	
	Dec 31, 2021	Dec 31, 2020	Dec 31, 2021	Dec 31, 2020
CP programmes	20,000	20,000	20,000	13,254
EMTN programme	unlimited	unlimited	N/A	N/A
US shelf registration	unlimited	–	N/A	N/A
Committed credit facilities	9,920	22,651	9,920	22,651

Under the CP programmes, Shell can issue debt of up to $10 billion with maturities not exceeding 270 days and $10 billion with maturities not exceeding 397 days.

The EMTN programme is updated each year, most recently in August 2021. In 2021, no debt was issued under this programme (2020: $6,734 million).

The US shelf registration provides Shell with the flexibility to issue debt securities, ordinary shares, preferred shares and warrants. The registration is updated every three years and was last updated in March 2021. During 2021, debt totalling $1,500 million (2020: $6,250 million) was issued under the US shelf registration.

On December 13, 2019, Shell refinanced its revolving credit facilities, which are linked to the new Secured Overnight Financing Rate ("SOFR"). The committed credit facilities are available at pre-agreed margins, with $1.92 billion expiring in 2022 (2020: expiring in 2021), $320 million expiring in 2025 and $7.68 billion expiring in 2026 (2020: expiring in 2025). The terms and availability are not conditional on Shell's financial ratios nor its financial credit ratings. The interest and fees paid on these facilities are linked to Shell's progress towards reaching its short-term Net Carbon Footprint intensity target.

The following tables compare contractual cash flows for debt excluding lease liabilities at December 31 with the carrying amount in the Consolidated Balance Sheet. Contractual amounts reflect the effects of changes in foreign exchange rates; differences from carrying amounts reflect the effects of discounting, premiums and, where fair value hedge accounting is applied, fair value adjustments. Interest is estimated assuming interest rates applicable to variable-rate debt remain constant and there is no change in aggregate principal amounts of debt other than repayment at scheduled maturity, as reflected in the table.

2021

	$ million								
	Contractual payments								
	Less than 1 year	Between 1 and 2 years	Between 2 and 3 years	Between 3 and 4 years	Between 4 and 5 years	5 years and later	Total	Difference from carrying amount	Carrying amount
Bonds	3,423	3,376	4,362	6,310	3,882	38,327	59,680	578	60,258
Bank and other borrowings	646	452	36	9	143	35	1,321	–	1,321
Total (excluding interest)	4,069	3,828	4,398	6,319	4,025	38,362	61,001	578	61,579
Interest	1,637	1,587	1,524	1,416	1,268	15,642	23,074		

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

15 – DEBT AND LEASE ARRANGEMENTS continued

2020

$ million

	Contractual payments								
	Less than 1 year	Between 1 and 2 years	Between 2 and 3 years	Between 3 and 4 years	Between 4 and 5 years	5 years and later	Total	Difference from carrying amount	Carrying amount
Commercial paper	6,746	–	–	–	–	–	6,746	(15)	6,731
Bonds	5,080	4,720	5,408	4,633	8,043	41,853	69,737	1,308	71,045
Bank and other borrowings	944	162	33	215	47	417	1,818	–	1,818
Total (excluding interest)	12,770	4,882	5,441	4,848	8,090	42,270	78,301	1,293	79,594
Interest	1,834	1,707	1,630	1,527	1,412	15,985	24,095		

Interest rate swaps have been entered into against certain fixed rate debt affecting the effective interest rate on these balances (see Note 20). The fair value of debt excluding lease liabilities at December 31, 2021, was $67,066 million (2020: $88,294 million), mainly determined from the prices quoted for those securities.

Lease arrangements

Lease liabilities are secured on the leased assets. Shell has lease contracts in Integrated Gas and Upstream, principally for floating production storage and offloading units, subsea equipment, power generation, for drilling and ancillary equipment, service vessels, LNG vessels and land and buildings; in Oil Products, principally for tankers, storage capacity and retail sites; in Chemicals, principally for plant pipeline and machinery and in Corporate, principally for land and buildings.

Lease expenses not included in the measurement of lease liability

$ million

	2021	2020
Expense relating to short-term leases	644	1,156
Expense relating to variable lease payments not included in the lease liabilities	1,172	1,209

The total cash outflow in respect of leases representing repayment of principal and payment of interest in 2021 was $6,777 million (2020: $6,891 million), recognised in the Consolidated Statement of Cash Flows from financing activities.

The future lease payments under lease contracts and the carrying amounts at December 31, by payment date are as follows:

2021

$ million

	Contractual lease payments	Interest	Lease liabilities
Less than 1 year	5,805	1,667	4,138
Between 1 and 5 years	15,889	4,972	10,917
5 years and later	18,309	5,857	12,452
Total	40,003 [A]	12,496	27,507

[A] Future cash outflows in respect of leases may differ from lease liabilities recognised due to future decisions that may be taken by Shell in respect of the use of leased assets. These decisions may result in variable lease payments being made. In addition, Shell may reconsider whether it will exercise extension options or termination options, where future reconsideration is not reflected in the lease liabilities. There is no exposure to these potential additional payments in excess of the recognised lease liabilities until these decisions have been taken by Shell.

2020

$ million

	Contractual lease payments	Interest	Lease liabilities
Less than 1 year	6,059	1,916	4,143
Between 1 and 5 years	16,681	5,617	11,064
5 years and later	19,999	6,786	13,213
Total	42,739	14,319	28,420

16 – TRADE AND OTHER PAYABLES

$ million

	Dec 31, 2021		Dec 31, 2020	
	Current	Non-current	Current	Non-current
Trade payables	34,136	–	22,664	–
Other payables [A]	9,617	1,675	6,941	1,843
Sales taxes, excise duties and similar levies	3,522	–	2,895	–
Amounts due to joint ventures and associates	4,793	36	3,281	39
Accruals and deferred income	11,105	364	8,791	422
Total	63,173	2,075	44,572	2,304

[A] Includes obligations under environmental compliance schemes of $4,016 million as at December 31, 2021 (2020: $2,053 million). (See Note 31)

The fair value of financial liabilities included above approximates the carrying amount and was determined from predominantly unobservable inputs.

Other payables include amounts due to joint arrangement partners and in respect of other project-related items.

Information about offsetting, collateral and liquidity risk is presented in Note 20.

17 – TAXATION

Taxation charge

$ million

	2021	2020	2019
Current tax:			
Charge in respect of current period	7,254	3,272	7,597
Adjustments in respect of prior periods	(719)	(56)	(1)
Total	6,535	3,216	7,596
Deferred tax:			
Relating to the origination and reversal of temporary differences, tax losses and credits	2,971	(9,063)	1,377
Relating to changes in tax rates and legislation	10	(16)	(67)
Adjustments in respect of prior periods	(317)	430	147
Total	2,664	(8,649)	1,457
Total taxation charge/(credit)	9,199	(5,433)	9,053

Adjustments in respect of prior periods relate to events in the current period and reflect the effects of changes in rules, facts or other factors compared with those used in establishing the current tax position or deferred tax balance in prior periods. In 2021, this included a one-off release of a tax provision in Nigeria of $628 million.

Reconciliation of applicable tax charge at statutory tax rates to taxation charge

$ million

	2021	2020	2019
Income/(loss) before taxation	29,829	(26,967)	25,485
Less: share of profit of joint ventures and associates	(4,097)	(1,783)	(3,604)
Income/(loss) before taxation and share of profit of joint ventures and associates	25,732	(28,750)	21,881
Applicable tax charge/(credit) at standard statutory tax rates	10,097	(8,330)	7,214
Adjustments in respect of prior periods	(1,036)	374	146
Tax effects of:			
Expenses not deductible for tax purposes	893	1,239	1,493
Incentives for investment and development	(467)	(557)	(757)
Disposals	(328)	(34)	(235)
(Recognition)/derecognition of deferred tax assets	(113)	1,458	846
Income not subject to tax at standard statutory rates	90	6	159
Exchange rate differences	53	339	(34)
Changes in tax rates and legislation	10	(16)	(67)
Other reconciling items	–	88	288
Taxation charge/(credit)	9,199	(5,433)	9,053

17 – TAXATION continued

The weighted average of statutory tax rates was 39% in 2021 (2020: 29%; 2019: 33%). Compared with 2020, the increase in the rate reflects a higher proportion of earnings in the Upstream and Integrated Gas segments subject to relatively higher tax rates. In addition, the weighted average of statutory tax rates in 2020 was significantly impacted by asset impairments.

2021 – Deferred tax

$ million

Deferred tax asset	Decommissioning and other provisions	Property, plant and equipment	Tax losses and credits carried forward	Retirement benefits	Other	Total
At January 1, 2021	6,567	5,232	12,496	3,774	5,084	33,153
(Charge)/credit to income	63	(163)	(1,669)	(537)	(395)	(2,701)
Currency translation differences	(64)	(75)	(252)	(72)	(46)	(509)
Other comprehensive income	(3)	–	64	(435)	(74)	(448)
Other	(1)	(1)	(121)	14	(24)	(133)
At December 31, 2021	6,562	4,993	10,518	2,744	4,545	29,362
Deferred tax liability						
At January 1, 2021		(23,801)		(673)	(2,831)	(27,305)
Credit/(charge) to income		566		319	(848)	37
Currency translation differences		71		114	48	233
Other comprehensive income		(18)		(2,481)	4	(2,495)
Other		38		(15)	24	47
At December 31, 2021		(23,144)		(2,736)	(3,603)	(29,483)
Net deferred tax liability at December 31, 2021						(121)
Deferred tax asset/liability as presented in the balance sheet at December 31, 2021						
Deferred tax asset						12,426
Deferred tax liability						(12,547)

2020 – Deferred tax

$ million

Deferred tax asset	Decommissioning and other provisions	Property, plant and equipment	Tax losses and credits carried forward	Retirement benefits	Other	Total
At January 1, 2020	5,380	3,014	11,629	3,660	4,361	28,044
Credit/(charge) to income	1,057	1,975	685	(250)	605	4,072
Currency translation differences	140	163	286	122	58	769
Other comprehensive income	–	–	9	242	(12)	239
Other	(10)	80	(113)	–	72	29
At December 31, 2020	6,567	5,232	12,496	3,774	5,084	33,153
Deferred tax liability						
At January 1, 2020		(28,040)		(1,093)	(2,909)	(32,042)
Credit to income		4,355		4	218	4,577
Currency translation differences		(143)		(2)	(39)	(184)
Other comprehensive income		(1)		511	–	510
Other		28		(93)	(101)	(166)
At December 31, 2020		(23,801)		(673)	(2,831)	(27,305)
Net deferred tax asset at December 31, 2020						5,848
Deferred tax asset/liability as presented in the balance sheet at December 31, 2020						
Deferred tax asset						16,311
Deferred tax liability						(10,463)

The presentation in the balance sheet takes into consideration the offsetting of deferred tax assets and deferred tax liabilities within the same tax jurisdiction, where this is permitted. The overall deferred tax position in a particular tax jurisdiction determines if a deferred tax balance related to that jurisdiction is presented within deferred tax assets or deferred tax liabilities.

Other movements in deferred tax assets and liabilities principally relate to acquisitions, sales of non-current assets and businesses, and amounts recognised in other comprehensive income.

The deferred tax category "Other" primarily includes deferred tax positions in respect of leases, financial assets and liabilities, inventories, intangible assets and investments in subsidiaries, joint ventures and associates.

The deferred tax category "Plant, property and equipment" includes deferred tax positions in respect of tangible fixed assets and investments in partnerships in the USA which are considered pass-through entities by its parent for tax purposes.

Deferred tax assets of $12,426 million (2020: $16,311 million) are recognised only to the extent it is considered probable that those assets will be recoverable. This involves an assessment of when those assets are likely to be recovered, and a judgement as to whether or not there will be sufficient taxable profits available to offset the assets. It is considered probable based on business forecasts that such taxable profits will be available. For Oil Products, additional judgement is required; in some European jurisdictions the assessment of forecasted taxable profits resulting in deferred tax asset recognition of $854 million (2020: $778 million) extends for an additional 10-years beyond Shell's regular 10 years planning horizon. In those situations, additional risking has been applied to the forecast of taxable profits. For Integrated Gas and Upstream, deferred tax assets recognised are expected to be recovered within the period of production of each asset. For deferred tax assets of $711 million as at December 31, 2021, mainly related to Brazil, Malaysia and Australia, this period extends beyond 10 years.

The amount of deferred tax assets which are dependent on future taxable profits not arising from the reversal of existing deferred tax liabilities, and which relate to tax jurisdictions where Shell has suffered a loss in the current or preceding year, was $10,195 million at December 31, 2021 (2020: $12,759 million). The decrease compared with 2020 is primarily attributable to the utilisation of deferred tax assets in 2021 and a higher number of entities which have generated profit in both the current and preceding year.

Unrecognised taxable temporary differences associated with undistributed retained earnings of investments in subsidiaries, joint ventures and associates amounted to $5,680 million at December 31, 2021 (2020: $6,705 million). These retained earnings are subject to withholding tax upon distribution.

Unrecognised deductible temporary differences, unused tax losses and credits carried forward amounted to $37,410 million at December 31, 2021 (2020: $42,836 million), including amounts of $31,349 million (2020: $31,873 million) that are subject to time limits for utilisation of five years or later, or are not time limited.

Furthermore, there are unrecognised losses for Petroleum Resource Rent Tax (PRRT) in Australia which due to the annual augmentation increased to $42,511 million as at the end of the most recent PRRT fiscal year, June 30, 2021 (June 30, 2020: $39,402 million).

The alignment of the Company's tax residence with its country of incorporation in the UK resulted in recognition in 2021 of a taxable deemed disposal gain fully offset by taxable losses in the Netherlands. (See Note 1)

18 – RETIREMENT BENEFITS

Retirement benefits are provided in most of the countries where Shell has operational activities. Shell offers these benefits through funded and unfunded defined benefit plans and defined contribution plans. The most significant pensions plans are in the Netherlands, UK and USA.

Other post-employment benefits (OPEB) comprised of retirement health care and life insurance are also provided in certain countries. The most significant OPEB plan is in the USA.

Financial position

$ million

	Dec 31, 2021	Dec 31, 2020
Obligations	(107,336)	(115,792)
Plan assets	104,495	102,678
Asset ceilings	(13)	(17)
Deficit	(2,854)	(13,131)
Retirement benefits in the Consolidated Balance Sheet:		
Non-current assets	8,471	2,474
Non-current liabilities:	(11,325)	(15,605)
Non-current liabilities – Pensions	(6,458)	(10,237)
Non-current liabilities – OPEB	(4,867)	(5,368)
Total	(2,854)	(13,131)

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

18 – RETIREMENT BENEFITS continued

Retirement benefit expense

$ million

	2021	2020	2019
Defined benefit plans:			
Current service cost, net of plan participants' contributions	1,385	1,359	1,127
Interest expense on defined pension benefit obligations	1,223	1,683	2,192
Interest income on plan assets	(1,160)	(1,657)	(2,253)
Interest expense on OPEB obligations	128	145	172
Current OPEB service cost	60	72	61
Other [A]	(343)	(174)	26
Total	1,293	1,428	1,325
Defined contribution plans	403	423	428
Total retirement benefit expense	1,696	1,851	1,753

[A] Mainly related to plan amendments and curtailments on pensions and OPEB plans.

Retirement benefit expense is presented principally within production and manufacturing expenses and selling, distribution and administrative expenses in the Consolidated Statement of Income. Interest income on plan assets is calculated using the same rate as that applied to the related defined benefit obligations for each plan to determine interest expense.

Remeasurements

$ million

	2021	2020	2019
Actuarial gains/(losses) on obligations:			
Due to changes in financial assumptions on pensions [A]	1,915	(9,500)	(10,913)
Due to changes in financial assumptions on OPEB [A]	59	(650)	(798)
Due to experience adjustments on pensions [B]	136	616	96
Due to experience adjustments on OPEB [B]	322	188	136
Due to changes in demographic assumptions on pensions [C]	(320)	1,310	(4)
Due to changes in demographic assumptions on OPEB [C]	(111)	65	(71)
Total	2,001	(7,971)	(11,554)
Return on plan assets in excess of interest income	8,185	4,509	8,460
Other movements	5	7	(12)
Total remeasurements	10,191	(3,455)	(3,106)

[A] Mainly relates to changes in the discount rate and inflation assumptions.
[B] Experience adjustments arise from differences between the actuarial assumptions made in respect of the year and actual outcomes.
[C] Mainly relates to updates in mortality assumptions.

Defined benefit plan obligations

2021

$ million, except where indicated

	Pension benefits				Other post-employment benefits	
	The Netherlands	UK	USA	Rest of the world [A]	OPEB [B]	Total
At January 1	37,268	32,269	20,367	20,520	5,368	115,792
Current service cost	377	323	339	339	60	1,438
Interest expense	155	376	357	335	128	1,351
Actuarial (gains)/losses	1,477	(1,418)	(695)	(1,095)	(270)	(2,001)
Benefit payments	(979)	(1,306)	(1,220)	(870)	(200)	(4,575)
Other movements	(27)	3	(145)	(167)	(187)	(523)
Currency translation differences	(2,931)	(334)	–	(849)	(32)	(4,146)
At December 31 [C]	35,340	29,913	19,003	18,213	4,867	107,336
Comprising:						
Funded pension plans	35,340	29,440	17,874	15,341		97,995
Weighted average duration	19 years	19 years	12 years	17 years		18 years
Unfunded pension plans		473	1,129	2,872		4,474
Weighted average duration		18 years	9 years	14 years		13 years
Unfunded OPEB plans					4,867	4,867
Weighted average duration					14 years	14 years

[A] Includes pension plans in Germany ($4,988 million) and Canada ($4,740 million) as the largest pension plans in the rest of the world.
[B] Mainly related to post-retirement medical benefits in the USA.
[C] As from 2021, liabilities associated with assets classified as held for sale are presented separately. (See Note 30)

2020

$ million, except where indicated

	Pension benefits				Other post-employment benefits	
	The Netherlands	UK	USA	Rest of the world [A]	OPEB [B]	Total
At January 1	32,696	28,397	19,090	18,337	5,025	103,545
Current service cost	352	300	398	313	72	1,435
Interest expense	295	491	489	408	145	1,828
Actuarial losses	1,720	2,897	1,611	1,346	397	7,971
Benefit payments	(925)	(1,119)	(1,024)	(808)	(183)	(4,059)
Other movements	(21)	(162)	(197)	(65)	1	(444)
Currency translation differences	3,151	1,465	–	989	(89)	5,516
At December 31	37,268	32,269	20,367	20,520	5,368	115,792
Comprising:						
Funded pension plans	37,268	31,839	18,892	17,339		105,338
Weighted average duration	19 years	19 years	13 years	18 years		18 years
Unfunded pension plans		430	1,475	3,181		5,086
Weighted average duration		19 years	8 years	15 years		13 years
Unfunded OPEB plans					5,368	5,368
Weighted average duration					15 years	15 years

[A] Includes pension plans in Germany ($5,432 million) and Canada ($5,066 million) as the largest pension plans in rest of the world.
[B] Mainly related to post-retirement medical benefits in the USA.

18 – RETIREMENT BENEFITS continued

Defined benefit plan assets

2021

$ million, except where indicated

	Pension benefits				
	The Netherlands	UK	USA	Rest of the world [A]	Total
At January 1	37,673	32,193	17,046	15,766	102,678
Return on plan assets in excess of interest income	3,199	2,575	1,377	1,034	8,185
Interest income	158	376	308	318	1,160
Employer contributions	170	266	559	(58) [B]	937
Plan participants' contributions	13	19	–	7	39
Benefit payments	(979)	(1,306)	(1,220)	(821)	(4,326)
Other movements	(6)	(13)	(15)	(13)	(47)
Currency translation differences	(3,132)	(390)	–	(609)	(4,131)
At December 31	37,096	33,720	18,055	15,624	104,495

[A] Includes pension plans in Germany ($3,282 million) and Canada ($4,325 million) as the largest pension plans in the rest of the world.
[B] Includes the netted amount of $294 million received from the captive structure in relation to the pension plans reinsured in the rest of the world.

2020

$ million, except where indicated

	Pension benefits				
	The Netherlands	UK	USA	Rest of the world [A]	Total
At January 1	33,863	30,260	16,042	14,661	94,826
Return on plan assets in excess of interest income	1,001	1,302	1,545	661	4,509
Interest income	307	523	404	423	1,657
Employer contributions	218	73	129	194 [B]	614
Plan participants' contributions	15	21	–	6	42
Benefit payments	(925)	(1,119)	(1,024)	(775)	(3,843)
Other movements	(5)	(173)	(50)	(53)	(281)
Currency translation differences	3,199	1,306	–	649	5,154
At December 31	37,673	32,193	17,046	15,766	102,678

[A] Includes pension plans in Germany ($3,346 million) and Canada ($4,025 million) as the largest pension plans in the rest of world.
[B] Includes the netted amount of $41 million received from the captive structure in relation to the pension plans reinsured in rest of the world.

Type of pension assets

	2021	2020
Quoted in active markets:		
Equities	22%	25%
Debt securities	53%	52%
Real estate	1%	0%
Other:		
Equities	10%	8%
Debt securities	4%	5%
Real estate	6%	6%
Investment funds	3%	3%
Cash	1%	1%

Employer contributions to defined benefit pension plans are based on actuarial valuations in accordance with local regulations and are estimated to be $900 million in 2022.

Characteristics of significant defined benefit and defined contribution plans and regulatory framework

The Netherlands

The principal defined benefit pension plan in the Netherlands is a funded career-averaged pension arrangement with retired employees drawing benefits as an annuity, with a surplus of $1,756 million reported as at December 31, 2021, (2020: $405 million surplus). Whilst the plan was closed to employees hired or rehired after July 1, 2013, it currently remains open for ongoing accrual for existing active members. 26% (2020: 31%) of the overall defined benefit liability in the Netherlands relates to active members. From July 1, 2013, onwards new employees in the Netherlands are entitled to membership of a defined contribution pension plan.

In line with Dutch regulations, the defined benefit pension plan has a joint Trustee Board with trustee representatives nominated by the company, the Central Staff Council and retired members. The defined benefit pension plan also has an Accountability Council comprised of members nominated by the company, the Central Staff Council and retired members. Furthermore, there is a Supervisory Committee which includes external experts from the pension industry to oversee management, compliance and operations of the fund. The defined contribution pension plan has a one-tier Trustee Board with an independent chairperson, and trustee representatives nominated by the company and the Central Staff Council (currently no retired members in the fund to act as trustee) as well as two executive board members. The defined contribution fund also has an Accountability Council comprised of members nominated by the company and the Central Staff Council.

The Dutch government is currently drafting a new regulatory framework for pensions in the Netherlands. The development of new regulations by the government was postponed in 2021 to January 2023 with subsequent implementation by January 2027. It is expected that these regulatory changes will have an impact on both the defined benefit pension plan and the defined contribution pension plan. The proposed changes will have to be submitted for consent with the Central Staff Council.

UK

The three largest defined benefit pension plans for employees in the UK are funded final salary pension arrangements with retired employees mainly drawing benefits as an annuity with the option to take a portion as a lump sum. The three plans are separate and independent plans and cannot be netted against each other. In total, the plans reported a surplus of $3,807 million as at December 31, 2021 (2020: deficit of $76 million), which is after netting of unfunded plans of $473 million which are reported as non-current liabilities on the balance sheet. All three plans were closed to new employees hired or rehired, however, two plans currently remain open for ongoing accrual for existing active members. 20% (2020: 23%) of the overall defined liability in the UK relates to active members. From March 1, 2013 onwards new employees in the UK are entitled to membership of a defined contribution pension plan.

In line with UK regulations, the principal defined benefit pension plan is governed by a corporate trustee whose board is comprised of four trustee directors nominated by the company including the chair and four member-nominated trustee directors. The defined contribution pension plan is governed by a corporate trustee whose board is comprised of three company-nominated directors including the chair and two member-nominated trustee directors. The trustees are responsible for administering the plans in line with the Trust Deed and Regulations, including setting the investment strategy for the pension plans' assets and paying member benefits, and are required to act in the best interests of the members of the pension plans.

USA

The principal defined benefit pension plan in the USA is a funded final average pay pension plan with a surplus of $182 million reported as at December 31, 2021 (2020: $1,846 million deficit). After retirement, all retirees can choose to draw their benefits as an annuity, whereas others also have the choice to take their benefit in a lump sum. There is also an unfunded defined benefit pension plan with a deficit of $1,129 million (2020: $1,475 million deficit). The benefits under this plan are taken primarily in a lump sum. In addition, the company provides a defined contribution benefit plan. The funded defined benefit, unfunded defined benefit and defined contribution pension plans are subject to the provisions of the Employee Retirement Income Security Act (ERISA). 24% (2020: 25%) of the overall defined liability of the funded defined benefit plan in the USA relates to active members.

Both the funded defined benefit pension plan and the defined contribution pension plan are governed by trustees who are appointed by the Plan Sponsor and are named fiduciaries with respect to the plans. The trustees are generally responsible for investment-related matters, appointing the Plan Administrator, maintaining general oversight and deciding appeals of participants.

USA OPEB

The company also sponsors "other post-retirement employee benefits" (OPEB) mainly in the USA. The OPEB plans in the USA provide medical, dental, and vision benefits as well as life insurance benefits to eligible retired employees. The plans are unfunded, and the company and retirees share the costs with a deficit of $4,067 million reported as at December 31, 2021 (2020: $4,497 million deficit). The plan that provides post-retirement medical benefits in the USA is closed to employees hired or rehired on or after January 1, 2017. Certain life insurance benefits are paid by the company.

Significant funding requirements:

- Additional contributions to the Dutch defined benefit pension plan would be required if the 12-month rolling average local funding percentage falls below 105% for six months or more. At the most recent (2021) funding valuation the local funding percentage was above this level;
- There are no set minimum statutory funding requirements for the UK plans. A professional qualified independent actuary, appointed by the trustee board, undertakes a local funding valuation typically every three years. The most recent completed funding valuation for the principal defined benefit plan was undertaken as at December 31, 2020 and revealed a funding ratio of 103% and therefore no sponsor contributions (except for salary sacrifice contributions) were payable under the schedule of contributions.
- Under the Pension Protection Act, US pension plans are subject to minimum required contribution levels based on the funding position. No contributions are required based on the most recent funding valuation.

Associated risks to which retirement benefits are exposed

There are inherent risks associated with defined benefit pension and OPEB plans. These risks are related to various assumptions made on valuation of the liabilities and the cash funding requirement of the underlying plans. Volatility in capital markets or government policies, and the resulting consequences for investment performance, interest and inflation rates, as well as changes in assumptions for mortality, retirement age or pensionable remuneration at retirement, could result in significant changes to the funding level of future liabilities, and in case of a shortfall, there could be a requirement to make substantial cash contributions (depending on the applicable local regulations).

18 – RETIREMENT BENEFITS continued

These inherent risks are managed by a pension forum, chaired by the Chief Financial Officer, which oversees Shell's pension strategy, policy and operations. The forum is supported by a risk committee in reviewing the results of the assurance process with respect to the pension risk.

Investment strategies

Long-term investment strategies of plans are generally determined by the relevant pension plan trustees using a structured asset/liability modelling approach to define the asset mix that best meets the objectives of optimising returns within agreed risk levels while maintaining adequate funding levels.

Principal and actuarial assumptions

The principal assumptions applied in determining the present value of defined benefit obligations and their bases were as follows:

- rates of increase in pensionable remuneration, pensions in payment and health-care costs: historical experience and management's long-term expectation;
- discount rates: prevailing long-term AA corporate bond yields, chosen to match the currency and duration of the relevant obligation; and
- mortality rates: published standard mortality tables for the individual countries concerned adjusted for Shell experience where statistically significant.

The weighted averages for those assumptions and related sensitivity information at December 31 are presented below. Sensitivity information indicates by how much the defined benefit obligations would increase or decrease if a given assumption were to increase or decrease with no change in other assumptions. The sensitivity analyses may not be representative of an actual change in the defined benefit obligation as it is unlikely that changes in assumptions would occur in isolation from one another. The weighted averages are at nominal terms and based on market expectations at December 31, 2021.

$ million, except where indicated

	Assumptions used at nominal rates		Effect of using alternative assumptions				
				Increase/(decrease) in defined benefit obligations			
	Dec 31, 2021	Dec 31, 2020	Range of assumptions	Dec 31, 2021		Dec 31, 2020	
Rate of increase in pensionable remuneration [A]	3.4%	3.9%	-1% to +1%	(1,519)	1,672	(1,780)	1,948
of which The Netherlands	2.8%	3.5%					
of which UK	3.6%	3.6%					
of which USA	4.1%	4.9%					
Rate of increase in pensions in payment	2.0%	1.6%	-1% to +1%	(9,908)	12,171	(10,937)	13,523
of which The Netherlands	2.2%	1.5%					
of which UK	3.0%	2.7%					
of which USA	–%	–%					
Discount rate for pension plans	2.0%	1.5%	-1% to +1%	18,954	(14,599)	21,463	(16,382)
of which The Netherlands	1.2%	0.7%					
of which UK	1.9%	1.5%					
of which USA	2.9%	2.6%					
Inflation rate for defined benefit obligation [B]	2.1%	1.7%	-1% to +1%	(10,691)	13,325	(11,514)	14,414
of which The Netherlands	2.2%	1.5%					
of which UK	3.2%	2.8%					
Expected age at death for persons aged 60:							
Men	87 years	87 years	-1 year to +1 year	(1,946)	1,937	(2,022)	2,112
of which The Netherlands	88 years	88 years					
of which UK	88 years	88 years					
of which USA	85 years	85 years					
Women	89 years	88 years	-1 year to +1 year	(1,863)	1,972	(1,985)	2,070
of which The Netherlands	89 years	89 years					
of which UK	90 years	90 years					
of which USA	86 years	86 years					
Rate of increase in health-care costs [C]	6.2%	6.0%	-1% to +1%	(513)	630	(605)	751
Discount rate for health-care plans [C]	2.9%	2.6%	-1% to +1%	678	(539)	791	(624)

[A] Based on active members.
[B] Excluding US funds in the weighted average inflation rate, because of the insignificant impact on the defined benefit obligation.
[C] Mainly related to post-retirement medical benefits in the USA.

19 – DECOMMISSIONING AND OTHER PROVISIONS

$ million

	Decommissioning and restoration	Onerous contracts	Legal	Environmental	Redundancy	Other	Total
At January 1, 2021							
Current [A]	900	532	521	273	673	723	3,622
Non-current [A]	22,081	1,207	1,229	952	265	1,382	27,116
	22,981	1,739	1,750	1,225	938	2,105	30,738
Additions	1,040 [B]	229	197	153	991	752	3,362
Amounts charged against provisions	(662)	(264)	(340)	(154)	(733)	(292)	(2,445)
Accretion expense	405	14	11	9	1	10	450
Disposals and liabilities classified as held for sale [A]	(819)	–	(5)	(17)	(1)	(27)	(869)
Remeasurements and other movements [C]	(609)	(36)	(196)	(11)	(512)	(339)	(1,703)
Currency translation differences	(252)	–	(6)	(26)	(39)	(68)	(391)
	(897)	(57)	(339)	(46)	(293)	36	(1,596)
At December 31, 2021							
Current	871	653	270	332	410	802	3,338
Non-current	21,213	1,029	1,141	847	235	1,339	25,804
	22,084	1,682	1,411	1,179	645	2,141	29,142
At January 1, 2020							
Current	755	79	626	263	295	793	2,811
Non-current	18,264	17	1,185	934	220	1,179	21,799
	19,019	96	1,811	1,197	515	1,972	24,610
Additions	1,697 [B]	1,722	502	199	986	664	5,770
Amounts charged against provisions	(433)	(71)	(522)	(138)	(375)	(317)	(1,856)
Accretion expense	448	3	17	21	1	7	497
Disposals and liabilities classified as held for sale [A]	(348)	(11)	–	(7)	–	(9)	(375)
Remeasurements and other movements [C]	2,090	–	(59)	(73)	(241)	(265)	1,452
Currency translation differences	508	–	1	26	52	53	640
	3,962	1,643	(61)	28	423	133	6,128
At December 31, 2020							
Current [A]	900	532	521	273	673	723	3,622
Non-current [A]	22,081	1,207	1,229	952	265	1,382	27,116
	22,981	1,739	1,750	1,225	938	2,105	30,738

[A] As from 2021, liabilities associated with assets classified as held for sale are presented separately. Prior period comparatives have been revised to conform with current year presentation. (See Note 30)
[B] Includes $823 million (2020: $798 million) additions for the recognition of decommissioning and restoration provisions in Integrated Gas and Upstream and $217 million (2020: $899 million) for the recognition of decommissioning and restoration provisions for manufacturing facilities in Oil Products and Chemicals.
[C] Includes the reversal of $1,095 million (2020: $528 million) of unused provisions.

The amount and timing of settlement in respect of these provisions are uncertain and dependent on various factors that are not always within management's control. Reviews of estimated future decommissioning and restoration costs and the discount rate applied are carried out regularly. The discount rate applied at December 31, 2021, was 2% (2020: 1.75%). An increase of 0.5% or a decrease of 0.5% in the discount rate could result in a decrease of $1.5 billion (2020: $1.7 billion) or an increase of $1.7 billion (2020: $2.2 billion) of decommissioning and restoration provisions, respectively. Such increase or decrease will be reflected in the carrying amount of the related asset. Where applicable that carrying amount is tested for impairment.

In 2021, there was a decrease of around $700 million (2020: increase of $3,999 million) in the decommissioning and restoration provision as a result of the change in the discount rate, partly offset by an increase in the provision resulting from changes in cost estimates of around $140 million (2020: decrease of $1,909 million), reported within remeasurements and other movements.

Of the decommissioning and restoration provision at December 31, 2021, an estimated $3,863 million is expected to be utilised within one to five years, $3,584 million within six to 10 years, and the remainder in later periods.

Legal provisions at December 31, 2021, include legal proceedings in Integrated Gas at $669 million, Upstream $94 million, Oil Products $255 million and Chemicals $393 million.

Other provisions at December 31, 2021, include amounts recognised in respect of employee benefits.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

20 – FINANCIAL INSTRUMENTS

Financial instruments in the Consolidated Balance Sheet include investments in securities (see Note 11), cash and cash equivalents (see Note 14), debt (see Note 15) and derivative contracts.

Risks

In the normal course of business, financial instruments of various kinds are used for the purposes of managing exposure to interest rate, foreign exchange and commodity price movements.

Treasury standards are applicable to all subsidiaries and each subsidiary is required to adopt a treasury policy consistent with these standards. These policies cover: financing structure; interest rate and foreign exchange risk management; insurance; counterparty risk management; and use of derivative contracts. Wherever possible, treasury operations are carried out through specialist regional organisations without removing from each subsidiary the responsibility to formulate and implement appropriate treasury policies.

Apart from forward foreign exchange contracts to meet known commitments, the use of derivative contracts by most subsidiaries is not permitted by their treasury policy.

Other than in exceptional cases, the use of external derivative contracts is confined to specialist trading and central treasury organisations that have appropriate skills, experience, supervision, control and reporting systems.

Shell's operations expose it to market, credit and liquidity risk, as described below.

Market risk

Market risk is the possibility that changes in interest rates, foreign exchange rates or the prices of crude oil, natural gas, LNG, refined products, chemical feedstocks, power and carbon-emission rights will adversely affect the value of assets, liabilities or expected future cash flows.

Interest rate risk

Most debt is raised from central borrowing programmes. Shell's policy continues to be to have debt principally denominated in dollars and to maintain a largely floating interest rate exposure profile; however, Shell has issued a significant amount of fixed rate debt in recent years, taking advantage of historically low interest rates available in debt markets. As a result, the majority of the debt portfolio at December 31, 2021, is at fixed rates and this reduces Shell's adverse exposure to rising floating dollar interest rates (see Note 2).

The financing of most subsidiaries is structured on a floating-rate basis, and any further interest rate risk management is only applied under exceptional circumstances.

On the basis of the floating-rate net cash position at December 31, 2021, (both issued and hedged), and assuming other factors (principally foreign exchange rates and commodity prices) remained constant and that no further interest rate management action was taken, an increase in interest rates of 1% would have increased 2021 income before taxation by $174 million (2020: $62 million increase, based on the floating rate net cash position at December 31, 2020).

The carrying amounts and maturities of debt and borrowing facilities are presented in Note 15. Interest expense is presented in Note 7.

Foreign exchange risk

Many of the markets in which Shell operates are priced, directly or indirectly, in dollars. As a result, the functional currency of most Integrated Gas and Upstream entities and those with significant cross-border business is the dollar. For Oil Products and Chemicals entities, the functional currency is typically the local currency. Consequently, Shell is exposed to varying levels of foreign exchange risk when an entity enters into transactions that are not denominated in its functional currency, when foreign currency monetary assets and liabilities are translated at the balance sheet date and as a result of holding net investments in operations that are not dollar-functional. Each entity is required to adopt treasury policies that are designed to measure and manage its foreign exchange exposures by reference to its functional currency.

Foreign exchange gains and losses arise in the normal course of business from the recognition of receivables and payables and other monetary items in currencies other than an entity's functional currency. Foreign exchange risk may also arise in connection with capital expenditure. For major projects, an assessment is made at the final investment decision stage of whether to hedge any resulting exposure.

Assuming other factors (principally interest rates and commodity prices) remained constant and that no further foreign exchange risk management action were taken, a 10% appreciation against the dollar at December 31 of the main currencies to which Shell is exposed would have the following effects:

$ million

	Increase/(decrease) in income before taxation		Increase in net assets	
	2021	2020	2021	2020
10% appreciation against the dollar of:				
Euro	(123)	(263)	601	451
Malaysian ringgit	119	255	399	270
Australian dollar	(3)	179	591	598
Sterling	(180)	(166)	738	328
Canadian dollar	(44)	1	1,439	1,299

The above sensitivity information was calculated by reference to carrying amounts of assets and liabilities at December 31 only. The effect on income before taxation arises in connection with monetary balances denominated in currencies other than an entity's functional currency; the effect on net assets arises principally from the translation of assets and liabilities of entities that are not dollar-functional.

Foreign exchange gains and losses included in income are presented in Note 6.

Commodity price risk

Certain subsidiaries have a mandate to trade crude oil, natural gas, LNG, refined products, chemical feedstocks, power and environmental certificates, and to use commodity derivative contracts (forwards, futures, swaps and options) as a means of managing price and timing risks arising from this trading activity. In effecting these transactions, the entities concerned operate within procedures and policies designed to ensure that risks, including those relating to the default of counterparties, are managed within authorised limits.

Value-at-risk (VAR) techniques based on variance/covariance or Monte Carlo simulation models are used to make a statistical assessment of the market risk arising from possible future changes in market values over a 1-day holding period and within a 95% confidence level. The calculation of potential changes in fair value takes into account positions, the history of price movements and the correlation of these price movements. Models are regularly reviewed against actual fair value movements to ensure integrity is maintained. The VAR average and year-end positions in respect of commodities traded in active markets, which are presented in the table below, are calculated on a diversified basis in order to reflect the effect of offsetting risk within combined portfolios.

Value-at-risk (pre-tax)

$ million

	2021		2020	
	Average	Year-end	Average	Year-end
Global oil	26	30	32	24
North America gas and power	12	15	11	14
Europe gas and power	11	13	8	11
Environmental certificates	8	10	6	7

Furthermore, commodity derivative hedge contracts are used to partially mitigate price volatility on future LNG sales and purchases.

As the underlying physical commodity LNG is accounted for an accrual basis (see Note 2) and commodity derivatives are accounted for on a fair-value basis, this creates an accounting mismatch over periods. The fair value accounting of commodity derivatives can result in gains or losses in the income statement, which for adjusted earnings are part of identified items.

These derivative contracts are based on a mix of European and North American gas price indices, global crude price indices and Asian LNG price indices. Shell has seen high volatility in these gas price markets in 2021. On that basis a sensitivity analysis has been performed for a 50% price increase or decrease of this basket of derivative contracts at year-end 2021, which would result in a gain or loss of $0.3 billion (pre-tax) in the income statement.

Credit risk

Policies are in place to ensure that sales of products are made to customers with appropriate creditworthiness. These policies include credit analysis and monitoring of trading partners against counterparty credit limits. Credit information is regularly shared between business and finance functions, with dedicated teams in place to quickly identify and respond to cases of credit deterioration. Mitigation measures are defined and implemented for higher-risk business partners and customers, and include shortened payment terms, collateral or other security posting and vigorous collections. In addition, policies limit the amount of credit exposure to any individual financial institution. There are no material concentrations of credit risk, with individual customers or geographically.

Surplus cash is invested in a range of short-dated, secure and liquid instruments including short-term bank deposits, money market funds, reverse repos and similar instruments. The portfolio of these investments is diversified to avoid concentrating risk in any one instrument, country or counterparty. Management monitors the investments regularly and adjusts the investment portfolio in light of new market information where necessary to ensure credit risk is effectively diversified.

In commodity trading, counterparty credit risk is managed within a framework of credit limits with utilisation being regularly reviewed. Credit risk exposure is monitored and the acceptable level of credit exposure is determined by a credit committee. Credit checks are performed by a department independent of traders, and are undertaken before contractual commitment. Where appropriate, netting arrangements, credit insurance, prepayments and collateral are used to manage specific risks.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

20 – FINANCIAL INSTRUMENTS continued

Shell routinely enters into offsetting, master netting and similar arrangements with trading and other counterparties to manage credit risk. Where there is a legally enforceable right of offset under such arrangements and Shell has the intention to settle on a net basis or realise the asset and settle the liability simultaneously, the net asset or liability is recognised in the Consolidated Balance Sheet, otherwise assets and liabilities are presented gross. These amounts, as presented net and gross within trade and other receivables, trade and other payables and derivative financial instruments in the Consolidated Balance Sheet at December 31, were as follows:

2021

$ million

		Amounts offset		Amounts not offset		
	Gross amounts before offset	Amounts offset	Net amounts as presented	Cash collateral received/pledged	Other offsetting instruments	Net amounts
Assets:						
Within trade receivables	20,561	11,937	8,624	164	283	8,177
Within derivative financial instruments	48,813	39,819	8,994	902	3,098	4,994
Liabilities:						
Within trade payables	19,347	11,935	7,412	61	283	7,068
Within derivative financial instruments	54,534	40,350	14,184	697	3,109	10,378

2020

$ million

		Amounts offset		Amounts not offset		
	Gross amounts before offset	Amounts offset	Net amounts as presented	Cash collateral received/pledged	Other offsetting instruments	Net amounts
Assets:						
Within trade receivables	10,658	6,470	4,188	14	79	4,095
Within derivative financial instruments	12,798	6,125	6,673	1,573	1,750	3,350
Liabilities:						
Within trade payables	10,580	6,467	4,113	1	79	4,033
Within derivative financial instruments	10,502	5,893	4,609	797	1,761	2,051

Amounts not offset principally relate to contracts where the intention to settle on a net basis was not clearly established at December 31.

The carrying amount of financial assets pledged as collateral for liabilities or contingent liabilities at December 31, 2021, presented within trade and other receivables, was $6,968 million (2020: $1,909 million). The carrying amount of collateral held at December 31, 2021, presented within trade and other payables, was $1,909 million (2020: $1,675 million). Collateral mainly relates to initial margins held with commodity exchanges and over-the-counter counterparty variation margins. Some derivative contracts are fully cash collateralised, thereby eliminating both counterparty risk and the Group's own non-performance risk.

Liquidity risk

Liquidity risk is the risk that suitable sources of funding for Shell's business activities may not be available. Management believes that it has access to sufficient debt funding sources (capital markets) and to undrawn committed borrowing facilities to meet foreseeable requirements. Information about borrowing facilities is presented in Note 15.

Interbank Offered Rate (IBOR) reform

USD London Interbank Offered Rate (LIBOR) is the most significant IBOR for Shell. USD LIBOR will transition immediately after June 30, 2023. Significant IBOR exposures, disaggregated by tenure at December 31, 2021, are as follows:

$ million

	December 31, 2021		
	Non-derivative financial assets – carrying value	Non-derivative financial liabilities – carrying value	Derivatives – Nominal amount
USD LIBOR (1 month)	62	–	
USD LIBOR (3 months)	1,155	1,200	5,828
USD LIBOR (6 months)	75		
Cross-currency interest rate swaps:			
EUR Fixed to USD LIBOR (3 months)			8,311
GBP Fixed to USD LIBOR (3 months)			1,227
CHF Fixed to USD LIBOR (3 months)			1,359
MYR LIBOR (3 months) to USD LIBOR (3 months)			360
Total	1,292	1,200	17,085

Derivative contracts and hedges

Derivative contracts are used principally as hedging instruments, however, because hedge accounting is not always applied, movements in the carrying amounts of derivative contracts that are recognised in income are not always matched in the same period by the recognition of the income effects of the related hedged items.

Carrying amounts, maturities and hedges

The carrying amounts of derivative contracts at December 31, designated and not designated as hedging instruments for hedge accounting purposes, were as follows:

2021

$ million

	Assets			Liabilities			
	Designated	Not designated	Total	Designated	Not designated	Total	Net
Interest rate swaps	237	–	237	24	14	38	199
Forward foreign exchange contracts	–	456	456	–	280	280	176
Currency swaps and options	277	22	299	860	33	893	(594)
Commodity derivatives	12	10,979	10,991	–	15,732	15,732	(4,741)
Other contracts	–	201	201	–	255	255	(54)
Total	526	11,658	12,184	884	16,314	17,198	(5,014)

2020

$ million

	Assets			Liabilities			
	Designated	Not designated	Total	Designated	Not designated	Total	Net
Interest rate swaps	451	–	451	26	22	48	403
Forward foreign exchange contracts	–	276	276	–	651	651	(375)
Currency swaps and options	1,890	13	1,903	280	63	343	1,560
Commodity derivatives	–	5,534	5,534	92	4,565	4,657	877
Other contracts	–	424	424	–	29	29	395
Total	2,341	6,247	8,588	398	5,330	5,728	2,860

Net losses before tax on derivative contracts, excluding those accounted for as hedges, were $8,377 million in 2021 (2020: $3,295 million gains; 2019: $2,004 million losses). As part of Shell's normal business, commodity derivative hedge contracts are entered into for mitigation of future purchases, sales and inventory. The losses in the current year are mainly related to gas and power trading in Europe to hedge supply and purchase contracts as well as inventory and to physical global LNG sales that are partially hedged through paper derivative positions. As from 2020, what is reported includes realised gains and losses on physical commodity derivatives (arising up to the point of settlement), resulting in what is reported includes $807 million of realised losses in 2021 (2020: $2,216 million gains). As from 2021, the disclosure applies the International Financial Reporting Interpretation Committee (IFRIC) guidance concerning the physical settlement of a contract to buy or sell a non-financial item, irrespective of whether the sales and purchases are presented on a gross or net basis. Comparative numbers have been revised to conform with the current year presentation. In 2020, the disclosure of net gains of $3,295 million (of which realised gains and losses on physical commodity contracts were $2,216 million) applied the IFRIC guidance only to physical derivatives where the subsequent sales and purchases were presented on a gross basis. The $2,216 million comparative was disclosed on its net basis of $597 million related to the aforementioned IFRIC guidance.

Certain contracts, mainly to hedge price risk relating to forecast commodity transactions, were designated in cash flow hedging relationships and are presented after the offset of related margin balances with exchanges. Contracts to hedge foreign exchange risks were also designated in cash flow hedging relationships and the net carrying amount of these contracts at December 31, 2021, was a liability of $173 million (2020: $556 million asset). See Note 23 for the accumulated balance recognised within other comprehensive income.

Certain interest rate and currency swaps were designated in fair value hedges, principally in respect of debt for which the net carrying amount of the related derivative contracts, net of accrued interest, at December 31, 2021, was a liability of $250 million (2020: $1,422 million asset).

In 2021, €3 billion (2020: €3 billion) of debt instruments were designated as hedges of net investments in foreign operations, relating to the foreign exchange risk arising between certain intermediate holding companies and their subsidiaries. See Note 23 for the accumulated balance recognised within other comprehensive income.

In the course of trading operations, certain contracts are entered into for delivery of commodities that are accounted for as derivatives. The resulting price exposures are managed by entering into related derivative contracts. These contracts are managed on a fair value basis and the maximum exposure to liquidity risk is the undiscounted fair value of derivative liabilities.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

20 – FINANCIAL INSTRUMENTS continued

For a minority of commodity derivatives contracts, carrying amounts cannot be derived from quoted market prices or other observable inputs, in which case fair value is estimated using valuation techniques such as Black-Scholes, option spread models and extrapolation using quoted spreads with assumptions developed internally based on observable market activity.

Other contracts include certain contracts that are held to sell or purchase commodities and others containing embedded derivatives, which are required to be recognised at fair value because of pricing or delivery conditions, even though they were entered into to meet operational requirements. These contracts are expected to mature in 2022-2025, with certain contracts having early termination rights (for either party). Valuations are derived from quoted market prices.

The contractual maturities of derivative liabilities at December 31 compare with their carrying amounts in the Consolidated Balance Sheet as follows:

2021

$ million

	Contractual maturities								
	Less than 1 year	Between 1 and 2 years	Between 2 and 3 years	Between 3 and 4 years	Between 4 and 5 years	5 years and later	Total	Difference from carrying amount [A]	Carrying amount
Interest rate swaps	13	13	5	4	3	4	42	(4)	38
Forward foreign exchange contracts	170	40	114	–	–	–	324	(44)	280
Currency swaps and options	321	150	159	287	356	808	2,081	(1,188)	893
Commodity derivatives	12,614	1,401	783	274	158	531	15,761	(29)	15,732
Other contracts	222	34	–	–	–	–	256	(1)	255
Total	13,340	1,638	1,061	565	517	1,343	18,464	(1,266)	17,198

[A] Mainly related to the effect of discounting.

2020

$ million

	Contractual maturities								
	Less than 1 year	Between 1 and 2 years	Between 2 and 3 years	Between 3 and 4 years	Between 4 and 5 years	5 years and later	Total	Difference from carrying amount [A]	Carrying amount
Interest rate swaps	12	10	9	7	5	6	49	(1)	48
Forward foreign exchange contracts	504	56	22	38	–	–	620	31	651
Currency swaps and options	174	13	28	–	159	–	374	(31)	343
Commodity derivatives	2,990	743	265	174	115	391	4,678	(21)	4,657
Other contracts	15	15	–	–	–	–	30	(1)	29
Total	3,695	837	324	219	279	397	5,751	(23)	5,728

[A] Mainly related to the effect of discounting.

Fair value measurements

The net carrying amounts of derivative contracts held at December 31, categorised according to the predominant source and nature of inputs used in determining the fair value of each contract, were as follows:

2021

$ million

	Prices in active markets for identical assets/liabilities	Other observable inputs	Unobservable inputs	Total
Interest rate swaps	–	199	–	199
Forward foreign exchange contracts	–	176	–	176
Currency swaps and options	–	(594)	–	(594)
Commodity derivatives	41	(5,171)	389	(4,741)
Other contracts	6	(60)	–	(54)
Total	47	(5,450)	389	(5,014)

2020

$ million

	Prices in active markets for identical assets/liabilities	Other observable inputs	Unobservable inputs	Total
Interest rate swaps	–	403	–	403
Forward foreign exchange contracts	–	(375)	–	(375)
Currency swaps and options	–	1,560	–	1,560
Commodity derivatives	37	(237)	1,077	877
Other contracts	20	375	–	395
Total	57	1,726	1,077	2,860

Net carrying amounts of derivative contracts measured using predominantly unobservable inputs

$ million

	2021	2020
At January 1	1,077	754
Net (losses)/gains recognised in revenue	(569)	564
Purchases	440	217
Sales	(442)	(450)
Settlements	(32)	(9)
Recategorisations (net)	(87)	(12)
Currency translation differences	2	13
At December 31	389	1,077

Included in net (losses)/gains recognised in revenue in 2021 were unrealised net losses totalling $175 million relating to assets and liabilities held at December 31, 2021 (2020: $743 million gains).

Unrecognised day one gains or losses

Certain long-term commodity purchase contracts extend to periods where observable pricing data are limited and so their value may include estimates for a portion of the value. Where this is more than an insignificant part of the overall contract valuation, any gains or losses will be deferred. Valuation techniques are further described in Note 2. The unrecognised gains on these derivative contracts at December 31, 2021, were as follows:

$ million

	2021	2020
At January 1	968	929
Movements	56	39
At December 31	1,024	968

21 – SHARE CAPITAL

Issued and fully paid ordinary shares of €0.07 each [A]

	Number of shares		Nominal value ($ million)		
	A	B	A	B	Total
At January 1, 2021	4,101,239,499	3,706,183,836	345	306	651
Repurchases of shares	–	(123,290,882)	–	(10)	(10)
At December 31, 2021	4,101,239,499	3,582,892,954	345	296	641
At January 1, 2020	4,151,787,517	3,729,407,107	349	308	657
Repurchases of shares	(50,548,018)	(23,223,271)	(4)	(2)	(6)
At December 31, 2020	4,101,239,499	3,706,183,836	345	306	651

[A] Share capital at December 31, 2021, and 2020, also included 50,000 issued and fully paid sterling deferred shares of £1 each.

At the Company's Annual General Meeting (AGM) on May 18, 2021, the Board was authorised to allot ordinary shares in the Company, and to grant rights to subscribe for or to convert any security into ordinary shares in the Company, up to an aggregate nominal amount of €182.1 million (representing 2,602 million ordinary shares of €0.07 each), and to list such shares or rights on any stock exchange. This authority expires at the earlier of the close of business on August 18, 2022, and the end of the AGM to be held in 2022, unless previously renewed, revoked or varied by the Company in a general meeting.

At the May 18, 2021, AGM, shareholders granted the Company the authority to repurchase up to 780 million ordinary shares (excluding any treasury shares), renewing the authority granted by the shareholders at previous AGMs. The authority will expire at the earlier of the close of business on August 18, 2022, and the end of the AGM of the Company to be held in 2022. Ordinary shares purchased by the Company pursuant to this authority will either be cancelled or held in treasury. Treasury shares are shares in the Company which are owned by the Company itself. The minimum price, exclusive of expenses, which may be paid for an ordinary share is €0.07. The maximum price, exclusive of expenses, which may be paid for an ordinary share is the higher of: (i) an amount equal to 5% above the average market value for an ordinary share for the five business days immediately preceding the date of the purchase; and (ii) the higher of the price of the last independent trade and the highest current independent bid on the trading venues where the purchase is carried out.

Subsequent to the balance sheet date, one line of shares was established through assimilation of A shares and B shares into a single line of ordinary shares of the Company. This assimilation had no impact on voting rights or dividend entitlements. (See Note 32)

22 – SHARE-BASED COMPENSATION PLANS AND SHARES HELD IN TRUST

Share-based compensation expense

			$ million
	2021	2020	2019
Equity-settled [A]	539	359	537
Total	539	359	537

[A] On an incidental basis awards may be cash-settled, where an equity settlement is not possible under local regulations.

The principal share-based employee compensation plans are the PSP and LTIP. Awards of shares and American Depositary Shares (ADS) of the Company under the PSP and LTIP are granted upon certain conditions to eligible employees. The actual amount of shares that may vest ranges from 0% to 200% of the awards, depending on the outcomes of prescribed performance conditions over a three-year period beginning on January 1 of the award year. On June 18, 2021, the Company granted all eligible employees a single Powering Progress shares award with vesting date in June 2022. Shares and ADSs vest for nil consideration.

Share awards

	Number of A shares (million)	Number of B shares (million)	Number of A ADSs (million)	Weighted Average remaining contractual life (years)
At January 1, 2021	29	10	8	1.0
Granted	20	6	4	
Vested	(9)	(3)	(2)	
Forfeited	(2)	(1)	(1)	
At December 31, 2021	38	12	9	1.2
At January 1, 2020	29	10	8	1.0
Granted	10	4	3	
Vested	(9)	(4)	(3)	
Forfeited	(1)	–	–	
At December 31, 2020	29	10	8	1.0

Other plans offer eligible employees opportunities to acquire shares and ADSs of the Company or receive cash benefits measured by reference to the Company's share price.

Shell employee share ownership trusts and trust-like entities purchase the Company's shares in the open market to meet delivery commitments under employee share plans. At December 31, 2021, they held 15.6 million A shares (2020: 14.3 million), 4.5 million B shares (2020: 5.2 million) and 4.5 million A ADSs (2020: 5.1 million).

23 – OTHER RESERVES

Other reserves attributable to Shell plc shareholders

$ million

	Merger reserve	Share premium reserve	Capital redemption reserve	Share plan reserve	Accumulated other comprehensive income	Total
At January 1, 2021	37,298	154	129	906	(25,735)	12,752
Other comprehensive income attributable to Shell plc shareholders	–	–	–	–	6,134	6,134
Transfer from other comprehensive income	–	–	–	–	(45)	(45)
Repurchases of shares	–	–	10	–	–	10
Share-based compensation	–	–	–	58	–	58
At December 31, 2021	37,298	154	139	964	(19,646)	18,909
At January 1, 2020	37,298	154	123	1,049	(24,173)	14,451
Other comprehensive loss attributable to Shell plc shareholders	–	–	–	–	(1,832)	(1,832)
Transfer from other comprehensive income	–	–	–	–	270	270
Repurchases of shares	–	–	6	–	–	6
Share-based compensation	–	–	–	(143)	–	(143)
At December 31, 2020	37,298	154	129	906	(25,735)	12,752
At January 1, 2019	37,298	154	95	1,098	(22,030)	16,615
Other comprehensive income attributable to Shell plc shareholders	–	–	–	–	(2,069)	(2,069)
Transfer from other comprehensive income	–	–	–	–	(74)	(74)
Repurchases of shares	–	–	28	–	–	28
Share-based compensation	–	–	–	(49)	–	(49)
At December 31, 2019	37,298	154	123	1,049	(24,173)	14,451

The merger reserve and share premium reserve were established as a consequence of the Company becoming the single parent company of Royal Dutch Petroleum Company and The "Shell" Transport and Trading Company, plc, now The Shell Transport and Trading Company Limited, in 2005. The merger reserve increased in 2016 following the issuance of shares for the acquisition of BG Group plc.

The capital redemption reserve was established in connection with repurchases of shares of the Company.

The share plan reserve is in respect of equity-settled share-based compensation plans (see Note 22). The movement comprises the net of the charge for the year and the release as a result of vested awards.

23 – OTHER RESERVES continued

Accumulated other comprehensive income comprises the following:

Accumulated other comprehensive income attributable to Shell plc shareholders

$ million

	Currency translation differences	Equity instruments remeasurements	Debt instruments remeasurements	Cash flow hedging (losses)/gains	Net investment hedging (losses)/gains	Deferred cost of hedging	Retirement benefits remeasurements	Total
At January 1, 2021	(8,175)	1,144	31	(485)	(2,439)	(187)	(15,624)	(25,735)
Recognised in other comprehensive income	(1,841)	180	(23)	88	295	(145)	10,191	8,745
Reclassified to income	368	–	(5)	(38)	–	92	–	417
Reclassified to the balance sheet	–	–	–	(13)	–	–	–	(13)
Reclassified to retained earnings	–	(45)	–	–	–	–	–	(45)
Tax on amounts recognised/reclassified	60	(35)	–	(16)	–	14	(2,993)	(2,970)
Total, net of tax	(1,413)	100	(28)	21	295	(39)	7,198	6,134
Share of joint ventures and associates	(36)	50	–	(72)	–	–	(48)	(106)
Other comprehensive income/(loss) for the period	(1,449)	150	(28)	(51)	295	(39)	7,150	6,028
Less: non-controlling interest	61	–	–	–	–	–	–	61
Attributable to Shell plc shareholders	(1,388)	150	(28)	(51)	295	(39)	7,150	6,089
At December 31, 2021	(9,563)	1,294	3	(536)	(2,144)	(226)	(8,474)	(19,646)
January 1, 2020	(9,415)	793	8	(233)	(2,016)	(287)	(13,023)	(24,173)
Recognised in other comprehensive income	1,204	68	31	(9)	(423)	17	(3,455)	(2,567)
Reclassified to income	(28)	–	(8)	(173)	–	94	–	(115)
Reclassified to the balance sheet	–	–	–	16	–	–	–	16
Reclassified to retained earnings	–	169	–	–	–	–	101	270
Tax on amounts recognised/reclassified	3	(4)	–	6	–	(11)	753	747
Total, net of tax	1,179	233	23	(160)	(423)	100	(2,601)	(1,649)
Share of joint ventures and associates	51	118	–	(92)	–	–	–	77
Other comprehensive loss for the period	1,230	351	23	(252)	(423)	100	(2,601)	(1,572)
Less: non-controlling interest	10	–	–	–	–	–	–	10
Attributable to Shell plc shareholders	1,240	351	23	(252)	(423)	100	(2,601)	(1,562)
At December 31, 2020	(8,175)	1,144	31	(485)	(2,439)	(187)	(15,624)	(25,735)
At January 1, 2019	(9,722)	906	(21)	117	(2,025)	(353)	(10,932)	(22,030)
Recognised in other comprehensive income	302	(17)	24	(592)	13	9	(3,106)	(3,367)
Reclassified to income	38	–	5	268	–	86	–	397
Reclassified to the balance sheet	–	–	–	11	–	–	–	11
Reclassified to retained earnings	–	(85)	–	–	–	–	11	(74)
Tax on amounts recognised/reclassified	4	(13)	–	37	(4)	(29)	1,004	999
Total, net of tax	344	(115)	29	(276)	9	66	(2,091)	(2,034)
Share of joint ventures and associates	(2)	2	–	(74)	–	–	–	(74)
Other comprehensive loss/income for the period	342	(113)	29	(350)	9	66	(2,091)	(2,108)
Less: non-controlling interest	(35)	–	–	–	–	–	–	(35)
Attributable to Shell plc shareholders	307	(113)	29	(350)	9	66	(2,091)	(2,143)
At December 31, 2019	(9,415)	793	8	(233)	(2,016)	(287)	(13,023)	(24,173)

24 – DIVIDENDS

Interim dividends

	$ per share			$ million		
	2021	2020	2019	2021	2020	2019
A shares:						
Cash:						
March	0.1665	0.47	0.47	677	1,862	2,100
June	0.1735	0.16	0.47	698	653	2,062
September	0.24	0.16	0.47	974	654	2,007
December	0.24	0.1665	0.47	981	691	1,978
Total – A shares	0.82	0.9565	1.88	3,330	3,860	8,147
B shares:						
Cash:						
March	0.1665	0.47	0.47	613	1,620	1,775
June	0.1735	0.16	0.47	633	586	1,762
September	0.24	0.16	0.47	880	582	1,765
December	0.24	0.1665	0.47	865	622	1,749
Total – B shares	0.82	0.9565	1.88	2,991	3,410	7,051
Total				6,321	7,270	15,198

In addition, on February 3, 2022, the Directors announced a further interim dividend in respect of 2021 of $0.24 per ordinary share. The total dividend is estimated to be $1,830 million and is payable on March 28, 2022, to shareholders on the register at February 18, 2022.

Shareholders will be able to elect to receive their dividends in US dollars, euros or pounds sterling.

25 – EARNINGS PER SHARE

	2021	2020	2019
Income/(loss) attributable to Shell plc shareholders ($ million)	20,101	(21,680)	15,842
Weighted average number of A and B shares used as the basis for determining:			
Basic earnings per share (million of shares)	7,761.7	7,795.6	8,058.3
Diluted earnings per share (million of shares)	7,806.8	7,795.6	8,112.5

Basic earnings per share are calculated by dividing the income attributable to Shell plc shareholders for the year by the weighted average number of A and B shares outstanding during the year. The weighted average number of shares outstanding excludes shares held in trust.

Diluted earnings per share are based on the same income figures. The weighted average number of shares outstanding during the year is increased by dilutive shares related to share-based compensation plans. If the inclusion of potentially issuable shares could decrease diluted loss per share, the potentially issuable shares are excluded from the weighted average number of shares outstanding used to calculate diluted earnings per share.

Earnings per share are identical for A and B shares.

26 – LEGAL PROCEEDINGS AND OTHER CONTINGENCIES

General

In the ordinary course of business, Shell subsidiaries are subject to a number of contingencies arising from litigation and claims brought by governmental authorities, including tax authorities, and private parties. The operations and earnings of Shell subsidiaries continue, from time to time, to be affected to varying degrees by political, legislative, fiscal and regulatory developments, including those relating to the protection of the environment and indigenous groups in the countries in which they operate. The industries in which Shell subsidiaries are engaged are also subject to physical risks of various types.

The amounts claimed in relation to such events and, if such claims against Shell were successful, the costs of implementing the remedies sought in the various cases could be substantial. Based on information available to date and taking into account that in some cases it is not practicable to estimate the possible magnitude or timing of any resultant payments, management believes that the foregoing are not expected to have a material adverse impact on Shell's Consolidated Financial Statements. However, there remains a high degree of uncertainty around these contingencies, as well as their potential effect on future operations, earnings, cash flows and Shell's financial condition.

26 – LEGAL PROCEEDINGS AND OTHER CONTINGENCIES continued

In certain divestment transactions, liabilities related to decommissioning and restoration are de-recognised upon transfer of these obligations to the buyer. For certain of these obligations, Shell has issued guarantees to third parties and continues to be liable in case the primary obligor is not able to meet its obligation. These potential obligations arising from issuance of these guarantees are assessed to be remote.

Decommissioning and restoration of manufacturing facilities

Industry practice had been not to recognise decommissioning and restoration provisions associated with manufacturing facilities in Oil Products and Chemicals. This was on the basis that these assets were considered to have indefinite lives and, therefore, that it was considered remote that an outflow of economic benefits would be required.

In 2020, the changed macroeconomic fundamentals were considered, together with Shell's plans to rationalise the Group's manufacturing portfolio. It was also reconsidered whether it remained appropriate not to recognise decommissioning and restoration provisions for manufacturing facilities.

It was concluded that the assumption of indefinite lives for manufacturing facilities is no longer appropriate, and the need for either recognition of decommissioning and restoration provisions or contingent liability disclosure was reviewed. In 2020, provisions had been recognised for certain shorter-lived manufacturing facilities (see Note 19). For the remaining longer-lived facilities, where decommissioning would generally be more than 50 years away, it was concluded that, while there is a present obligation that has arisen from past events, the amount of the obligation cannot be measured with sufficient reliability. This conclusion was reached on the basis that the settlement dates are indeterminate; and that other estimates, such as extremely long-term discount rates for which there is no observable measure, are not reliable. Consequently, a decommissioning and restoration obligation exists that cannot be recognised or quantified and that is disclosed as a contingent liability.

Pesticide litigation

Shell Oil Company (SOC), along with another agricultural chemical pesticide manufacturer and several distributors, has been sued by public and quasi-public water purveyors, water storage districts, and private landowners alleging responsibility for groundwater contamination caused by applications of chemical pesticides. There are approximately 37 such cases currently pending, seven claims made but not yet filed, and an active subpoena for records. These matters assert various theories of strict liability and negligence, seeking to recover actual damages, including drinking well treatment and remediation costs. Most assert claims for punitive damages. While the Company continues to vigorously defend these actions, in January 2018 an environmental regulatory standard became effective in the State of California, where a majority of the suits are pending. The 2018 standard requires public water systems state-wide to perform quarterly or monthly sampling of their drinking water sources for a chemical contained in certain pesticides. Water systems deemed out of compliance with the regulatory standard must take corrective action to resolve the exceedance or take the potable water source out of service. In response to this regulatory standard, the Company monitors the sampling results to determine the number of wells potentially impacted. Based on the claims asserted and SOC's history with regard to amounts paid to resolve varying actions, management does not expect the outcome of the matters pending at December 31, 2021, to have a material adverse impact on Shell. However, there remains a high degree of uncertainty regarding the potential outcome of some of these pending lawsuits, as well as their potential effect on future operations, earnings, cash flows and Shell's financial condition.

Climate change litigation

In the USA, 21 lawsuits filed by several municipalities and/or states against oil and gas companies, including Shell plc, are pending as of December 31, 2021. The plaintiffs seek damages for a variety of claims including harm to their public and private infrastructure from rising sea levels and other alleged impacts of climate change caused by the defendants' fossil fuel products. A similar suit has been filed by a crab-fishing industry group claiming harm to their fisheries as a result of alleged ocean-related impacts of climate change. In the Netherlands, in a case against Shell brought by a group of environmental non-governmental organisations (eNGOs) and individual claimants, the Court found that while Shell is not currently acting unlawfully, Shell must reduce the aggregate annual volume of CO_2 emissions of Shell Group operations and energy-carrying products sold across Scopes 1, 2 and 3 by 45% (net) by the end of 2030 relative to its 2019 emissions levels. For Scopes 2 and 3, this is a significant best efforts obligation. Shell has appealed that ruling. Management believes the outcome of these matters should be resolved in a manner favourable to Shell, but there remains a high degree of uncertainty regarding the ultimate outcome of these lawsuits, as well as their potential effect on future operations, earnings, cash flows and Shell's financial condition.

Louisiana coast litigation

The State of Louisiana and multiple local governments have initiated 43 lawsuits against more than 200 oil and gas companies, claiming either current or historical oil and gas operations caused or contributed to contamination, land loss and the erosion of the Louisiana coastline. Shell entities are named in 14 of the suits. Although the State and local parishes fail to claim specified amounts, these claims represent potentially material matters. The cases are of first impression, arise out of an untested 1980 Louisiana statute and represent a novel attempt to render illegal operations that federal and state agencies permitted and authorised at the time. Management believes the outcome of these matters should ultimately be resolved in a manner favourable to Shell; there remains a high degree of uncertainty, however, concerning the scope of the claims and the ultimate outcomes, as well as their potential effects on future operations, earnings, cash flows, reputation and Shell's financial condition. The cases continue to go through jurisdictional challenges with respect to whether the cases should be tried in federal court or state court.

NAM (Groningen gas field) litigation

Since 1963 NAM – a joint venture between Shell and ExxonMobil (50:50) – has been producing gas from the Groningen field, the largest gas field in Western Europe. After smaller tremors in the 1990s and the late 2000s, an earthquake measuring 3.6 on the Richter scale occurred in 2012, causing damage to properties in the affected area, and the area continues to experience tremor/earthquake-type events. NAM has received more than 100,000 claims for physical damage to property – the majority of which have been successfully settled. The Dutch State has taken over the damage-claim-handling from NAM for all claim categories (strengthening, physical damage to property, housing value loss, emotional damages and loss of living enjoyment) while NAM remains financially responsible. In February 2022 NAM commenced arbitral proceedings against the State to get clarity on these financial responsibilities. NAM still faces claims in civil litigation from claimants who elect not to use the government arrangement or from claims pre-dating the governmental arrangements. These claims include, but are not limited to:

- housing claims where NAM was found liable for value loss;
- emotional damages and loss of living enjoyment, around 5,000 claimants; and
- other civil litigation matters.

There remains a high degree of uncertainty concerning the ultimate outcomes and their potential effects on future operations, earnings, cash flows, reputation and Shell's financial condition.

Nigerian litigation

Shell subsidiaries and associates operating in Nigeria are parties to various environmental and contractual disputes brought in the courts of Nigeria, England and the Netherlands. These disputes are at different stages in litigation, including at the appellate stage, where judgements have been rendered against Shell entities. If taken at face value, the aggregate amount of these judgements could be seen as material. Management, however, believes that the outcomes of these matters will ultimately be resolved in a manner favourable to Shell. However, there remains a high degree of uncertainty regarding these cases, as well as their potential effect on future operations, earnings, cash flows and Shell's financial condition.

OPL 245

Authorities are investigating Shell Nigeria Exploration and Production Company Ltd.'s (SNEPCO's) investment in Nigerian oil block OPL 245 and the 2011 settlement of litigation pertaining to that block with regard to potential anti-bribery and anti-corruption laws.

On January 27, 2017, the Nigeria Federal High Court issued an Interim Order of Attachment for Oil Prospecting Licence 245 (OPL 245), pending the conclusion of the investigation. SNEPCO applied for and was granted a discharge of this order on constitutional and procedural grounds. Also in Nigeria, in March 2017, criminal charges alleging official corruption and conspiracy to commit official corruption were filed against SNEPCO, one current Shell employee and third parties including ENI SpA and one of its subsidiaries. Those proceedings are in abeyance. In January 2020, criminal charges alleging disobeying direction of law related to tax waivers were filed in Nigeria against Shell Nigeria Ultra Deep Ltd., SNEPCO, and third parties including Nigeria Agip Exploration Limited (NAE). Those proceedings are ongoing. In March 2017, parties alleging to be shareholders of Malabu Oil and Gas Company Limited. (Malabu) filed two actions to challenge the 2011 settlement and the award of OPL 245 to SNEPCO and an ENI SpA subsidiary by the Federal Government of Nigeria. Both actions are currently stayed awaiting the outcome of appeals filed against procedural decisions. Those appeal proceedings are ongoing. On May 8, 2018, Human Environmental Development Agenda (HEDA) sought permission from the Federal High Court of Nigeria to apply for an order to direct the Attorney General of the Federation to revoke OPL 245 on grounds that the entire Malabu transaction in relation to the OPL is unconstitutional, illegal and void as it was obtained through fraudulent and corrupt practice. On July 3, 2019, the Nigerian Federal High Court upheld objections from SNEPCO and NAE and struck the lawsuit filed by HEDA. The suit was struck because of the statute of limitations and lack of jurisdiction to hear the matter. HEDA has appealed the judgement, which is ongoing.

On December 12, 2018, the Federal Republic of Nigeria (FRN) issued a claim form in the UK against Shell and six of its subsidiaries, ENI SpA and two of its subsidiaries, Malabu as well as two other entities for the amount of $1,092 million plus damages for having participated in a fraudulent and corrupt scheme leading to the acquisition by Shell and ENI corporate defendants in 2011 of OPL 245. The Shell entities were served with proceedings in April and May 2019, following which they, and other defendants, challenged the jurisdiction of the English courts. Following a hearing in April 2020, the English High Court rendered judgement in May 2020, dismissing the claims in England and refusing the FRN's request for permission to appeal. In September 2020, the UK Court of Appeal also refused the FRN's permission to appeal, meaning the case is now concluded.

On February 14, 2017, Shell plc received a notice of request for indictment from the Milan public prosecutor with respect to this matter. On December 20, 2017, Shell plc and four former Shell employees including one former executive were remanded to trial in Milan. On May 14, 2018, a trial commenced in the Court of Milan. The FRN was admitted as a civil claimant by a court decision on July 20, 2018. On September 18, 2018, Shell was joined to the proceedings as the civilly responsible party for the damages caused by the alleged illegal acts of the four former Shell employees. Three other Shell entities (Shell UK Ltd, Shell Petroleum Development Company of Nigeria Ltd. and Shell Exploration and Production Africa Ltd.) also joined the proceedings as responsible civile for their respective former employees at that phase of the proceedings. On March 17, 2021, the Court of Milan acquitted the Shell entities and four former Shell employees of all charges on the grounds that there was no case to answer. The Court of Milan published the full grounds for its decision on June 9, 2021. The decision is under appeal.

On September 20, 2018, a guilty judgement was filed by the Milan Judge of the Preliminary Hearing in a separate OPL 245 fast-track trial of two individuals, neither of whom worked for or on behalf of Shell. That decision was appealed to the Court of Appeal which rendered its judgement on June 24, 2021, acquitting both individuals. Separate OPL 245 pre-trial criminal proceedings are pending against another individual who also did not work for or on behalf of Shell.

In February 2019, we were informed by the Dutch Public Prosecutor's Office (DPP) that they were nearing the conclusion of their investigation and preparing to prosecute Shell plc for criminal charges directly or indirectly related to the 2011 settlement of disputes over OPL 245 in Nigeria. On October 2, 2019, the US Department of Justice (DOJ) informed Shell that it was closing its inquiry into Shell in relation to OPL 245. We understand that the decision was based on the facts available to the DOJ, including ongoing legal proceedings in Europe. On April 22, 2020, the United States Securities and Exchange Commission notified us that it had also closed its inquiry into Shell in relation to OPL 245. There remains a high degree of uncertainty around the OPL 245 matters and contingencies discussed above, as well as their potential effect on future operations, earnings, cash flows and Shell's financial condition. Accordingly, at this time, it is not practicable to estimate the magnitude and timing of any possible obligations or payments. Any violation of anti-bribery, anti-corruption or anti-money laundering legislation could have a material adverse effect on Shell plc's earnings, cash flows and financial condition.

Simplification of share structure

On December 20, 2021, the Board decided to proceed with the simplification (as outlined in Note 1). Preceding this decision, a proposed bill on the Dutch dividend withholding tax (DWT) exit tax charge and subsequent amendments were submitted to the Dutch Parliament imposing a DWT exit tax charge on any company that transfers its tax residence to a country that does not levy dividend withholding tax, such as the UK. The amended bill was submitted to the Dutch Council of State for advice and is at an early stage of discussion in the Dutch Parliament. Having considered a range of factors including legal advice, following the transfer of the Company's tax residence it is expected that the Company will ultimately not incur any DWT exit tax cost.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS continued

27 – EMPLOYEES

Employee costs

$ million

	2021	2020	2019
Remuneration	9,038	9,128	10,075
Social security contributions	819	793	844
Retirement benefits (see Note 18)	1,696	1,851	1,753
Share-based compensation (see Note 22)	539	359	537
Total [A]	12,092	12,131	13,209

[A] Excludes employees seconded to joint ventures and associates.

Average employee numbers

Thousand

	2021	2020	2019
Integrated Gas	11	11	10
Upstream	12	14	14
Oil Products	30	34	32
Chemicals	2	2	4
Corporate [A]	27	25	23
Total [B]	82	86	83

[A] Includes all employees working in business service centres irrespective of the segment they support.
[B] Excludes employees seconded to joint ventures and associates (2021: 2,000 employees; 2020: 2,000 employees; 2019: 3,000 employees).

28 – DIRECTORS AND SENIOR MANAGEMENT

Remuneration of Directors of the Company

$ million

	2021	2020	2019
Emoluments	12	6	8
Value of released awards under long-term incentive plans	5	6	12
Employer contributions to pension plans	1	1	1

Emoluments comprise salaries and fees, annual bonuses (for the period for which performance is assessed) and other benefits. The value of released awards under long-term incentive plans for the period is in respect of the performance period ending in that year. In 2021 retirement benefits were accrued in respect of qualifying services under defined benefit plans by two Directors.

Further information on the remuneration of the Directors can be found in the Directors' Remuneration Report on pages 166-171.

Directors and Senior Management expense

$ million

	2021	2020	2019
Short-term benefits	27	14	18
Retirement benefits	3	3	3
Share-based compensation	16	17	15
Termination and related amounts	2	2	2
Total	48	36	38

Directors and Senior Management comprise members of the Executive Committee and the Non-executive Directors of the Company.

Short-term benefits comprise salaries and fees, annual bonuses delivered in cash and shares (for the period for which performance is assessed), other benefits and employer social security contributions.

29 – AUDITOR'S REMUNERATION

$ million

	2021	2020	2019
Fees in respect of the audit of the Consolidated and Parent Company Financial Statements, including audit of consolidation returns	39	36	32
Other audit fees, principally in respect of audits of accounts of subsidiaries	18	17	18
Total audit fees	57	53	50
Audit-related fees	3	3	4
Fees in respect of other non-audit services	3	2	–
Total	63	58	54

In addition, the auditor provided audit services to retirement benefit plans for employees of subsidiaries. Remuneration paid by those benefit plans amounted to $1 million in 2021 (2020: $1 million; 2019: $1 million).

30 – ASSETS HELD FOR SALE

$ million

	2021			2020		
	Current	Non-current	Total	Current	Non-current	Total
Intangible assets	–	116	116	–	112	112
Property, plant and equipment	–	896	896	–	1,147	1,147
Trade and other receivables	349	71	420	–	–	–
Inventories	528	–	528	–	–	–
Assets classified as held for sale	877	1,083	1,960	–	1,259	1,259
Debt	257	199	456	–	–	–
Trade and other payables	235	140	375	–	–	–
Deferred tax	–	41	41	–	–	–
Retirement benefits	–	108	108	–	–	–
Decommissioning and other provisions	10	219	229	2	194	196
Income taxes payable	44	–	44	–	–	–
Liabilities directly associated with assets classified as held for sale	546	707	1,253	2	194	196

The carrying amount of assets classified as held for sale at December 31, 2021, is $1,960 million (2020: $1,259 million), with liabilities directly associated with assets classified as held for sale of $1,253 million (2020: $196 million).

At December 31, 2021, assets held for sale mainly referred to Shell's interest in two refineries within Oil Products. All transactions that resulted in the reclassification of assets held for sale at December 31, 2021, are either already completed in 2022 or are expected to be completed during the course of 2022.

At December 31, 2020, assets held for sale mainly referred to Integrated Gas. All transactions that resulted in assets held for sale reclassification at December 31, 2020, were completed in the first quarter of 2021.

31 – EMISSION SCHEMES AND RELATED ENVIRONMENTAL PROGRAMMES

Emission trading and related schemes

Generally, emission trading schemes (ETS) are mandated governmental schemes to control emission levels and enhance clean energy transition, allowing for the trading of emission certificates. In most ETS, governments set an emission cap for one or more sectors. Generally, entities in scope of the scheme are allowed to buy emission certificates to cover shortages or sell surplus emission certificates. In certain countries emissions are priced through a carbon tax. For Shell, the most significant carbon pricing mechanisms are established in Europe, North America, and Singapore.

Biofuel programmes

Biofuel programmes are mandated schemes that set binding national targets on the share of renewables in fuel consumption or measures on reducing GHG emissions by fuel suppliers. Biofuels are blended with existing fuels such as gasoline and diesel to reduce net emissions. The share of biofuel in the total sales mix of fuel is used to comply with regulatory requirements. This can be achieved by the blending of biofuels in refineries and/or distribution depots (self-blending), through import of biofuels (for jurisdictions that grant biofuels certificates at the point of import) or by the purchasing of certificates from third parties (for jurisdictions that have a tradable biofuel certificates mechanism). Biofuel programmes include also regulatory requirements to pay a levy for the combustion of fossil fuels, based on CO_2 emitted – mainly represented by the German Fuel Emissions Trading Act (BEHG) applying since January 1, 2021.

31 – EMISSION SCHEMES AND RELATED ENVIRONMENTAL PROGRAMMES continued

Renewable power programmes

Renewable power programmes create a financial incentive to consume power that is sourced from renewable origins or require that a minimum percentage of power sold meets the green definition of the relevant standard. These regulations are typically accompanied by schemes supporting investments in the renewable technology. Renewable power programmes generally use certificates to monitor compliance, where renewable power certificates are granted for each MWh of energy generated that meets the predefined renewable criteria. Shell's compliance obligation under renewable power programmes comes primarily from energy supply and results from regulations applying in Europe, North America and Australia.

Cost of emission schemes and related environmental programmes recognised in the Consolidated Statement of Income

$ million

	2021	2020
ETS and related schemes	331	150
Biofuels [A]	2,609 [B]	1,137
Renewable power	455	364
Total	3,395	1,651

[A] Represents the cost of biofuel certificates required for compliance purposes over and above those generated from self-blending activities.
[B] Includes the cost under the German Fuel Emissions Trading Act (BEHG) applying since January 1, 2021.

Purchased environmental certificates (presented under Other Intangible assets, see Note 8) [A]

$ million

	ETS and related schemes	Biofuels	Renewable power	Total
At January 1, 2021	157	780	76	1,013
Additions	292	2,450	405	3,147
Settlements	(115)	(754)	(355)	(1,224)
Other movements	(50)	(114)	(25)	(189)
At December 31, 2021	284	2,362	101	2,747

[A] Includes environmental certificates held for compliance purposes.

Obligation (presented under Other payables, see Note 16)

$ million

	ETS and related schemes	Biofuels [B]	Renewable power	Total
At January 1, 2021				
Current	(154)	(1,549)	(290)	(1,993)
Non-current	–	(54)	(6)	(60)
	(154)	(1,603)	(296)	(2,053)
Additions	(781)	(2,756)	(487)	(4,024)
Additions covered by government grants	456 [A]			456
Settlements	150	755	491	1,396
Other movements	59	160	(10)	209
	(116)	(1,841)	(6)	(1,963)
At December 31, 2021				
Current	(270)	(3,262)	(273)	(3,805)
Non-current	–	(182)	(29)	(211)
	(270)	(3,444)	(302)	(4,016)

[A] Emission certificates that were allocated free of charge at an equivalent fair value at grant date.
[B] Includes the liability under the German Fuel Emissions Trading Act (BEHG) applying since January 1, 2021.

Environmental certificates acquired that are held for compliance purposes are recognised at cost under intangible assets. In addition, a portfolio of environmental certificates is held for trading purposes and classified under inventory (see Note 2 and Note 13). Environmental certificates held for trading purposes can be redesignated for compliance purposes and then settle compliance obligations.

Cost recognised in the Consolidated Statement of Income represents the compliance cost associated with emissions or with products sold during the year. The liability at year-end represents the compliance cost recognised over current and past compliance periods to the extent not settled to date. Liabilities are settled in line with compliance periods, which depend on the scheme and may not coincide with the calendar year.

The figures present compliance schemes only, excluding voluntary activities.

32 – POST-BALANCE SHEET EVENTS

On January 20, 2022, Shell completed the sale of its interest in Deer Park Refining Limited Partnership, a 50:50 joint venture between Shell Oil Company and P.M.I. Norteamerica, S.A. De C.V. (a subsidiary of Petroleos Mexicanos) for a total of $596 million, consisting of a combination of cash and debt.

On January 21, 2022, the Company changed its name from Royal Dutch Shell plc to Shell plc.

On January 29, 2022, one line of shares was established through assimilation of A shares and B shares into a single line of ordinary shares of the Company. This assimilation had no impact on voting rights or dividend entitlements. Dutch withholding tax, applied previously on dividends on A shares, no longer applies on dividends paid on the ordinary shares following assimilation.

On February 3, 2022, Shell announced the commencement of $8.5 billion of share buybacks for the first half of 2022. This comprises the remaining $5.5 billion of Permian divestment proceeds and $3.0 billion as part of the Company's capital allocation framework, which includes shareholder distributions in the range of 20-30% of cash flow from operations. In the first tranche of this buyback programme, the Company has entered into an irrevocable, non-discretionary arrangement with a broker to enable the purchase of ordinary shares for a period up to and including May 4, 2022. The aggregate maximum consideration for the purchase of ordinary shares under the initial programme is $4.0 billion. All shares repurchased as part of this arrangement will be cancelled.

On February 11, 2022, Shell Pipeline Company LP announced it had made a non-binding offer to purchase all remaining common units held by the public representing limited partner interests in Shell Midstream Partners, L.P. ("SHLX") for $12.89 per common unit in cash. At the date of the announcement, Shell and its affiliates owned approximately 68.5% of SHLX common units. The proposed transaction is subject to a number of contingencies, including the approval of the board of directors of SHLX and the satisfaction of any conditions to the consummation of a transaction set forth in any definitive agreement concerning the transaction. There can be no assurance that such definitive documentation will be executed or that any transaction will materialise on the terms described above or at all.

Russia's recent invasion of Ukraine poses wide-ranging challenges. Given the evolving situation, there are many unknown factors and events that could materially impact our operations. These events have and continue to impact commodity prices, our supply chain, credit risks including those related to receivables, commodity trading, treasury and other factors. Any of these factors, individually or in aggregate, could have a material effect on our earnings, cash flows and financial condition.

On February 28, 2022, following Russia's invasion in Ukraine, Shell announced its intention to exit its ventures in Russia with Gazprom and related entities, and to end its involvement in the Nord Stream 2 pipeline project. At the end of 2021, Shell had around $3 billion in non-current assets in these ventures in Russia. In 2021, net income from Sakhalin Energy and Salym was $0.7 billion.

Subsequently, on March 8, 2022, Shell announced its intent to withdraw from its involvement in all Russian hydrocarbons, including crude oil, petroleum products, gas and LNG in a phased manner, aligned with new government guidance. As an immediate first step, Shell will stop all spot purchases of Russian crude oil. It will also shut its service stations, aviation fuels and lubricants operations in Russia. At the end of 2021, Shell had around $0.4 billion in non-current assets in its downstream operations in Russia.

It is expected that these decisions to start the process of exiting ventures with Gazprom and related entities, to end the involvement in the Nord Stream 2 pipeline project and to shut down its service stations, aviation fuels and lubricants operations in Russia will impact the carrying value of the related assets and lead to recognition of impairments in 2022. Details of Shell's interest in the respective ventures and operations are as follows.

- Sakhalin-2: Shell has a 27.5% interest in Sakhalin-2, an integrated oil and gas project located on Sakhalin island, accounted for as an associate. Other ownership interests are Gazprom 50%, Mitsui 12.5%, Mitsubishi 10%.
- Salym: Shell has a 50% interest in Salym Petroleum Development N.V., a joint operation with Gazprom Neft that is developing the Salym fields in the Khanty Mansiysk Autonomous District of western Siberia.
- Gydan: A joint operation with Gazprom Neft (Shell interest 50%) to explore and develop blocks in the Gydan peninsula, in north-western Siberia. The project is in the exploration phase, with no production.
- Nord Stream 2: Shell is one of five energy companies which have each committed to provide financing and guarantees for up to 10% of the total cost of the project, which is accounted for as a long-term loan.
- Shell's downstream operations in Russia: Shell owns 100% of its downstream operations in Russia which consist of service stations, aviation fuels and lubricants operations.

SUPPLEMENTARY INFORMATION – OIL AND GAS (UNAUDITED)

ABOUT THIS SECTION

The purpose of this section is to comply with the requirements of the Financial Accounting Standards Board (FASB) "Extractive Activities – Oil and Gas (Topic 932)". Extractive activities for this purpose include exploration and production activities to extract oil, condensates, natural gas liquids, oil sands and natural gas from their natural reservoirs.

In Shell, extractive activities, or oil and gas exploration and production activities, are undertaken within the Upstream segment, Integrated Gas segment and Oil Products segment (oil sands). Shell's extractive activities do not represent the full extent of the Upstream, Integrated Gas and Oil Products activities and exclude downstream GTL, some LNG activities, Marketing business in Oil Products, Power and New Energies, trading and optimisation, as well as other non-extractive activities. As a result, the information in this extractive activities section is not suitable for modelling Shell's integrated businesses, for which we refer to the segment information. Full segment information to the Consolidated Financial Statements is available on pages 245-248.

The information set out on pages 285-301 is referred to as "unaudited" as a means of clarifying that it is not covered by the audit opinion of the independent registered public accounting firm that has audited and reported on the Consolidated Financial Statements.

PROVED RESERVES

Proved reserves estimates are calculated pursuant to the US Securities and Exchange Commission (SEC) Rules and the FASB's Topic 932. Proved reserves can be either developed or undeveloped. The definitions used are in accordance with the SEC Rule 4–10 (a) of Regulation S-X. We include proved reserves associated with future production that will be consumed in operations.

Proved reserves shown are net of any quantities of crude oil or natural gas that are expected to be (or could be) taken as royalties in kind. Proved reserves outside North America include quantities that will be settled as royalties in cash. Proved reserves include certain quantities of crude oil or natural gas that will be produced under arrangements that involve Shell subsidiaries, joint ventures and associates in risks and rewards but do not transfer title of the product to those entities.

Subsidiaries' proved reserves at December 31, 2021, were divided into 80% developed and 20% undeveloped on a barrel of oil equivalent basis. For the Shell share of joint ventures and associates, the proved reserves at December 31, 2021, were divided into 88% developed and 12% undeveloped on a barrel of oil equivalent basis.

Proved reserves are recognised under various forms of contractual agreements. Shell's proved reserves volumes at December 31, 2021, present in agreements such as production-sharing contracts (PSC), tax/variable royalty contracts or other forms of economic entitlement contracts, where the Shell share of reserves can vary with commodity prices, were 1,835 million barrels of crude oil and natural gas liquids, and 12,804 thousand million standard cubic feet (scf) of natural gas.

Proved reserves cannot be measured exactly because estimation of reserves involves subjective judgement (see "Risk factors" on page 26 and our "Proved reserves assurance process" below). These estimates remain subject to revision and are unaudited supplementary information.

PROVED RESERVES ASSURANCE PROCESS

A central group of reserves experts, who on average have around 25 years' experience in the oil and gas industry, undertake the primary assurance of the proved reserves bookings. This group of experts is part of the Resources Assurance and Reporting (RAR) organisation within Shell. A Vice President with 36 years' experience in the oil and gas industry currently heads the RAR organisation. He is a member of the Society of Petroleum Engineers, Society of Petroleum Evaluation Engineers and holds a BA in mathematics from Oxford University and an MEng in Petroleum Engineering from Heriot-Watt University. The RAR organisation reports directly to an Executive Vice President of Finance, who is a member of the Upstream Reserves Committee (URC). The URC is a multidisciplinary committee consisting of senior representatives from the Finance, Legal, Integrated Gas and Upstream organisations. The URC reviews and endorses all major (larger than 20 million barrels of oil equivalent) proved reserves bookings and debookings and endorses the total aggregated proved reserves. Final approval of all proved reserves bookings remains with Shell's CEO, and all proved reserves bookings are reviewed by Shell's Audit Committee. The Internal Audit function also provides secondary assurance through audits of the control framework.

CRUDE OIL, NATURAL GAS LIQUIDS, SYNTHETIC CRUDE OIL AND BITUMEN

Shell subsidiaries' proved reserves of crude oil, natural gas liquids (NGLs), synthetic crude oil and bitumen at the end of the year; their share of the proved reserves of joint ventures and associates at the end of the year; and the changes in such reserves during the year are set out on pages 285-287. Significant changes in these proved reserves are discussed below, where "revisions and reclassifications" are changes based on new information that resulted from development drilling, production history, and changes in economic factors.

PROVED RESERVES 2021–2020

Shell subsidiaries

Asia

The net increase of 121 million barrels in revisions and reclassifications was mainly in Kashagan and Upper Salym.

USA

The net increase of 119 million barrels in revisions and reclassifications was mainly in Mars and Stones.

The decrease of 136 million barrels in sales in place was in Permian.

The increase of 55 million barrels in extensions and discoveries was mainly in Whale Dev.

Canada

The net decrease of 90 million barrels in revisions and reclassifications was mainly in Jackpine Mine and Muskeg River mine.

South America

The net increase of 325 million barrels in revisions and reclassifications half of which was mainly in Mero.

The increase of 103 million barrels in extensions and discoveries was mainly in Mero.

Europe

The increase of 67 million barrels in revisions and reclassifications was mainly in Schiehallion and Val d'Agri.

Africa

The decrease of 53 million barrels in revisions and reclassifications was mainly in Nigeria.

PROVED RESERVES 2020–2019

Shell subsidiaries

Asia

The net increase of 181 million barrels in revisions and reclassifications was mainly in Kazakhstan and Oman.

USA

The net decrease of 116 million barrels in revisions and reclassifications of which half was mainly in Permian and Belridge Light Oil.

Canada

The net increase of 55 million barrels in revisions and reclassifications was mainly in Jackpine Mine and Muskeg River mine.

South America

The net decrease of 82 million barrels in revisions and reclassifications was mainly in Brazil.

Proved developed and undeveloped reserves 2021

Million barrels

	Europe	Asia	Oceania	Africa	North America				South America				Total
					USA			Canada					
	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	All products
Shell subsidiaries													
At January 1	178	1,573	73	379	728	15	644	–	815	3,761	644	–	4,405
Revisions and reclassifications	67	121	18	(53)	119	–	(90)	–	325	597	(90)	–	507
Improved recovery	–	–	–	–	9	–	–	–	21	30	–	–	30
Extensions and discoveries	4	11	–	1	55	1	–	–	103	175	–	–	175
Purchases of minerals in place	–	–	–	–	–	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	(21)	(136)	(8)	–	–	–	(165)	–	–	(165)
Production [A]	(41)	(184)	(11)	(41)	(165)	(3)	(21)	–	(133)	(578)	(21)	–	(599)
At December 31	208	1,521	80	265	610	5	533	–	1,131	3,820	533	–	4,353
Shell share of joint ventures and associates													
At January 1	6	210	–	–	–	–	–	–	–	216	–	–	216
Revisions and reclassifications	2	40	–	–	–	–	–	–	4	46	–	–	46
Improved recovery	–	–	–	–	–	–	–	–	–	–	–	–	–
Extensions and discoveries	–	–	–	–	–	–	–	–	2	2	–	–	2
Purchases of minerals in place	–	–	–	–	–	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–	–	–	–	–	–
Production	(1)	(33)	–	–	–	–	–	–	(2)	(36)	–	–	(36)
At December 31	7	217	–	–	–	–	–	–	4	228	–	–	228
Total [B]	215	1,738	80	265	610	5	533	–	1,135	4,048	533	–	4,581
Reserves attributable to non-controlling interest in Shell subsidiaries at December 31	–	–	–	–	–	–	267	–	–	–	267	–	267

[A] Includes 1 million barrels consumed in operations for synthetic crude oil.

[B] As announced on February 28, 2022, Shell intends to exit its joint ventures with Gazprom and related entities, including our 27.5% interest in Sakhalin-2, our 50% interest in Salym Petroleum Development and our Gydan energy venture. As of December 31, 2021, we had proved reserves of 93 million barrels in crude oil. For more information See Note 32 on page 283.

Proved developed reserves 2021

Million barrels

	Europe	Asia	Oceania	Africa	North America				South America				Total
					USA			Canada					
	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	All products
Shell subsidiaries													
At January 1	103	1,417	69	316	539	12	644	–	674	3,130	644	–	3,774
At December 31	140	1,348	71	218	397	2	533	–	786	2,962	533	–	3,495
Shell share of joint ventures and associates													
At January 1	6	192	–	–	–	–	–	–	1	199	–	–	199
At December 31	7	197	–	–	–	–	–	–	4	208	–	–	208

Proved undeveloped reserves 2021

Million barrels

	Europe	Asia	Oceania	Africa	North America				South America				Total
					USA			Canada					
	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	All products
Shell subsidiaries													
At January 1	76	156	5	63	189	3	–	–	141	633	–	–	633
At December 31	68	173	9	47	213	3	–	–	345	858	–	–	858
Shell share of joint ventures and associates													
At January 1	–	18	–	–	–	–	–	–	–	18	–	–	18
At December 31	–	20	–	–	–	–	–	–	–	20	–	–	20

SUPPLEMENTARY INFORMATION – OIL AND GAS (UNAUDITED) continued

Proved developed and undeveloped reserves 2020

Million barrels

	Europe	Asia	Oceania	Africa	North America				South America				Total
					USA			Canada					
	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	All products
Shell subsidiaries													
At January 1	274	1,551	121	395	982	18	607	–	1,033	4,374	607	–	4,981
Revisions and reclassifications	(46)	181	(41)	42	(116)	(2)	57	–	(82)	(63)	57	–	(6)
Improved recovery	–	–	–	–	–	–	–	–	–	–	–	–	–
Extensions and discoveries	–	14	–	–	27	7	–	–	–	48	–	–	48
Purchases of minerals in place	–	9	–	–	–	–	–	–	–	9	–	–	9
Sales of minerals in place	(1)	–	–	–	–	–	–	–	–	(1)	–	–	(1)
Production [A]	(49)	(182)	(7)	(58)	(165)	(9)	(20)	–	(136)	(606)	(20)	–	(626)
At December 31	178	1,573	73	379	728	15	644	–	815	3,761	644	–	4,405
Shell share of joint ventures and associates													
At January 1	12	271	–	–	–	–	–	–	–	283	–	–	283
Revisions and reclassifications	(5)	(27)	–	–	–	–	–	–	–	(32)	–	–	(32)
Improved recovery	–	–	–	–	–	–	–	–	–	–	–	–	–
Extensions and discoveries	–	–	–	–	–	–	–	–	1	1	–	–	1
Purchases of minerals in place	–	–	–	–	–	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–	–	–	–	–	–
Production	(1)	(34)	–	–	–	–	–	–	(1)	(36)	–	–	(36)
At December 31	6	210	–	–	–	–	–	–	–	216	–	–	216
Total	184	1,783	73	379	728	15	644	–	815	3,977	644	–	4,621
Reserves attributable to non-controlling interest in Shell subsidiaries at December 31	–	–	–	–	–	–	322	–	–	–	322	–	322

[A] Includes 1 million barrels consumed in operations for synthetic crude oil.

Proved developed reserves 2020

Million barrels

	Europe	Asia	Oceania	Africa	North America				South America				Total
					USA			Canada					
	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	All products
Shell subsidiaries													
At January 1	156	1,403	106	314	641	15	607	–	675	3,310	607	–	3,917
At December 31	103	1,417	69	316	539	12	644	–	674	3,130	644	–	3,774
Shell share of joint ventures and associates													
At January 1	11	240	–	–	–	–	–	–	–	251	–	–	251
At December 31	6	192	–	–	–	–	–	–	1	199	–	–	199

Proved undeveloped reserves 2020

Million barrels

	Europe	Asia	Oceania	Africa	North America				South America				Total
					USA			Canada					
	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	All products
Shell subsidiaries													
At January 1	118	149	15	80	341	3	–	–	358	1,064	–	–	1,064
At December 31	76	156	5	63	189	3	–	–	141	633	–	–	633
Shell share of joint ventures and associates													
At January 1	1	31	–	–	–	–	–	–	–	32	–	–	32
At December 31	–	18	–	–	–	–	–	–	–	18	–	–	18

Proved developed and undeveloped reserves 2019

Million barrels

	Europe	Asia	Oceania	Africa	North America				South America				Total
					USA			Canada					
	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	All products
Shell subsidiaries													
At January 1	368	1,502	129	420	1,017	23	661	–	1,027	4,486	661	–	5,147
Revisions and reclassifications	27	226	2	33	86	(2)	(34)	–	72	444	(34)	–	410
Improved recovery	–	–	–	–	–	–	–	–	4	4	–	–	4
Extensions and discoveries	–	7	–	6	74	11	–	–	60	158	–	–	158
Purchases of minerals in place	–	–	–	–	5	–	–	–	–	5	–	–	5
Sales of minerals in place	(65)	–	–	–	(29)	(2)	–	–	–	(96)	–	–	(96)
Production [A]	(56)	(184)	(10)	(64)	(171)	(12)	(20)	–	(130)	(627)	(20)	–	(647)
At December 31	274	1,551	121	395	982	18	607	–	1,033	4,374	607	–	4,981
Shell share of joint ventures and associates													
At January 1	9	281	–	–	–	–	–	–	–	290	–	–	290
Revisions and reclassifications	4	21	–	–	–	–	–	–	–	25	–	–	25
Improved recovery	–	4	–	–	–	–	–	–	–	4	–	–	4
Extensions and discoveries	–	2	–	–	–	–	–	–	–	2	–	–	2
Purchases of minerals in place	–	–	–	–	–	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–	–	–	–	–	–
Production	(1)	(37)	–	–	–	–	–	–	–	(38)	–	–	(38)
At December 31	12	271	–	–	–	–	–	–	–	283	–	–	283
Total	286	1,822	121	395	982	18	607	–	1,033	4,657	607	–	5,264
Reserves attributable to non-controlling interest in Shell subsidiaries at December 31	–	–	–	–	–	–	304	–	–	–	304	–	304

[A] Includes 1 million barrels consumed in operations for synthetic crude oil.

Proved developed reserves 2019

Million barrels

	Europe	Asia	Oceania	Africa	North America				South America				Total
					USA			Canada					
	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	All products
Shell subsidiaries													
At January 1	243	1,318	108	335	629	21	661	–	634	3,288	661	–	3,949
At December 31	156	1,403	106	314	641	15	607	–	675	3,310	607	–	3,917
Shell share of joint ventures and associates													
At January 1	8	251	–	–	–	–	–	–	–	259	–	–	259
At December 31	11	240	–	–	–	–	–	–	–	251	–	–	251

Proved undeveloped reserves 2019

Million barrels

	Europe	Asia	Oceania	Africa	North America				South America				Total
					USA			Canada					
	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	Oil and NGL	Oil and NGL	Synthetic crude oil	Bitumen	All products
Shell subsidiaries													
At January 1	124	185	21	85	388	2	–	–	394	1,199	–	–	1,199
At December 31	118	149	15	80	341	3	–	–	358	1,064	–	–	1,064
Shell share of joint ventures and associates													
At January 1	1	30	–	–	–	–	–	–	–	31	–	–	31
At December 31	1	31	–	–	–	–	–	–	–	32	–	–	32

SUPPLEMENTARY INFORMATION – OIL AND GAS (UNAUDITED) continued

NATURAL GAS

Shell subsidiaries' proved reserves of natural gas at the end of the year, their share of the proved reserves of joint ventures and associates at the end of the year, and the changes in such reserves during the years are set out on pages 289-291. Significant changes in these proved reserves are discussed below. Volumes are not adjusted to standard heat content. Apart from integrated projects, volumes of gas are reported on an as-sold basis. The price used to calculate future revenue and cash flows from proved gas reserves is the contract price or the 12-month average on as-sold volumes. Volumes associated with integrated projects are those measured at a designated transfer point between the upstream and downstream portions of the integrated project. Natural gas volumes are converted into oil equivalent using a factor of 5,800 standard cubic feet (scf) per barrel.

PROVED RESERVES 2021–2020

Shell subsidiaries

Asia

The increase of 559 thousand million scf in extensions and discoveries was mainly in Jerun and Timi.

Oceania

The increase of 1,905 thousand million scf in revisions and reclassifications was mainly in Surat QGC, Janzlo and Prelude.

Europe

The increase of 838 thousand million scf in revisions and reclassifications was mainly in Ormen Lange.

South America

The increase of 535 thousand million scf in revisions and reclassifications mainly in Dolphin, Starfish and Mero.

The increase of 357 thousand million scf in extensions and discoveries was mainly in Cassra and Bounty.

Shell share of joint ventures and associates

Asia

The increase of 313 thousand million scf in revisions and reclassifications was mainly in South West Ampa.

PROVED RESERVES 2020–2019

Shell subsidiaries

Oceania

The net decrease of 3,512 thousand million scf in revisions and reclassifications was mainly in Gorgon, Jansz-Io and Surat QGC.

USA

The net decrease of 319 thousand million scf in revisions and reclassifications was mainly in Permian. The 542 thousand million scf of Sales of minerals in place was mainly in Tioga.

Proved developed and undeveloped reserves 2021

Thousand million standard cubic feet

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Shell subsidiaries								
At January 1	2,442	9,927	4,176	2,363	801	1,295	1,128	22,132
Revisions and reclassifications	838	(37)	1,905	(63)	90	123	535	3,391
Improved recovery	–	–	–	–	5	–	4	9
Extensions and discoveries	1	559	–	126	158	277	357	1,477
Purchases of minerals in place	1	–	–	–	–	–	–	1
Sales of minerals in place	–	–	–	(122)	(225)	(37)	–	(384)
Production [A]	(291)	(876)	(774)	(288)	(214)	(118)	(271)	(2,831)
At December 31	2,991	9,573	5,307	2,016	615	1,540	1,753	23,795
Shell share of joint ventures and associates								
At January 1	262	3,678	41	–	–	–	1	3,982
Revisions and reclassifications	210	313	51	–	–	–	3	577
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	–	–	–	–	–	–	2	2
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–
Production [B]	(160)	(431)	(21)	–	–	–	–	(612)
At December 31	312	3,560	71	–	–	–	6	3,949
Total [C]	3,303	13,133	5,378	2,016	615	1,540	1,759	27,744
Reserves attributable to non-controlling interest in Shell subsidiaries at December 31	–	–	–	–	–	–	–	–

[A] Includes 232 thousand million standard cubic feet consumed in operations.
[B] Includes 41 thousand million standard cubic feet consumed in operations.
[C] As announced on February 28, 2022, Shell intends to exit its joint ventures with Gazprom and related entities, including our 27.5% interest in Sakhalin-2, our 50% interest in Salym Petroleum Development and our Gydan energy venture. As of December 31, 2021, we had proved reserves of 980 thousand million cubic feet in natural gas. For more information See Note 32 on page 283.

Proved developed reserves 2021

Thousand million standard cubic feet

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Shell subsidiaries								
At January 1	1,590	9,675	3,656	1,341	670	720	924	18,576
At December 31	2,532	8,789	4,089	981	373	757	1,301	18,822
Shell share of joint ventures and associates								
At January 1	227	3,175	42	–	–	–	1	3,445
At December 31	265	3,097	71	–	–	–	6	3,439

Proved undeveloped reserves 2021

Thousand million standard cubic feet

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Shell subsidiaries								
At January 1	852	252	520	1,022	132	575	203	3,556
At December 31	459	784	1,218	1,035	242	783	452	4,973
Shell share of joint ventures and associates								
At January 1	35	502	–	–	–	–	–	537
At December 31	47	463	–	–	–	–	–	510

SUPPLEMENTARY INFORMATION – OIL AND GAS (UNAUDITED) continued

Proved developed and undeveloped reserves 2020

Thousand million standard cubic feet

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Shell subsidiaries								
At January 1	2,998	10,618	8,360	2,608	1,868	1,281	1,259	28,992
Revisions and reclassifications	(209)	249	(3,512)	93	(319)	59	162	(3,477)
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	–	2	33	5	66	122	–	228
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	(28)	(29)	–	–	(542)	–	–	(599)
Production [A]	(319)	(913)	(705)	(343)	(272)	(167)	(293)	(3,012)
At December 31	2,442	9,927	4,176	2,363	801	1,295	1,128	22,132
Shell share of joint ventures and associates								
At January 1	595	4,198	36	–	–	–	–	4,829
Revisions and reclassifications	(200)	(62)	27	–	–	–	1	(234)
Improved recovery	–	–	–	–	–	–	–	–
Extensions and discoveries	–	1	–	–	–	–	1	2
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–
Production [B]	(133)	(459)	(22)	–	–	–	(1)	(615)
At December 31	262	3,678	41	–	–	–	1	3,982
Total	2,703	13,605	4,219	2,363	801	1,295	1,128	26,114
Reserves attributable to non-controlling interest in Shell subsidiaries at December 31	–	–	–	–	–	–	–	–

[A] Includes 225 thousand million standard cubic feet consumed in operations.
[B] Includes 42 thousand million standard cubic feet consumed in operations.

Proved developed reserves 2020

Thousand million standard cubic feet

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Shell subsidiaries								
At January 1	2,060	10,091	5,769	1,523	1,615	781	968	22,807
At December 31	1,590	9,675	3,656	1,341	670	720	924	18,576
Shell share of joint ventures and associates								
At January 1	555	3,519	36	–	–	–	–	4,110
At December 31	227	3,175	42	–	–	–	1	3,445

Proved undeveloped reserves 2020

Thousand million standard cubic feet

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Shell subsidiaries								
At January 1	937	528	2,591	1,085	254	499	291	6,185
At December 31	852	252	520	1,022	132	575	203	3,556
Shell share of joint ventures and associates								
At January 1	39	680	–	–	–	–	–	719
At December 31	35	502	–	–	–	–	–	537

Proved developed and undeveloped reserves 2019

Thousand million standard cubic feet

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Shell subsidiaries								
At January 1	3,600	10,631	8,427	2,544	2,147	989	1,509	29,847
Revisions and reclassifications	(46)	859	699	290	114	235	29	2,180
Improved recovery	–	–	–	–	–	–	3	3
Extensions and discoveries	–	36	–	152	142	317	37	684
Purchases of minerals in place	–	–	–	–	5	–	–	5
Sales of minerals in place	(210)	–	–	–	(132)	(30)	–	(372)
Production [A]	(346)	(908)	(766)	(378)	(408)	(230)	(319)	(3,355)
At December 31	2,998	10,618	8,360	2,608	1,868	1,281	1,259	28,992
Shell share of joint ventures and associates								
At January 1	1,163	4,581	24	–	–	–	–	5,768
Revisions and reclassifications	(322)	64	34	–	–	–	–	(224)
Improved recovery	–	1	–	–	–	–	–	1
Extensions and discoveries	–	5	–	–	–	–	–	5
Purchases of minerals in place	–	–	–	–	–	–	–	–
Sales of minerals in place	–	–	–	–	–	–	–	–
Production [B]	(246)	(453)	(22)	–	–	–	–	(721)
At December 31	595	4,198	36	–	–	–	–	4,829
Total	3,593	14,816	8,396	2,608	1,868	1,281	1,259	33,821
Reserves attributable to non-controlling interest in Shell subsidiaries at December 31	–	–	–	–	–	–	–	–

[A] Includes 247 thousand million standard cubic feet consumed in operations.
[B] Includes 42 thousand million standard cubic feet consumed in operations.

Proved developed reserves 2019

Thousand million standard cubic feet

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Shell subsidiaries								
At January 1	2,658	10,092	5,820	1,573	1,706	721	1,238	23,808
At December 31	2,060	10,091	5,769	1,523	1,615	781	968	22,807
Shell share of joint ventures and associates								
At January 1	1,136	3,938	24	–	–	–	–	5,099
At December 31	555	3,519	36	–	–	–	–	4,110

Proved undeveloped reserves 2019

Thousand million standard cubic feet

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Shell subsidiaries								
At January 1	942	539	2,607	971	441	268	271	6,039
At December 31	937	528	2,591	1,085	254	499	291	6,185
Shell share of joint ventures and associates								
At January 1	27	643	–	–	–	–	–	670
At December 31	39	680	–	–	–	–	–	719

SUPPLEMENTARY INFORMATION – OIL AND GAS (UNAUDITED) continued

STANDARDISED MEASURE OF DISCOUNTED FUTURE CASH FLOWS

The SEC Form 20-F requires the disclosure of a standardised measure of discounted future net cash flows, relating to proved reserves quantities and based on a 12-month unweighted arithmetic average sales price, calculated on a first-day-of-the-month basis, with cost factors based on those at the end of each year, currently enacted tax rates and a 10% annual discount factor. In our view, the information so calculated does not provide a reliable measure of future cash flows from proved reserves, nor does it permit a realistic comparison to be made of one entity with another because the assumptions used cannot reflect the varying circumstances within each entity. In addition, a substantial but unknown proportion of future real cash flows from oil and gas production activities is expected to derive from reserves which have already been discovered, but which cannot yet be regarded as proved.

STANDARDISED MEASURE OF DISCOUNTED FUTURE CASH FLOWS RELATING TO PROVED RESERVES AT DECEMBER 31

2021 – Shell subsidiaries

$ million

					North America		South	
	Europe	Asia	Oceania	Africa	USA	Canada	America	Total
Future cash inflows	37,801	115,068	37,462	22,663	41,431	34,835	81,239	370,499
Future production costs	11,977	30,567	13,446	8,742	23,314	15,565	35,787	139,398
Future development costs	5,347	12,989	6,718	3,078	7,787	4,063	16,130	56,112
Future tax expenses	12,311	28,834	2,206	7,584	1,572	3,153	7,829	63,489
Future net cash flows	8,166	42,678	15,092	3,259	8,758	12,054	21,493	111,500
Effect of discounting cash flows at 10%	1,754	18,771	4,205	497	1,207	7,331	7,270	41,035
Standardised measure of discounted future net cash flows	6,412	23,907	10,887	2,762	7,551	4,723	14,223	70,465
Non-controlling Interest Included	–	–	–	–	–	1,906	–	1,906

2021 – Shell share of joint ventures and associates

$ million

					North America		South	
	Europe	Asia	Oceania	Africa	USA	Canada	America	Total
Future cash inflows	4,006	36,365	326	–	–	–	283	40,980
Future production costs	2,869	15,653	245	–	–	–	128	18,895
Future development costs	931	6,819	82	–	–	–	15	7,847
Future tax expenses	1,623	6,229	–	–	–	–	9	7,861
Future net cash flows	-1,417	7,664	-1	–	–	–	131	6,377
Effect of discounting cash flows at 10%	-316	1,630	-29	–	–	–	34	1,319
Standardised measure of discounted future net cash flows	-1,101 [A]	6,034	28	–	–	–	97	5,058

[A] While proved reserves are economically producible at the 2021 yearly average price, the standardised measure of discounted future net cash flows was negative for those proved reserves at December 31, 2021, due to addition of overhead, tax and abandonment costs and ongoing commitments post production of proved reserves.

2020 – Shell subsidiaries

$ million

					North America		South	
	Europe	Asia	Oceania	Africa	USA	Canada	America	Total
Future cash inflows	16,581	75,128	23,787	19,743	27,891	22,447	34,502	220,079
Future production costs	6,776	26,896	10,240	9,837	20,341	15,475	19,137	108,702
Future development costs	4,352	12,416	7,441	3,354	7,274	4,559	7,440	46,836
Future tax expenses	4,525	12,585	254	4,713	54	407	1,847	24,385
Future net cash flows	928	23,231	5,852	1,838	222	2,006	6,079	40,156
Effect of discounting cash flows at 10%	338	9,792	493	-50	-1,469	1,231	1,369	11,704
Standardised measure of discounted future net cash flows	590	13,440	5,359 [A]	1,889	1,691	775	4,709	28,452 [B]
Non-controlling interest included	–	–	–	–	–	398	–	398

2020 SMOG value has been corrected. [A] Corrected from 6,719 and [B] Corrected from 29,813

2020 – Shell share of joint ventures and associates

$ million

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Future cash inflows	1,209	22,209	139	–	–	–	21	23,578
Future production costs	2,801	11,472	136	–	–	–	17	14,426
Future development costs	948	5,165	111	–	–	–	2	6,226
Future tax expenses	–	3,026	–	–	–	–	–	3,026
Future net cash flows	(2,540)	2,546	(108)	–	–	–	2	(100)
Effect of discounting cash flows at 10%	(583)	412	(35)	–	–	–	–	(206)
Standardised measure of discounted future net cash flows	(1,957) [A]	2,134	(73)	–	–	–	2	106

[A] While proved reserves are economically producible at the 2020 yearly average price, the standardised measure of discounted future net cash flows was negative for those proved reserves at December 31, 2020, due to addition of overhead, tax and abandonment costs and ongoing commitments post production of proved reserves.

2019 – Shell subsidiaries

$ million

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Future cash inflows	33,762	111,802	71,775	31,046	55,800	31,522	64,957	400,664
Future production costs	11,818	32,581	21,589	12,158	30,139	16,651	32,362	157,298
Future development costs	6,047	13,449	10,103	4,081	11,137	4,603	13,219	62,639
Future tax expenses	9,285	25,938	7,016	10,542	2,397	2,313	5,429	62,920
Future net cash flows	6,612	39,834	33,067	4,265	12,127	7,955	13,947	117,807
Effect of discounting cash flows at 10%	1,917	17,851	13,328	377	1,815	5,571	4,094	44,953
Standardised measure of discounted future net cash flows	4,695	21,983	19,739	3,888	10,312	2,384	9,853	72,854
Non-controlling interest included	–	–	–	–	–	1,371	–	1,371

2019 – Shell share of joint ventures and associates

$ million

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Future cash inflows	3,615	38,099	122	–	–	–	–	41,836
Future production costs	2,810	18,336	81	–	–	–	–	21,227
Future development costs	935	6,946	36	–	–	–	–	7,917
Future tax expenses	718	6,160	4	–	–	–	–	6,882
Future net cash flows	(848)	6,657	1	–	–	–	–	5,812
Effect of discounting cash flows at 10%	(266)	1,190	(7)	–	–	–	–	917
Standardised measure of discounted future net cash flows	(582) [A]	5,467	8	–	–	–	–	4,893

[A] While proved reserves are economically producible at the 2019 yearly average price, the standardised measure of discounted future net cash flows was negative for those proved reserves at December 31, 2019, due to addition of overhead, tax and abandonment costs and ongoing commitments post production of proved reserves.

SUPPLEMENTARY INFORMATION – OIL AND GAS (UNAUDITED) continued

CHANGE IN STANDARDISED MEASURE OF DISCOUNTED FUTURE NET CASH FLOWS RELATING TO PROVED RESERVES

2021

$ million

	Shell subsidiaries	Shell share of joint ventures and associates	Total
At January 1	28,452	106	28,558
Net changes in prices and production costs	74,896	9,188	84,084
Revisions of previous reserves estimates	19,435	3,253	22,688
Extensions, discoveries and improved recovery	5,631	60	5,691
Purchases and sales of minerals in place	(880)	–	(880)
Development cost related to future production	(10,652)	(982)	(11,634)
Sales and transfers of oil and gas, net of production costs	(35,754)	(4,455)	(40,209)
Development cost incurred during the year	8,594	969	9,563
Accretion of discount	3,832	170	4,002
Net change in income tax	(23,089)	(3,251)	(26,340)
At December 31	70,465	5,058	75,523

2020

$ million

	Shell subsidiaries	Shell share of joint ventures and associates	Total
At January 1	72,854	4,893	77,747
Net changes in prices and production costs	(71,184)	(6,097)	(77,281)
Revisions of previous reserves estimates	574	(459)	115
Extensions, discoveries and improved recovery	691	17	709
Purchases and sales of minerals in place	(540)	–	(540)
Development cost related to future production	2,906	(426)	2,480
Sales and transfers of oil and gas, net of production costs	(16,990)	(1,954)	(18,944)
Development cost incurred during the year	8,197	759	8,956
Accretion of discount	9,881	832	10,713
Net change in income tax	22,063	2,541	24,604
At December 31	28,452 [A]	106	28,558 [B]

2020 SMOG value has been corrected. [A] Corrected from 29,813 and [B] Corrected from 29,919

2019

$ million

	Shell subsidiaries	Shell share of joint ventures and associates	Total
At January 1	89,845	7,229	97,074
Net changes in prices and production costs	(18,759)	(1,017)	(19,776)
Revisions of previous reserves estimates	13,777	(293)	13,484
Extensions, discoveries and improved recovery	5,193	93	5,286
Purchases and sales of minerals in place	(2,831)	–	(2,831)
Development cost related to future production	(9,417)	(2)	(9,419)
Sales and transfers of oil and gas, net of production costs	(33,319)	(3,918)	(37,237)
Development cost incurred during the year	10,430	702	11,132
Accretion of discount	12,004	1,133	13,137
Net change in income tax	5,931	966	6,897
At December 31	72,854	4,893	77,747

OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITIES CAPITALISED COSTS

The aggregate amount of property, plant and equipment and intangible assets, excluding goodwill, relating to oil and gas exploration and production activities, and the aggregate amount of the related depreciation, depletion and amortisation at December 31, are shown in the tables below.

Shell subsidiaries

$ million

	2021	2020
Cost		
Proved properties [A] [B]	261,085	276,239
Unproved properties	12,754	14,563
Support equipment and facilities [B]	11,067	10,741
	284,906	301,543
Depreciation, depletion and amortisation		
Proved properties [A] [B]	156,554	157,844
Unproved properties	5,660	5,342
Support equipment and facilities [B]	5,891	4,990
	168,105	168,176
Net capitalised costs	116,801	133,367

[A] Includes capitalised asset decommissioning and restoration costs and related depreciation.
[B] As of 2021, assets held for sale have been excluded from scope of this note and presented under a separate disclosure within Note 30 – Assets held for sale. Prior period comparatives have also been revised to conform with current year.

Shell share of joint ventures and associates

$ million

	2021	2020
Cost		
Proved properties [A]	52,762	50,644 [C]
Unproved properties	1,853	2,512
Support equipment and facilities	4,982	5,037
	59,597	58,193 [C]
Depreciation, depletion and amortisation		
Proved properties [A]	38,844	36,994 [C]
Unproved properties [B]	452	473
Support equipment and facilities	3,182	3,070
	42,478	40,537 [C]
Net capitalised costs	17,119	17,656 [C]

[A] Includes capitalised asset decommissioning and restoration costs and related depreciation.
[B] The major part of this cost consists of an impairment charge taken in 2020.
[C] As revised, following a reassessment.

OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITIES COSTS INCURRED

Costs incurred during the year in oil and gas property acquisition, exploration and development activities, whether capitalised or charged to income currently, are shown in the tables below. As a result of the adoption of IFRS 16 Leases as of January 1, 2019, leases are included in all years shown below. Development costs include capitalised asset decommissioning and restoration costs (including increases or decreases arising from changes to cost estimates or to the discount rate applied to the obligations) and exclude costs of acquiring support equipment and facilities, but include depreciation thereon.

Shell subsidiaries

2021

$ million

					North America		South	
	Europe	Asia	Oceania	Africa	USA	Other [A]	America	Total
Acquisition of properties								
Proved	2	–	–	246	–	–	–	247
Unproved	–	–	–	2	26	34	42	103
Exploration	301	103	26	136	920	217	170	1,873 [B]
Development	996	693	600	166	3,116	106	1,436	7,113

[A] Comprises Canada and Mexico.
[B] Includes $336 million of Shales-related exploration activities. Shell did not have any exploratory wells with proved reserves allocated at the end of 2021 due to divestment activities.

SUPPLEMENTARY INFORMATION – OIL AND GAS (UNAUDITED) continued

2020

$ million

	Europe	Asia	Oceania	Africa	North America USA	North America Other [A]	South America	Total
Acquisition of properties								
Proved	4	156	–	5	–	–	–	165
Unproved	115	19	–	48	80	6	180	448
Exploration	287	102	33	168	951	275	390	2,206 [B]
Development	1,612	1,018	1,465	807	4,186	325	1,930	11,343

[A] Comprises Canada and Mexico.
[B] Includes $504 million of Shales-related exploration activities. In 2020, we participated in 161 Shales productive exploratory wells with proved reserves allocated (Shell share: 77 wells).

2019

$ million

	Europe	Asia	Oceania	Africa	North America USA	North America Other [A]	South America	Total
Acquisition of properties								
Proved	3	105	–	10	–	–	–	118
Unproved	–	11	–	67	118	5	3	204
Exploration	428	165	117	253	1,723	402	500	3,588 [B]
Development	2,054	1,434	1,225	1,480	4,455	287	2,418	13,353

[A] Comprises Canada and Mexico.
[B] Includes $1,195 million of Shales-related exploration activities. In 2019, we participated in 231 Shales productive exploratory wells with proved reserves allocated (Shell share: 117 wells).

Shell share of joint ventures and associates

Joint ventures and associates did not incur costs in the acquisition of oil and gas properties in 2021 and 2019.

2021

$ million

	Europe	Asia	Oceania	Africa	North America USA	North America Other	South America	Total
Exploration	–	69	1	-	-	-	41	111
Development	101	1,648	205	-	-	-	49	2,002

2020

$ million

	Europe	Asia	Oceania	Africa	North America USA	North America Other	South America	Total
Acquisition of properties								
Unproved	–	–	–	–	–	–	128	128
Exploration	–	94	10	–	–	–	105	209
Development	124	2,225 [A]	67	–	–	–	2	2,418 [A]

[A] As revised, following a reassessment.

2019

$ million

	Europe	Asia	Oceania	Africa	North America USA	North America Other	South America	Total
Exploration	1	116	12	–	–	–	–	129
Development	94	1,400	65	–	–	–	–	1,559

OIL AND GAS EXPLORATION AND PRODUCTION ACTIVITIES EARNINGS

In Shell, extractive activities, or oil and gas exploration and production activities, are undertaken within the Integrated Gas segment, the Upstream segment and the Oil Products segment. Shell's extractive activities do not represent the full extent of Integrated Gas, Upstream and Oil Products activities, and exclude downstream GTL, some LNG activities, Marketing business in Oil Products, Power and New Energies, trading and optimisation, as well as other non-extractive activities.

The earnings disclosed in this "extractive activities" section are only a subset of Shell's total earnings and as a result are not suitable for modelling Shell's integrated businesses, for which we refer to the full segment earnings and descriptions of the Integrated Gas, Upstream and Oil Products businesses. These are available on pages 45, 50 and 65 respectively. The earnings disclosed in this "extractive activities" section are not adjusted for items such as impairment charges, restructuring charges and charges for onerous contract provisions. Full segment information to the Consolidated Financial Statements is available on pages 245-248.

The results of operations for oil and gas producing activities are shown in the tables below. Taxes other than income tax include cash-paid royalties to governments outside North America.

Shell subsidiaries

2021

$ million

					North America		South	
	Europe	Asia	Oceania	Africa	USA	Other [A]	America	Total
Revenue								
Third parties	1,502	3,089	681	1,849	3,411	816	1,224	12,572
Sales between businesses	5,524	11,107	5,256	2,214	8,009	1,815	8,249	42,174
Total	7,026	14,196	5,937	4,063	11,420	2,631	9,473	54,746
Production costs excluding taxes	1,892	1,817	1,222	1,013	2,165	679	1,045	9,833
Taxes other than income tax	77	863	234	250	120	–	2,904	4,448
Exploration	242	70	21	133	616	191	150	1,423
Depreciation, depletion and amortisation	1,342	2,817	1,805	1,227	5,201	181	3,973	16,546
Other costs/(income)	3,867	1,210	(155)	(349)	(2,550)	1,045	233	3,301
Earnings before taxation	(394)	7,419	2,810	1,789	5,868	535	1,168	19,195
Taxation charge/(credit)	473	4,473	831	35	1,268	180	256	7,516
Earnings after taxation	(867)	2,946	1,979	1,754	4,600	355	912	11,679

[A] Comprises Canada and Mexico.

2020

$ million

					North America		South	
	Europe	Asia	Oceania	Africa	USA	Other [A]	America	Total
Revenue								
Third parties	767	2,104	589	1,540	1,008	753	567	7,328
Sales between businesses	2,879	6,792 [B]	3,366 [B]	1,816	5,239	943	4,656	25,691
Total	3,646	8,896	3,955	3,356	6,247	1,696	5,223	33,019
Production costs excluding taxes	2,023	1,811	1,040	1,064	2,615	735	936	10,224
Taxes other than income tax	64	389	93	245	64	–	1,494	2,349
Exploration	256	149	234	202	325	108	473	1,747
Depreciation, depletion and amortisation	3,618	2,120	10,178	2,589	7,927	2,147	6,282	34,861
Other costs/(income)	553	1,559 [B]	314 [B]	645	230	631	161	4,093
Earnings before taxation	(2,868)	2,868	(7,904) [B]	(1,389)	(4,914)	(1,925)	(4,123)	(20,255)
Taxation charge/(credit)	(423)	1,854	(3,175)	(104)	(790)	(449)	(300)	(3,387)
Earnings after taxation	(2,445)	1,014	(4,729) [B]	(1,285)	(4,124)	(1,476)	(3,823)	(16,868)

[A] Comprises Canada and Mexico.
[B] As revised, following a reassessment.

SUPPLEMENTARY INFORMATION – OIL AND GAS (UNAUDITED) continued

2019

$ million

	Europe	Asia	Oceania	Africa	North America USA	North America Other [A]	South America	Total
Revenue								
Third parties	1,257	3,065	931	1,936	2,638	632	844	11,303
Sales between businesses	4,911	10,526	4,918 [B]	3,289	7,786	1,936	7,647	41,013
Total	6,168	13,591	5,849 [B]	5,225	10,424	2,568	8,491	52,316
Production costs excluding taxes	1,582	2,065	1,178	1,062	2,807	983	1,135	10,812
Taxes other than income tax	94	749	136	370	103	–	2,613	4,065
Exploration	619	583	107	187	411	159	288	2,354
Depreciation, depletion and amortisation	2,604	2,130	1,957	1,354	6,932	858	3,929	19,764
Other costs/(income)	(20)	1,599	(105)	121	(575)	818	1,379	3,217
Earnings before taxation	1,289	6,465	2,576 [B]	2,131	746	(250)	(853)	12,104
Taxation charge/(credit)	848	4,013	1,094	1,431	154	(110)	(78)	7,352
Earnings after taxation	441	2,452	1,482 [B]	700	592	(140)	(775)	4,752

[A] Comprises Canada, Honduras and Mexico.
[B] As revised, following a reassessment.

Shell share of joint ventures and associates

2021

$ million

	Europe	Asia	Oceania	Africa	North America USA	North America Canada	South America	Total
Third-party revenue	1,632	5,473	78	–	–	–	102	7,285
Total	1,632	5,473	78	–	–	–	102	7,285
Production costs excluding taxes	246	770	82	–	–	–	9	1,107
Taxes other than income tax	48	900	7	–	–	–	12	967
Exploration	2	27	–	–	–	–	–	29
Depreciation, depletion and amortisation	254	1,262	32	–	–	–	38	1,586
Other costs/(income)	732	355	(22)	–	(8)	–	11	1,068
Earnings before taxation	350	2,159	(21)	–	8	–	32	2,528
Taxation charge	62	877	–	–	2	–	(2)	939
Earnings after taxation	288	1,282	(21)	–	6	–	34	1,589

2020

$ million

	Europe	Asia	Oceania	Africa	North America USA	North America Canada	South America	Total
Third-party revenue	514	3,464	65	–	–	–	32	4,075
Total	514	3,464	65	–	–	–	32	4,075
Production costs excluding taxes	272	726	72	–	–	–	8	1,078
Taxes other than income tax	22	423	5	–	–	–	4	454
Exploration	2	97	–	–	–	–	–	99
Depreciation, depletion and amortisation	366	1,219	270	–	(7)	–	23	1,871
Other costs/(income)	296	365	(14)	–	(1)	–	12	658
Earnings before taxation	(444)	634	(268)	–	8	–	(15)	(85)
Taxation charge	(281)	162	–	–	2	–	(9)	(126)
Earnings after taxation	(163)	472	(268)	–	6	–	(6)	41

2019

$ million

	Europe	Asia	Oceania	Africa	North America		South America	Total
					USA	Canada		
Third-party revenue	1,233	5,475	81	–	–	–	–	6,789
Total	1,233	5,475	81	–	–	–	–	6,789
Production costs excluding taxes	249	669	88	–	–	–	–	1,006
Taxes other than income tax	75	1,037	6	–	–	–	–	1,118
Exploration	4	51	–	–	–	–	–	55
Depreciation, depletion and amortisation	217	949	415	–	–	–	–	1,581
Other costs/(income)	547	622	(18)	–	1	1	–	1,153
Earnings before taxation	141	2,147	(410)	–	(1)	(1)	–	1,876
Taxation charge	39	957	–	–	–	–	–	996
Earnings after taxation	102	1,190	(410)	–	(1)	(1)	–	880

ACREAGE AND WELLS

The tables below reflect acreage and wells of Shell subsidiaries, joint ventures and associates. The term "gross" refers to the total activity in which Shell subsidiaries, joint ventures and associates have an interest. The term "net" refers to the sum of the fractional interests owned by Shell subsidiaries plus the Shell share of joint ventures and associates' fractional interests. Data below are rounded to the nearest whole number.

Oil and gas acreage (at December 31)

Thousand Acres

	2021				2020				2019			
	Developed		Undeveloped		Developed		Undeveloped		Developed		Undeveloped	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net
Europe	6,009	1,875	8,090	3,833	6,075	1,900	13,399	5,663	6,278	1,910	13,844	6,077
Asia	21,360	7,651	31,620	17,022	21,360	7,651	34,545	18,003	21,387	7,672	31,486	14,880
Oceania	2,485	947	9,577	5,132	2,653 [A]	993 [A]	9,654 [B]	5,256 [B]	2,563 [C]	949 [C]	12,182 [D]	6,525 [D]
Africa	3,937	1,457	71,398	35,633	4,764	1,996	67,197 [E]	36,944 [E]	4,663	1,938	60,968 [F]	31,765 [F]
North America – USA	487	286	2,049	1,555	1,145	728	1,916	1,408	1,346	906	2,483	1,911
North America – Mexico	–	–	5,407	3,335	–	–	5,178	3,291	–	–	5,178	3,291
North America – Canada	359	206	1,334	823	490	336	1,689	1,177	483	329	1,783	1,265
South America	1,463	616	23,467	12,629	1,449	609	20,037 [G]	11,709 [G]	1,393	595	16,336 [H]	10,192 [H]
Total	36,100	13,038	152,942	79,962	37,936	14,213	153,615	83,451	38,113	14,299	144,260	75,906

[A] Corrected from 3,151 Gross (1,275 Net).
[B] Corrected from 9,156 Gross (4,974 Net).
[C] Corrected from 3,025 Gross (1,215 Net).
[D] Corrected from 11,720 Gross (6,260 Net).
[E] Corrected from 69,194 Gross (37,743 Net).
[F] Corrected from 62,965 Gross (32,564 Net).
[G] Corrected from 20,147 Gross (11,731 Net).
[H] Corrected from 16,446 Gross (10,214 Net).

Number of productive wells [A] (at December 31)

	2021				2020				2019			
	Oil		Gas		Oil		Gas		Oil		Gas	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net
Europe	796	193	1,021	324	814	197	1,047 [B]	335 [B]	894	217	1,095	345
Asia	8,819	3,219	364	210	8,505	3,105	342	193	7,860	2,874	336	193
Oceania	–	–	3,398	1,974	–	–	3,369 [C]	1,920 [C]	–	–	3,348	1,891
Africa	391	126	114	56	567	235	209	141	514	206	202	139
North America – USA	13,042	6,627	28	20	14,505	7,402	401	223	14,953	7,650	824	518
North America – Canada	–	–	510	440	–	–	757	684	–	–	748	676
South America	229	112	67	39	179	82	63	37	137	63	58	36
Total	23,277	10,277	5,502	3,063	24,570	11,021	6,188	3,533	24,358	11,010	6,611	3,798

[A] The number of productive wells with multiple completions at December 31, 2021, was 956 Gross (427 Net) ; December 31, 2020: 956 Gross (416 Net); December 31, 2019: 950 Gross (418 Net).
[B] Corrected from 1,055 Gross (336 Net).
[C] Corrected from 3,394 Gross (1,927 Net).

SUPPLEMENTARY INFORMATION – OIL AND GAS (UNAUDITED) continued

Number of net productive wells and dry holes drilled

	2021		2020		2019	
	Productive	Dry	Productive	Dry	Productive	Dry
Exploratory [A]						
Europe	–	–	–	1	–	4
Asia	5	10	10	8	25	17
Oceania	–	2	–	6	–	2
Africa	–	11	5	7	8	8
North America – USA	3	39	57	81	89	9
North America – Canada	–	15	17	1	24	–
South America	5	1	5	3	8	1
Total	13	78	94	107	154	41
Development						
Europe	3	1	5 [B]	–	4	1
Asia	218	–	169	–	182	–
Oceania	7	–	20 [C]	–	16	–
Africa	6 [D]	–	19	–	34	–
North America – USA	46 [E]	–	110	–	280	5
North America – Canada	–	–	–	–	6	–
South America	31	–	14	–	10	1
Total	311	1	337	–	532	7

[A] Productive wells are wells with proved reserves allocated. Wells in the process of drilling are excluded and presented separately below.
[B] Corrected from 6.
[C] Corrected from 22.
[D] Includes 5 development productive wells in Shell Egypt that were divested in 2021.
[E] Includes 26 development productive wells in SEPCo USA that were divested in 2021.

Number of wells in the process of exploratory drilling [A]

2021

	At January 1		Wells in the process of drilling at January 1 and allocated proved reserves during the year		Wells in the process of drilling at January 1 and determined as dry during the year		New wells in the process of drilling at December 31		At December 31	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net
Europe	12	8 [B]	–	–	–	–	1	–	13	8
Asia	56	21	6	2	10	4	15	6	55	21
Oceania	32	11	–	–	9	2	45	21	68	30
Africa	28	19	–	–	10 [C]	10 [C]	1	1	19	10
North America – USA	92	43	4	3	79 [D]	35 [D]	2	1	11	8
North America – Canada	15	15	–	–	15 [E]	15 [E]	–	–	–	–
South America	35	13	17	5	2	1	13	5	29	11
Total	270	130	27	10	125	67	77	34	195	88

[A] Wells in the process of exploratory drilling includes wells pending further evaluation.
[B] Corrected from 7
[C] Includes 10 Gross (10 Net) wells in Shell Egypt that were divested
[D] Includes 78 Gross (34 Net) wells in Permian that were divested
[E] Includes 15 Gross (15 Net) wells in Fox Creek that were divested

Number of wells in the process of development drilling

2021

	At January 1		At December 31	
	Gross	Net	Gross	Net
Europe	12 [A]	2	1	1
Asia	41	24	38	20
Oceania	191	124	181	111
Africa	4	1	5	2
North America – USA	30	20	9	6
North America – Canada	–	–	6	5
South America	30	21	46	30
Total	308	192	286	175

[A] Corrected from 7

In addition to the present activities mentioned above, the following recovery methods are operational in the following countries: water flooding (Brazil (including water alternating gas), Brunei, Malaysia, Nigeria, Norway, Oman, Russia, the UK and the USA); gas injection (Brazil, Brunei, Kazakhstan, Malaysia, Nigeria and Oman); steam injection (the Netherlands, Oman and the USA), and polymer flooding (Oman).

SUPPLEMENTARY INFORMATION – EU TAXONOMY DISCLOSURE

OVERVIEW

The EU Taxonomy Regulation, adopted by the European Union (EU) in 2020, is designed to encourage investment in an environmentally sustainable economy by creating uniform definitions of sustainability for investors. Shell supports the EU's ambition to achieve climate neutrality by 2050 and welcomes measures to increase transparency and mobilise capital towards the energy transition.

The Taxonomy requires the disclosure of financial information about qualifying activities according to detailed criteria. Shell has followed these rules in preparing our disclosure. But in our view the resulting information does not provide a complete picture of our low-carbon activities because it excludes our interests in equity accounted joint ventures and associates, integrated value chains and spending on early-stage businesses. We encourage efforts to improve the Taxonomy so that it enables a full understanding of how companies in transition are adapting to the needs of their customers, who are progressing towards a low-carbon future at different speeds and via different pathways.

Shell supports efforts to develop sustainable finance tools that enable transitional and low-carbon projects to advance the energy transition. Such systems should be workable and inclusive, with all sectors and technologies encouraged to be part of the solution. We see these tools as a complement to energy and sectoral policies that create market incentives for businesses to innovate and invest in low-carbon solutions.

For more on our energy transition strategy, see "Climate Change and Energy Transition" on pages 75-98.

The Taxonomy framework

As a UK company, Shell is not currently subject to the EU Taxonomy Regulation. We comply with its disclosure requirements on a voluntary basis and expect to come into scope following the adoption of the EU's proposed Corporate Sustainability Reporting Directive, which would extend the reporting obligation to third-country issuers like Shell that list on European exchanges.

The Taxonomy establishes technical criteria for sustainability across more than 90 economic activities and six environmental objectives. So far, criteria have been approved for the first two objectives, climate change mitigation and climate change adaptation. These form the basis of our 2021 reporting. Criteria for the four remaining objectives – water, circular economy, pollution control and biodiversity – are expected to be adopted by the EU in 2022.

An activity is "Taxonomy-eligible" if it is described in the regulation, irrespective of whether it complies with the technical screening criteria. An activity is "Taxonomy-aligned" if it contributes substantially to one or more environmental objectives, does no significant harm to any of the other objectives, is carried out in compliance with minimum social safeguards and complies with the technical screening criteria.

For 2021, companies are required to disclose the share of eligible and non-eligible activities in their total turnover, capital expenditure (capex) and operating expenditure (opex). Starting in 2022, companies are required to assess their eligible activities against the technical screening criteria and provide breakdowns of their aligned and non-aligned turnover, capex and opex.

Scope of Taxonomy-eligible activities

Taxonomy-eligible | Taxonomy non-eligible

3.14 Manufacture of chemicals **3.17** Manufacture of plastics	Associates	Manufacturing	Non-eligible products	Trading	
4.1 Electricity from solar **4.3** Electricity from wind	Associates	Power generation	Trading	B2B/B2C solutions	
7.6 Installation of renewable energy technologies	B2C solutions				
3.10 Manufacture of hydrogen **4.13** Manufacture of biogas and biofuels	Associates	Feasibility	Manufacturing	Trading	
1.4 Conservation forestry	Projects	Non-eligible NBS projects	Trading		
5.11 Transport of CO2 **5.12** Storage of CO2	Feasibility	Transport and storage			
6.15 Infrastructure enabling low-carbon road transport **7.4** Installation of EV charging in buildings and parking spaces	Retail power	Infrastructure	B2B/B2C solutions		

NBS = Nature-Based Solutions B2B = Business-to-Business B2C = Business-to-Consumer

Our EU Taxonomy eligibility

EU Taxonomy eligibility 2021

	$ million, except where indicated		
	Turnover	Capex	Opex
Eligible	14,984	4,548	820
Non-Eligible	246,520	20,845	4,479
Total	261,504	25,393	5,299
Eligible % of total	6%	18%	15%
Non-eligible % of total	94%	82%	85%

In 2021, Shell's Taxonomy-eligible turnover was $15 billion, capex was $4.5 billion, and opex was $0.8 billion. Chemicals and renewable power contributed the largest share of eligible activity, followed by biofuels and low-carbon transport. Our fossil fuel businesses are currently non-eligible under the regulation.

In addition, Shell engages in low-carbon activities that are outside the scope of the Taxonomy and therefore not included in our reporting. For example, our interests in equity accounted joint ventures and associates are out of scope, which has the effect of understating our participation in businesses such as renewable power and biofuels. The Taxonomy's definition of opex excludes early-stage spending on activities such as hydrogen and CCS, where we incur significant feasibility expenses prior to a final investment decision. It also excludes our purchases of low-carbon energy and investments in Nature-Based Solutions.

We believe the Taxonomy could be improved by allowing greater recognition of the role of integrated value chains in enabling decarbonisation at a sector level. For example, our renewable power business develops low-carbon solutions for business and residential customers by leveraging our portfolio of renewable generation, trading and retail assets. But under current rules, only the generation component is eligible. Similarly, our investments in sustainable aviation fuel rely on refineries to host biofuels facilities, distribution networks, access to airports and other assets. Presently, only the biofuels manufacturing activity is eligible.

The Taxonomy recognises activities and environmental performance levels consistent with the EU's environmental goals. According to the European Commission, early studies suggest many companies will have low levels of Taxonomy eligibility and alignment in the initial years of reporting. As a provider of energy and chemical products to customers who are also transitioning to a low-carbon future, Shell expects its Taxonomy-eligible activities to evolve in line with the sectors we serve.

The EU has stated that the Taxonomy will develop over time. The fact that an activity is not recognised does not necessarily mean that it is not sustainable. In addition, not all activities with the potential to make a substantial contribution to the environmental objectives are yet included.

Accounting policies

The Taxonomy is still evolving and remains subject to interpretation in some areas. The EU has indicated that further guidance will be issued on the application of the reporting requirement. Shell has consulted externally in developing our reporting framework and will update our approach as appropriate.

For 2021, Shell's reporting method for the Taxonomy follows a systematic process to identify economic activities in scope for reporting and calculate eligible turnover, capex and opex.

Shell has assessed its business against the economic activities qualifying for the climate mitigation and climate adaptation objectives. Activities are treated as in scope for reporting if they correspond to products or services offered by Shell. For 2021, this resulted in a total of 12 activities, all of which address the climate mitigation objective.

Taxonomy eligibility is expressed as a share of revenue, capex and opex. The scope of each of these measures is defined by the regulation, with the eligible part consisting of amounts derived from products or services associated with Taxonomy-eligible activities. The reporting scope covers Shell's global business, not just activities in Europe.

The turnover measure comprises the Revenue line from the Consolidated Statement of Income.

The capex measure comprises the Additions line from Note 8 – Intangible Assets and the Additions line from Note 9 – Property, Plant and Equipment to the Consolidated Financial Statements. As the treatment of goodwill under the Taxonomy is uncertain, we exclude it from the capex measure. This measure is reconciled as follows.

EU Taxonomy capex

	$ million
	2021
Additions to property, plant and equipment	21,719
Additions to intangible assets	5,220
Less: Goodwill	1,546
Total EU Taxonomy capex	**25,393**

Under the Taxonomy, opex is defined as costs associated with maintenance and repair, research and development, and short-term leases. This results in a total opex figure of $5.3 billion. The limited scope of the Taxonomy's opex measure differs from Shell's definition of operating expenses, and does not allow us to recognise all of our spending on otherwise eligible activities. This measure is reconciled as follows.

EU Taxonomy opex

	$ million
	2021
Production and manufacturing expenses	23,822
Selling, distribution and administrative expenses	11,328
Research and development	815
Total operating expenses	35,964
Less: Non-maintenance expenses	19,981
Less: Selling, distribution and administrative expenses	11,328
Add: Expenses relating to short-term leases	644
Total EU Taxonomy opex	**5,299**

SUPPLEMENTARY INFORMATION – EU TAXONOMY DISCLOSURE continued

Taxonomy eligibility is calculated on an activity-by-activity basis. Because the activity boundaries defined in the regulation differ from our existing value chains, certain adjustments are necessary to calculate the allowed figures. For example, we exclude sales of third-party products, as well as trading and retailing as discrete activities. These are significant for Shell's integrated business model but are not eligible under the Taxonomy. Although intra-group sales are out of scope, sales to our trading and marketing business are used in certain circumstances to calculate the revenue attributable to Taxonomy-eligible parts of the value chain.

When a reporting entity contains eligible and non-eligible activity, an allocation method is applied so that only the eligible part is counted. A reconciliation has been made to total revenue, capex and opex to avoid double counting.

Data for Taxonomy-eligible turnover, capex and opex are calculated in accordance with the requirements of the EU Taxonomy Regulation. Reporting on this basis differs from that applied for financial reporting purposes in the "Consolidated Financial Statements" on pages 228-283 and elsewhere in this Report.

In addition to the required information provided in this section, Shell makes an additional disclosure in the table below to provide further insight into our Taxonomy-eligible activities. The amounts shown represent the aggregated total for the activities listed in each group.

EU Taxonomy-eligible activities 2021

$ million

No	Activity Description	Turnover	Capex	Opex	Notes
3.14 3.17	Manufacture of organic basic chemicals Manufacture of plastics in primary form	14,672	3,854	715	[A], [B], [C], [D]
4.1 4.3 7.6	Electricity generation using solar photovoltaic energy Electricity generation from wind power Installation, maintenance and repair of renewable energy technologies	228	288	9	[A], [B], [C], [E], [F], [G]
3.10 4.13	Manufacture of hydrogen Manufacture of biogas and biofuels for use in transport and of bioliquids	0	284	82	[A], [B], [C], [E]
1.4 5.11 5.12	Conservation forestry Transport of CO_2 Underground permanent geological storage of CO_2	13	4	8	[A], [B], [H], [I]
6.15 7.4	Infrastructure enabling low-carbon road transport and public transport Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	71	118	7	[A], [F]
	Total	**14,984**	**4,548**	**820**	

[A] Excludes interests in equity-accounted associates.
[B] Excludes trading activity.
[C] Excludes sales of third-party products.
[D] Includes only Taxonomy-eligible organic basic chemical products.
[E] Excludes feasibility expenses incurred prior to final investment decision.
[F] Excludes B2B/B2C electricity retailing.
[G] Excludes purchases of low-carbon power.
[H] Includes only Nature-Based Solutions projects that meet the criteria for conservation forestry and generate capital assets.
[I] For integrated CCS projects where it not possible to distinguish carbon transport and storage, the "Storage of CO_2" activity is used.

PARENT COMPANY FINANCIAL STATEMENTS

The Parent Company Financial Statements have not been audited in accordance with the standards of the Public Company Accounting Oversight Board (United States).

306 Statement of Income
306 Statement of Comprehensive Income
306 Balance Sheet
307 Statement of Changes in Equity
307 Statement of Cash Flows
308 Notes to the Parent Company Financial Statements
308 Note 1 Basis of preparation
308 Note 2 Significant accounting policies
309 Note 3 Interest and other income/expense
309 Note 4 Investments in subsidiaries
309 Note 5 Accounts payable and accrued liabilities
310 Note 6 Taxation
310 Note 7 Financial instruments
311 Note 8 Share capital
312 Note 9 Other reserves
313 Note 10 Dividends
313 Note 11 Legal proceedings and other contingencies
313 Note 12 Directors and Senior Management
313 Note 13 Related parties
313 Note 14 Auditor's remuneration
313 Note 15 Post-balance sheet events

PARENT COMPANY FINANCIAL STATEMENTS continued

STATEMENT OF INCOME

$ million

	Notes	2021	2020
Dividend income		19,098	8,481
Interest and other income	3	3	11
Administrative expenses		(70)	(58)
Interest and other expense	3	(1)	(1)
Income before taxation		**19,030**	**8,433**
Taxation credit	6	8	8
Income for the period		**19,038**	**8,441**

STATEMENT OF COMPREHENSIVE INCOME

$ million

	2021	2020
Income for the period	19,038	8,441
Comprehensive income for the period	**19,038**	**8,441**

BALANCE SHEET

$ million

	Notes	Dec 31, 2021	Dec 31, 2020
Assets			
Non-current assets			
Investments in subsidiaries	4	256,953	256,663
		256,953	**256,663**
Current assets			
Amounts due from subsidiaries	13	11,522	1,488
Cash and cash equivalents		–	1
		11,522	**1,489**
Total assets		**268,475**	**258,152**
Liabilities			
Current liabilities			
Accounts payable and accrued liabilities	5	1,868	1,250
Total liabilities		**1,868**	**1,250**
Equity			
Share capital	8	641	651
Other reserves	9	235,488	235,419
Retained earnings		30,478	20,832
Total equity		**266,607**	**256,902**
Total liabilities and equity		**268,475**	**258,152**

Signed on behalf of the Board

/s/ Jessica Uhl

JESSICA UHL
Chief Financial Officer
March 9, 2022

STATEMENT OF CHANGES IN EQUITY

$ million

	Notes	Share capital	Other reserves	Retained earnings	Total equity
At January 1, 2021		**651**	**235,419**	**20,832**	**256,902**
Comprehensive income for the period		–	–	19,038	19,038
Dividends	10	–	–	(6,321)	(6,321)
Repurchases of shares [A]	8	(10)	10	(3,509)	(3,509)
Share-based compensation	9	–	59	438	497
At December 31, 2021		**641**	**235,488**	**30,478**	**266,607**
At January 1, 2020		**657**	**235,561**	**20,529**	**256,747**
Comprehensive income for the period		–	–	8,441	8,441
Dividends	10	–	–	(7,270)	(7,270)
Repurchases of shares	8	(6)	6	(1,214)	(1,214)
Share-based compensation	9	–	(148)	346	198
At December 31, 2020		**651**	**235,419**	**20,832**	**256,902**

[A] Includes shares committed to repurchase under an irrevocable contract and repurchases subject to settlement at the end of the year (see Note 8).

STATEMENT OF CASH FLOWS

$ million

	Notes	2021	2020
Income before taxation for the period		19,030	8,433
Adjustment for:			
Dividend income		(19,098)	(8,481)
Interest income		–	(11)
Interest expense		1	–
Share-based compensation		22	25
(Increase)/decrease in net working capital		(10,094)	501
Cash flow from operating activities		**(10,139)**	**467**
Dividends received		19,098	8,481
Interest received		–	11
Share-based compensation		184	164
Cash flow from investing activities		**19,282**	**8,656**
Cash dividends paid [A]	10	(6,253)	(7,424)
Shares repurchased	8	(2,890)	(1,702)
Interest and other expenses paid		(1)	–
Cash flow from financing activities		**(9,144)**	**(9,126)**
Change in cash and cash equivalents		(1)	(3)
Cash and cash equivalents at beginning of the year		1	4
Cash and cash equivalents at end of the year		**–**	**1**

[A] Cash dividends paid represents the payment of net dividends (after deduction of withholding taxes where applicable) and payment of withholding taxes on dividends paid in the previous quarter.

NOTES TO THE PARENT COMPANY FINANCIAL STATEMENTS

1 BASIS OF PREPARATION

The Financial Statements of Shell plc (formerly Royal Dutch Shell plc) (the "Company") have been prepared in accordance with international accounting standards in conformity with the requirements of the UK Companies Act 2006 (the "Act"), and therefore in accordance with UK-adopted international accounting standards. As applied to the Company, there are no material differences from International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB); therefore, the Financial Statements have been prepared in accordance with IFRS as issued by the IASB.

As described in the accounting policies in Note 2, the Financial Statements have been prepared under the historical cost convention except for certain items measured at fair value. Those accounting policies have been applied consistently in all periods.

The preparation of financial statements in conformity with IFRS requires the use of certain accounting estimates. It also requires management to exercise its judgement in the process of applying the Company's accounting policies. Actual results may differ from those estimates.

The financial results of the Company are included in the Consolidated Financial Statements on pages 228-283. The financial results of the Company incorporate the results of the Dividend Access Trust (the "Trust"), the financial statements of which are presented on pages 316-319.

The Company's principal activity is being the parent company for Shell, as described in Note 1 to the Consolidated Financial Statements (see page 233).

On December 10, 2021, the shareholders of the Company supported the resolution to amend the Company's Articles of Association to enable the simplification of the Company. The simplification entailed the assimilation of the Company's shares into a single line, the alignment of the Company's tax residence with its country of incorporation in the UK and granting the Board the power to change the Company's name. On December 20, 2021, the Board decided to proceed with the proposal. On December 31, 2021, the first Board meeting of the Company took place in the UK, on January 21, 2022, the Company changed its name from Royal Dutch Shell plc to Shell plc and on January 29, 2022, the Company's shares were assimilated into a single line of shares (see Note 15).

2 SIGNIFICANT ACCOUNTING POLICIES

The Company's accounting policies follow those of Shell as set out in Note 2 to the Consolidated Financial Statements on pages 233-241. The following are Company-specific policies.

Presentation and functional currency

The Company's presentation and functional currency is US dollars (dollars).

Investments

Investments in subsidiaries are stated at cost, net of any impairment. Investments are tested for impairment whenever events or changes in circumstances indicate that the carrying amounts for those investments may not be recoverable. For the purposes of determining whether impairment of investments in subsidiaries has occurred, and the extent of any impairment loss or its reversal, management performs an assessment of value in use or fair value less costs of disposal. Management's conclusion may be determined using one or both of these methodologies as appropriate.

The original cost of the Company's investment in Royal Dutch Petroleum Company (Royal Dutch) was based on the fair value of the shares transferred to the Company by the former shareholders of Royal Dutch in exchange for A shares in the Company during the public exchange offer in 2005. The original cost of the Company's investment in The "Shell" Transport and Trading Company p.l.c., now The Shell Transport and Trading Company Limited (Shell Transport), was the fair value of the shares held by the former shareholders of The "Shell" Transport and Trading Company p.l.c., transferred in consideration for the issuance of B shares as part of the Scheme of Arrangement in 2005. The Company's investments in Royal Dutch and Shell Transport subsequently became an investment in Shell Petroleum N.V. (Shell Petroleum); this change had no impact on the cost of investments in subsidiaries. On February 15, 2016, the Company acquired all the voting rights in BG Group plc via the issuance of shares and cash payments of a total fair value of $53,086 million. In September 2016, the Company's shares in BG Group Limited (BG), formerly BG Group plc, were exchanged for an increased investment in Shell Petroleum. This change had no impact on the cost of investment in subsidiaries.

Dividend income

Dividends are recognised on a paid basis unless the dividend has been confirmed by a general meeting of Shell Petroleum, in which case income is recognised on the date at which receipt is deemed virtually certain.

Share-based compensation plans

The fair value of share-based compensation for equity-settled plans granted to employees of subsidiaries under the Company's plans is recognised as an investment in subsidiaries from the date of grant over the vesting period with a corresponding increase in equity.

In the year of vesting of a plan, the costs for the actual deliveries are charged to the relevant employing subsidiaries. This is recognised as a realisation of the investment originally booked. If the actual vesting costs are higher than the cumulatively recognised share-based compensation charge, the difference is recognised in income.

See Note 22 to the Consolidated Financial Statements (see page 274) for information on the Company's principal plan.

Taxation

The Company was tax-resident in the Netherlands up to December 31, 2021. For the assessment of corporate income tax in the Netherlands, the Company and certain subsidiaries form a fiscal unit. The recognition and derecognition of deferred tax assets and/or liabilities, as applicable, may be done either by the Company or by any of its subsidiary members. Any current tax receivable or payable (and deferred tax asset or liability) recognised by the Company for the fiscal unit as a whole is settled between the Company and other members of the fiscal unit at the balance sheet date. Balances not settled with the Company at the balance sheet date are recognised in the subsidiary member's financial statements and, to the extent they are material, are disclosed in the notes to the Company's financial statements.

The Company's tax charge or credit recognised in the income statement is calculated at the statutory tax rate prevailing in the Netherlands for current tax and statutory tax rate substantively enacted in the Netherlands for deferred tax.

The alignment of the Company's tax residence with its country of incorporation in the UK (see Note 1) resulted in recognition in 2021 of a taxable deemed disposal gain fully offset by taxable losses in the Netherlands.

3 INTEREST AND OTHER INCOME/EXPENSE

$ million

	2021	2020
Interest and other income:		
Interest income	–	11
Foreign exchange gains	3	
Total	3	11
Interest and other expenses:		
Interest expense	(1)	–
Foreign exchange losses	–	(1)
Total	(1)	(1)

4 INVESTMENTS IN SUBSIDIARIES

$ million

	2021	2020
At January 1	256,663	256,654
Share-based compensation	517	332
Recovery of vested share-based compensation	(227)	(323)
At December 31	256,953	256,663

As at December 31, 2021, the market capitalisation of Royal Dutch Shell plc, now Shell plc (the "Company") and its subsidiaries (collectively referred to as the "Group") was less than the Company's carrying value of its investment in the Group. Management has therefore performed an impairment test to determine whether recoverable value exceeded the cost of investment recognised.

Following the broader recovery in equity markets during the year, recoverable value was assessed by reference to fair value less costs of disposal. This was calculated by comparing the cost of investment with the Group's market capitalisation, adjusted to reflect a control premium. In determining the premium and costs of disposal, available data from recent market transactions in comparable industries, conducted at arm's length for similar assets, have been taken into account.

This resulted in a recoverable value exceeding the cost of investment recognised and is consistent with management's expectation of the future recoverability of the Company's investment in the Group. As fair value less costs of disposal exceeded cost, no separate value in use calculation was undertaken.

The recoverability of the Company's investment in the Group may be influenced by the risk factors of the Shell Group, including commodity prices, market supply and demand, expected production volumes and developments related to climate change and the energy transition (see Note 4 to the Consolidated Financial Statements on page 242).

5 ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

$ million

	Dec 31, 2021		Dec 31, 2020	
	Current	Non-current	Current	Non-current
Amounts due to subsidiaries (see Note 13)	836	–	874	–
Accruals and other liabilities	901	–	44	–
Withholding tax payable	121	–	322	–
Unclaimed dividends	10	–	10	–
Total	1,868	–	1,250	–

Accruals and other liabilities at December 31, 2021, principally comprise commitments for share repurchases undertaken on the Company's behalf under irrevocable, non-discretionary arrangements of $838 million (2020: nil).

NOTES TO THE PARENT COMPANY FINANCIAL STATEMENTS continued

6 TAXATION

	$ million	
	2021	2020
Current tax:		
Credit in respect of current period	(10)	–
Total	(10)	–
Deferred tax:		
Relating to the origination and reversal of tax losses and credits	2	(8)
Relating to changes in tax rates and legislation	–	–
Total	2	(8)
Taxation credit	(8)	(8)

A tax credit of $8 million has been recognised in the Company's accounts relating to the current year. In 2021, deferred tax assets of $124 million (representing unused tax losses and tax credits related to the fiscal unit) have not been re-recognised in the Company, but in the income statement of Shell Petroleum, a subsidiary of the Company forming part of the same fiscal unit.

Reconciliation of applicable tax charge at statutory tax rate to taxation charge

	$ million	
	2021	2020
Income before taxation	19,030	8,433
Applicable tax charge at the statutory tax rate of 25.0% (2020: 25.0%)	4,758	2,108
Derecognition of deferred tax assets	–	–
Tax effects of:		
Income not subject to tax at statutory rates	(4,774)	(2,120)
Expenses not deductible for tax purposes	20	4
Other	(12)	–
Taxation credit	(8)	(8)

Taxes payable are reported within accounts payable and accrued liabilities (see Note 5).

Deferred tax assets

	$ million	
	2021	2020
At January 1	–	–
Recognised in income	(2)	8
Other movements	2	(8)
At December 31	–	–

As at December 31, 2021, no deferred tax assets have been recognised (2020: nil). The Dutch Fiscal Unit has unrecognised unused tax losses amounting to $2,905 million (2020: $3,776 million) and unrecognised credits carried forward amounted to $356 million (2020: $349 million). Unused tax losses are available for relief against future taxable profits indefinitely, subject to certain restrictions, and to the extent not yet expired as at January 1, 2022. Following the alignment of the Company's tax residence with its country of incorporation in the UK, the Company's losses, or a portion thereof, may be transferred to other group companies remaining in the Netherlands. These losses will remain unrecognised.

7 FINANCIAL INSTRUMENTS

Financial assets and liabilities measured at amortised cost in the Company's Balance Sheet comprise amounts due from subsidiaries (see Note 13) and certain amounts reported within accounts payable and accrued liabilities (see Note 5). The fair value of financial assets and liabilities at December 31, 2021, and December 31, 2020, approximates their carrying amount.

Information on financial risk management is presented in Note 20 to the Consolidated Financial Statements (see pages 268-273). Foreign currency derivatives are used by the Company to manage foreign exchange risk, which arises when certain transactions are denominated in a currency that is not the Company's functional currency. No derivative financial instruments were held at December 31, 2021, or December 31, 2020.

8 SHARE CAPITAL

Issued and fully paid ordinary shares of €0.07 each [A]

	Number of shares		Nominal value ($ million)		
	A	B	A	B	Total
At January 1, 2021	4,101,239,499	3,706,183,836	345	306	651
Repurchases of shares	–	(123,290,882)	–	(10)	(10)
At December 31, 2021	4,101,239,499	3,582,892,954	345	296	641
At January 1, 2020	4,151,787,517	3,729,407,107	349	308	657
Repurchases of shares	(50,548,018)	(23,223,271)	(4)	(2)	(6)
At December 31, 2020	4,101,239,499	3,706,183,836	345	306	651

[A] Share capital at December 31, 2021, and 2020, also included 50,000 issued and fully paid sterling deferred shares of £1 each.

At the Company's Annual General Meeting (AGM) on May 18, 2021, the Board was authorised to allot ordinary shares in the Company, and to grant rights to subscribe for or to convert any security into ordinary shares in the Company, up to an aggregate nominal amount of €182.1 million (representing 2,602 million ordinary shares of €0.07 each) and to list such shares or rights on any stock exchange. This authority expires at the earlier of the close of business on August 18, 2022, and the end of the AGM to be held in 2022, unless previously renewed, revoked or varied by the Company in a general meeting.

At the May 18, 2021, AGM, shareholders granted the Company the authority to repurchase up to 780 million ordinary shares (excluding any treasury shares), renewing the authority granted by the shareholders at previous AGMs. The authority will expire at the earlier of the close of business on August 18, 2022, and the end of the AGM of the Company to be held in 2022. Ordinary shares purchased by the Company pursuant to this authority will either be cancelled or held in treasury. Treasury shares are shares in the Company which are owned by the Company itself. The minimum price, exclusive of expenses, which may be paid for an ordinary share is €0.07. The maximum price, exclusive of expenses, which may be paid for an ordinary share is the higher of: (i) an amount equal to 5% above the average market value for an ordinary share for the five business days immediately preceding the date of the purchase; and (ii) the higher of the price of the last independent trade and the highest current independent bid on the trading venues where the purchase is carried out.

B shares repurchased in 2021 under the Company's share buyback programme were all cancelled except for repurchases on December 30 and December 31 which were cancelled in January 2022. No A Shares were repurchased.

B shares ranked equally in all respects with A shares except for the dividend access mechanism described below. The Company, Shell Transport and BG can procure the termination of the dividend access mechanism at any time.

The sterling deferred shares are redeemable only at the discretion of the Company for £1 each and carry no voting rights. There are no further rights to participate in profits or assets, including the right to receive dividends. Upon winding-up or liquidation, the shares carry a right to repayment of paid-up nominal value, ranking ahead of A and B shares.

For information on the number of shares in the Company held by Shell employee share ownership trusts and trust-like entities to meet delivery commitments under employee share plans, see Note 22 to the Consolidated Financial Statements (see pages 274-275).

Dividend access mechanism for B shares

General

During the period, dividends paid on A shares had a Dutch source for tax purposes and were subject to Dutch withholding tax. Dividends paid on B shares were settled through the dividend access mechanism, with a UK source for UK and Dutch tax purposes. There was no Dutch withholding tax on such dividends.

Subsequent to the balance sheet date, the Company completed the assimilation of A and B shares into a single class of share, following a change in tax residence to the UK with effect from December 31, 2021. As a result, it is anticipated that future dividend payments will be settled directly by the Company, with the use of the dividend access mechanism restricted to the settlement of amounts unclaimed in respect of dividends declared on Class B shares prior to assimilation.

Description of dividend access mechanism prior to the assimilation of A and B shares

Shell Transport and BG have each issued a dividend access share to Computershare Trustees (Jersey) Limited as Trustee. Pursuant to a declaration of trust, the Trustee arranges for disbursement of dividends to holders of B shares when claimed. Interest and other income earned on unclaimed dividends will be for the account of Shell Transport and BG and any dividends which are unclaimed after 12 years will revert to Shell Transport and BG once forfeited. Holders of B shares did not have any interest in either dividend access share and did not have any rights against Shell Transport and BG as issuers of the dividend access shares. The only assets held on trust for the benefit of the holders of B shares were dividends paid to the Trustee in respect of the dividend access shares.

The declaration and payment of dividends on the dividend access shares required board action by Shell Transport and BG (as applicable) and was subject to any applicable limitations in law or in the Shell Transport or BG (as appropriate) articles of association in effect. In no event was the aggregate amount of the dividend paid by Shell Transport and BG under the dividend access mechanism for a particular period to exceed the aggregate of the dividend announced by the Board of the Company on B shares in respect of the same period (after giving effect to currency conversions).

NOTES TO THE PARENT COMPANY FINANCIAL STATEMENTS continued

8 SHARE CAPITAL continued

In particular, under their respective articles of association, Shell Transport and BG were each only able to pay a dividend on their respective dividend access shares which represented a proportional amount of the aggregate of any dividend announced by the Company on the B shares in respect of the relevant period, where such proportions were calculated by reference to, in the case of Shell Transport, the number of B shares in existence prior to completion of the Company's acquisition of BG and, in the case of BG, the number of B shares issued as part of the acquisition, in each case as against the total number of B shares in issue immediately following completion of the acquisition of BG. Subsequent to the balance sheet date, it is not expected that any further dividends will be declared in respect of the dividend access shares.

Operation of the dividend access mechanism prior to the assimilation of A and B shares

If, in connection with the announcement of a dividend by the Company on B shares, the Board of Shell Transport and/or the Board of BG elected to declare and pay a dividend on their respective dividend access shares to the Trustee, the holders of B shares were beneficially entitled to receive their share of those dividends pursuant to the declaration of trust (and arrangements were made to ensure that the dividend was paid in the same currency in which they would have received a dividend from the Company).

If any amount was paid by Shell Transport or BG by way of a dividend on the dividend access shares and paid by the Trustee to any holder of B shares, the dividend which the Company would otherwise have paid on B shares was reduced by an amount equal to the amount paid to such holders of B shares by the Trustee.

The Company would have had a full and unconditional obligation, in the event that the Trustee did not pay an amount to holders of B shares on a cash dividend payment date (even if that amount had been paid to the Trustee), to pay immediately the dividend announced on B shares. The right of holders of B shares to receive distributions from the Trustee would have been reduced by an amount equal to the amount of any payment actually made by the Company on account of any dividend on B shares.

If for any reason no dividend was paid on the dividend access shares, holders of B shares would only have received dividends from the Company directly.

Operation of the dividend access mechanism subsequent to the assimilation of A and B shares

As a result of the assimilation of each A share and each B share into one ordinary share of the Company the dividend access mechanism will no longer operate to pay dividends to the holders of B shares in the future but amounts paid through the dividend access mechanism will be limited to the settlement of amounts unclaimed in respect of dividends declared prior to assimilation of Class B shares.

9 OTHER RESERVES

$ million

	Merger reserve	Share premium reserve	Capital redemption reserve	Share plan reserve	Total
At January 1, 2021	234,231	154	129	905	235,419
Repurchases of shares	–	–	10	–	10
Share-based compensation	–	–	–	59	59
At December 31, 2021	234,231	154	139	964	235,488
At January 1, 2020	234,231	154	123	1,053	235,561
Repurchases of shares	–	–	6	–	6
Share-based compensation	–	–	–	(148)	(148)
At December 31, 2020	234,231	154	129	905	235,419

The merger reserve was established as a consequence of the Company becoming the single parent company of Royal Dutch and Shell Transport and represented the difference between the cost of the investment in those companies and the nominal value of shares issued in exchange for those investments as required by the prevailing legislation at that time, section 131 of the Companies Act 1985. On February 15, 2016, the Company acquired all shares in BG Group plc by means of a Scheme of Arrangement under Part 26 of the Act, via the issuance of 218.7 million A shares and 1,305.1 million B shares and cash payments. This resulted in an increase in the merger reserve, representing the difference between the fair value and the nominal value of the shares issued by the Company.

On January 6, 2006, loan notes were converted into 4,827,974 A shares. The difference between the carrying value of the loan notes and the nominal value of the new shares issued was credited to the share premium reserve. The capital redemption reserve was established in connection with repurchases of shares of the Company. The share plan reserve is in respect of equity-settled share-based compensation plans (see Note 22 to the Consolidated Financial Statements) and movement in share-based compensation for the year is the net of the charge to equity and the release as a result of vested awards.

10 DIVIDENDS

See Note 24 to the Consolidated Financial Statements (see page 277).

11 LEGAL PROCEEDINGS AND OTHER CONTINGENCIES

See Note 26 to the Consolidated Financial Statements (see pages 277-279).

12 DIRECTORS AND SENIOR MANAGEMENT

See Note 28 to the Consolidated Financial Statements (see page 280) for the remuneration of Directors of the Company. In 2021, the Company recognised $23 million (2020: $25 million) in administrative expenses for the compensation of Directors and Senior Management.

13 RELATED PARTIES

Information about the Company's subsidiaries, and whether these are held directly or indirectly, and other related undertakings (all of which are held indirectly), at December 31, 2021, is set out in 'Appendix 1: Significant Subsidiaries and Other Related Undertakings'.

$ million

	Amounts due from subsidiaries		Amounts due to subsidiaries (see Note 5)	
	2021	2020	2021	2020
Shell Petroleum	–	–	836	855
Shell Treasury Centre Limited	11,511	1,484	–	14
Other	11	4	–	5
Total	11,522	1,488	836	874

The amount due from Shell Treasury Centre Limited (STCL) comprises call deposits and overdrafts in dollars, sterling and euros. Interest is calculated using arm's-length benchmark 3-day median quotes on dollar (2020: USD LIBOR), sterling (2020: GBP LIBOR less 0.03%) and euro (2020: Euro Overnight Index Average) balances. Net interest income in 2021 from STCL was $0 million (2020: $11 million).

Other transactions and balances

The Company periodically enters into forward and spot foreign currency contracts with Treasury companies, which are subsidiaries. There were no open foreign currency contracts at December 31, 2021, or December 31, 2020.

The Company settles general and administrative expenses of the Trust, including the auditor's remuneration.

The Company has guaranteed contractual payments totalling $54,653 million at December 31, 2021 (December 31, 2020: $63,146 million), and related interest, in respect of listed debt issued by Shell International Finance B.V. The fair value of this guarantee was considered to be immaterial at initial recognition and since the likelihood of default is considered remote no subsequent expected credit losses have been recognised.

14 AUDITOR'S REMUNERATION

See Note 29 to the Consolidated Financial Statements (see pages 281).

15 POST-BALANCE SHEET EVENTS

On January 29, 2022, one line of shares was established through assimilation of A shares and B shares into a single line of ordinary shares of the Company. This assimilation had no impact on voting rights or dividend entitlements. Dutch withholding tax, applied previously on dividends on A shares, no longer applies on dividends paid on the ordinary shares following assimilation.

On February 3, 2022, Shell announced the commencement of $8.5 billion of share buybacks for the first half of 2022. This comprises the remaining $5.5 billion of Permian divestment proceeds and $3.0 billion as part of the Company's capital allocation framework, which includes shareholder distributions in the range of 20-30% of cash flow from operations. In the first tranche of this buyback programme, the Company has entered into an irrevocable, non-discretionary arrangement with a broker to enable the purchase of ordinary shares for a period up to and including May 4, 2022. The aggregate maximum consideration for the purchase of ordinary shares under the initial programme is $4.0 billion. All shares repurchased as part of this arrangement will be cancelled.

INDEPENDENT AUDITOR'S REPORT TO COMPUTERSHARE TRUSTEES (JERSEY) LIMITED AS TRUSTEE OF THE ROYAL DUTCH SHELL DIVIDEND ACCESS TRUST AND THE BOARD OF DIRECTORS AND SHAREHOLDERS OF SHELL PLC

TO COMPUTERSHARE TRUSTEES (JERSEY) LIMITED AS TRUSTEE OF THE ROYAL DUTCH SHELL DIVIDEND ACCESS TRUST AND THE BOARD OF DIRECTORS AND SHAREHOLDERS OF SHELL PLC

Opinion on the Financial Statements

We have audited the non-statutory financial statements of the Royal Dutch Shell Dividend Access Trust (the Financial Statements) for the year ended December 31, 2021 which comprise the Statement of Income, the Statement of Comprehensive Income, the Balance Sheet, the Statement of Changes in Equity, the Statement of Cash Flows and the related notes 1 to 9, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

In our opinion the Financial Statements give a true and fair view of the Royal Dutch Shell Dividend Access Trust's (the Trust) affairs as at December 31, 2021 and of its income for the year then ended; and have been properly prepared in accordance with IFRS as issued by the IASB.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the "Auditor's responsibilities for the audit of the financial statements" section of our report below. We are independent of the Trust in accordance with the ethical requirements that are relevant to our audit of the Financial Statements in the UK, including the Financial Reporting Council's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a suitable basis for our opinion.

Conclusions relating to going concern

In auditing the financial statements, we have concluded that the Trustee of Royal Dutch Shell Dividend Access Trust's (the Trustee) use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the Trust's ability to continue as a going concern for a period until 31 March 2023 (the going concern period).

Our responsibilities and the responsibilities of the Trustee with respect to going concern are described in the relevant sections of this report. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Trust's ability to continue as a going concern.

Other information

The other information comprises the information included in the annual report other than the Financial Statements and our auditor's report thereon. The Board of Directors of Shell plc (the Directors) are responsible for the other information contained within the annual report.

Our opinion on the Financial Statements does not cover the other information and, except to the extent otherwise stated explicitly within this report, we do not express any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Financial Statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the Financial Statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of the other information, we are required to report that fact.

We have nothing to report in this regard.

Responsibilities of the Trustee and the Board of Directors of Shell plc

The Trustee and the Board of Directors of Shell plc are responsible for the preparation of the Financial Statements and for being satisfied that they give a true and fair view, and for such internal control as the Trustee and the Board of Directors of Shell plc determine is necessary to enable the preparation of Financial Statements that are free from material misstatement, whether due to fraud or error.

In preparing the Financial Statements, the Trustee and the Board of Directors of Shell plc are responsible for assessing the Trust's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors of Shell plc either intends to liquidate the Trust or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the Financial Statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Financial Statements.

Explanation as to what extent the audit was considered capable of detecting irregularities, including fraud

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect irregularities, including fraud. The risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below. However, the primary responsibility for the prevention and detection of fraud rests with both the Trustee and those charged with governance of Shell plc and its management.

- We obtained an understanding of the legal and regulatory frameworks that are applicable to the Trust and determined that the most significant are those that relate to the reporting framework (IFRS and the US Securities Exchange Act of 1934).
- We understood how the Trust is complying with those frameworks by making enquiries of the Trustee, Shell plc management and those responsible for legal and compliance procedures over the Trust. We corroborated our enquiries through our review of Resolutions of the Trust Committee of the Trustee, papers provided to the Shell plc Audit Committee and correspondence received from regulatory bodies and noted that there was no contradictory evidence.
- We assessed the susceptibility of the Trust's financial statements to material misstatement, including how fraud might occur by regular meetings with the Trustee, Shell plc management and those responsible for legal and compliance procedures over the Trust to understand where it was considered there was susceptibility to fraud. We considered the programmes and design, implementation and maintenance of internal controls that the Trustee and Shell plc have established to prevent and detect fraud over the Trust and how the Trustee, Shell plc management and those responsible for legal and compliance procedures over the Trust monitor those programmes and controls.
- Based on this understanding we designed our audit procedures to identify noncompliance with such laws and regulations. Our procedures involved review of Resolutions of the Trust Committee of the Trustee and Shell plc Audit Committee minutes to identify noncompliance with laws and regulations, journal entry testing with a focus on journals meeting our defined risk criteria based on our understanding of the Trust and enquiries of the Trustee, Shell plc management and those responsible for legal and compliance procedures over the Trust.

A further description of our responsibilities for the audit of the Financial Statements is located on the Financial Reporting Council's website at https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Use of our report

This report is made solely to the Trustee and the Board of Directors and Shareholders of Shell plc as a body, in accordance with our engagement letter. Our audit work has been undertaken so that we might state to the Trustee and the Board of Directors and Shareholders of Shell plc those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Trustee and the Board of Directors and Shareholders of Shell plc as a body, for our audit work, for this report, or for the opinions we have formed.

/s/ Mark Woodward

for and on behalf of Ernst & Young LLP
Statutory Auditor
London
March 9, 2022

ROYAL DUTCH SHELL DIVIDEND ACCESS TRUST FINANCIAL STATEMENTS

317 Statement of Income
317 Statement of Comprehensive Income
317 Balance Sheet
318 Statement of Changes in Equity
318 Statement of Cash Flows
319 Notes to the Royal Dutch Shell Dividend Access Trust Financial Statements
319 Note 1 The Trust
319 Note 2 Basis of preparation
319 Note 3 Significant accounting policies
319 Note 4 Unclaimed dividends
319 Note 5 Capital account
319 Note 6 Distributions made
319 Note 7 Related parties
319 Note 8 Auditor's remuneration
319 Note 9 Post-balance sheet events

STATEMENT OF INCOME

£ million

	2021	2020	2019
Dividend income	2,201	2,777	5,484
Income before taxation and for the period	**2,201**	**2,777**	**5,484**

STATEMENT OF COMPREHENSIVE INCOME

£ million

	2021	2020	2019
Income for the period	2,201	2,777	5,484
Comprehensive income for the period	**2,201**	**2,777**	**5,484**

BALANCE SHEET

£ million

	Notes	Dec 31, 2021	Dec 31, 2020
Assets			
Other current assets		7	7
Cash and cash equivalents		–	–
Total assets		**7**	**7**
Liabilities			
Unclaimed dividends	4	7	7
Total liabilities		**7**	**7**
Equity			
Capital account	5	–	–
Revenue account		–	–
Total equity		**–**	**–**
Total liabilities and equity		**7**	**7**

Signed on behalf of Computershare Trustees (Jersey) Limited as Trustee of the Royal Dutch Shell Dividend Access Trust

/s/ John Le Marquand

JOHN LE MARQUAND
March 9, 2022

/s/ Martin Fish

MARTIN FISH

ROYAL DUTCH SHELL DIVIDEND ACCESS TRUST FINANCIAL STATEMENTS continued

STATEMENT OF CHANGES IN EQUITY

£ million

	Notes	Capital account	Revenue account	Total equity
At January 1, 2021		–	–	–
Comprehensive income for the period		–	2,201	2,201
Distributions made	6	–	(2,201)	(2,201)
At December 31, 2021		–	–	–
At January 1, 2020		–	–	–
Comprehensive income for the period		–	2,777	2,777
Distributions made	6	–	(2,777)	(2,777)
At December 31, 2020		–	–	–
At January 1, 2019		–	–	–
Comprehensive income for the period		–	5,484	5,484
Distributions made	6	–	(5,484)	(5,484)
At December 31, 2019		–	–	–

STATEMENT OF CASH FLOWS

£ million

	2021	2020	2019
Income for the period	2,201	2,777	5,484
Adjustment for:			
Dividends received	(2,201)	(2,777)	(5,484)
Cash flow from operating activities	–	–	–
Dividends received	2,200	2,772	5,484
Cash flow from investing activities	**2,200**	**2,772**	**5,484**
Cash distributions made	(2,200)	(2,775)	(5,484)
Cash flow from financing activities	(2,200)	(2,775)	(5,484)
Change in cash and cash equivalents	–	(3)	–
Cash and cash equivalents at January 1	–	3	3
Cash and cash equivalents at December 31	**–**	**–**	**3**

NOTES TO THE ROYAL DUTCH SHELL DIVIDEND ACCESS TRUST FINANCIAL STATEMENTS

1 THE TRUST

The Royal Dutch Shell Dividend Access Trust (the "Trust") was established on May 19, 2005, by The "Shell" Transport and Trading Company, p.l.c., now The Shell Transport and Trading Company Limited (Shell Transport), and Royal Dutch Shell plc, now Shell plc (the "Company"). The Trust is governed by the applicable laws of England and Wales and is resident and domiciled in Jersey. The Trust is not subject to taxation. The Trustee of the Trust is Computershare Trustees (Jersey) Limited, registration number 92182 (the "Trustee"), 13 Castle Street, St Helier, Jersey, JE1 1ES.
The Trust was established as part of a dividend access mechanism.

Shell Transport and BG Group Limited (BG) have each issued a dividend access share to the Trustee. Following the announcement of a dividend by the Company on the B shares, Shell Transport and BG may declare a dividend on their dividend access shares. Subsequent to the balance sheet date, it is expected that no further dividends will be declared on the dividend access share (see Note 9).

The primary purposes of the Trust are to receive, on behalf of the B shareholders of the Company and in accordance with their respective holdings of B shares in the Company, any amounts paid by way of dividend on the dividend access shares and to pay such amounts to the B shareholders on the same pro rata basis. The Trust is not subject to significant market risk, credit risk or liquidity risk.

The Trust shall not endure for a period in excess of 80 years from May 19, 2005, being the date on which the Trust Deed was executed.

2 BASIS OF PREPARATION

The Financial Statements of the Trust have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

The Financial Statements have been prepared under the historical cost convention and on a going concern basis (see Note 9). The accounting policies described in Note 3 have been applied consistently in all periods presented.

The Financial Statements were approved and authorised for issue by the Trustee on March 9, 2022.

The financial results of the Trust are included in the Consolidated Financial Statements on pages 228-283 and Parent Company Financial Statements on pages 305-313.

3 SIGNIFICANT ACCOUNTING POLICIES

The Trust's accounting policies follow those of Shell as set out in Note 2 to the Consolidated Financial Statements (see pages 233-241). The following are Trust-specific policies.

Presentation and functional currency

The Trust's presentation and functional currency is sterling. The Trust's dividend income and dividends paid are principally in sterling.

Dividend income

Dividends on the dividend access shares are recognised on a paid basis unless the dividend has been confirmed by a general meeting of Shell Transport or BG, in which case income is recognised on the date on which receipt is deemed virtually certain. Dividend income includes amounts receivable from Shell Transport and BG in respect of dividends declared but unclaimed (see Note 4).

Distributions made

Amounts are recorded as distributed once a payment is made in the appropriate currency using various electronic transfer methods, or an unconditional payment obligation is established. Shell Transport or BG (as appropriate) may, each at their respective discretion, withhold any part of the funding relating to an unpayable dividend until such time as the relevant B shareholder provides accurate or complete details for payment of any such dividend.

4 UNCLAIMED DIVIDENDS

Unclaimed dividends of £7 million (2020: £7 million) include any pre-electronic transfer dividend cheque payments that have not been presented, have expired or have been returned unpresented. Dividends are also classified as unclaimed where amounts have been withheld due to incomplete or incorrect electronic payment details. Dividends which are unclaimed after 12 years will unconditionally revert to Shell Transport and BG once forfeited.

5 CAPITAL ACCOUNT

The capital account is represented by the dividend access share of 25 pence settled in the Trust by Shell Transport and the dividend access share of 10 pence settled in the Trust by BG. There have been no changes in the capital account in the current or prior year.

6 DISTRIBUTIONS MADE

Distributions are made to the B shareholders of the Company in accordance with the Trust Deed. See Note 24 to the Consolidated Financial Statements (see page 277) for information about dividends per share.

7 RELATED PARTIES

The Trust recognised dividend income of £1,437 million (2020: £1,805 million; 2019: £3,573 million) in respect of the dividend access share from Shell Transport and £764 million (2020: £972 million; 2019: £1,911 million) in respect of the dividend access share from BG. The Trust made distributions of £2,201 million (2020: £2,777 million; 2019: £5,484 million) to the B shareholders of the Company.

As at December 31, 2021, the Trust recorded amounts due from Shell Transport of £5 million and BG of £2 million relating to unclaimed dividends (see Note 4).

The Company pays the general and administrative expenses of the Trust, including the auditor's remuneration.

8 AUDITOR'S REMUNERATION

Auditor's remuneration for 2021 audit services was £33,750 (2020: £33,750; 2019: £33,750).

9 POST-BALANCE SHEET EVENTS

On January 29, 2022, one line of shares was established through assimilation of A shares and B shares into a single line of ordinary shares of the Company. This assimilation had no impact on voting rights or dividend entitlements. Dutch withholding tax, applied previously on dividends on A shares, no longer applies on dividends paid on the ordinary shares following assimilation.

In relation to the assimilation of the Company's Class A and B shares, the Trust will continue in existence for the foreseeable future to facilitate the payment of unclaimed dividend liabilities for B shareholders, until these are either claimed or forfeited in line with the terms outlined (see Note 4).

As these unclaimed dividends relate to dividends that were announced by the Company during the period the Company was still named Royal Dutch Shell plc, and it is expected that the Company will not announce any further dividends on the dividend access shares, the Trust continues to be named The Royal Dutch Shell Dividend Access Trust.

ADDITIONAL **INFORMATION**

321 Shareholder information
326 Non-GAAP measures reconciliations
331 Appendix 1: Significant Subsidiaries and Other Related Undertakings (Audited)



SHAREHOLDER INFORMATION

Shell plc (the Company) was incorporated in England and Wales on February 5, 2002, as a private company under the Companies Act 1985, as amended. On October 27, 2004, the Company was re-registered as a public company limited by shares and changed its name from Forthdeal Limited to Royal Dutch Shell plc. On January 21, 2022, the Company changed its name from Royal Dutch Shell plc to Shell plc. The Company is registered at Companies House, Cardiff, under company number 4366849. The Legal Entity Identifier (LEI) issued by the London Stock Exchange is 21380068P1DRHMJ8KU70. The business address for the Directors and Senior Management is Shell Centre, London, SE1 7NA.

On December 31, 2021, the Company became tax resident in the United Kingdom. Its primary objective is to carry on the business of a holding company. It is not directly or indirectly owned or controlled by another corporation or by any government and does not know of any arrangements that may result in a change of control of the Company.

NATURE OF TRADING MARKET

Effective from January 29, 2022, the Company has one single line of ordinary shares, each having a nominal value €0.07. All shares are listed and able to trade at Euronext Amsterdam and the London Stock Exchange. Furthermore, all shares are transferable between these two markets. This makes both these exchanges primary exchanges for the ordinary shares.

Ordinary shares are traded in registered form.

The Company's American Depositary Shares (ADSs) are listed on the New York Stock Exchange [A]. A depositary receipt is a certificate that evidences ADSs. Depositary receipts are issued, cancelled and exchanged at the office of JP Morgan Chase Bank, N.A., 383 Madison Avenue, New York, New York 10179, USA, as depositary (the Depositary), under a deposit agreement between the Company, the Depositary and the holders of ADSs. Each ADS is equivalent to two ordinary shares of Shell plc deposited under the agreement. All ordinary shares are capable of being deposited with the Depository in exchange for the corresponding amount of ADSs which may be traded at the New York Stock Exchange. This makes the New York Stock Exchange the primary exchange for the Company's ADRs. More information relating to ADSs is given on pages 316-319.

[A] At February 21, 2022, 574,568,365 ADSs were outstanding, representing 15.076% of the ordinary share capital, held by holders of record with an address in the USA. In addition to holders of ADSs, at February 21, 2022, 943,329 ordinary shares of €0.07 each were outstanding, representing 0.012% of the ordinary share capital, held by 3,052 holders of record registered with an address in the USA.

Listing information

Identifiers	Euronext Amsterdam	London Stock Exchange	NYSE
	Ordinary share	Ordinary share	ADS [*]
Market	Primary	Primary	Primary
Ticker symbol	SHELL	SHEL	SHEL
ISIN	GB00BP6MXD84	GB00BP6MXD84	US7802593050
SEDOL	BP6MXT4	BP6MXD8	BPK3CG3
CUSIP	G80827 101	G80827 101	780259 305
Index weight at 31/12/21	AEX: 12.9% (**)	FTSE: 7.39%	–

[*] Each ADS represents two ordinary shares of € 0.07 each
(**)This has taken former A shares into account. The reweight is based upon all ordinary shares and will become effective on March 21, 2022

SHARE CAPITAL

On January 29, 2022 as part of the Simplification announced on 20 December 2021, the Company's share capital was assimilated from ordinary A shares and ordinary B shares, into a single line of ordinary shares. Below we provide information on our share capital both before and after the assimilation.

Share capital as at December 31, 2021

The issued and fully paid share capital of the Company at December 31, 2021, was as follows:

	Issued and fully paid	
	Number	Nominal value
Ordinary shares of €0.07 each		
A Shares	4,101,239,499	€287,086,764.93
B Shares	3,582,892,954	€250,802,506.78
Sterling deferred shares of £1 each	50,000	£50,000

Share capital as at February 21, 2022

The issued and fully paid share capital of the Company at February 21, 2022, was as follows:

	Issued and fully paid	
	Number	Nominal value
Ordinary shares of €0.07 each	7,622,217,098	€533,555,196.86
Sterling deferred shares of £1 each	50,000	£50,000

The Directors may only allot new ordinary shares if they have authority from shareholders to do so. The Company seeks to renew this authority annually at its AGM. Under the resolution passed at the Company's 2021 AGM, the Directors were granted authority to allot ordinary shares up to an aggregate nominal amount equivalent to approximately one-third of the issued ordinary share capital of the Company (in line with the guidelines issued by institutional investors).

The following is a summary of the material terms of the Company's ordinary shares, including brief descriptions of the provisions contained in the Articles of Association (the Articles) and applicable laws of England and Wales in effect on the date of this document. This summary does not purport to include complete statements of these provisions:

- upon issuance, the ordinary shares are fully paid and free from all liens, equities, charges, encumbrances and other interest of the Company and not subject to calls of any kind;
- all ordinary shares rank equally for all dividends and distributions on ordinary share capital; and
- all ordinary shares are admitted to the Official List of the UK Financial Conduct Authority and to trading on the market for listed securities of the London Stock Exchange. Ordinary shares are also admitted to trading on Euronext Amsterdam. ADSs are listed on the New York Stock Exchange.

At December 31, 2021, trusts and trust-like entities holding shares for the benefit of employee share plans of Shell held (directly and indirectly) 25 million shares of the Company with an aggregate market value of $636 million and an aggregate nominal value of €2 million.

SIGNIFICANT SHAREHOLDINGS

The Company's ordinary shares have voting rights on all matters that are subject to shareholder approval, including the election of directors. The Company's major shareholders do not have different voting rights.

SHAREHOLDER INFORMATION

Notification of major shareholdings

The Company received two notifications pursuant to Disclosure Guidance and Transparency Rule (DTR) 5 from Norges Bank and Blackrock, Inc. during the year and up to February 21, 2022, (being a date not more than one month prior to the date of the Company's Notice of Annual General Meeting). The information provided includes the percentage of issued capital as at the date of the notifications.

Investor

	A shares		B shares		Ordinary Shares Total	
	Number	%	Number	%	Number	%
Norges Bank.[A]	2,208,342	0.03	258,338,615	3.31	393,464,731	3.34
Blackrock [B]	–	–	–	–	513,401,704	6.71

[A] The notification for Norges Bank was announced on August 6, 2021, before the assimilation of the A and B shares effected on January 29, 2022. The figures in the table above reflect the position which was announced at the time, however, these will now have now been assimilated, as shown under the "Ordinary shares" column.
[B] The notification for Blackrock was announced on February 3, 2022. The figures in the table above reflect the position which was announced at the time, which was following the assimilation of the ordinary shares.

Designation of the Netherlands as EU Home Member State for regulatory purposes

Following the exit of the UK from the EU and the end of the transition period, the Company announced that the EU Home Member State of the Company for the purposes of the EU Transparency Directive would be the Netherlands as from January 1, 2021. As a consequence, the Company files Transparency Directive and Market Abuse Regulation-related regulatory information with the Netherlands Authority for the Financial Markets (Autoriteit Financiële Markten, or AFM). Major shareholders are required to report substantial holdings in Shell to the AFM in accordance with applicable Dutch law, in addition to their ongoing disclosure obligations under the UK Disclosure Guidance and Transparency Rules (DTR).

DIVIDENDS

The following tables show the dividends on each class of share and each class of ADS for the years 2017-2021.

The Q4 2021 dividend was declared following the simplification and will be paid on Ordinary shares.

A and B shares

					$
	2021	2020	2019	2018	2017
Q1	0.17	0.16	0.47	0.47	0.47
Q2	0.24	0.16	0.47	0.47	0.47
Q3	0.24	0.17	0.47	0.47	0.47
Q4	0.24	0.17	0.47	0.47	0.47
Total announced in respect of the year	0.89	0.65	1.88	1.88	1.88

A shares [A]

					€ [B]
	2021	2020	2019	2018	2017
Q1	0.14	0.14	0.42	0.4	0.42
Q2	0.20	0.14	0.43	0.4	0.39
Q3	0.21	0.14	0.42	0.41	0.4
Q4 [C]	TBA	0.14	0.42	0.42	0.38
Total announced in respect of the year [C]	TBA	0.56	1.68	1.64	1.59
Amount paid during the year	0.97	0.84	1.68	1.6	1.65

[A] On January 29, 2022, the A and B ordinary shares were assimilated into a single line of ordinary shares of the Company.
[B] Euro equivalent, rounded to the nearest euro cent.
[C] Q4 2021 euro equivalent will be announced on March 14,2022.

B shares [A]

					Pence [B]
	2021	2020	2019	2018	2017
Q1	12.26	12.68	36.97	35.18	37.12
Q2	17.38	12.09	38.01	36.5	36.28
Q3	18.06	12.48	35.73	36.77	35.02
Q4 [C]	TBA	11.96	36.4	35.94	33.91
Total announced in respect of the year [C]	TBA	49.21	147.11	144.39	142.33
Amount paid during the year	59.66	73.65	146.65	142.36	147.06

[A] On January 29, 2022, the A and B ordinary shares were assimilated into a single line of ordinary shares of the Company.
[B] Sterling equivalent.
[C] Q4 2020 sterling equivalent will be announced on March 14, 2022

A and B ADSs

					$
	2021	2020	2019	2018	2017
Q1	0.34	0.32	0.94	0.94	0.94
Q2	0.48	0.32	0.94	0.94	0.94
Q3	0.48	0.33	0.94	0.94	0.94
Q4	0.48	0.33	0.94	0.94	0.94
Total announced in respect of the year	1.78	1.31	3.76	3.76	3.76
Amount paid during the year	1.63	1.91	3.76	3.76	3.76

METHOD OF HOLDING SHARES OR AN INTEREST IN SHARES

There are several ways in which Shell plc registered shares or an interest in these shares can be held, including:

- directly as registered shares either in uncertificated form or in certificated form in a shareholder's own name;
- indirectly through Euroclear Nederland (in respect of which the Dutch Securities Giro Act (Wet giraal effectenverkeer) is applicable);
- through the Shell Corporate Nominee Service;
- through another third-party nominee or intermediary company; and
- as a direct or indirect holder of either ADS with the Depositary.

AMERICAN DEPOSITARY SHARES

The Depositary is the registered shareholder of the shares underlying the ADSs and enjoys the rights of a shareholder under the Articles. Holders of ADSs will not have shareholder rights. The rights of the holder of an ADS are specified in the Deposit Agreement with the Depositary and are summarised below.

The Depositary will receive all cash dividends and other cash distributions made on the deposited shares underlying the ADSs and, where possible and on a reasonable basis, will distribute such dividends and distributions to holders of ADSs. Rights to purchase additional shares will also be made available to the Depositary who may make such rights available to holders of ADSs. All other distributions made on the Company's shares will be distributed by the Depositary in any means that the Depositary thinks is equitable and practical. The Depositary may deduct its fees and expenses and the amount of any taxes owed from any payments to holders and it may sell a holder's deposited shares to pay any taxes owed. The Depositary is not responsible if it decides that it is unlawful or impractical to make a distribution available to holders of ADSs.

The Depositary will notify holders of ADSs of shareholders' meetings of the Company and will arrange to deliver voting materials to such holders of ADSs if requested by the Company. Upon request by a holder, the Depositary will endeavour to appoint such holder as proxy in respect of such holder's deposited shares entitling such holder to attend and vote at shareholders' meetings. Holders of ADSs may also instruct the Depositary to vote their deposited securities and the Depositary will try, as far as practical and lawful, to vote deposited shares in accordance with such instructions. The Company cannot ensure that holders will receive voting materials or otherwise learn of an upcoming shareholders' meeting in time to ensure that holders can instruct the Depositary to vote their shares.

Upon payment of appropriate fees, expenses and taxes: (i) shareholders may deposit their shares with the Depositary and receive the corresponding class and amount of ADSs; and (ii) holders of ADSs may surrender their ADSs to the Depositary and have the corresponding class and amount of shares credited to their account.

Further, subject to certain limitations, holders may, at any time, cancel ADSs and withdraw their underlying shares or have the corresponding class and amount of shares credited to their account.

FEES PAID BY HOLDERS OF ADSs

The Depositary collects its fees for delivery and surrender of ADSs directly from investors depositing shares or surrendering ADSs for the purpose of withdrawal or from intermediaries acting for them. The Depositary collects fees for making distributions to investors by deducting those fees from the amounts distributed or by selling a portion of distributable property to pay the fees. The Depositary may generally refuse to provide fee-attracting services until its fees for those services are paid. See page 321.

PAYMENTS BY DEPOSITARY TO THE COMPANY

J.P. Morgan Chase Bank, N.A., as Depositary, has agreed to share with the Company portions of certain fees collected, less ADS programme expenses paid by the Depositary. For example, these expenses include the Depositary's annual programme fees, transfer agency fees, custody fees, legal expenses, postage and envelopes for mailing annual and interim financial reports, printing and distributing dividend cheques, electronic filing of US federal tax information, mailing required tax forms, stationery, postage, facsimile and telephone calls and the standard out-of-pocket maintenance costs for the ADSs. From January 1, 2021, to February 21, 2022, the Company received $2,500,542.19 from the Depositary.

SHAREHOLDER INFORMATION continued

Persons depositing or withdrawing shares must pay:	For:
$5.00 or less per 100 ADSs (or portion of 100 ADSs)	▪ Issuance of ADSs, including those resulting from a distribution of shares, rights or other property; Cancellation of ADSs for the purpose of their withdrawal, including if the deposit agreement terminates; and Distribution of securities to holders of deposited securities by the Depositary to ADS registered holders.
Registration and transfer fees	▪ Registration and transfer of shares on the share register to or from the name of the Depositary or its agent when they deposit or withdraw shares.
Expenses of the Depositary	▪ Cable, telex and facsimile transmissions (when expressly provided in the deposit agreement); and ▪ Converting foreign currency into dollars.
Taxes and other governmental charges the Depositary or the custodian has to pay on any ADS or share underlying an ADS, for example, share transfer taxes, stamp duty or withholding taxes	▪ As necessary.

DIVIDEND REINVESTMENT PLAN

Equiniti Financial Services Limited, part of the same group of companies as the Company's Registrar, Equiniti Limited, operates a Dividend Reinvestment Plan (DRIP) which enables Shell plc shareholders to elect to have their dividend payments used to purchase Shell plc ordinary shares. More information can be found at www.shareview.co.uk/info/drip or by contacting Equiniti.

ABN AMRO Bank N.V. and JP Morgan Chase Bank N.A. also operate dividend reinvestment options. More information can be found by contacting the relevant provider.

In addition to the above, the Depositary may charge: (i) a dividend fee of $5.00 or less per 100 ADSs (or portion of 100 ADSs) for cash dividends or issuance of ADSs resulting from share dividends and (ii) an administrative fee of $5.00 or less per 100 ADSs (or portion of 100 ADSs) per calendar year. The Company and Depositary have agreed not to charge these fees at this time.

EXCHANGE CONTROLS AND OTHER LIMITATIONS AFFECTING SECURITY HOLDERS

Other than restrictions affecting those individuals, entities, government bodies, corporations, or activities that are targeted by European Union (EU) or UK sanctions for example, regarding Syria, Russia or North Korea, and the general EU prohibition to transfer funds to and from for example, North Korea or Syria, we are not aware of any other legislative or other legal provision currently in force in the UK, the Netherlands, the EU or arising under the Articles restricting remittances to holders of the Company's ordinary shares who are non-residents of the UK, or affecting the import or export of capital.

TAXATION

General

The Company is incorporated in England and Wales and was tax-resident in the Netherlands up to 31 December 2021. The Company's tax residence was moved to the UK with effect from 31 December 2021.

As a tax resident of the Netherlands, it is generally required by Dutch law to withhold tax at a rate of 15% on dividends on its ordinary shares and ADSs, subject to the provisions of any applicable tax convention or domestic law. Depending on their particular circumstances, non-Dutch tax-resident holders may be entitled to a full or partial refund of Dutch withholding tax. The following sets forth the operation of other provisions on dividends on the Company's various ordinary shares and ADSs to UK and US holders, as well as certain other tax rules pertinent to holders for the 2021 financial year. Holders should consult their own tax adviser if they are uncertain as to the tax treatment of any dividend.

Dividends paid on the dividend access shares

As part of the Simplification, the A ordinary shares and B ordinary shares were assimilated in to one single line of ordinary shares. Prior to the assimilation, there was no Dutch withholding tax on dividends on B shares or B ADSs, provided that such dividends are paid on the dividend access shares pursuant to the dividend access mechanism (see "Dividend access mechanism for B shares" on page 319). Dividends paid on the dividend access shares are treated as UK-source for tax purposes and there is no UK withholding tax on them.

In 2021, all dividends with respect to B shares and B ADSs were paid on the dividend access shares pursuant to the dividend access mechanism.

Dutch withholding tax

On January 29, 2022, one line of shares was established through assimilation of each A share and each B share into one single line of ordinary shares of the Company. This assimilation had no impact on voting rights or dividend entitlements. Dutch dividend withholding tax, applied previously on dividends on A shares, no longer applies on dividends paid on the now assimilated ordinary shares following move of Company's tax residence to the UK.

The following applies to dividends paid in the 2021 and prior financial years:

When Dutch withholding tax applies on dividends paid to a US holder (that is, dividends on A shares or A ADSs, or on B shares or B ADSs that are not paid on the dividend access shares pursuant to the dividend access mechanism), the US holder will be subject to Dutch withholding tax at the rate of 15%. A US holder who is entitled to the benefits of the 1992 Double Taxation Convention (the Convention) between the USA and the Netherlands as amended by the protocol signed on March 8, 2004, will be entitled to a reduction in the Dutch withholding tax, either by way of a full or a partial exemption at source or by way of a partial refund or a credit as follows:

- if the US holder is an exempt pension trust as described in article 35 of the Convention, or an exempt organisation as described in article 36 thereof, the US holder will be exempt from Dutch withholding tax; or
- if the US holder is a company that holds directly at least 10% of the voting power in the Company, the US holder will be subject to Dutch withholding tax at a rate not exceeding 5%.

In general, the entire dividend (including any amount withheld) will be dividend income to the US holder and the withholding tax will be treated as a foreign income tax that is eligible for credit against the US holder's income tax liability or a deduction subject to certain limitations. A "US holder" includes, but is not limited to, a citizen or resident of the USA, or a corporation or other entity organised under the laws of the USA or any of its political subdivisions.

When Dutch withholding tax applies on dividends paid to UK tax-resident holders (that is, dividends on A shares or A ADSs, or on B shares or B ADSs that are not paid on the dividend access shares pursuant to the dividend access mechanism), the dividend will typically be subject to withholding tax at a rate of 15%. Such UK tax-resident holder may be entitled to a credit (not repayable) for withholding tax against their UK tax liability. However, certain corporate shareholders are, subject to conditions, exempt from UK tax on dividends. Withholding tax suffered cannot be offset against such exempt dividends. UK tax-resident holders should also be entitled to claim a refund of one-third of the Dutch withholding tax from the Dutch tax authorities in reliance on the tax convention between the Netherlands and the UK. Pension plans meeting certain defined criteria can, however, be entitled to claim a full refund or exemption at source of the dividend tax withheld. Also, UK tax-resident corporate shareholders holding at least a 5% shareholding and meeting other defined criteria are exempted at source from dividend tax.

For holders who are tax-resident in any other country, the availability of a whole or partial exemption or refund of Dutch withholding tax is governed by Dutch tax law and/or the tax convention, if any, between the Netherlands and the country of the holder's residence.

There may be other grounds on which holders who are tax-resident in the UK, the USA or any other country can obtain a full or partial refund of the Dutch withholding tax, depending on their particular circumstances; see "Taxation: General" above.

Dutch capital gains taxation

Capital gains on the sale of shares of a Dutch tax-resident company by a US holder are generally not subject to taxation by the Netherlands unless the US holder has a permanent establishment therein and the capital gain is derived from the sale of shares that are part of the business property of the permanent establishment.

Dutch succession duty and gift taxes

Shares of a Dutch tax-resident company held by an individual who is not a resident or a deemed resident of the Netherlands will generally not be subject to succession duty in the Netherlands on the individual's death.

A gift of shares of a Dutch tax-resident company by an individual who is not a resident or a deemed resident of the Netherlands is generally not subject to Dutch gift tax.

UK stamp duty and stamp duty reserve tax

Sales or transfers of the Company's ordinary shares within a clearance service (such as Euroclear Nederland) or of the Company's ADSs within the ADS depositary receipts system will not give rise to a stamp duty reserve tax (SDRT) liability and should not in practice require the payment of UK stamp duty.

The transfer of the Company's ordinary shares to a clearance service (such as Euroclear Nederland) or to an issuer of depositary shares (such as ADSs) will generally give rise to a UK stamp duty or SDRT liability at the rate of 1.5% of consideration given or, if none, of the value of the shares. A sale of the Company's ordinary shares that are not held within a clearance service (for example, settled through the UK's CREST system of paperless transfers) will generally be subject to UK stamp duty or SDRT at the rate of 0.5% of the amount of the consideration, normally paid by the purchaser.

Capital gains tax

For the purposes of UK capital gains tax, the market values [A] of the shares of the former public parent companies of the Shell Group at the relevant dates were:

		£
	March 31, 1982	July 20, 2005
Royal Dutch Petroleum Company (N.V. Koninklijke Nederlandsche Petroleum Maatschappij) which ceased to exist on December 21, 2005	1.1349	17.6625
The "Shell" Transport and Trading Company, p.l.c. which delisted on July 19, 2005	1.4502	Not applicable

[A] Restated where applicable to reflect all capitalisation issues since the relevant date. This includes the change in the capital structure in 2005, when Shell plc (at the time known as Royal Dutch Shell plc) became the single parent company of Royal Dutch Petroleum Company and of The "Shell" Transport and Trading Company, p.l.c., now The Shell Transport and Trading Company Limited, and one share in Royal Dutch Petroleum Company was exchanged for two Royal Dutch Shell plc A shares and one share in The "Shell" Transport and Trading Company, p.l.c. was exchanged for 0.287333066 Royal Dutch Shell plc B shares.

NON-GAAP MEASURES RECONCILIATIONS

These non-GAAP measures, also known as alternative performance measures, are financial measures other than those defined in International Financial Reporting Standards, which Shell considers provide useful information.

EARNINGS ON A CURRENT COST OF SUPPLIES BASIS

Segment earnings are presented on a current cost of supplies basis (CCS earnings), which is the earnings measure used by the Chief Executive Officer for the purposes of making decisions about allocating resources and assessing performance. On this basis, the purchase price of volumes sold during the period is based on the current cost of supplies during the same period after making allowance for the tax effect. CCS earnings therefore exclude the effect of changes in the oil price on inventory carrying amounts. The current cost of supplies adjustment does not impact cash flow from operating activities in the "Consolidated Statement of Cash Flows".

Reconciliation of income for the period to CCS earnings

$ million

	2021	2020	2019
Income/(loss) attributable to Shell plc shareholders	20,101	(21,680)	15,842
Income/(loss) attributable to non-controlling interest	529	146	590
Income/(loss) for the period	20,630	(21,534)	16,432
Current cost of supplies adjustment	(3,148)	1,833	(605)
Of which:			
Attributable to Shell plc shareholders	(3,029)	1,759	(572)
Attributable to non-controlling interest	(119)	74	(33)
CCS earnings	17,482	(19,701)	15,827
Of which:			
Attributable to Shell plc shareholders	17,072	(19,921)	15,270
Attributable to non-controlling interest	410	220	557

ADJUSTED EARNINGS AND ADJUSTED EARNINGS BEFORE INTEREST, TAXES, DEPRECIATION AND AMORTISATION (EBITDA)

The "Adjusted Earnings" measure aims to facilitate a comparative understanding of Shell's financial performance from period to period by removing the effects of oil price changes on inventory carrying amounts and removing the effects of identified items. These items are in some cases driven by external factors and may, either individually or collectively, hinder the comparative understanding of Shell's financial results from period to period.

The "Adjusted EBITDA (CCS basis)" and "Adjusted EBITDA (FIFO basis)" measures are introduced with effect from January 1, 2021. Management uses both measures to evaluate Shell's performance in the period and over time. We define "Adjusted EBITDA (CCS basis)" as "Income/(loss) for the period" adjusted for current cost of supplies; identified items; tax charge/(credit); depreciation, amortisation and depletion; exploration well write-offs and net interest expense. All items include the non-controlling interest component. We define "Adjusted EBITDA (FIFO basis)" as "Income/(loss) for the period adjusted for identified items; tax charge/(credit); depreciation, amortisation and depletion; exploration well write-offs and net interest expense. All items include the non-controlling interest component.

Adjusted Earnings

$ million

	2021	2020	2019
Income/(loss) attributable to Shell PLC shareholders	20,101	(21,680)	15,842
Add: Current cost of supplies adjustment attributable to Shell plc shareholders	(3,029)	1,759	(572)
Less: Identified items attributable to Shell plc shareholders	(2,216)	(24,767)	(1,192)
Adjusted Earnings	19,289	4,846	16,462
Of which:			
Integrated Gas	8,757	4,383	8,955
Upstream	7,950	(2,852)	4,452
Oil Products	3,944	5,995	6,231
Chemicals	1,753	962	741
Corporate	(2,686)	(3,412)	(3,383)
less: Non-controlling interest	(429)	(230)	(535)

Adjusted EBITDA

$ million

	2021	2020	2019
Adjusted Earnings	19,289	4,846	16,462
Add: Non-controlling interest	429	230	535
Add: Taxation charge/(credit) excluding tax impact of identified items	8,482	2,252	9,533
Add: Depreciation, depletion and amortisation excluding impairments	23,071	24,981	25,108
Add: Exploration well write-offs	639	815	1,218
Add: Interest expense excluding identified items	3,607	4,088	4,687
Less: Interest income	510	679	899
Adjusted EBITDA (CCS basis)	55,004	36,533	56,644
Of which:			
Integrated Gas	16,421	11,668	16,719
Upstream	27,358	13,247	27,034
Oil Products	8,821	10,421	11,779
Chemicals	2,959	2,131	1,891
Corporate	(554)	(933)	(780)
Less: Current cost of supplies adjustment	(3,148)	1,833	(605)
Add: Current cost of supplies adjustment to taxation charge/(credit)	808	(585)	194
Adjusted EBITDA (FIFO basis)	58,960	34,114	57,443
Of which:			
Integrated Gas	16,421	11,668	16,719
Upstream	27,358	13,247	27,034
Oil Products	12,267	8,288	12,674
Chemicals	3,470	1,847	1,796
Corporate	(554)	(933)	(780)

Identified Items

The objective of identified items is to remove material impacts on net income/loss arising from transactions which are generally uncontrollable and unusual (infrequent or non-recurring) in nature or giving rise to a mismatch of accounting and economic results, or certain transactions that are generally excluded from underlying results in the industry.

			$ million
	2021	2020	2019
Identified items before tax			
Of which:			
Divestment gains/(losses)	5,996	316	2,611
Impairments	(3,884)	(28,061)	(4,155)
Redundancy and restructuring	(227)	(883)	(132)
Provisions for onerous contracts	(340)	(1,392)	–
Fair value accounting of commodity derivatives and certain gas contracts	(3,249)	(1,151)	602
Other	(621)	(706)	(770)
Total identified items before tax	(2,326)	(31,877)	(1,844)
Tax impact	91	7,100	674
Identified items after tax	(2,235)	(24,777)	(1,170)
Of which:			
Divestment gains/(losses)	4,632	4	2,170
Impairments	(2,993)	(21,267)	(3,162)
Redundancy and restructuring	(140)	(644)	(89)
Provisions for onerous contracts	(299)	(1,120)	–
Fair value accounting of commodity derivatives and certain gas contracts	(2,764)	(1,034)	650
Impact of exchange rate movements on tax balances	(128)	(240)	(69)
Other	(543)	(475)	(670)
Impact on CCS earnings	(2,235)	(24,777)	(1,170)
Of which:			
Integrated Gas	(2,417)	(10,661)	(326)
Upstream	1,745	(7,933)	(598)
Oil Products	(1,280)	(6,489)	(93)
Chemicals	(364)	(154)	(263)
Corporate	81	460	109
Identified items attributable to Shell plc shareholders	(2,216)	(24,767)	(1,192)
Identified items attributable to Non-controlling interest	(19)	(10)	22

CASH CAPITAL EXPENDITURE

Cash capital expenditure monitors investing activities on a cash basis, excluding items such as lease additions which do not necessarily result in cash outflows in the period. The measure comprises the following lines from the Consolidated Statement of Cash flows: Capital expenditure, Investments in joint ventures and associates and Investments in equity securities.

The reconciliation of "Capital expenditure" to "Cash capital expenditure" is as follows.

Cash capital expenditure

			$ million
	2021	2020	2019
Capital expenditure [A]	19,000	16,585	22,971
Investments in joint ventures and associates [A]	479	1,024	743
Investments in equity securities [A]	218	218	205
Cash capital expenditure	19,698	17,827	23,919
Of which:			
Integrated Gas	5,767	4,301	4,299
Upstream	6,269	7,296	10,205
Oil Products	3,868	3,328	4,907
Chemicals	3,573	2,640	4,090
Corporate	221	262	418

[A] Included within Cash flow from investing activities in the "Consolidated Statement of Cash Flows".

OPERATING EXPENSES AND UNDERLYING OPERATING EXPENSES

Operating expenses is a measure of Shell's cost management performance, comprising the following items from the "Consolidated Statement of Income": production and manufacturing expenses; selling, distribution and administrative expenses; and research and development expenses.

Underlying operating expenses is a measure aimed at facilitating a comparative understanding of performance from period to period by removing the effects of identified items, which, either individually or collectively, can cause volatility, in some cases driven by external factors.

NON-GAAP MEASURES RECONCILIATIONS continued

Operating expenses and underlying operating expenses

$ million

	2021	2020	2019
Production and manufacturing expenses	23,822	24,001	26,438
Selling, distribution and administrative expenses	11,328	9,881	10,493
Research and development	815	907	962
Total	35,964	34,789	37,893
Of which			
Integrated Gas	7,126	6,555	6,667
Upstream	10,604	10,983	11,582
Oil Products	14,376	13,511	15,730
Chemicals	3,335	3,235	3,430
Corporate	524	505	486
Identified Items, of which:			
Redundancy and restructuring (charges)/reversal	(226)	(872)	(123)
(Provisions)/reversal	(254)	(1,415)	(639)
Other	(175)	–	(131)
Underlying operating expenses	35,309	32,502	37,000
Of which:			
Integrated Gas	6,892	5,769	6,534
Upstream	10,362	10,227	11,284
Oil Products	14,272	12,970	15,590
Chemicals	3,256	3,035	3,104
Corporate	527	501	488

RETURN ON AVERAGE CAPITAL EMPLOYED

Return on average capital employed (ROACE) measures the efficiency of our utilisation of the capital that we employ. In this calculation, ROACE is defined as income for the period, adjusted for after-tax interest expense, as a percentage of the average capital employed for the period. Capital employed consists of total equity, current debt and non-current debt.

Calculation of return on average capital employed

$ million

	2021	2020	2019
Income for the period	20,630	(21,534)	16,432
Interest expense after tax	2,741	2,822	3,024
Income before interest expense	23,371	(18,712)	19,456
Capital employed – opening	266,551	286,887	295,398
Capital employed – closing	264,413	266,551	286,887
Capital employed – average	265,482	276,719	291,142
ROACE	8.8%	(6.8)%	6.7%

NET DEBT AND GEARING

Net debt is defined as the sum of current and non-current debt, less cash and cash equivalents, adjusted for the fair value of derivative financial instruments used to hedge foreign exchange and interest rate risk relating to debt, and associated collateral balances.

Gearing is a measure of Shell's capital structure and is defined as net debt (total debt less cash and cash equivalents) as a percentage of total capital (net debt plus total equity).

Also refer to Note 15 to the Consolidated Financial Statements on page 256.

FREE CASH FLOW AND ORGANIC FREE CASH FLOW

Free cash flow is used to evaluate cash available for financing activities, including shareholder distributions and debt servicing, after investment in maintaining and growing our business.

Organic free cash flow is defined as Free cash flow excluding the cash flows from acquisition and divestment activities. It is a measure used by management to evaluate generation of cash flow without these activities.

Free cash flow and Organic free cash flow

$ million

	2021	2020	2019
Cash flow from operating activities	45,104	34,105	42,178
Cash flow from investing activities	(4,761)	(13,278)	(15,779)
Free cash flow	40,343	20,828	26,399
Less: Cash inflows related to divestments [A]	15,113	4,010	7,871
Add: Tax paid on divestments	188	–	187
Add: Cash outflows related to inorganic capital expenditure [B]	1,658	817	1,400
Organic free cash flow	27,076	17,634	20,116

[A] Cash inflows related to divestments includes Proceeds from sale of property, plant and equipment and businesses, Proceeds from joint ventures and associates from sale, capital reduction and repayment of long-term loans, and Proceeds from sale of equity securities as reported in the "Consolidated Statement of Cash Flows".

[B] Cash outflows related to inorganic capital expenditure includes portfolio actions which expand Shell's activities through acquisitions and restructuring activities as reported in capital expenditure lines in the "Consolidated Statement of Cash Flows".

SHAREHOLDER DISTRIBUTION

Shareholder distribution is used to evaluate the level of cash distribution to shareholders. It is defined as the sum of Cash dividends paid to Shell plc shareholders and Repurchases of shares, both of which are reported in the Consolidated Statement of Cash Flows.

Calculation of shareholder distribution

$ million

	2021	2020	2019
Cash dividends paid to Shell plc shareholders	(6,253)	(7,424)	(15,198)
Repurchases of shares	(2,889)	(1,702)	(10,188)
Shareholder distribution	(9,142)	(9,126)	(25,386)

DIVESTMENT PROCEEDS

Divestment proceeds represent cash received from divestment activities in the period. Management regularly monitors this measure as a key lever to deliver sustainable cash flow.

Calculation of Divestment proceeds

$ million

	2021	2020	2019
Proceeds from sale of property, plant and equipment and businesses	14,233	2,489	4,803
Proceeds from joint ventures and associates from sale, capital reduction and repayment of long-term loans [A]	584	1,240	2,599
Proceeds from sale of equity securities	296	281	469
Divestment proceeds	15,113	4,010	7,871
Of which:			
Integrated Gas	3,195	503	723
Upstream	10,930	1,909	5,384
Oil Products	935	1,368	1,517
Chemicals	10	26	22
Corporate	44	205	225

[A] includes $322 million (2020: $313 million) of long-term loan repayments received from joint ventures and associates.

APPENDICES

APPENDIX 1

SIGNIFICANT SUBSIDIARIES AND OTHER RELATED UNDERTAKINGS (AUDITED)

Significant subsidiaries and other related undertakings at December 31, 2021, are set out below. These are included in the "Consolidated Financial Statements" on pages 228-283. Shell's percentage of share capital is shown to the nearest whole number. All subsidiaries are marked with the annotation [a]. Subsidiaries held directly by the Company are marked with the annotation [b]. A number of the entities listed are dormant or not yet operational. Entities that are proportionately consolidated are identified by the annotation [c]. Shell-owned shares are ordinary (voting) shares unless identified with one of the following annotations against the company name: [d] Membership interest; [e] Partnership capital; [f] Non-redeemable; [g] Ordinary, Partnership capital; [h] Ordinary, Redeemable; [i] Ordinary, Redeemable, Non-redeemable; and [j] Redeemable, Non-redeemable.

Company by country and address of incorporation	%
ARGENTINA	
AVENIDA PTE. ROQUE SÁENZ PENA 788, 2ND FLOOR, CIUDAD DE BUENOS AIRES, 1035	
Bandurria Sur Investments S.A.	50
Shell Argentina S.A. [a]	100
AUSTRALIA	
5 TULLY ROAD, EAST PERTH, 6004	
OVIDRIVE APPLABS PTY LTD	42
C/O ALANDS ACCOUNTANTS, LEVEL 1/293 QUEEN STREET, BRISBANE, QLD 4000	
Alliance Automation Pty Ltd	50
C/O JEFFERY ZIVIN, UNIT 4, 4 GEORGE STREET, CAMBERWELL, VIC 3124	
Solpod Pty Ltd	24
INFRASTRUCTURE CAPITAL GROUP, LEVEL 15 MARTIN PLACE, SYDNEY, NSW 2000	
NewGen Neerabup Pty Ltd [a] [c]	50
NewGen Power Neerabup Pty Ltd [a] [c]	50
LEVEL 30, 275 GEORGE STREET, BRISBANE, QLD 4000	
BC 789 Holdings Pty Ltd [a]	100
BG CPS Pty Limited [a]	100
BNG (Surat) Pty Ltd [a]	100
CCM Energy Solutions Pty Ltd [a]	100
Condamine 1 Pty Ltd [a]	100
Condamine 2 Pty Ltd [a]	100
Condamine 3 Pty Ltd [a]	100
Condamine 4 Pty Ltd [a]	100
Condamine Power Station Pty Ltd [a]	100
E.R.M. Oakey Power Pty Ltd [a]	100
ERM Braemar 3 Power Pty Ltd [a]	100
ERM Braemar 3 Pty Ltd [a]	100
ERM Employee Share Plan Administrator Pty Ltd [a]	100
ERM Energy Solutions Holdings Pty Ltd [a]	100
ERM Financial Services Pty Ltd [a]	100
ERM Gas Pty Ltd [a]	100
ERM Gas WA01 Pty Ltd [a]	100
ERM Holdings Pty Ltd [a]	100
ERM Land Holdings Pty Ltd [a]	100
ERM Neerabup Power Pty Ltd [a]	100
ERM Power International Pty Ltd [a]	100
ERM Power Investments Pty Ltd [a]	100
ERM Power Services Pty Ltd [a]	100
ERM Power Utility Systems Pty Ltd [a]	100
ERM Wellington 1 Holdings Pty Ltd [a]	100
Greensense Pty Ltd [a]	100
Lumaled Pty Ltd [a]	100
New South Oil Pty Ltd [a]	100
Oakey Power Holdings Pty Ltd [a]	100
OME Resources Australia Pty Ltd [a]	100
Petroleum Resources (Thailand) Pty. Limited [a]	100
Powermetric Metering Pty Ltd [a]	100
Pure Energy Resources Pty Limited [a]	100
QCLNG Operating Company Pty Ltd [a] [h]	75
QCLNG Pty Ltd [a]	100

Company by country and address of incorporation	%
QGC (B7) Pty Ltd [a]	100
QGC (Exploration) Pty Ltd [a]	100
QGC (Infrastructure) Pty Ltd [a]	100
QGC Common Facilities Company Pty Ltd [a]	100
QGC Holdings 2 Pty Ltd [a]	100
QGC Holdings 3 Pty Ltd [a]	100
QGC Holdings 4 Pty Ltd [a]	100
QGC Holdings 5 Pty Ltd [a]	100
QGC Holdings 6 Pty Ltd [a]	100
QGC Holdings 7 Pty Ltd [a]	100
QGC Holdings 8 Pty Ltd [a]	100
QGC Holdings 9 Pty Ltd [a]	100
QGC Midstream Holdings Pty Ltd [a]	100
QGC Midstream Investments Pty Ltd [a]	100
QGC Midstream Land Pty Ltd [a]	100
QGC Midstream Services Pty Ltd [a]	100
QGC Northern Forestry Pty Ltd [a]	100
QGC Pty Limited [a]	100
QGC Sales Qld Pty Ltd [a]	100
QGC Train 1 Pty Ltd [a]	100
QGC Train 1 Tolling Pty Ltd [a]	100
QGC Train 1 UJV Manager Pty Ltd [a]	100
QGC Train 2 Pty Ltd [a]	100
QGC Train 2 Tolling No.2 Pty Ltd [a]	100
QGC Train 2 Tolling Pty Ltd [a]	100
QGC Train 2 UJV Manager Pty Ltd [a]	100
QGC Upstream Finance Pty Ltd [a]	100
QGC Upstream Holdings Pty Ltd [a]	100
QGC Upstream Investments Pty Ltd [a]	100
Queensland Electricity Investors Pty Ltd [a]	100
Queensland Gas Company Pty Ltd [a]	100
Richmond Valley Solar Thermal Pty Ltd [a]	100
Roma Petroleum Pty Limited [a]	100
Select Carbon Pty Ltd [a]	100
SGA (Queensland) Pty Ltd [a]	100
SGAI Pty Limited [a]	100
Shell Energy Australia Pty Ltd [a]	100
Shell Energy BESS 1 Pty Ltd [a]	100
Shell Energy Certificate Trading Pty Ltd [a]	100
Shell Energy Engineering Pty Ltd [a]	100
Shell Energy Environmental Products Australia Pty Ltd [a]	100
Shell Energy Neerabup Pty Ltd [a]	100
Shell Energy Oakey Power Holdings Pty Ltd [a]	100
Shell Energy Operations Pty Ltd [a]	100
Shell Energy Power Developments Pty Ltd [a]	100
Shell Energy Power Generation Pty Ltd [a]	100
Shell Energy Projects Pty Ltd [a]	100
Shell Energy Retail Pty Ltd [a]	100
Shell New Energies Australia Pty Ltd [a]	100

APPENDIX 1 continued

Company by country and address of incorporation	%
AUSTRALIA continued	
Shell QGC Pty Ltd [a]	100
Starzap Pty Ltd [a]	100
Sunshine 685 Pty Limited [a]	100
Walloons Coal Seam Gas Company Pty Limited [a] [h]	75
LEVEL 39, 111 EAGLE STREET, BRISBANE, QLD 4000	
Arrow Energy Holdings Pty Ltd	50
LEVEL 4, 13 CREMORNE STREET, RICHMOND, VIC 3121	
ESCO Pacific Holdings Pty Ltd	49
LEVEL 4, 459 LITTLE COLLINS STREET, MELBOURNE, VIC 3000	
1st Energy Pty Ltd	30
LEVEL 42, BOURKE PLACE, 600 BOURKE STREET, MELBOURNE, VIC 3000	
QGC Midstream Limited Partnership [a]	100
QGC Upstream Limited Partnership [a]	100
LEVEL 52, 111 EAGLE STREET, BRISBANE, QLD 4000	
ERM Innovation Labs Pty Ltd [a]	100
SHELL HOUSE, 562 WELLINGTON STREET, PERTH, WA 6000	
Austen & Butta Pty Ltd [a]	100
North West Shelf LNG Pty Ltd [a]	100
SASF Pty Ltd [a]	100
Shell Australia FLNG Pty Ltd [a]	100
Shell Australia Pty Ltd [a]	100
Shell Australia Services Company Pty Ltd [a]	100
Shell Development (PSC19) Pty Ltd [a]	100
Shell Development (PSC20) Pty Ltd [a]	100
Shell Energy Holdings Australia Limited [a]	100
Shell Global Solutions Australia Pty Ltd [a]	100
Shell Tankers Australia Pty Ltd [a]	100
Trident LNG Shipping Services Pty Ltd [a]	100
TENANCY 6, LIONSGATE BUSINESS PARK, 180 PHILIP HIGHWAY, ELIZABETH SOUTH, SA 5112	
Sonnen Australia Pty Limited [a]	100
AUSTRIA	
FRANZ-JOSEFS-KAI 27, VIENNA, 1010	
Next Kraftwerke AT GmbH [a]	100
INNSBRUCKER BUNDESSTRASSE 95, SALZBURG, 5020	
Salzburg Fuelling GmbH	33
KIENBURG 11, MATREI IN OSTTIROL, 9971	
Transalpine Ölleitung in Österreich GmbH	19
RETTENLACKSTRASSE 3, SALZBURG, 5020	
TBG Tanklager Betriebsgesellschaft m.b.H.	50
SCHULHOF 6/1, VIENNA, 1010	
Shell China Holding GmbH [a]	100
TECH GATE, DONAU-CITY-STR. 1, VIENNA, 1220	
Shell Austria Gesellschaft mbH [a]	100
Shell Brazil Holding GmbH [a]	100
BAHAMAS	
GTC CORPORATE SERVICES LIMITED, SASSOON HOUSE, SHIRLEY STREET & VICTORIA AVENUE, NASSAU	
Shell Western Supply and Trading Limited [a]	100
P.O. BOX N4805, ST. ANDREW'S COURT, FREDERICK STREET STEPS, NASSAU	
Shell Bahamas Power Company Inc. [a]	100
BARBADOS	
ONE WELCHES, WELCHES, ST. THOMAS, BB22025	
Shell Trinidad and Tobago Resources SRL [a]	100
BELGIUM	
BORSBEEKSEBRUG 34/1, ANTWERPEN, 2600	
Shell EV Charging Solutions Belgium BV [a]	100
CANTERSTEEN 47, BRUSSELS, 1000	
Belgian Shell S.A. [a]	100

Company by country and address of incorporation	%
New Market Belgium S.A. [a]	100
PALEIZENSTRAAT 153 RUE DES PALAIS, GEBOUW/BÂTIMENT: LUSTRERIE, BRUSSELS, 1030	
Next Kraftwerke Belgium BVBA [a]	100
PANTSERSCHIPSTRAAT 331, GENT, 9000	
Shell Catalysts & Technologies Belgium N.V. [a]	100
BERMUDA	
3RD FLOOR CONTINENTAL BUILDING, 25 CHURCH STREET, HAMILTON, HM 12	
Gas Investments & Services Company Limited [a]	85
Qatar Shell GTL Limited [a]	100
Shell Australia Natural Gas Shipping Limited [a]	100
Shell Holdings (Bermuda) Limited [a]	100
Shell International Trading Middle East Limited [a]	100
Shell Markets (Middle East) Limited [a]	100
Shell Oman Trading Limited [a]	100
Shell Petroleum (Malaysia) Ltd [a]	100
Shell Saudi Arabia (Refining) Limited [a]	100
Shell Trust (Bermuda) Limited [a]	100
Solen Life Insurance Limited [a]	100
CLARENDON HOUSE, 2 CHURCH STREET, HAMILTON, HM 11	
Egypt LNG Shipping Limited	25
Sakhalin Energy Investment Company Ltd	28
BRAZIL	
AVENIDA BRIGADEIRO FARIA LIMA N° 3.311, CONJUNTO 82, ITAIM BIBI, SÃO PAULO, 04538-133	
Shell Energy do Brasil Ltda. [a]	100
AVENIDA DAS ALMIRANTE BARROSO, N° 81, 36° ANDAR, SALA 36A104, RIO DE JANEIRO, 20031-004	
Raizen S.A.	44
AVENIDA DAS REPUBLICA DO CHILE 330, 23° ANDAR (PARTE) – TORRE 2, CENTRO, RIO DE JANEIRO, 20031-170	
BG Petroleo & Gas Brasil Ltda. [a]	100
AVENIDA DAS REPUBLICA DO CHILE 330, 23° ANDAR, TORRE 2, CENTRO, RIO DE JANEIRO, 20031-170	
BG Comercio e Importacao Ltda. [a]	100
AVENIDA PAULISTA, 1274, 8° ANDAR, CONJUNTO 23, SALA B, BELA VISTA, SÃO PAULO, 01310-100	
Marlim Azul Energia S.A.	30
AVENIDA REPÚBLICA DO CHILE N° 330, BLOCO 2, SALA 2001, CENTRO, RIO DE JANEIRO, 20031-170	
Shell Energy do Brasil Gás Ltda. [a]	100
AVENIDA REPÚBLICA DO CHILE N° 330, BLOCO 2, SALA 2301, CENTRO, RIO DE JANEIRO, 20031-170	
Pecten do Brasil Servicos de Petroleo Ltda. [a]	100
AVENIDA REPÚBLICA DO CHILE N° 330, BLOCO 2, SALA 2401, CENTRO, RIO DE JANEIRO, 20031-170	
Seapos Ltda. [a]	100
AVENIDA REPÚBLICA DO CHILE N° 330, BLOCO 2, SALAS 2001, 2301, 2401, 2501, 3101, 3201, 3301 E 3401, CENTRO, RIO DE JANEIRO, 20031-170	
Shell Brasil Petroleo Ltda. [a]	100
PRAIA INTENDENTE BITENCOURT N° 2, E 8N, RIBEIRA, RIO DE JANEIRO, 21930-030	
Neolubes Indústria DE Lubrificantes LTDA [a]	100
BRUNEI	
BRUNEI SHELL PETROLEUM COMPANY, SENDIRIAN BERHAD, SERIA, KB2933	
Brunei Shell Marketing Company Sendirian Berhad	50
C/O BSP HEAD OFFICE, NDCO BLOCK, GROUND FLOOR, JALAN UTARA, PANAGA SERIA, KB3534	
Shell Borneo Sendirian Berhad [a]	100
JALAN UTARA, PANAGA, SERIA, KB2933	
Brunei Shell Petroleum Company Sendirian Berhad	50
Brunei Shell Tankers Sendirian Berhad	25
LUMUT, SERIA, KC2935	
Brunei LNG Sendirian Berhad	25

Company by country and address of incorporation	%
BULGARIA	
48, SITNYAKOVO BLVD., SERDIKA OFFICES, 8TH FLOOR, SOFIA, 1505	
Shell Bulgaria Ead [a]	100
CANADA	
1701 HOLLIS STREET, SUITE 1400, HALIFAX, NOVA SCOTIA, B3J 3M8	
Sable Offshore Energy Inc.	33
199 BAY STREET, SUITE 5300, COMMERCE COURT WEST, TORONTO, ONTARIO, M5L 1B9	
SFJ Inc.	50
2100, 855 – 2ND STREET S.W., CALGARY, ALBERTA, T2P 4J8	
1745844 Alberta Ltd. [a]	50
400 4TH AVENUE S.W., CALGARY, ALBERTA, T2P 0J4	
10084751 Canada Limited [a]	100
7026609 Canada Inc. [a]	100
7645929 Canada Limited [a]	100
Cansolv Technologies Inc. [a]	100
Coral Cibola Canada Inc. [a]	100
FP Solutions Corporation	33
LNG Canada Development Inc. [a] [c]	40
SCL Pipeline Inc. [a]	100
Shell Americas Funding (Canada) Limited [a]	100
Shell Canada BROS Inc. [a]	100
Shell Canada Energy [a] [d]	100
Shell Canada Limited [a]	100
Shell Canada OP Inc. [a]	100
Shell Canada Products [a]	100
Shell Canada Services Limited [a]	100
Shell Catalysts & Technologies Canada Inc. [a]	100
Shell Chemicals Canada [a] [d]	100
Shell Energy North America (Canada) Inc. [a]	100
Shell Global Solutions Canada Inc. [a]	100
Shell Quebec Limitée [a]	100
Shell Trading Canada [a] [d]	100
Zeco Systems (Canada) Inc. [a]	100
45 VOGEL ROAD, SUITE 310, RICHMOND HILL, ONTARIO, L4B 3P6	
Trans-Northern Pipelines Inc.	33
5305 MCCALL WAY N.E., CALGARY, ALBERTA, T2E 7N7	
Alberta Products Pipe Line Ltd.	20
830 HIGHWAY NO. 6 NORTH, FLAMBOROUGH, ONTARIO, L0R 2H0	
Sun-Canadian Pipe Line Company Limited	45
CAYMAN ISLANDS	
CALEDONIAN TRUST (CAYMAN) LIMITED, CALEDONIAN HOUSE, 69 DR ROY'S DRIVE P.O. BOX 1043, GEORGE TOWN, GRAND CAYMAN, KY1-1102	
Schiehallion Oil & Gas Limited [a]	100
CAMPBELLS, FLOOR 4, WILLOW HOUSE, CRICKET SQUARE, GEORGE TOWN, GRAND CAYMAN, KY1-9010	
BG Exploration and Production India Limited [a]	100
MAPLES CORPORATE SERVICES LIMITED, UGLAND HOUSE, P.O. BOX 309, GEORGE TOWN, GRAND CAYMAN, KY1-1104	
Shell North Sea Holdings Limited [a]	100
PICCADILLY CENTRE, 28 ELGIN AVENUE, SUITE 201, P.O. BOX 2570, GEORGE TOWN, GRAND CAYMAN, KY1-1103	
BG Egypt S.A. [a]	100
Gas Resources Limited [a]	100
Shell Bolivia Corporation [a]	100
STERLING TRUST (CAYMAN) LIMITED, WHITEHALL HOUSE, 238 NORTH CHURCH STREET, P.O. BOX 1043, GEORGE TOWN, GRAND CAYMAN, KY1-1102	
Beryl North Sea Limited [a]	100
CHILE	
C/O CAREY Y CIA ABOGADOS, MIRAFLORES 222, PISO 28, SANTIAGO	
Shell Chile S.A. [a]	100

Company by country and address of incorporation	%
CHINA	
18TH FLOOR, TOWER 1, YONGLI INTERNATIONAL FINANCE CENTRE, JINYE NO. 1 ROAD, HIGH-TECH DISTRICT, XI'AN, 710075	
Yanchang and Shell Petroleum Company Limited	45
23F, YANLORD SQUARE, SECTION 2, RENMIN SOUTH ROAD, CHENGDU, SICHUAN, 610016	
Yanchang and Shell (Sichuan) Petroleum Company Limited	45
30/F UNIT 01-02, NO. 16 BUILDING, NO. 1 COURTYARD, JIAN GUO MEN WAI AVENUE, CHAOYANG DISTRICT, BEIJING, 100004	
Shell (China) Limited [a]	100
39TH FLOOR AS PLANNING-DESIGNED (41ST FLOOR AS SELF-DESIGNATED), LEATOP PLAZA, NO. 32 EAST ZHUJIANG ROAD, ZHUJIANG NEW TOWN, TIANHE DISTRICT, GUANGZHOU, 510623	
Yanchang and Shell (Guangdong) Petroleum Co., Ltd.	49
8/F, BUILDING 1, NO. 818 SHENCHANG ROAD, MINHANG DISTRICT, SHANGHAI, 201106	
Shell Management and Consulting Company Limited [a]	100
Shell Ventures Company Limited [a]	100
8/F, NO. 818 SHENCHANG ROAD, MINHANG DISTRICT, SHANGHAI, 201107	
Shell (Shanghai) Petroleum Company Limited [a]	100
BAISHA, HEKOU, SANSHUI DISTRICT, FOSHAN, GUANGDONG, 528133	
Shell Road Solutions Xinyue (Foshan) Co. Ltd.	60
BUILDING 4, JIN CHUANG BUILDING, NO. 4560, JIN KE ROAD, PILOT FREE TRADE ZONE, SHANGHAI	
Shell (Shanghai) Technology Limited [a]	100
BUILDING NO. 2, HEBEI GUOKONG NORTHERN SILICON VALLEY HIGH-TECH NEW CITY, NO. 28 EAST ZHANQIAN STREET, QIAODONG DISTRICT, ZHANGJIAKOU, 075000	
Zhangjiakou City Transport and Shell New Energy Co., Ltd	48
DAYAWAN PETROCHEMICAL INDUSTRIAL PARK, HUIZHOU, GUANGDONG, 516086	
CNOOC and Shell Petrochemicals Company Limited	50
NANJIN WAN, GAOLAN DAO, GAOLAN HARBOUR ECONOMIC ZONE, ZHUHAI, 519050	
Shell (Zhuhai) Lubricants Company Limited [a]	100
NO. 1 DONGXIN ROAD, JIANGSU YANGTZE RIVER INTERNATIONAL, CHEMICAL INDUSTRY PARK, ZHANGJIAGANG, JIANGSU, 215600	
Infineum (China) Co. Ltd.	50
NO. 1 WANGJIABA, XINMIAOZHI VILLAGE, PUYUAN TOWN, TONGXIANG, JIAXING, ZHEJIANG, 314502	
Shell (Zhejiang) Petroleum Trading Limited [a]	100
NO. 100, XINGANG DADAO, NANJING ECONOMIC AND TECHNOLOGICAL DEVELOPMENT ZONE, NANJING, JIANGSU, 210000	
Sinopec and Shell (Jiangsu) Petroleum Marketing Company Limited	40
NO. 196, SHUANG YUAN STREET, BEIBEI ZONE, CHONGQING, 400700	
Chongqing Shell Energy Company Limited [a]	100
NO. 286 NANSAN ROAD, TIANJIN HARBOUR NANJIANG DEV. ZONE, TANGGU, BINHAI NEWDISTRICT, TIANJIN, 300452	
Shell (Tianjin) Oil and Petrochemical Company Limited [a]	100
NO. 358 ZHUHUI ROAD, SUZHOU, 215000	
Suzhou Liyuan Retail Site Management Co., Ltd.	50
NO. 4, 5, 12/F, UNIT A, OCEANWIDE INTERNATIONAL CENTER OFFICE, 249 HUAIHAI ROAD, 187 YUNXIA ROAD, 185 YUNXIA ROAD, CBD, JIANHAN DISTRICT, WUHAN, 430000	
Hubei Shell Energy Company Limited [a]	100
NO. 68 XIANIEJIA, DAGANG, ZHENJIANG NEW DISTRICT, ZHENJIANG, 212132	
Shell Road Solutions (Zhenjiang) Co. Ltd [a]	100
NORTH TO GANG BEI ROAD AND EAST TO HAI GANG ROAD, NANGANG INDUSTRIAL ZONE, TIANJIN ECONOMIC-TECHNOLOGICAL DEVELOPMENT AREA, TIANJIN, 300280	
Shell (Tianjin) Lubricants Company Limited [a]	100
RM 1503, BUILDING 2, PLAZA OF ZBA, NO. 939 MINHE ROAD, NINGWEI STREET, XIAOSHAN, HANGZHOU, ZHEJIANG, 311215	
Zhejiang Shell Energy Development Company Limited [a]	100
ROOM 1801, BUILDING 1, INTERNATIONAL FINANCE CENTER, NO. 347, JIANGDONG MIDDLE ROAD, JIANYE DISTRICT, NANJING, JIANGSU, 210019	
Jiangsu Shell Energy Company Limited [a]	100
ROOM 2103, NORTH TOWER, YEFENG MODERN CENTER, NO. 161, SHAOXING ROAD, XIACHENG DISTRICT, HANGZHOU, ZHEJIANG, 310004	
Zhejiang Shell Fuels Company Limited	49
ROOM 2407-2409, BUILDING 15, FANGMAOYUAN (PHASE II), NO. 1177 HUANHU ROAD, YUELU DISTRICT, CHANGSHA, 410006	
Hunan Shell Energy Company Limited [a]	100

APPENDIX 1 continued

Company by country and address of incorporation	%
CHINA continued	
ROOM 2519-2522, 25/F, GREENLAND CENTER, CROSS-AREA OF SUSONG RD AND CHANGQIN ST, SOUTH ERHUAN, BAOHE DISTRICT, HEFEI, ANHUI, 230000	
Anhui Shell Energy Company Limited [a]	100
ROOM 518, 5TH FLOOR, OFFICE BUILDING, TIANJIN FOOD GROUP COMPANY LTD, NO. 96, QIXIANGTAI ROAD, HEXI DISTRICT, TIANJIN, 300074	
Shell North China Petroleum Group Co., Ltd.	49
ROOM 530, 5TH FLOOR, BUILDING 1, NO. 239 GANG'AO ROAD, CHINA (SHANGHAI) FREE TRADE ZONE, SHANGHAI, 200137	
Shell Energy (China) Limited [a]	100
ROOM 609, BUILDING NO. 1, NO. 388 NORTH MU HUA ROAD, FENGXIAN DIST, SHANGHAI, 200120	
Climate Bridge (Shanghai) Ltd.	49
ROOM 611,6TH FLOOR, BUILDING B, VITALITY BUSINESS SQUARE, 185 JUMAO STREET, XIANGCHENG, SUZHOU, 215100	
Suzhou Yiwei NewEnergy Technology Company Limited [a]	100
THE PORT OF ZHAPU, JIAXING MUNICIPALITY, ZHEJIANG, 314201	
Zhejiang Shell Oil and Petrochemical Company Limited [a]	100
UNIT 01, 32/F, NO. 16 BUILDING, NO. 1 COURTYARD, JIAN GUO MEN WAI AVENUE, CHAOYANG DISTRICT, BEIJING, 100004	
Shell (Beijing) Real Estate Consulting Ltd. [a]	100
UNIT 01-08, LEVEL 31, NO. 16 BUILDING, NO. 1 JIAN GUO MEN WAI AVENUE, CHAOYANG DISTRICT, BEIJING, 100004	
Shell (China) Projects & Technology Limited [a]	100
UNIT 1101-1104, LEVEL 11, BUILDING 1, NO. 19 CHAOYANG PARK ROAD, CHAOYANG DISTRICT, BEIJING, 100125	
Beijing Shell Petroleum Company Ltd.	49
UNIT 604, 6/F, BUILDING C, NO. 3 YUNAN FOURTH ROAD, FTPZ XIAMEN SUB-ZONE (TARIFF-FREE ZONE), XIAMEN, 361000	
Fujian Xiangyu and Shell Petroleum Company Limited	49
COLOMBIA	
CALLE 90 NO. 19 – 41, OFICINA 702- EDIFICIO QUANTUM, BOGOTÁ, 452	
Shell Colombia S.A. [a]	100
CÔTE D'IVOIRE	
14, BLVD CARDE, IMM. LES HEVEAS, PLATEAU, ABIDJAN, BP V 194	
Cote d'Ivoire GNL	13
CYPRUS	
METOCHIOU STR, 37, AGIOS ANDREAS, NICOSIA, CY-1101	
Rosneft-Shell Caspian Ventures Limited	49
CZECH REPUBLIC	
ANTALA STAŠKA 2027/77, PRAHA 4, 140 00	
Shell Czech Republic a.s. [a]	100
DENMARK	
BREDGADE 30, KØBENHAVN K, 1260	
TetraSpar Demonstrator ApS	66
C/O BJØRNHOLM LAW, STRANDVEJEN 60, COPENHAGEN, HELLERUP, 2900	
Shell EP Holdingselskab Danmark ApS [a]	100
NÆRUM HOVEDGADE 8, NAERUM, 2850	
DCC & Shell Aviation Denmark A/S	49
EGYPT	
28 ROAD 270, MAADI, CAIRO	
Burullus Gas Company S.A.E. [a] [c]	25
38 STREET NO. 270, MAADI, CAIRO	
Rashid Petroleum Company S.A.E. [a] [c]	50
BUSINESS VIEW BUILDING, NO. 79, 90 STREET (SOUTH), FIFTH SETTLEMENT- NEW CAIRO, CAIRO, 11835	
Shell Egypt Trading [a]	100
Shell Lubricants Egypt [a]	100
CITY OF RASHID, EL BEHERA GOVERNORATE	
El Behera Natural Gas Liquefaction Company S.A.E.	36
IDKU Natural Gas Liquefaction Company S.A.E.	38
The Egyptian LNG Company S.A.E.	36
The Egyptian Operating Company for Natural Gas Liquefaction Projects S.A.E.	36

Company by country and address of incorporation	%
FINLAND	
TEKNOBULEVARDI 3-5, VANTAA, 01530	
Shell Aviation Finland Oy [a]	100
FRANCE	
10 PLACE DE CATALOGNE, PARIS, 75014	
Airefsol Energies [a]	67
Airefsol Energies 2 [a]	67
Airefsol Energies 8 [a]	67
Airefsol Energies 9 [a]	67
Centrale Photovoltaïque Bouches-du-Rhône 1 [a]	100
Centrale Photovoltaïque Haute-Vienne 1 [a]	100
Centrale Photovoltaïque Landes 1 [a]	100
Centrale Photovoltaïque Var 1 [a]	100
Eolfi Offshore France	10
Eolfi SAS [a]	100
Ferme Eolienne Flottante de Groix & Belle-Ile	30
Ferme Eolienne Flottante Stenella Rhône [a]	100
Parc Eolien Aisne 1 [a]	100
Parc Eolien Corrèze 1 [a]	100
Parc Eolien Côtes Armor 1 [a]	100
Parc Eolien de la Vrine [a]	100
Parc Eolien De Mervent [a]	100
Parc Eolien Haute-Saône 1 [a]	100
Parc Eolien HM1 [a]	100
Parc Eolien Jura 1 [a]	100
Parc Eolien Marne 1 [a]	100
Parc Eolien Oise 1 [a]	100
Parc Eolien Oise 2 [a]	100
Parc Eolien Somme 1 [a]	100
Parc Eolien Somme 2 [a]	100
Parc Eolien Yonne 1 [a]	100
Parc Eolien Yonne 2 [a]	100
75 AVENUE PARMENTIER, PARIS, 75544	
Centrales Next S.A.S [a]	100
92 AVENUE CHARLES DE GAULLE, CS 30082, NEUILLY SUR SEINE, 92522	
The New Motion France SAS [a]	100
AÉROPORT ROISSY CHARLES DE GAULLE, ZONE DE FRÊT 1, 3 RUE DES VIGNES, TREMBLAY-EN-FRANCE, 93290	
Groupement Pétrolier Aviation SNC	20
CHEMIN DÉPARTEMENTAL 54, BERRE-L'ETANG, 13130	
Infineum France	50
ORLY SUD NO. 144 – BAT. 438, ORLY AEROGARES, 94541	
Service Aviation Paris SNC	33
ROUTE D'ARLES, LA FENOUILLÈRE, FOS-SUR-MER, 13270	
Ste du Pipeline Sud Européen S.A.	22
TOUR PACIFIC, 11/13 COURS VALMY – LA DÉFENSE, PUTEAUX, 92800	
Avitair SAS [a]	100
Shell Retraites SAS [a]	100
Société de Gestion Mobilière et Immobilière SAS [a]	100
Société des Pétroles Shell SAS [a]	100
GERMANY	
AM HAUPTTOR, BAU 8322, LEUNA, 06237	
CRI Deutschland GmbH [a]	100
Shell Catalysts & Technologies Leuna GmbH [a]	100
AM RIEDBACH 1, WILDPOLDSRIED, 87499	
Sonnen eServices Deutschland GmbH [a]	100
Sonnen eServices GmbH [a]	100
Sonnen GmbH [a]	100
Sonnen Holding GmbH [a]	100

Company by country and address of incorporation	%
AUF DEM SCHOLLBRUCH 24-26, GELSENKIRCHEN, 45899	
Rheinland Kraftstoff GmbH [a]	100
BERGHAUSENER STRASSE 96, LANGENFELD, 40764	
AGES Maut System GmbH & Co. KG	25
BRUEHLER STR. 95, WESSELING, 50389	
Wasserbeschaffungsverband Wesseling-Hersel	35
CAFFAMACHERREIHE 5, HAMBURG, 20355	
BEB Holding GmbH [a] [c]	50
DEA-SCHOLVEN-STR., KARLSRUHE, 76187	
Mineraloelraffinerie Oberrhein Verwaltungs GmbH	32
Oberrheinische Mineraloelwerke GmbH [a] [c]	42
EINSTEINSTR. 47, VAIHINGEN AN DER ENZ, 71665	
Enersol GmbH [a]	100
EUREF-CAMPUS 10-11, BERLIN, 10829	
H2 Mobility Deutschland GmbH and Co. KG	27
EUREF-CAMPUS 7-8, BERLIN, 10829	
Ubimeter GmbH [a]	100
Ubitricity Gesellschaft für verteilte Energiesysteme mbH [a]	100
FRANZÖSISCHE STRASSE 33 A-C, BERLIN, 10117	
Toll4Europe GmbH	15
GODORFER HAUPTSTRASSE 186, KÖLN, 50997	
Rhein-Main-Rohrleitungstransportgesellschaft mbH [a] [c]	63
HOHE-SCHAAR-STRASSE 36, HAMBURG, 21107	
Shell Global Solutions (Deutschland) GmbH [a]	100
LICHTSTRASSE 43G, KOELN, 50825	
Next Kraftwerke GmbH [a]	100
NEUSSER LANDSTRASSE 16, KÖLN, 50735	
Deutsche Infineum GmbH & Co. KG	50
Infineum Deutschland Verwaltungsgesellschaft mbH	50
PASSOWER CHAUSSEE 111, SCHWEDT/ODER, 16303	
PCK Raffinerie GmbH [a] [c]	38
PAUL WASSERMANN STR. 3, MUNICH, 81829	
Deutsche Transalpine Oelleitung GmbH	19
RIETHORST 12, HANNOVER, 30659	
BEB Erdgas und Erdoel GmbH & Co. KG [a] [c]	50
Erdoel-Raffinerie Deurag-Nerag GmbH	50
ST.-LEONHARD-STRASSE 26, BALZHAUSEN, 86483	
Energeticum Energiesysteme GmbH [a]	100
SUHRENKAMP 71 – 77, HAMBURG, 22335	
Carissa Verwaltungsgesellschaft mbH [a]	100
Deutsche Shell Holding GmbH [a]	100
Deutsche Shell Verwaltungsgesellschaft mbH [a]	100
euroShell Deutschland GmbH & Co. KG [a]	100
euroShell Deutschland Verwaltungsgesellschaft mbH [a]	100
Shell Deutschland Additive GmbH [a]	100
Shell Deutschland GmbH [a]	100
Shell Energy Deutschland GmbH [a]	100
Shell Energy Retail GmbH [a]	100
Shell Erdgas Beteiligungsgesellschaft mbH [a]	100
Shell Erdgas Marketing GmbH & Co. KG [a]	75
Shell Erdoel und Erdgas Exploration GmbH [a]	100
Shell Exploration and Development Libya GmbH I [a]	100
Shell Exploration and Production Colombia GmbH [a]	100
Shell Exploration and Production Libya GmbH [a]	100
Shell Exploration et Production du Maroc GmbH [a]	100
Shell Exploration New Ventures One GmbH [a]	100
Shell Hydrogen Deutschland GmbH [a]	100
Shell Tunisia Offshore GmbH [a]	100
Shell Verwaltungsgesellschaft für Erdgasbeteiligungen mbH [a]	100

Company by country and address of incorporation	%
SPNV Deutschland Beteiligungsges. mbH [a]	100
WATTSTRASSE 11, BERLIN, 13355	
Shell EV Charging Solutions Germany GmbH [a]	100
WEWORK EUROPAPASSAGE, HERMANNSTRASSE 13, HAMBURG, 20095	
OLF Deutschland GmbH [a]	100
WILLINGHUSENER WEG 5 D-E, OSTSTEINBEK, 22113	
Carissa Einzelhandel- und Tankstellenservice GmbH & Co. KG [a]	100
ZUM OELHAFEN 207, WILHELMSHAVEN, 26384	
Nord-West Oelleitung GmbH [a] [c]	20
GHANA	
NO 4 MOMOTSE AVENUE, ADABRAKA, ACCRA, GP 1632	
Shell Energy Ghana Limited [a]	100
GIBRALTAR	
57/63 LINE WALL ROAD, P.O. BOX 199, GIBRALTAR	
Shell LNG Gibraltar Limited	51
GREECE	
151 KIFISIAS AVE., MAROUSI, ATHENS, 15124	
Shell & MOH Aviation Fuels A.E.	51
GREENLAND	
P.O. BOX 510, ISSORTARFIMMUT 6, 102, NUUSSUAQ, 3905	
Shell Greenland A/S [a]	100
GUAM	
643 CHALAN SAN ANTONIO, SUITE 100, TAMUNING, GU 96911	
Shell Guam Inc. [a]	100
HONG KONG	
3 SCENIC ROAD, CHEK LAP KOK, LANTAU	
AFSC Operations Limited	11
AFSC Refuelling Limited	11
35/F AIA KOWLOON TOWER, LANDMARK EAST, 100 HOW MING STREET, KWUN TONG, KOWLOON	
Fulmart Limited [a]	100
Ocean Century Tf Limited [a] [h]	100
Shell Developments (HK) Limited [a] [h]	100
Shell Hong Kong Limited [a]	100
Shell Korea Limited [a]	100
Shell Macau Limited [a]	100
ESSO TSING YI TERMINAL, LOT 46 TSING YI ROAD, TSING YI ISLAND, NEW TERRITORIES	
Hong Kong Response Limited	25
HUNGARY	
BOCSKAI ÚT 134-146., BUDAPEST, 1113	
Shell Hungary Trading close Company Limited by shares [a]	100
INDIA	
102, PRESTIGE SIGMA, VITTAL MALLYA ROAD, BANGALORE, 560001	
Shell MRPL Aviation Fuels and Services Limited	50
2ND FLOOR, CAMPUS 4A, RMZ MILLENIA BUSINESS PARK II, 143 DR MGR ROAD, KANDHANCHAVADY, PERUNGUDI, CHENNAI, TN 600096	
Shell Energy Marketing and Trading India Private Limited [a]	100
Shell India Markets Private Limited [a]	100
3-C WORLD TRADE TOWER, NEW BARAKHAMBA LANE, NEW DELHI, 110001	
BG India Energy Private Limited [a]	100
BG India Energy Services Private Limited [a]	100
BG India Energy Solutions Private Limited [a]	100
BG LNG Regas India Private Limited [a]	100
7, BANGALORE HARDWARE PARK, DEVANAHALLI INDUSTRIAL PARK, MAHADEVA-KODIGEHALLI, BANGALORE, 562149	
Shell Pahal Social Welfare Association [a]	100
OFFICE NO 2008, WESTGATE – D BLOCK, NR YMCA CLUB, S.G.HIGHWAY, MAKARBA, AHMEDABAD, GUJARAT, 380051	
Hazira Port Private Limited [a]	100
Shell Energy India Private Limited [a]	100

APPENDIX 1 continued

Company by country and address of incorporation	%
INDIA continued	
PLATINA TOWER MG ROAD, NEAR SIKANDARPUR METRO STATION, SECTION, HARYANA, GURUGRAM, 122001	
Greenlots Technology India LLP [a]	100
TIKI TAR INDUSTRIES VILLAGE ROAD, NEAR BHANDUP VILLAGE, BHANDUP WEST MUMBAI, MUMBAI, MH 400078	
Tiki Tar and Shell India Private Limited	45
INDONESIA	
TALAVERA OFFICE PARK 22-26TH FLOOR, JL. LETJEN. TB SIMATUPANG KAV. 22-26, JAKARTA SELATAN, JAKARTA, 12430	
PT Shell LNG Indonesia [a]	100
PT. Shell Indonesia [a]	100
PT. Shell Manufacturing Indonesia [a]	100
IRAQ	
KHOR AL ZUBAIR, BASRAH	
Basrah Gas Company	44
IRELAND	
1ST FLOOR, TEMPLE HALL, TEMPLE ROAD, BLACKROCK, CO. DUBLIN, A94 K3K0	
Asiatic Petroleum Company (Dublin) Limited [a]	100
Irish Shell Trust Designated Activity Company [a]	100
SUITE 7 NORTHWOOD HOUSE, NORTHWOOD BUSINESS PARK, SANTRY, DUBLIN, 9	
Shell and Topaz Aviation Ireland Limited	50
WOODBINE HILL, YOUGHAL (COUNTY CORK), P36 NW52	
Emerald Offshore Wind Limited	51
WOODBINE HILL, YOUGHAL, COUNTY CORK, P36 NW52	
Western Star Wind Limited	51
ISLE OF MAN	
EUROMANX HOUSE, FREEPORT, BALLASALLA, IM9 2AP	
Shell Marine Personnel (I.O.M.) Limited [a]	100
Shell Ship Management Limited [a]	100
FIRST NAMES HOUSE, VICTORIA ROAD, DOUGLAS, IM2 4DF	
Petrolon Europe Limited [a]	100
Petrolon International Limited [a]	100
ISRAEL	
DERECH ABA HILEL 16, RAMAT GAN, 5250608	
Ravin AI Ltd.	36
ITALY	
GALLERIA VINTLER 17, BOLZANO, 39100	
Anagni S.r.l. [a]	100
Barberio S.r.l. [a]	100
Baroni S.r.l. [a]	100
Baroninuovi S.r.l [a]	100
Bonacaro S.r.l. [a]	100
Carlucci S.r.l. [a]	100
Colangelo S.r.l. [a]	100
Depalma S.r.l. [a]	100
Dimassa S.r.l. [a]	100
Mesagne S.r.l. [a]	100
Natuzzi S.r.l. [a]	100
Ottobiano S.r.l. [a]	100
Paliano S.r.l. [a]	100
Ricchiuti S.r.l. [a]	100
Rotello S.r.l. [a]	100
Sanfrancesco S.r.l. [a]	100
Sasso S.r.l. [a]	100
Serracapriola S.r.l. [a]	100
Sicilia S.r.l. [a]	100
Solar-Konzept Italia S.r.l. [a]	100
Teodoro S.r.l. [a]	100
Tuturano S.r.l. [a]	100
Vulci S.r.l. [a]	100
Zamboni S.r.l. [a]	100
GALLERIA VINTLER 17, BOLZANO, 39100 AVV	
Guarini S.r.l. [a]	100
PIAZZA SAN SILVESTRO 8, ROME, 00187	
Shell International Exploration and Development Italia S.p.A. [a]	100
Shell Italia E&P S.p.A. [a]	100
STRADA DI SCORRIMENTO 2, VADO LIGURE, SAVONA, 17047	
Infineum Italia S.R.L.	50
VIA AUTOSTRADA 32, BERGAMO, 24126	
Sonnen eServices Italia S.R.L. [a]	100
Sonnen S.R.L. [a]	100
VIA CLELIA BERTINI ATTILJ 34/D, ROME, 00137	
Centrali Next Srl [a]	100
VIA GIORGIO RIBOTTA 51, ROME, 00144	
Societa' Oleodotti Meridionali S.p.A.	30
VIA MUGGIA #1, SAN DORLIGO DELLA VALLE, TRIESTE, 34147	
Societa Italiana per l'Oleodotto Transalpino S.p.A.	19
VIA SUSA 40, TORINO, 10138	
Shell Fleet Solutions Consorzio [a]	100
VIA TORTONA 25, MILANO, 20144	
BG Italia Power S.r.l [a]	100
VIA VITTOR PISANI 16, MILANO, 20124	
Alle S.R.L. [a]	100
Aquila S.p.A. [a]	100
Development S.R.L. [a]	100
Marco Polo Solar 2 S.R.L. [a]	100
Marco Polo Solar S.R.L. [a]	100
Ramacca Solar S.R.L [a]	100
Shell Energy Italia S.R.L. [a]	100
Shell Italia Holding S.p.A. [a]	100
Shell Italia Oil Products S.R.L. [a]	100
Shell Mobility Italia S.r.l. [a]	100
JAPAN	
1-1-5 WAKAMIYA-CHO, SUMA-KU, KOBE-SHI, HYOGO, 654-0049	
Y.K. Nishi-Kobe Bosai Center	33
12F PACIFIC CENTURY PLACE MARUNOUCHI, 1-11-1, MARUNOUCHI, CHIYODA-KU, TOKYO, 100-6212	
Shell Japan Limited [a]	100
Shell Lubricants Japan K.K. [a]	100
13F FUKOKU SEIMEI BUILDING, 2-2-2 UCHISAIWAI-CHO, CHIYODA-KU, TOKYO, 100-0011	
K.K. Red and Yellow [a]	100
16F PACIFIC CENTURY PLACE MARUNOUCHI, 1-11-1, MARUNOUCHI, CHIYODA-KU, TOKYO, 100-6216	
Sonnen Japan Kabushiki Kaisha [a]	100
2-1-13, MOTOAZABU, MINATO-KU, TOKYO, 106-0046	
Fukuoka Offshore Wind Power No. 1 K.K	50
2-3, KANDA, AWAJI-CHO, CHIYODA-KU, TOKYO, 101-0063	
Sakhalin LNG Services Company Ltd.	50
4052-2 NAKATSU, AIKAWA-CHO, AIKO-GUN, KANAGAWA, 243-0303	
K.K. SVC Tokyo [a]	100
72-34, HORIKAWA-CHO, SAIWAI-KU, KAWASAKI, KAWASAKI, 212-8585	
Next Kraftwerke Toshiba Corporation	49
7F KOKURYU SHIBA KOEN BUILDING 2-6-15, SHIBA KOEN, MINATO-KU, TOKYO, 105-0011	
CO2-free Hydrogen Energy Supply-chain TRA	25
JERSEY	
13 CASTLE STREET, ST HELIER, JE1 1ES	
Shell Service Station Properties Limited [a]	100

Company by country and address of incorporation	%
LUXEMBOURG	
412F, ROUTE D'ESCH, LUXEMBOURG, L-2086	
Denham International Power SCSp [e]	32
7, RUE DE L'INDUSTRIE, BERTRANGE, LUXEMBOURG, L-8005	
Shell Luxembourgeoise Sarl [a]	100
7, RUE DE L'INDUSTRIE, BERTRANGE, LUXEMBOURG, L-8069	
Shell Finance Luxembourg Sarl [a]	100
MACAU	
876 AVENIDA DA AMIZADE, EDIFICIO MARINA GARDENS, ROOM 310, 3RD FLOOR	
Shell Macau Petroleum Company Limited [a]	100
MALAYSIA	
12TH FLOOR, MENARA SYMPHONY, NO. 5, JALAN PROF. KHOO KAY KIM, SEKSYEN 13, PETALING JAYA/SELANGOR DARUL EHSAN, 46200	
P S Terminal Sendirian Berhad	35
Pertini Vista Sdn. Bhd. [a]	100
Provista Ventures Sdn. Bhd. [a]	100
Sarawak Shell Berhad [a]	100
Shell Business Service Centre Sdn. Bhd. [a]	100
Shell Global Solutions (Malaysia) Sdn. Bhd. [a]	100
Shell Malaysia Trading Sendirian Berhad [a]	100
Shell MDS (Malaysia) Sendirian Berhad [a]	72
Shell New Ventures Malaysia Sdn. Bhd. [a] [h]	100
Shell People Services Asia Sdn. Bhd. [a]	100
Shell Sabah Selatan Sendirian Berhad [a]	100
Shell Timur Sdn. Bhd. [a]	70
KENSINGTON GARDENS, NO. U1317, LOT 7616, JALAN JUMIDAR BUYONG, LABUAN F.T., 87000	
Shell Treasury Malaysia (L) Limited [a]	100
LEVEL 30, TOWER 1, PETRONAS TWIN TOWERS, KLCC, KUALA LUMPUR/FEDERAL TERRITORY, 50088	
P S Pipeline Sendirian Berhad	50
LEVEL 8, SYMPHONY HOUSE, BLOCK D13, PUSAT DAGANGAN DANA 1, JALAN PJU 1A/46, PETALING JAYA/SELANGOR DARUL EHSAN, 47301	
Bonuskad Loyalty Sdn. Bhd. [h]	33
LOT 7689 AND LOT 7690, SECTION 64, KUCHING TOWN LAND DISTRICT, JALAN PENDING, KUCHING, SARAWAK, 93450	
IOT Management Sdn. Bhd.	7
Tanjung Manis Oil Terminal Management Sdn. Bhd.	14
SUITE 13.03, 13 FLOOR, MENARA TAN & TAN, 207 TUN RAZAK, KUALA LUMPUR/FEDERAL TERRITORY, 50400	
Kebabangan Petroleum Operating Company Sdn. Bhd. [a] [c]	30
MAURITIUS	
33 EDITH CAVELL STREET, PORT LOUIS, 11324	
Pennzoil Products International Company [a]	100
6TH FLOOR, TOWER A, 1 CYBERCITY, EBENE, 72201	
BG Mauritius LNG Holdings Ltd [a]	100
BG Mumbai Holdings Limited [a]	100
MEXICO	
AVENIDA CERRO GORDO DEL CAMPESTRE, NUMBER 201, INTERIOR 202, OF COLONIA LAS QUINTAS, LEÓN, GUANAJUATO, 37125	
Mega Gasolineras SA de CV	50
AVENIDA PASEO DE LAS PALMAS 340, 1ST FLOOR, COLONIA LOMAS DE CHAPULTEPEC, DELEGACIÓN MIGUEL HIDALGO, CIUDAD DE MÉXICO, 11000	
Gas Del Litoral, S. de R.L. de C.V. [a]	75
Shell Energy Mexico, S.A. de C.V. [a]	100
Shell Exploracion y Exrtraccion de Mexico, S.A. de C.V. [a]	100
Shell México Gas Natural, S. de R.L. de C.V. [a]	100
Shell México, S.A. de C.V. [a]	100
Shell Servicios México, S.A. de C.V. [a]	100
Shell Solutions Mexico S.A. de C.V. [a]	100
Shell Trading México, S. de R.L. de C.V. [a]	100

Company by country and address of incorporation	%
GUILLERMO GONZÁLEZ CAMARENA NO. 400, SANTA FE, LVARO OBREGÓN, CIUDAD DE MÉXICO, 1210	
Comercial Importadora S.A. De C.V.	50
Concilia Asesores y Servicios, S.A. de C.V.	50
NETHERLANDS	
2E HAVENSTRAAT 5B, IJMUIDEN, 1976 CE	
Noordzeewind B.V. [a]	100
Noordzeewind C.V. [a] [e]	100
AMSTERDAMSEWEG 55, 1182 GP AMSTELVEEN, P.O. BOX 75650, LUCHTHAVEN SCHIPHOL, 1118 ZS	
Amsterdam Schiphol Pijpleiding Beheer B.V.	40
ANTARESLAAN 39, P.O. BOX 3068, 2130 KB, HOOFDDORP, 2132 JE	
Multi Tank Card B.V.	30
BUTAANWEG 215, VONDELINGPLAAT, ROTTERDAM, 3196 KC	
N.V. Rotterdam-Rijn Pijpleiding Maatschappij [a] [c]	56
C/O APPLEBY GLOBAL SERVICES (CAYMAN) LIMITED, 71 FORT STREET, P.O. BOX 500, GEORGE TOWN, GRAND CAYMAN, KY1-1106	
KE STP Company B.V. [a]	100
KE Suriname B.V. [a]	100
Portfolio Holdings B.V. [a]	100
CAREL VAN BYLANDTLAAN 16, THE HAGUE, 2596 HR	
Shell International Exploration and Production B.V. [a]	100
CAREL VAN BYLANDTLAAN 30, DEN HAAG, 2596 HP	
Solar-EW II B.V. [a]	100
CAREL VAN BYLANDTLAAN 30, THE HAGUE, 2596 HR	
Attiki Gas B.V. [a]	100
B.V. Dordtsche Petroleum Maatschappij [a]	100
B.V. Petroleum Assurantie Maatschappij [a]	100
BG Gas Brazil E&P 12 B.V. [a]	100
BG Gas Brazil Holdings B.V. [a]	100
BG Gas International B.V. [a]	100
BG Gas International Holdings B.V. [a]	100
BG Gas Netherlands Holdings B.V. [a]	100
BG Gas Sao Paulo Investments B.V. [a]	100
BJS Oil Operations B.V.	80
BJSA Exploration and Production B.V. [a]	100
Chosun Shell B.V. [a]	100
CrossWind Beheer B.V. [a] [c]	80
Crosswind C.V. [a] [c] [e]	80
Energiepark Pottendijk B.V. [a]	100
Geocombinatie Leeuwarden B.V.	30
HKN LP 1 B.V. [a]	100
HKN LP 2 B.V. [a]	100
HKN LP 3 B.V. [a]	100
HKN LP 4 B.V. [a]	100
HKN LP 5 B.V. [a]	100
HKN LP 6 B.V. [a]	100
Hkz Lp 18 B.V. [a]	100
Hkz Lp 19 B.V. [a]	100
Hkz Lp 20 B.V. [a]	100
Hkz Lp 21 B.V. [a]	100
Hkz Lp 22 B.V. [a]	100
Integral Investments B.V. [a]	100
Jordan Oil Shale Company B.V. [a]	100
LNG Shipping Operation Services Netherlands B.V. [a]	100
Netherlands Alng Holding Company B.V. [a]	100
Pottendijk Energie B.V. [a]	100
Pottendijk Wind B.V. [a]	100
Pottendijk Zon B.V. [a]	100

APPENDIX 1 continued

Company by country and address of incorporation	%
NETHERLANDS continued	
RESCO B.V. [a]	100
Rotterdam Hydrogen Company B.V. [a]	100
Salym Petroleum Development N.V. [a] [c]	50
Shell Abu Dhabi B.V. [a]	100
Shell Additives Holdings (I) B.V. [a]	100
Shell Additives Holdings (II) B.V. [a]	100
Shell Albania Block 4 B.V. [a]	100
Shell and Vivo Lubricants B.V.	50
Shell Brazil Holding B.V. [a]	100
Shell Business Development Central Asia B.V. [a]	100
Shell Caspian B.V. [a]	100
Shell Caspian Pipeline Holdings B.V. [a]	100
Shell China B.V. [a]	100
Shell China Holdings B.V. [a]	100
Shell Deepwater Borneo B.V. [a]	100
Shell Deepwater Tanzania B.V. [a]	100
Shell Development Iran B.V. [a]	100
Shell E and P Offshore Services B.V. [a]	100
Shell Egypt N.V. [a] [f]	100
Shell Energy Europe B.V. [a]	100
Shell EP Holdings (EE&ME) B.V. [a]	100
Shell EP Middle East Holdings B.V. [a]	100
Shell EP Oman B.V. [a]	100
Shell EP Russia Investments (III) B.V. [a]	100
Shell EP Russia Investments (V) B.V. [a]	100
Shell EP Somalia B.V. [a]	100
Shell EP Wells Equipment Services B.V. [a]	100
Shell Exploration and Production (100) B.V. [a]	100
Shell Exploration and Production (101) B.V. [a]	100
Shell Exploration and Production (102) B.V. [a]	100
Shell Exploration and Production (103) B.V. [a]	100
Shell Exploration and Production (106) B.V. [a]	100
Shell Exploration and Production (107) B.V. [a]	100
Shell Exploration and Production (82) B.V. [a]	100
Shell Exploration and Production (84) B.V. [a]	100
Shell Exploration and Production (89) B.V. [a]	100
Shell Exploration and Production (90) B.V. [a]	100
Shell Exploration and Production (91) B.V. [a]	100
Shell Exploration and Production (92) B.V. [a]	100
Shell Exploration and Production (93) B.V. [a]	100
Shell Exploration and Production (94) B.V. [a]	100
Shell Exploration and Production (96) B.V. [a]	100
Shell Exploration and Production (99) B.V. [a]	100
Shell Exploration and Production (LI) B.V. [a]	100
Shell Exploration and Production (LVIII) B.V. [a]	100
Shell Exploration and Production (LXI) B.V. [a]	100
Shell Exploration and Production (LXII) B.V. [a]	100
Shell Exploration and Production (LXV) B.V. [a]	100
Shell Exploration and Production (LXVI) B.V. [a]	100
Shell Exploration and Production (LXXI) B.V. [a]	100
Shell Exploration and Production (LXXV) B.V. [a]	100
Shell Exploration and Production Brunei B.V. [a]	100
Shell Exploration and Production Holdings B.V. [a]	100
Shell Exploration and Production Investments B.V. [a]	100
Shell Exploration and Production Mauritania (C10) B.V. [a]	100
Shell Exploration and Production Mauritania (C19) B.V. [a]	100
Shell Exploration and Production Services (RF) B.V. [a]	100

Company by country and address of incorporation	%
Shell Exploration and Production South Africa B.V. [a]	100
Shell Exploration and Production Ukraine I B.V. [a]	100
Shell Exploration and Production Ukraine Investments (I) B.V. [a]	100
Shell Exploration and Production Ukraine Investments (II) B.V. [a]	100
Shell Exploration and Production West-Siberia B.V. [a]	100
Shell Exploration B.V. [a]	100
Shell Exploration Company (RF) B.V. [a]	100
Shell Exploration Company (West) B.V. [a]	100
Shell Exploration Company B.V. [a]	100
Shell Exploration Venture Services B.V. [a]	100
Shell Finance (Netherlands) B.V. [a]	100
Shell Gas & Power Developments B.V. [a]	100
Shell Gas (LPG) Holdings B.V. [a]	100
Shell Gas B.V. [a]	100
Shell Gas Iraq B.V. [a]	100
Shell Gas Nigeria B.V. [a]	100
Shell Gas Venezuela B.V. [a]	100
Shell Generating (Holding) B.V. [a]	100
Shell Geothermal B.V. [a]	100
Shell Global Solutions (Eastern Europe) B.V. [a]	100
Shell Global Solutions Services B.V. [a]	100
Shell Hydrogen Operations & Production BV [a]	100
Shell Information Technology International B.V. [a]	100
Shell Integrated Gas Oman B.V. [a]	100
Shell International B.V. [a]	100
Shell International Finance B.V. [a] [b]	100
Shell Internationale Research Maatschappij B.V. [a]	100
Shell Internet Ventures B.V. [a]	100
Shell Iraq Petroleum Development B.V. [a]	100
Shell Iraq Services B.V. [a]	100
Shell Kazakhstan B.V. [a]	100
Shell Kazakhstan Development B.V. [a]	100
Shell Kuwait Exploration and Production B.V. [a]	100
Shell LNG Bunkering B.V. [a]	100
Shell LNG Port Spain B.V. [a]	100
Shell Manufacturing Services B.V. [a]	100
Shell Mozambique B.V. [a]	100
Shell Namibia Upstream B.V. [a]	100
Shell Nanhai B.V. [a]	100
Shell Nederland B.V. [a]	100
Shell Netherlands Canada Financing B.V. [a]	100
Shell New Energies Holding Europe B.V. [a]	100
Shell New Energies NL B.V. [a]	100
Shell Offshore (Personnel) Services B.V. [a]	100
Shell Offshore Services B.V. [a]	100
Shell Offshore Upstream South Africa B.V. [a]	100
Shell OKLNG Holdings B.V. [a]	100
Shell Olie OG Gas Holding B.V. [a] [j]	100
Shell Oman Exploration and Production B.V. [a]	100
Shell Overseas Holdings (Oman) B.V. [a]	100
Shell Overseas Investments B.V. [a]	100
Shell Petroleum N.V. [a] [b]	100
Shell Philippines Exploration B.V. [a]	100
Shell Project Development (VIII) B.V. [a]	100
Shell RDS Holding B.V. [a]	100
Shell Sakhalin Holdings B.V. [a]	100
Shell Sakhalin Services B.V. [a]	100
Shell Salym Development B.V. [a]	100

Company by country and address of incorporation	%
Shell Sao Tome and Principe B.V. [a]	100
Shell Services Oman B.V. [a]	100
Shell Shared Services (Asia) B.V. [a]	100
Shell South Syria Exploration B.V. [a]	100
Shell Trademark Management B.V. [a]	100
Shell Trading Russia B.V. [a]	100
Shell Upstream Albania B.V. [a]	100
Shell Upstream Development B.V. [a]	100
Shell Upstream Indonesia Services B.V. [a]	100
Shell Upstream Turkey B.V. [a]	100
Shell Ventures B.V. [a]	100
Shell Ventures Investments B.V. [a]	100
Shell Western LNG B.V. [a]	100
Shell Windenergy Netherlands B.V. [a]	100
Shell Windenergy NZW I B.V. [a]	100
Syria Shell Petroleum Development B.V. [a] [i]	65
Tamba B.V.	50
The Green Near Future 5 B.V. [a]	100
CAREL VAN BYLANDTLAAN 30, THE HAGUE, 2596HR	
Solar-EP II B.V. [a]	100
Chemieweg 25, P.O. Box 6060, Moerdijk, 4780 LN	
SHELL NEDERLAND CHEMIE B.V. [A] [H]	100
DR. HUB VAN DOORNEWEG 183, TILBURG, 5026 RD	
Travis Road Services International B.V.	34
EUROPAWEG 975, MAASVLAKTE, ROTTERDAM, 3199 LC	
Maasvlakte Olie Terminal C.V. [e]	16
GRAAF ENGELBERTLAAN 75, BREDA, 4837DS	
Next Kraftwerke Benelux B.V. [a]	100
HENRI BERSSENBRUGGESTRAAT 9, DEVENTER, 7425 SB	
B.R.E. B.V. [a]	100
Waalbrug Exploitatie Maatschappij B.V. [a]	100
HERIKERBERGWEG 238, AMSTERDAM, 1101 CM	
Bogstone Holding B.V.	51
Cicerone Holding B.V.	51
Infineum Holdings B.V.	50
HERIKERBERGWEG 88, AMSTERDAM, 1101 CM	
Shell Technology Ventures Fund 1 B.V.	52
HOFPLEIN 20, ROTTERDAM, 3032 AC	
Shell TapUp B.V. [a]	100
LANGE KLEIWEG 40, RIJSWIJK, 2288 GK	
Shell Global Solutions International B.V. [a]	100
MUIDERSTRAAT 1, AMSTERDAM, 1011 PZ	
Caspi Meruerty Operating Company B.V. [a] [c]	40
OOSTDUINLAAN 2, THE HAGUE, 2596 JM	
North Caspian Operating Company N.V. [a] [c]	17
OOSTERHORN 36, FARMSUM, 9936 HD	
Zeolyst C.V.	50
P.O. BOX 477, GRONINGEN, 9700 AL	
Gasterra B.V.	25
POLARIS AVENUE 81, P.O. BOX 2047, 2130 GE, HOOFDDORP, 2132 JH	
Loyalty Management Netherlands B.V.	40
REACTORWEG 301, UNIT 1.3, UTRECHT, 3542 AD	
Paqell B.V.	50
RIGAKADE 20, AMSTERDAM, 1013 BC	
Shell EV Charging Solutions B.V. [a]	100
SCHEPERSMAAT 2, ASSEN, 9405 TA	
Nederlandse Aardolie Maatschappij B.V.	50
STRAWINSKYLAAN 1343, AMSTERDAM, 1077 XX	
Shell & AMG Recycling B.V [e]	50
STRAWINSKYLAAN 1345, AMSTERDAM, 1077 XX	
Karachaganak Petroleum Operating B.V. [a] [c]	29
VONDELINGENWEG 601, VONDELINGENPLAAT, ROTTERDAM, 3196 KK	
Ellba B.V. [a] [c]	50
Ellba C.V. [a] [c] [e]	50
Shell MSPO 2 Holding B.V. [a]	100
Shell Nederland Raffinaderij B.V. [a]	100
VOORSTRAAT 67, GROOT-AMMERS, 2964 AJ	
BlueAlp Holding B.V.	21
VOORSTRAAT 67, GROOT-AMMERS, 2964AJ	
PTC Kampen B.V. [a]	80
VORMERLAAN 5, RIJSWIJK, 2288 GC	
MS Europe B.V. [a]	100
WEENA 70, ROTTERDAM, 3012 CM	
Blauwwind II C.V. [e]	20
Blauwwind Management II B.V.	20
Euroshell Cards B.V. [a]	100
Shell Chemicals Europe B.V. [a]	100
Shell Downstream Services International B.V. [a]	100
Shell Energy Retail B.V. [a]	100
Shell Lubricants Supply Company B.V. [a]	100
SHELL NEDERLAND VERKOOPMAATSCHAPPIJ B.V. [A]	100
Shell Trading Rotterdam B.V. [a]	100
Snijders Olie B.V. [a]	100
Tankstation Exploitatie Maatschappij Holding B.V. [a]	100
WEENA 762, 9E VERDIEPING, ROTTERDAM, 3014 DA	
Guara B.V.	30
Iara B.V.	4
Lapa Oil & Gas B.V.	30
Libra Oil & Gas B.V.	20
Tupi B.V.	23
ZEELANDSESTRAAT 1, MILLINGEN AAN DE RIJN, 6566 DE	
SolarNow B.V.	23
NEW ZEALAND	
C/O BAKER TILLY STAPLES RODWAY TARANAKI LIMITED, 109-113 POWDERHAM STREET, P.O. BOX 146, NEW PLYMOUTH, TARANAKI, 4340	
Energy Finance NZ Limited [a]	100
Energy Holdings Offshore Limited [a]	100
Shell (Petroleum Mining) Company Limited [a]	100
Shell Energy Asia Limited [a]	100
Shell Investments NZ Limited [a]	100
Southern Petroleum No Liability [a]	100
MERCER (N.Z.) LIMITED, FLOOR 2, 20 CUSTOMHOUSE QUAY, WELLINGTON, 6011	
Shell New Zealand Pensions Limited [a]	100
NIGERIA	
CORPORATE OFFICE, INTELS ABA ROAD ESTATE, KM16 ABA EXPRESSWAY, PORT HARCOURT, 500211	
Nigeria LNG Limited	26
NLNG Shipping Management Limited	20
FREEMAN HOUSE, 21/22 MARINA, P.M.B. 2418, LAGOS	
All on Partnerships for Energy Access Limited by Guarantee [a]	100
BG Exploration and Production Nigeria Limited [a]	100
BG Upstream A Nigeria Limited [a]	100
Delta Business Development Limited [a]	100
Shell Exploration and Production Africa Limited [a]	100
Shell Nigeria Business Operations Limited [a]	100
Shell Nigeria Closed Pension Fund Administrator Ltd [a]	100
Shell Nigeria Exploration and Production Company Ltd [a]	100
Shell Nigeria Exploration Properties Charlie Limited [a]	100

APPENDIX 1 continued

Company by country and address of incorporation	%
NIGERIA continued	
Shell Nigeria Gas Ltd (SNG) [a]	100
Shell Nigeria Infrastructure Development Limited [a]	100
Shell Nigeria Oil Products Limited (SNOP) [a]	100
Shell Nigeria Ultra Deep Limited [a]	100
Shell Nigeria Upstream Ventures Limited [a]	100
Shell Thrift & Loan Fund Trustees Nig Ltd [a]	99
SHELL INDUSTRIAL AREA, P.O. BOX 263, RIVERS STATE, PORT HARCOURT, 500272	
The Shell Petroleum Development Company of Nigeria Limited [a]	100
NORWAY	
BYFJORDPARKEN 15, STAVANGER, 4007	
Northern Lights JV DA [e]	33
KARENSLYST ALLÉ 2, OSLO, 0278	
Shell New Energies Norway AS [a]	100
KONGSGÅRDBAKKEN 1, STAVANGER, 4005	
Enhanced Well Technologies Group AS	22
KRISTIAN AUGUSTS GATE 13, OSLO, 0164	
Aviation Fuelling Services Norway AS	50
MONGSTAD 71A, MONGSTAD, 5954	
Technology Centre Mongstad DA	9
NYHAMNA, AUKRA, 6480	
Ormen Lange Eiendom DA	18
TANKVEGEN 1, TANANGER, 4056	
A/S Norske Shell [a]	100
OMAN	
BAIT SALAM, SALAM SQUARE, P.O. BOX 74, MUSCAT, P.C. 116	
Shell Development Oman LLC [a]	100
P.O. BOX 38, MINA AL FAHAL, MUSCAT, 116	
Shell Oman Marketing Company SAOG [a]	49
P.O. BOX 398, SOHAR FREE ZONE, NORTH AL BATINAH GOVERNORATE, SOHAR, 322	
Sohar Solar Qabas (FZC) LLC [a]	100
P.O. BOX 560, MINA AL FAHAL, MUSCAT, 116	
Oman LNG LLC	30
P.O. BOX 81, MINA AL FAHAL, MUSCAT, 113	
Petroleum Development Oman LLC	34
PAKISTAN	
E110, KHAYABAN E JINNAH, LAHORE CANTONEMENT, PUNJAB, CANTONEMENT, 54810	
Pakistan Energy Gateway Limited	33
OFFICE NO 8, LEVEL 3, GROUND FLOOR, SERENA BUSINESS COMPLEX, KHAYABAN-E-SUHRDWARDY, G-5/1, ISLAMABAD, 44000	
Pak Arab Pipeline Company Limited	20
SHELL HOUSE, 6 CH. KHALIQUZZAMAN ROAD, KARACHI, 75530	
Shell Energy Pakistan (Private) Limited [a]	100
Shell Pakistan Limited [a]	77
PERU	
CALLE DEAN VALDIVIA 111, OFICINA 802, SAN ISIDRO, LIMA, LIMA 27	
Shell GNL Peru S.A.C. [a]	100
Shell Operaciones Peru S.A.C. [a]	100
PHILIPPINES	
2ND FLOOR, BONIFACIO TECHNOLOGY CENTER, 31ST STREET CORNER 2ND AVENUE, BONIFACIO GLOBAL CITY, TAGUIG, METRO MANILA, 1635	
Bonifacio Gas Corporation	24
41ST FLOOR, THE FINANCE CENTER, 26TH STREET CORNER 9TH AVENUE, BONIFACIO GLOBAL CITY, TAGUIG, METRO MANILA, 1635	
Pilipinas Shell Petroleum Corporation [a]	55
Shell Chemicals Philippines, Inc. [a]	100
Shell Energy Philippines Inc [a]	100
Shell Gas and Energy Philippines Corporation [a]	100
Shell Solar Philippines Corporation [a]	100
NDC BLDG., 116 TORDESILLAS ST., SALCEDO VILLAGE, MAKATI CITY, METRO MANILA, 1227	
Kamayan Realty Corporation	22
SUBIC BAY FREE PORT ZONE, OLANGAPO CITY, 2200	
Shell Gas Trading (Asia Pacific), Inc. [a]	100
UNIT D 9TH FLOOR INOZA TOWER, 40TH STREET, NORTH BONIFACIO, BONIFACIO GLOBAL CITY, TAGUIG, METRO MANILA, 1634	
Tabangao Realty, Inc.	40
POLAND	
ASTORIA, PRZESKOK 2, WARSAW, 00-032	
Next Kraftwerke Sp. z o.o. [a]	100
UL. BITWY WARSZAWSKIEJ 1920 R. NR 7A, WARSAW, 02-366	
Shell Polska Sp. z o.o. [a]	100
UL. BITWY WARSZAWSKIEJ 1920R. 7A, WARSZAWA, 02-366	
Shell Mobility Polska Sp. z o.o. [a]	100
UL. PAWIA 21, KRAKOW, 31-154	
Shell Energy Retail Poland Sp. z o.o. [a]	100
PUERTO RICO	
P.O. BOX 186, YABUCOA, PR 00767-0186	
Station Managers of Puerto Rico, Inc. [a]	100
QATAR	
1ST FLOOR, AL-MIRQAB TOWER, DOHA	
Marine LNG Solutions LLC [a] [c]	50
AL MIRQAB TOWER, WEST BAY, P.O. BOX 3747, DOHA	
Qatar Shell Service Company W.L.L. [a]	100
P.O. BOX 22666, DOHA	
Qatar Liquefied Gas Company Limited (4)	30
QATAR SCIENCE & TECHNOLOGY PARK TECH1, OFFICE 101, P.O. BOX 3747, DOHA	
Qatar Shell Research & Technology Centre QSTP-LLC [a]	100
ROMANIA	
ING. GEORGE CONSTANTINESCU STREET, NO. 4B AND 2-4, BUILDING A, FLOOR 7, OFFICE 727, DISTRICT 2, BUCHAREST, 20337	
Shell Romania S.R.L. [a]	100
RUSSIA	
24 A YAKUBOVICHA UL., SAINT PETERSBURG, 190000	
Khanty-Mansiysk Petroleum Alliance Closed Joint Stock Company [a] [c]	50
9 LESNAYA STREET, FLOOR 3, MOSCOW, 125196	
Limited Liability Company "Shell Neft" [a]	100
9 LESNAYA STREET, FLOOR 4, MOSCOW, 125196	
Limited Liability Company "Shell Neftegaz Development (V)" [a]	100
LLC Shell NefteGaz Development [a]	100
Syriaga Neftegaz Development LLC [a]	100
SINOPSKAYA NABEREZHNAYA, 22 A, OFFICE 811, SANKT-PETERBURG, 191167	
Gydan Energy LLC [a] [c]	50
SAINT KITTS AND NEVIS	
MORNING STAR HOLDINGS LIMITED, MAIN STREET, SUITE 556, CHARLESTOWN, NEVIS, WEST INDIES	
Shell Oil & Gas (Malaysia) LLC [a]	90
SAINT LUCIA	
MERCURY COURT, CHOC ESTATE, CASTRIES	
BG Atlantic 2/3 Holdings Limited [a]	100
SAUDI ARABIA	
P.O. BOX 41467, RIYADH, 11521	
Al Jomaih and Shell Lubricating Oil Co.Ltd.	50
SINGAPORE	
1 COMMONWEALTH LANE, #09-30, ONE COMMONWEALTH, SINGAPORE, 149544	
Zeco Systems Pte. Ltd. [a]	99
1 HARBOURFRONT AVENUE, #08-01/08, KEPPEL BAY TOWER, SINGAPORE, 098632	
Infineum Singapore LLP	50
15, AIRLINE ROAD, SINGAPORE, 819828	
Changi Airport Fuel Hydrant Installation Pte. Ltd.	11

Company by country and address of incorporation	%
160 TUAS SOUTH AVENUE 5, SINGAPORE, 637364	
Singapore Lube Park Pte. Ltd. [a] [c]	44
25 CHURCH STREET, 03-04 CAPITAL SQUARE THREE, SINGAPORE, 049482	
Cleantech Renewable Assets Pte Ltd	49
50 GUL ROAD, SINGAPORE, 629351	
Fuelng Pte. Ltd [a] [c]	50
50 RAFFLES PLACE #06-00, SINGAPORE LAND TOWER, SINGAPORE, 048623	
Orb Energy Pte Ltd.	24
THE METROPOLIS TOWER 1, 9 NORTH BUONA VISTA DRIVE, #07-01, SINGAPORE, 138588	
BG Asia Pacific Holdings Pte. Limited [a]	100
BG Asia Pacific Services Pte. Ltd. [a]	100
BG Exploration & Production Myanmar Pte. Ltd. [a]	100
BG Insurance Company (Singapore) Pte Ltd [a]	100
BG Myanmar Pte. Ltd. [a]	100
Connected Freight Pte. Ltd.	80
QPI and Shell Petrochemicals (Singapore) Pte Ltd	51
Shell Catalysts & Technologies Pte. Ltd. [a]	100
Shell Chemicals Seraya Pte. Ltd. [a]	100
Shell Eastern Petroleum (Pte) Ltd [a] [h]	100
Shell Eastern Trading (Pte) Ltd [a] [h]	100
Shell Gas Marketing Pte. Ltd. [a]	100
Shell Integrated Gas Thailand Pte.Limited [a]	100
Shell International Shipping Services (Pte) Ltd [a]	100
Shell Myanmar Energy Pte. Ltd. [a]	100
Shell Pulau Moa Pte Ltd [a]	100
Shell Tankers (Singapore) Private Limited [a]	100
Shell Treasury Centre East (Pte) Ltd [a]	100
Sirius Well Manufacturing Services Pte. Ltd. [a] [c]	50
SLOVAKIA	
EINSTEINOVA 23, BRATISLAVA, 851 01	
SHELL Slovakia s.r.o. [a]	100
SLOVENIA	
BRAVNICARJEVA ULICA 13, LJUBLJANA, 1000	
Shell Adria d.o.o. [a]	100
SOUTH AFRICA	
1ST FLOOR OXFORD PARKS, 199 OXFORD ROAD, DUNKELD, GAUTENG, 2196	
Sekelo Oil Trading (Pty) Limited	43
HONSHU ROAD, DURBAN, 4001	
Blendcor (Pty) Ltd. [a] [c]	36
REUNION, DURBAN, 4001	
Shell & BP South African Petroleum Refineries (Pty) Limited [a] [c]	36
SUITE OE/2, THE NAUTICA, THE WATERCLUB, BEACH ROAD, GRANGER BAY, CAPE TOWN, 8001	
STISA (Pty) Limited [a]	72
TWICKENHAM, THE CAMPUS, 57 SLOAN STREET, EPSOM DOWNS, BRYANSTON, 2021	
Bituguard Southern Africa (Pty) Ltd	36
Shell Downstream South Africa (Pty) Ltd [a]	72
Shell South Africa Energy (Pty) Ltd [a]	100
Shell South Africa Exploration (Pty) Limited [a]	100
Shell South Africa Holdings (Pty) Ltd [a]	100
SOUTH KOREA	
#704-3, TOWER B. HYUNDAI KNOWLEDGE INDUSTRIAL CENTER, 70 DUSAN-RO, GEUMCHEON-GU, SEOUL, 08584	
Korea Impact Carbon Corporation	40
640-6, DAEJUK-RI, DAESAN-EUP, SEOSAN-SHI, CHUNGCHONGNAM-DO, 356-713	
Hyundai and Shell Base Oil Co., Ltd	40
903, 21, CENTUM 6-RO, HAEUNDAE-GU, BUSAN, 0	
MunmuBaram Co.,Ltd. [a]	80
NO. 250, SINSUN-RO, NAM-GU, BUSAN, 48561	
Hankook Shell Oil Company [a]	54

Company by country and address of incorporation	%
SPAIN	
PASEO DE LA CASTELLANA, 257-6°, MADRID, 28046	
BG Energy Iberian Holdings, S.L. [a]	100
Shell España, S.A. [a]	100
Shell Spain LNG, S.A.U. [a]	100
RIO BULLAQUE, 2, MADRID, 28034	
Shell & Disa Aviation España, S.L.	50
SWEDEN	
DELOITTE, P.O. BOX 450, ÖSTERSUND, 831 26	
BG International Services AB [a]	100
GUSTAVSLUNDSVÄGEN 22, BROMMA, 16751	
Shell Aviation Sweden AB [a]	100
P.O. BOX 135, STOCKHOLM-ARLANDA, 190 46	
A Flygbränslehantering Aktiebolag	25
P.O. BOX 2154, GOTHENBURG, 438 14	
Gothenburg Fuelling Company AB	33
P.O. BOX 85, STOCKHOLM-ARLANDA, 190 45	
Stockholm Fuelling Services AB	25
STURUP FLYGPLATS, P.O. BOX 22, MALMÖ, 230 32	
Malmö Fuelling Services AB	33
SWITZERLAND	
AUTOSTRADA A2 (DIREZIONE GOTTARDO), HOTEL BELLINZONA SUD, MONTE CARASSO, 6513	
Stazioni Autostradali Bellinzona SA	50
BAARERMATTE, BAAR, 6340	
Shell (Switzerland) AG [a]	100
Shell Brands International AG [a]	100
Shell Corporate Services Switzerland AG [a]	100
Shell Finance Switzerland AG [a]	100
Shell Holdings Switzerland AG [a]	100
Shell Trading Switzerland AG [a]	100
Shell Treasury Company Switzerland AG [a]	100
Solen Versicherungen AG [a]	100
BAHNHOFSTR. 10, ZURICH, 8001	
Suisse Next GmbH [a]	100
ROUTE DE PRÉ-BOIS 17, COINTRIN, 1216	
Saraco SA	20
ROUTE DE VERNIER 132, VERNIER, 1214	
SOGEP Sociéte Genevoise des Pétroles SA	34
Steigerhubelstrasse 8, Bern, 3008	
Shell Lubricants Switzerland AG [a]	100
ZWÜSCHETEICH, RÜMLANG, 8153	
UBAG – Unterflurbetankungsanlage Flughafen Zürich AG	20
SYRIA	
DAMASCUS NEW SHAM WESTERN DUMMAR, ISLAND NO. 1 – PROPERTY 2299, P.O. BOX 7660, DAMASCUS	
Al Badiah Petroleum Company	22
Al Furat Petroleum Company	20
TAIWAN	
INTERNATIONAL TRADE BUILDING, ROOM 2001, 20TH FLOOR, 333, KEELUNG ROAD SECTION 1, TAIPEI, 110	
Shell Taiwan Limited [a]	100
NO. 2, TSO-NAN ROAD, NAN-TZE DISTRICT, P.O. BOX 25-30, KAOHSIUNG, 811	
CPC Shell Lubricants Co. Ltd	51
TANZANIA	
1ST FLOOR KILWA HOUSE, PLOT 369, TOURE DRIVE, OYSTER BAY, P.O. BOX 105833, DAR ES SALAAM	
Fahari Gas Marketing Company Limited	53
Mzalendo Gas Processing Company Limited	53
Ruvuma Pipeline Company Limited	53
Tanzania LNG Limited [a]	100

APPENDIX 1 continued

Company by country and address of incorporation	%
THAILAND	
10 SOONTHORNKOSA ROAD, KLONGTOEY, BANGKOK, 10110	
Pattanadhorn Company Limited [a]	42
Sahapanichkijphun Company Limited [a]	42
Shell Global Solutions (Thailand) Limited [a]	100
Shell Global Solutions Holdings (Thailand) Limited [a]	100
Shell Global Solutions Service (Thailand) Company Limited [a]	100
Thai Energy Company Limited [a]	100
Unitas Company Limited [a]	42
TRINIDAD AND TOBAGO	
1 INTERNATIONAL DRIVE, WESTMOORINGS	
The International School of Port of Spain Limited	25
5 SAINT CLAIR AVENUE, SAINT CLAIR, PORT OF SPAIN	
BG 2/3 Investments Limited [a]	100
Point Fortin LNG Exports Limited	81
Shell Gas Supply Trinidad Limited [a]	100
Shell LNG T&T Ltd [a]	100
Shell Manatee Limited [a]	100
Shell Trinidad Central Block Limited [a]	100
Shell Trinidad North Coast Limited [a]	100
TRINLING Limited [a]	100
SHELL ENERGY HOUSE, 5 ST. CLAIR AVENUE, PORT OF SPAIN	
Shell Trinidad Ltd [a]	100
TUNISIA	
IMMEUBLE LE TANIT DU LAC, RUE DU LAC WINDERMERE, LES BERGES DU LAC, TUNIS, 1053	
Tunisian Processing S.A. [a]	100
IMMEUBLE LE TANIT DU LAC, RUE DU LAC WINDERMERE, LES BERGES DU LAC, TUNIS, 1053	
Shell Tunisia LPG S.A. [a]	100
IMMEUBLE MEZGHENNI, RUE DU LAC WINDERMERE, LES BERGES DU LAC, TUNIS, 1053 – BP 36	
Amilcar Petroleum Operations S.A.	50
TURKEY	
DILOVASI ORGANIZE SANAYI BOLGESI 1.KISIM, 1004 SOKAK NO:10, DILOVASI, KOCAELI	
Samsun Akaryakit VE Depolama A.S.	35
GULBAHAR MAH.SALIH TOZAN SOK., KARAMANCILAR IS MERKEZI B BLOK NO:18, ESENTEPE, SISLI, ISTANBUL, 34394	
Shell & Turcas Petrol A.S. [a]	70
Shell Enerji A.S. [a]	100
Shell Petrol A.S. [a]	70
LIMAN MAHALLESI 60. SOKAK NO. 25, KONYAALTI, ANTALYA, 07070	
Cekisan Depolama Hizmetleri Ltd. Sti.	46
SULTANKOY MAHALLESI MALTEPE SOKAK NO:66, MARMARA EREGLISI, TEKIRDAG, 59750	
Marmara Depoculuk Hizmetleri A.S.	35
UK	
1 ALTENS FARM ROAD, NIGG, ABERDEEN, AB12 3FY	
Shell Trustee Solutions Limited [a]	100
16 GREAT QUEEN STREET, COVENT GARDEN, LONDON, WC2B 5AH	
Ubitricity Distributed Energy Systems UK Limited [a]	100
3 WATERHOUSE SQUARE, 138 – 142 HOLBORN, LONDON, EC1N 2SW	
Shell EV Charging Solutions UK Ltd. [a]	100
50 LOTHIAN ROAD, FESTIVAL SQUARE, EDINBURGH, EH3 9WJ	
BG General Partner Limited [a]	100
5-7 ALEXANDRA ROAD, HEMEL HEMPSTEAD, HERTFORDSHIRE, HP2 5BS	
British Pipeline Agency Limited	50
United Kingdom Oil Pipelines Limited [a] [c]	48
Walton-Gatwick Pipeline Company Limited [a] [c]	52
West London Pipeline and Storage Limited [a] [c]	38
BUILDING 1204, SANDRINGHAM ROAD, HEATHROW AIRPORT, HOUNSLOW, MIDDLESEX, TW6 3SH	
Heathrow Airport Fuel Company Limited	14
Heathrow Hydrant Operating Company Limited	10

Company by country and address of incorporation	%
CANTERBURY COURT, KENNINGTON PARK, 1-3 BRIXTON ROAD, LONDON, SW9 6DE	
Limejump Energy Limited [a]	100
Limejump Intermediate 1 Limited [a]	100
Limejump Ltd [a]	100
Limejump Virtual 1 Limited [a]	100
Limejump Virtual 10 Limited [a]	100
Limejump Virtual 11 Limited [a]	100
Limejump Virtual 12 Limited [a]	100
Limejump Virtual 13 Limited [a]	100
Limejump Virtual 14 Limited [a]	100
Limejump Virtual 15 Limited [a]	100
Limejump Virtual 2 Limited [a]	100
Limejump Virtual 3 Limited [a]	100
Limejump Virtual 4 Limited [a]	100
Limejump Virtual 5 Limited [a]	100
Limejump Virtual 6 Limited [a]	100
Limejump Virtual 7 Limited [a]	100
Limejump Virtual 8 Limited [a]	100
Limejump Virtual 9 Limited [a]	100
LEVEL 39, ONE CANADA SQUARE, LONDON, E14 5AB	
Applied Blockchain Ltd	22
MAIN ROAD, WATERSTON, MILFORD HAVEN, PEMBROKESHIRE, SA73 1DR	
Dragon LNG Group Limited [a] [c]	50
ONE BARTHOLOMEW CLOSE, LONDON, EC1A 7BL	
Gatwick Airport Storage and Hydrant Company Limited	13
Manchester Airport Storage and Hydrant Company Limited	25
PANNONE CORPORATE LLP, 378-380 DEANSGATE, CASTLEFIELD, MANCHESTER, M3 4LY	
Steama Company Limited	33
SHELL CENTRE, LONDON, SE1 7NA	
BG Central Holdings Limited [a]	100
BG Cyprus Limited [a]	100
BG Delta Limited [a]	100
BG Energy Capital Plc [a]	100
BG Energy Holdings Limited [a]	100
BG Energy Marketing Limited [a]	100
BG Equatorial Guinea Limited [a]	100
BG Gas Services Limited [a]	100
BG General Holdings Limited [a]	100
BG Great Britain Limited [a]	100
BG Group Employee Shares Trustees Limited [a]	100
BG Group Limited [a]	100
BG Group Pension Trustees Limited [a]	100
BG Group Trustees Limited [a]	100
BG Intellectual Property Limited [a]	100
BG International Limited [a]	100
BG Karachaganak Limited [a]	100
BG Kenya L10A Limited [a]	100
BG Kenya L10B Limited [a]	100
BG LNG Investments Limited [a]	100
BG Mongolia Holdings Limited [a]	100
BG Netherlands Financing Unlimited [a]	100
BG Norge Limited [a]	100
BG North Sea Holdings Limited [a]	100
BG OKLNG Limited [a]	100
BG Overseas Holdings Limited [a]	100
BG Overseas Investments Limited [a]	100
BG Overseas Limited [a]	100
BG Rosetta Limited [a]	100

Company by country and address of incorporation	%
BG South East Asia Limited [a]	100
BG Subsea Well Project Limited [a]	100
BG Tanzania Holdings Limited [a]	100
BG Trinidad LNG Limited [a]	100
BG UK Holdings Limited [a]	100
Brazil Shipping I Limited [a]	100
B-Snug Limited [a]	100
CRI Catalyst Company Europe Limited [a]	100
Derivatives Trading Atlantic Limited [a]	100
Eastham Refinery Limited [a] [c]	50
Enterprise Oil Limited [a]	100
Enterprise Oil Middle East Limited [a]	100
Enterprise Oil Norge Limited [a]	100
Enterprise Oil U.K. Limited [a]	100
Gainrace Limited [a]	100
GOGB Limited [a]	100
Machine Max Limited [a]	100
Methane Services Limited [a]	100
Murphy Schiehallion Limited [a]	100
Private Oil Holdings Oman Limited [a]	85
Sabah Shell Petroleum Company Limited [a]	100
Saxon Oil Limited [a]	100
Saxon Oil Miller Limited [a]	100
SELAP Limited [a]	100
Shell Aircraft Limited [a]	100
Shell Aviation Limited [a]	100
Shell Business Development Middle East Limited [a]	100
Shell Caribbean Investments Limited [a]	100
Shell Chemical Company of Eastern Africa Limited [a]	100
Shell Chemicals (Hellas) Limited [a]	100
Shell Chemicals Limited [a]	100
Shell Chemicals U.K. Limited [a]	100
Shell China Exploration and Production Company Limited [a]	100
Shell Clair UK Limited [a]	100
Shell Club Corringham Limited [a]	100
Shell Company (Hellas) Limited [a]	100
Shell Company (Pacific Islands) Limited [a]	100
Shell Corporate Director Limited [a]	100
Shell Corporate Secretary Limited [a]	100
Shell Distributor (Holdings) Limited [a]	100
Shell Employee Benefits Trustee Limited [a]	100
Shell Energy Europe Limited [a]	100
Shell Energy Investments Limited [a]	100
Shell Energy Supply UK LTD. [a]	100
Shell EP Offshore Ventures Limited [a]	100
Shell Exploration and Production Tanzania Limited [a]	100
Shell Finance GB Limited [a]	100
Shell Gas Holdings (Malaysia) Limited [a]	100
Shell Gas Marketing U.K Limited [a]	100
Shell Global LNG Limited [a]	100
Shell Hasdrubal Limited [a]	100
Shell Holdings (U.K.) Limited [a]	100
Shell Information Technology International Limited [a]	100
Shell International Gas Limited [a]	100
Shell International Limited [a]	100
Shell International Petroleum Company Limited [a]	100
Shell International Trading and Shipping Company Limited [a]	100

Company by country and address of incorporation	%
Shell Malaysia Limited [a]	100
Shell Marine Products Limited [a]	100
Shell New Energies Holding Limited [a]	100
Shell New Energies UK Ltd [a]	100
Shell Overseas Holdings Limited [a]	100
Shell Overseas Services Limited [a]	100
Shell Pension Reserve Company (SIPF) Limited [a]	100
Shell Pension Reserve Company (SOCPF) Limited [a]	100
Shell Pension Reserve Company (UK) Limited [a]	100
Shell Pensions Trust Limited [a]	100
Shell Property Company Limited [a]	100
Shell QGC Holdings Limited [a] [h]	100
Shell QGC Midstream 1 Limited [a] [h]	100
Shell QGC Midstream 2 Limited [a]	100
Shell QGC Upstream 1 Limited [a]	100
Shell QGC Upstream 2 Limited [a]	100
Shell Research Limited [a]	100
Shell Response Limited [a]	100
Shell South Asia LNG Limited [a]	100
Shell Supplementary Pension Plan Trustees Limited [a]	100
Shell Tankers (U.K.) Limited [a]	100
Shell Trading International Limited [a]	100
Shell Treasury Centre Limited [a]	100
Shell Treasury Dollar Company Limited [a]	100
Shell Treasury UK Limited [a]	100
Shell Trinidad 5(A) Limited [a]	100
Shell Trinidad and Tobago Limited [a]	100
Shell Trinidad Block E Limited [a]	100
Shell Tunisia Upstream Limited [a]	100
Shell U.K. Limited [a]	100
Shell U.K. North Atlantic Limited [a]	100
Shell U.K. Oil Products Limited [a]	100
Shell Upstream Overseas Services (I) Limited [a]	100
Shell Ventures New Zealand Limited [a]	100
Shell Ventures U.K. Limited [a]	100
Shell-Mex and B.P. Limited	60
STT (Das Beneficiary) Limited [a] [b]	100
Synthetic Chemicals (Northern) Limited [a]	100
Telegraph Service Stations Limited [a]	100
The Anglo-Saxon Petroleum Company Limited [a]	100
The Asiatic Petroleum Company Limited [a]	100
The Consolidated Petroleum Company Limited	50
The Mexican Eagle Oil Company Limited [a]	100
The Shell Company (W.I.) Limited [a]	100
The Shell Company of Hong Kong Limited [a]	100
The Shell Company of India Limited [a]	100
The Shell Company of Nigeria Limited [a]	100
The Shell Company of Thailand Limited [a]	100
The Shell Company of The Philippines Limited [a]	75
The Shell Company of Turkey Limited [a]	100
The Shell Marketing Company of Borneo Limited [a]	100
The Shell Petroleum Company Limited [a]	100
The Shell Transport and Trading Company Limited [a]	100
Thermocomfort Limited [a]	100
UK Shell Pension Plan Trust Limited [a]	100
Wonderbill Limited [a]	100

APPENDIX 1 continued

Company by country and address of incorporation	%
UKcontinued	
SHELL CENTRE, YORK ROAD, LONDON, SE1 7NA	
Shell Catalysts & Technologies Limited [a]	100
SHELL ENERGY HOUSE, WESTWOOD BUSINESS PARK, WESTWOOD WAY, COVENTRY, CV4 8HS	
First Telecommunications Limited [a]	100
First Utility Limited [a]	100
Impello Limited [a]	100
Shell Energy Retail Limited [a]	100
Shell Energy UK Limited [a]	100
UKRAINE	
N. GRINCHENKO, 4, KIEV, 03038	
Alliance Holding LLC [e]	51
Invest-Region LLC [e]	51
UNITED ARAB EMIRATES	
EMDAD AVIATION FUEL STORAGE FZCO, P.O. BOX 261781, JEBEL ALI, DUBAI	
Emdad Aviation Fuel Storage FZCO	33
P.O. BOX 665, ABU DHABI	
Abu Dhabi Gas Industries Limited (GASCO)	15
URUGUAY	
LA CUMPARSITA, 1373 4TH FLOOR, MONTEVIDEO, 11200	
BG (Uruguay) S.A. [a]	100
Dinarel S.A.	50
Gasoducto Cruz del Sur S.A.	40
USA	
10000 MING AVENUE, BAKERSFIELD, CA 93311	
Aera Energy LLC [a] [c]	52
Aera Energy Services Company	50
1013 CENTRE ROAD, COUNTY OF NEW CASTLE, DELAWARE, WILMINGTON, DE 19805	
Zeco Holdings, Inc. [a]	100
Zeco Systems, Inc. [a]	100
10346 BRECKSVILLE RD, BRECKSVILLE, OH 44141	
True North Energy LLC	50
11111 WILCREST GREEN, SUITE 100, HOUSTON, TX 77042	
Texas Petroleum Group LLC	50
1191 2ND AVENUE, SUITE 1900, SEATTLE, WA 98101	
Airbiquity Inc.	26
150 N. DAIRY ASHFORD, HOUSTON, TX 77079	
Gaviota Terminal Company [e]	20
Ship Shoal Pipeline Company LLC [e]	43
160 GREENTREE, SUITE 101, DOVER, DE 19904	
Inspire Energy Capital, LLC [a]	100
16285 PARK TEN PLACE, SUIT 300, HOUSTON, TX 77084	
Bluware Headwave Ventures Inc.	20
1740 ED TEMPLE BLVD, NASHVILLE, TN 37208	
Tri Star Energy LLC	33
1900 EAST LINDEN AVENUE, LINDEN, NJ 07036	
Infineum USA Inc.	50
2048 WEEMS ROAD, BLDG C, TUCKER, GA 30084	
Sonnen Inc. [a]	100
2050 PLAINFIELD PIKE, CRANSTON, RI 02921	
Colbea Enterprises, LLC	50
2100 GENG ROAD, SUITE 210, SANTA CLARA, PALO ALTO, CA 94303	
D.Light Design Inc.	34
2237 HATCHER HILL ROAD, BACONTON, GA 31716	
Baconton Power LLC [d]	35
2441 HIGH TIMBERS DRIVE, SUITE 220, THE WOODLANDS, TX 77380	
Distributed Generation Solutions LLC	33

Company by country and address of incorporation	%
3333 HWY 6 SOUTH, HOUSTON, TX 77082	
Zeolyst International	50
3402 PICO BOULEVARD, SUITE 300, SANTA MONICA, CA 90405	
Inspire Digital Services California LLC [a] [d]	100
Inspire Digital Services PJM LLC [a] [d]	100
Inspire Digital Services USA LLC [a] [d]	100
Inspire Energy Holdings LLC [a] [d]	100
Inspire Energy Technologies LLC [a] [d]	100
3450 E. COMMERCIAL CT., MERIDIAN, ID 83642	
Pacwest Energy, LLC.	50
4080 WEST JONATHAN MOORE PIKE, COLUMBUS, IN 47201	
RDK Ventures, LLC	50
41805 ALBRAE STREET, FREMONT, CA 94538	
Au Energy, LLC	50
422 ADMIRAL BLVD, KANSAS, MO 64106	
Savion LLC [a] [d]	100
850 NEW BURTON ROAD, SUITE 201, DOVER, DELAWARE, DE 19904	
ELEOX LLC ERROR	17
8595 WEST 110TH STREET, OVERLAND PARK, 66210	
MSTS Payments, LLC [a] [d]	100
930 WHITMORE DRIVE, ROCKWALL, 75087	
Shell & Whitmore Reliability Solutions, LLC [d]	50
BECHTEL ENTERPRISES, 12011 SUNSET HILLS ROAD, RESTON, VA 20190	
Maple Power Holdings LLC [a] [c]	68
C T CORPORATION SYSTEM, 1999 BRYAN STREET, SUITE 900, DALLAS, TX 75201	
EPP LLC [a] [d]	100
J & J Lubrication, LLC [a] [d]	100
Lazlyng Real Estate Company, LLC [a] [d]	100
MP2 Energy LLC [a] [d]	100
MP2 Energy NE LLC [a] [d]	100
MP2 Energy NY LLC [a] [d]	100
MP2 Energy Retail Holdings LLC [a] [d]	100
MP2 Energy Texas LLC [a] [d]	100
MP2 Generation LLC [a] [d]	100
MP2 Mesquite Creek Wind LLC [a] [d]	100
Mpower2 LLC [a] [d]	100
Noble Assurance Company [a]	100
Shell Legacy Holdings LLC [a]	100
CORPORATION SERVICE COMPANY, 251 LITTLE FALLS DRIVE, WILMINGTON, DE 19808	
Atlantic Shores Offshore Wind, LLC [d]	50
Bengal Pipeline Company LLC	40
California Western Grid Development, LLC [a] [d]	100
Colonial Pipeline Company	11
Cumulus Digital Systems, Inc.	30
West Shore Pipe Line Company	19
CORPORATION SERVICE COMPANY, 2711 CENTERVILLE ROAD, SUITE 400, WILMINGTON, DE 19808	
Infineum USA L.P. [g]	50
CT CORPORATION SYSTEM, 7700 E ARAPAHOE RD, STE 220, CENTENNIAL, CO 80112-1268	
Positive Energies, LLC [a] [d]	100
RL & F SERVICE CORP, 920 N KING ST FLOOR 2, NEW CASTLE, WILMINGTON, DE 19801	
Atlantic 1 Holdings LLC [d]	46
Atlantic 2/3 Holdings LLC [d]	58
Atlantic 4 Holdings LLC [d]	51
THE CORPORATION TRUST COMPANY OF NEVADA, 311 SOUTH DIVISION STREET, CARSON CITY, NV 89703	
Pennzoil-Quaker State Nominee Company [a]	100
THE CORPORATION TRUST COMPANY, CORPORATION TRUST CENTER, 1209 ORANGE STREET, WILMINGTON, DE 19801	

Company by country and address of incorporation	%
Amberjack Pipeline Company LLC [d]	43
Arizona A1 LLC [a] [d]	100
Arizona B1 LLC [a] [d]	100
BG Brasilia, LLC [a] [d]	100
BG Energy Finance, Inc. [a]	100
BG Energy Merchants, LLC [a] [d]	100
BG Gulf Coast LNG, LLC [a] [d]	100
BG LNG Services, LLC [a] [d]	100
BG LNG Trading, LLC [a]	100
BG North America, LLC [a] [d]	100
BG US Services, Inc. [a]	100
Brazil Crude Services, LLC [a] [d]	100
Brazos Wind Ventures, LLC [a] [d]	100
Caesar Oil Pipeline Company, LLC [d]	15
Concha Chemical Pipeline LLC [a] [d]	100
Crestwood Permian Basin LLC	34
CRI Sales and Services Inc. [a]	100
CRI Zeolites Inc. [a]	100
Deer Park Refining Limited Partnership [a] [c] [e]	50
Diamond Energy. LLC [d]	50
Ellwood Land Holdings, LLC [a] [d]	100
Endymion Oil Pipeline Company, LLC [d]	7
Enterprise Oil North America Inc. [a]	100
Equilon Enterprises LLC [a] [d]	100
Explorer Pipeline Company	26
GI Energy Storage LLC [a] [d]	100
Husk Power Systems, Inc.	30
Hyder PVS LLC [a] [d]	100
Jiffy Lube International, Inc. [a]	100
LOCAP LLC	28
LOOP LLC	46
Mars Oil Pipeline Company LLC [d]	49
Mattox Pipeline Company LLC [d]	54
Mayflower Wind Energy LLC [d]	50
Odyssey Pipeline L.L.C. [a] [d]	49
Oryx Caspian Pipeline, L.L.C. [a] [d]	100
Pecten Arabian Company [a]	100
Pecten Brazil Exploration Company [a]	100
Pecten Midstream LLC [a] [d]	69
Pecten Orient Company [a]	100
Pecten Orient Company LLC [a] [d]	100
Pecten Producing Company [a]	100
Pecten Trading Company [a]	100
Pecten Victoria Company [a]	100
Pecten Yemen Masila Company [a]	100
Pennzoil-Quaker State Company [a]	100
Pennzoil-Quaker State International Corporation [a]	100
Peru LNG Company LLC [d]	20
Poseidon Oil Pipeline Company, LLC	25
Power Limited Partnership [a] [e]	100
PR Microgrids LLC [a] [d]	100
Premium Velocity Auto LLC [a] [d]	100
Proteus Oil Pipeline Company, LLC [d]	7
Pulse Power, LLC [a]	100
Quaker State Investment Corporation [a]	100

Company by country and address of incorporation	%
RK Caspian Shipping Company, LLC [a] [d]	100
S T Exchange, Inc. [a]	100
Sand Dollar Pipeline LLC [a] [d]	69
SCOGI GP [a] [e]	100
Shell (US) Gas & Power M&T Holdings, Inc. [a]	100
Shell California Pipeline Company LLC [a] [d]	100
Shell Catalysts & Technologies Americas LP [a] [e]	100
Shell Catalysts & Technologies Company [a]	100
Shell Catalysts & Technologies Holdings Inc. [a]	100
Shell Catalysts & Technologies LP [a] [e]	100
Shell Catalysts & Technologies US LP [a] [e]	100
Shell Catalysts Ventures Inc. [a]	100
Shell Chemical Appalachia LLC [a] [d]	100
Shell Chemical LP [a] [e]	100
Shell Chemicals Arabia L.L.C. [a] [d]	100
Shell Communications, Inc. [a]	100
Shell Deepwater Royalties Inc. [a]	100
Shell Downstream Inc. [a]	100
Shell Energy Company [a]	100
Shell Energy Holding GP LLC [a] [d]	100
Shell Energy North America (US), L.P. [a] [e]	100
Shell Energy Resources Company [a]	100
Shell Enterprises LLC [a]	100
Shell EP Holdings Inc. [a]	100
Shell Expatriate Employment US Inc. [a]	100
Shell Exploration & Production Company [a]	100
Shell Exploration Company Inc. [a]	100
Shell Frontier Oil & Gas Inc. [a]	100
Shell Gas Gathering Corp. #2 [a]	100
Shell Global Solutions (US) Inc. [a]	100
Shell GOM Pipeline Company LLC [a] [d]	100
Shell Gulf of Mexico Inc. [a]	100
Shell Information Technology International Inc. [a]	100
Shell International Exploration and Production Inc. [a]	100
Shell Lake Charles Operations, LLC [a] [d]	100
Shell Leasing Company [a]	100
Shell Marine Products (US) Company [a]	100
Shell Midstream LP Holdings LLC [a] [d]	100
Shell Midstream Operating LLC [a] [d]	69
Shell Midstream Partners GP LLC [a] [d]	100
Shell Midstream Partners, L.P. [a]	69
Shell NA Gas & Power Holding Company [a]	100
Shell NA LNG LLC [a] [d]	100
Shell New Energies US LLC [a] [d]	100
Shell North America Gas & Power Services Company [a]	100
Shell Offshore and Chemical Investments Inc. [a]	100
Shell Offshore Inc. [a]	100
Shell Offshore Response Company LLC [a] [d]	100
Shell Oil Company Investments Inc. [a]	100
Shell Oil Products Company LLC [a] [d]	100
Shell Onshore Ventures Inc. [a]	100
Shell Petroleum Inc. [a]	100
Shell Pipeline Company LP [a] [e]	100
Shell Pipeline GP LLC [a] [d]	100
Shell Retail and Convenience Operations LLC [a] [d]	100

APPENDIX 1 continued

Company by country and address of incorporation	%
USA continued	
Shell RSC Company [a]	100
Shell Thailand E&P Inc. [a]	100
Shell Trademark Management Inc. [a]	100
Shell Trading (US) Company [a]	100
Shell Trading North America Company [a]	100
Shell Trading Risk Management, LLC [a] [d]	100
Shell Trading Services Company [a]	100
Shell Transportation Holdings LLC [a] [d]	100
Shell Treasury Center (West) Inc. [a]	100
Shell US E&P Investments LLC [a] [d]	100
Shell US Gas & Power LLC [a] [d]	100
Shell US Hosting Company [a]	100
Shell US LNG, LLC [a] [d]	100
Shell USA, Inc. [a]	100
Shell Ventures LLC [a] [d]	100
Shell WindEnergy Inc. [a]	100
Shell WindEnergy Services Inc. [a]	100
Silicon Ranch Corporation	47
SOI Finance Inc. [a]	100
SOPC Holdings East LLC [a] [d]	100
SOPC Holdings West LLC [a] [d]	100
SOPC Southeast Inc. [a]	100
Studio X LLC [a] [d]	100
SWEPI LLC [a]	100
Tejas Coral GP, LLC [a] [d]	100
Tejas Coral Holding, LLC [a] [d]	100
Tejas Power Generation, LLC [a] [d]	100
Texas-New Mexico Pipe Line Company [a]	100
The Valley Camp Coal Company [a]	100
Three Wind Holdings, LLC [d]	50
TMR Company LLC [a]	100
Triton Diagnostics Inc. [a]	100
Triton Terminaling LLC [a] [d]	100
Triton West LLC [a] [d]	69
URSA Oil Pipeline Company LLC [d]	45
Zydeco Pipeline Company LLC [a] [d]	69
VENEZUELA	
AVENIDA LEONARDO DA VINCI, EDIFICIO PDV SERVICIOS, CARACAS, DISTRITO CAPITAL	
Sucre Gas, S.A.	30
AVENIDA ORINOCO, EDIFICIO CENTRO EMPRESARIAL PREMIUM, PISO 2, OFICINAS 2-A Y 2-B, URBANIZACIÓN LAS MERCEDES, CARACAS, DISTRITO CAPITAL, 1060	
Shell Venezuela Productos, C.A. [a]	100
Shell Venezuela, S.A. [a]	100
VIETNAM	
GO DAU INDUSTRIAL ZONE, PHUOC THAI COMMUNE, LONG THANH DISTRICT, DONG NAI PROVINCE	
Shell Vietnam Ltd [a]	100
ZIMBABWE	
BLOCK 1, TENDESEKA OFFICE PARK, CNR SAMORA MACHEL AVENUE, RENFREW ROAD, HARARE	
Central African Petroleum Refineries (Private) Limited	21

APPENDIX 2

FIVE-YEAR FINANCIAL DATA SET

CONSOLIDATED STATEMENT OF INCOME

$ million

	2021	2020	2019	2018	2017
Revenue	261,504	180,543	344,877	388,379	305,179
Share of profit of joint ventures and associates	4,097	1,783	3,604	4,106	4,225
Interest and other income	7,056	869	3,625	4,071	2,466
Total revenue and other income	**272,657**	**183,195**	**352,106**	**396,556**	**311,870**
Purchases	174,912	117,093	252,983	294,399	223,447
Production and manufacturing expenses	23,822	24,001	26,438	26,970	26,652
Selling, distribution and administrative expenses	11,328	9,881	10,493	11,360	10,509
Research and development	815	907	962	986	922
Exploration	1,423	1,747	2,354	1,340	1,945
Depreciation, depletion and amortisation	26,921	52,444	28,701	22,135	26,223
Interest expense	3,607	4,089	4,690	3,745	4,042
Total expenditure	**242,828**	**210,162**	**326,621**	**360,935**	**293,740**
Income/(loss) before taxation	**29,829**	**(26,967)**	**25,485**	**35,621**	**18,130**
Taxation (credit)/charge	9,199	(5,433)	9,053	11,715	4,695
Income/(loss) for the period	**20,630**	**(21,534)**	**16,432**	**23,906**	**13,435**
Income attributable to non-controlling interest	529	146	590	554	458
Income/(loss) attributable to Shell plc shareholders	**20,101**	**(21,680)**	**15,842**	**23,352**	**12,977**
Basic earnings per share ($)	2.59	(2.78)	1.97	2.82	1.58
Diluted earnings per share ($)	2.57	(2.78)	1.95	2.80	1.56

RECONCILIATION OF INCOME FOR THE PERIOD TO CCS EARNINGS

$ million

	2021	2020	2019	2018	2017
Income/(loss) attributable to Shell plc shareholders	20,101	(21,680)	15,842	23,352	12,977
Income attributable to non-controlling interest	529	146	590	554	458
Income/(loss) for the period	20,630	(21,534)	16,432	23,906	13,435
Current cost of supplies adjustment	(3,148)	1,833	(605)	458	(964)
Of which:					
Attributable to Shell plc shareholders	(3,029)	1,759	(572)	481	(896)
Attributable to non-controlling interest	(119)	74	(33)	(23)	(68)
CCS earnings	17,482	(19,701)	15,827	24,364	12,471
Of which:					
Attributable to Shell plc shareholders	17,072	(19,921)	15,270	23,833	12,081
Attributable to non-controlling interest	410	220	557	531	390

TAXATION CHARGE/(CREDIT)

$ million unless indicated

	2021	2020	2019	2018	2017
Current tax	6,535	3,216	7,596	10,475	6,591
Deferred tax	2,664	(8,649)	1,457	1,240	(1,896)
Total taxation charge/(credit)	9,199	(5,433)	9,053	11,715	4,695
As a % of income before taxation	31	20	36	33	26

CONSOLIDATED BALANCE SHEET

$ million

	Dec 31, 2021	Dec 31, 2020	Dec 31, 2019	Dec 31, 2018	Dec 31, 2017
Assets					
Non-current assets					
Intangible assets	24,693	22,710	23,486	23,586	24,180
Property, plant and equipment	194,932	209,700	238,349	223,175	226,380
Joint ventures and associates	23,415	22,451	22,808	25,329	27,927
Investments in securities	3,797	3,222	2,989	3,074	7,222
Deferred tax	12,426	16,311	10,524	12,097	13,791
Retirement benefits	8,471	2,474	4,717	6,051	2,799
Trade and other receivables	7,065	7,641	8,085	7,826	8,475
Derivative financial instruments	815	2,805	689	574	919
	275,614	287,314	311,647	301,712	311,693
Current assets					
Inventories	25,258	19,457	24,071	21,117	25,223
Trade and other receivables	53,208	33,625	43,414	42,431	44,565
Derivative financial instruments	11,369	5,783	7,149	7,193	5,304
Cash and cash equivalents	36,970	31,830	18,055	26,741	20,312
	126,805	90,695	92,689	97,482	95,404
Assets classified as held for sale [B]	1,960	1,259			
	128,765	91,954			
Total assets	404,379	379,268	404,336	399,194	407,097
Liabilities					
Non-current liabilities					
Debt	80,868	91,115	81,360	66,690	73,870
Trade and other payables	2,075	2,304	2,342	2,735	3,447
Derivative financial instruments	887	420	1,209	1,399	981
Deferred tax	12,547	10,463	14,522	14,837	13,007
Retirement benefits	11,325	15,605	13,436	12,104	13,841
Decommissioning and other provisions	25,804	27,116	21,799	21,533	24,966
	133,506	147,023	134,668	119,298	130,112
Current liabilities					
Debt	8,218	16,899	15,064	10,134	11,795
Trade and other payables	63,173	44,572	52,423	52,395	54,598
Derivative financial instruments	16,311	5,308	5,429	7,184	5,253
Income taxes payable [A]	3,254	3,111	3,478	3,990	4,062
Decommissioning and other provisions	3,338	3,622	2,811	3,659	3,465
	94,294	73,512	79,205	77,362	79,173
Liabilities directly associated with assets classified as held for sale [B]	1,253	196			
	95,547	73,708			
Total liabilities	229,053	220,731	213,873	196,660	209,285
Equity					
Share capital	641	651	657	685	696
Shares held in trust	(610)	(709)	(1,063)	(1,260)	(917)
Other reserves	18,909	12,752	14,451	16,615	16,932
Retained earnings	153,026	142,616	172,431	182,606	177,645
Equity attributable to Shell plc shareholders	171,966	155,310	186,476	198,646	194,356
Non-controlling interest	3,360	3,227	3,987	3,888	3,456
Total equity	175,326	158,537	190,463	202,534	197,812
Total liabilities and equity	404,379	379,268	404,336	399,194	407,097

[A] As from January 1, 2021, the current 'Retirement benefits' liability has been classified under non-current liabilities (previously separately presented within current liabilities) (see Note 18) and taxes payable not related to income tax are presented within 'Trade and other payables' (previously 'Taxes payable') (see Note 17). Prior period comparatives have been revised to conform with current year presentation.

[B] As from year 2021, Assets held for sale and Liabilities directly associated with assets held for sale are presented separately. Comparatives, prior to year 2020, have not been revised.

CONSOLIDATED STATEMENT OF CASH FLOWS

$ million

	2021	2020	2019	2018	2017
Income/(loss) before taxation for the period	29,829	(26,967)	25,485	35,621	18,130
Adjustment for:					
Interest expense (net)	3,096	3,316	3,705	2,878	3,365
Depreciation, depletion and amortisation	26,921	52,444	28,701	22,135	26,223
Exploration well write-offs	639	815	1,218	449	897
Net gains on sale and revaluation of non-current assets and businesses	(5,995)	(286)	(2,519)	(3,265)	(1,640)
Share of profit of joint ventures and associates	(4,097)	(1,783)	(3,604)	(4,106)	(4,225)
Dividends received from joint ventures and associates	3,929	2,591	4,139	4,903	4,998
(Increase)/decrease in inventories	(7,319)	4,477	(2,635)	2,823	(2,079)
(Increase)/decrease in current receivables	(20,567)	9,625	(921)	1,955	(2,577)
Increase/(decrease) in current payables	17,519	(9,494)	(1,223)	(1,336)	2,406
Derivative financial instruments	5,882	977	(1,484)	799	(1,039)
Retirement benefits	16	568	(365)	390	(654)
Decommissioning and other provisions	(76)	1,104	(686)	(1,754)	(1,706)
Other	803	8	(28)	1,264	(142)
Tax paid	(5,476)	(3,290)	(7,605)	(9,671)	(6,307)
Cash flow from operating activities	**45,104**	**34,105**	**42,178**	**53,085**	**35,650**
Capital expenditure	(19,000)	(16,585)	(22,971)	(23,011)	(20,845)
Investments in joint ventures and associates	(479)	(1,024)	(743)	(880)	(595)
Investment in equity securities	(218)	(218)	(205)	(187)	(93)
Proceeds from sale of property, plant and equipment and businesses	14,233	2,489	4,803	4,366	8,808
Proceeds from joint ventures and associates from sale, capital reduction and repayment of long-term loans [A]	584	1,240	2,599	1,594	2,177
Proceeds from sale of equity securities	296	281	469	4,505	2,636
Interest received	423	532	911	823	724
Other investing cash inflows	2,928	3,239	2,921	1,373	2,909
Other investing cash outflows	(3,528)	(3,232)	(3,563)	(2,242)	(3,750)
Cash flow from investing activities	**(4,761)**	**(13,278)**	**(15,779)**	**(13,659)**	**(8,029)**
Net increase/(decrease) in debt with maturity period within three months	14	(63)	(308)	(396)	(869)
Other debt:					
New borrowings	1,791	23,033	11,185	3,977	760
Repayments	(21,534)	(17,385)	(14,292)	(11,912)	(11,720)
Interest paid	(4,014)	(4,105)	(4,649)	(3,574)	(3,550)
Derivative financial instruments	(1,165)	1,157	(48)	–	–
Change in non-controlling interest	19	(42)	–	678	293
Cash dividends paid to:					
Shell plc shareholders [B]	(6,253)	(7,424)	(15,198)	(15,675)	(10,877)
Non-controlling interest	(348)	(311)	(537)	(584)	(406)
Repurchases of shares	(2,889)	(1,702)	(10,188)	(3,947)	-
Shares held in trust: net purchases and dividends received	(285)	(382)	(1,174)	(1,115)	(717)
Cash flow from financing activities	**(34,664)**	**(7,224)**	**(35,209)**	**(32,548)**	**(27,086)**
Effects of exchange rate changes on cash and cash equivalents	(539)	172	124	(449)	647
Increase/(decrease) in cash and cash equivalents	5,140	13,775	(8,686)	6,429	1,182
Cash and cash equivalents at beginning of year	31,830	18,055	26,741	20,312	19,130
Cash and cash equivalents at end of year	**36,970**	**31,830**	**18,055**	**26,741**	**20,312**

[A] As from 2021, renamed from "Proceeds from sale of joint ventures and associates".
[B] Cash dividends paid represents the payment of net dividends (after deduction of withholding taxes where applicable) and payment of withholding taxes on dividends paid in the previous quarter.

APPENDIX 2 continued

FREE CASH FLOW AND ORGANIC FREE CASH FLOW

$ million

	2021	2020	2019	2018	2017
Cash flow from operating activities	45,104	34,105	42,178	53,085	35,650
Cash flow from investing activities	(4,761)	(13,278)	(15,779)	(13,659)	(8,029)
Free cash flow	40,343	20,828	26,399	39,426	27,621
Less: Cash inflows related to divestments [A]	15,113	4,010	7,871	10,465	13,619
Add: Tax paid on divestments	188	–	187	482	[C]
Add: Cash outflows related to inorganic capital expenditure [B]	1,658	817	1,400	1,740	1,138
Organic free cash flow	27,076	17,634	20,116	31,183	15,140

[A] Cash inflows related to divestments includes Proceeds from sale of property, plant and equipment and businesses, Proceeds from joint ventures and associates from sale, capital reduction and repayment of long-term loans, and Proceeds from sale of equity securities as reported in the "Consolidated Statement of Cash Flows".
[B] Cash outflows related to inorganic capital expenditure includes portfolio actions which expand Shell's activities through acquisitions and restructuring activities as reported in capital expenditure lines in the "Consolidated Statement of Cash Flows".

RETURN ON AVERAGE CAPITAL EMPLOYED

$ million unless indicated

	2021	2020	2019	2018	2017
Income for the period	20,630	(21,534)	16,432	23,906	13,435
Interest expense after tax	2,741	2,822	3,024	2,513	2,995
Income before interest expense	23,371	(18,712)	19,456	26,419	16,430
Capital employed – opening	266,551	286,887	295,398	283,477	280,988
Capital employed – closing	264,413	266,551	286,887	279,358	283,477
Capital employed – average	265,482	276,719	291,142	281,417	282,233
ROACE	8.8%	(6.8)%	6.7%	9.4%	5.8%

GEARING

$ million unless indicated

	2021	2020	2019	2018	2017
Current debt	8,218	16,899	15,064	10,134	11,795
Non-current debt	80,868	91,115	81,360	66,690	73,870
Total debt [A]	89,086	108,014	96,424	76,824	85,665
Add: Debt-related derivative financial instruments: net liability/(asset)	424	(1,979)	701	1,273	591
Add: Collateral on debt-related derivatives: net liability/(asset)	16	1,181	23	72	–
Less: Cash and cash equivalents	(36,970)	(31,830)	(18,055)	(26,741)	(20,312)
Net debt [A]	52,556	75,386	79,093	51,428	65,944
Add: Total equity [A]	175,326	158,537	190,463	202,534	197,812
Total capital [A]	227,882	233,923	269,556	253,962	263,756
Gearing [A]	23.1%	32.2%	29.3%	20.3%	25.0%

[A] Shell used the modified retrospective transition method for implementing IFRS 16 Leases. Comparative information was not restated, and continues to be presented as previously reported under IAS 17 Leases.

NOTES

NOTES

FINANCIAL CALENDAR IN 2022

The Annual General Meeting will be held on May 24, 2022.

	2021 Fourth quarter [A]	2022 First quarter [B]	2022 Second quarter [B]	2022 Third quarter [B]
Results announcements	February 3	May 5	July 28	October 27
Interim dividend timetable				
Announcement date	February 3 [C]	May 5	July 28	October 27
Ex-dividend date for SHEL ADS [D]	February 17	May 19	August 11	November 9
Ex-dividend date for SHEL ordinary shares	February 17	May 19	August 11	November 10
Record date	February 18	May 20	August 12	November 11
Closing of currency election date [E]	March 4	June 7	August 26	November 25
Pounds sterling and euro equivalents announcement date	March 14	June 13	September 5	December 5
Payment date	March 28	June 27	September 19	December 19

[A] In respect of the financial year ended December 31, 2021.
[B] In respect of the financial year ended December 31, 2022.
[C] The Directors do not propose to recommend any further distribution in respect of 2021.
[D] The New York Stock Exchange (NYSE), with effect from September 5, 2017, reduced the standard settlement cycle in accordance with the SEC amendments to Exchange Act Rule 15c6-1(a). Under these rules, regular settlement will occur on a T+2 basis for trades occurring on or after the SEC's implementation date of September 5, 2017. As a result RDS A ADSs and RDS B ADSs traded on the NYSE markets will now settle in line with RDS A shares and RDS B shares traded on European markets, who moved to a T+2 settlement basis for trades in 2014, resulting in the same ex-dividend date for RDS A shares, RDS B shares, RDS A ADSs and RDS B ADSs. Record dates will not change. The timings of these are detailed above.
[E] A different currency election date may apply to shareholders holding shares in a securities account with a bank or financial institution ultimately through Euroclear Nederland. This may also apply to other shareholders who do not hold their shares either directly on the Register of Members or in the corporate sponsored nominee arrangement. Shareholders can contact their broker, financial intermediary, bank or financial institution for the election deadline that applies.

CONTACT US

The best way to get in touch is via the "Contact us" section of the Shell website www.shell.com/investors. From here questions are properly directed to the Shell team that can assist. In addition, we have introduced an automated question response tool to assist with the most popular questions that we receive and reviewed and updated the "Frequently asked Questions" section of our website to provide the most time efficient information for our investors.

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- Detailed information on Shell's taxes
- Report on our progress in contributing to sustainable development