



University of Wales
Trinity Saint David

200
1822 - 2022

Project management A2

Student's Name: Miroslava Georgieva

Student Number: 2112588

Course: Project Management

LCBB5005

Lecturer's Name: Md Sadeque Imam Shaikh

Table of Contents

Introduction.....	3
Thoughts based on the current project progress	3
Reasons I consider it a success for the future energy sector of the UK.....	4
Lessons Learned:	9
Recommendation for a similar project.....	9
Recommendation 1: Comprehensive Risk Assessment and Management.....	9
Recommendation 2: Stakeholder Engagement and Communication.....	10
Recommendation 3: Diversified Financing and Long-Term Investments	10
Recommendation 4: Adaptive Project Governance and Flexibility.....	10
Recommendation 5: Proper cost and timeline estimation.....	10
Conclusion	11
References.....	11-13

Introduction

The project's success can be defined by the project deliverables, level of effectiveness, stakeholders' satisfaction, and benefits (Armenia et al., 2019). From assignment 1, The Hinkley Point C project has made progress but has also faced challenges, as is typical for large-scale projects, leading to overruns and delays. The task has accomplished numerous major phases but is still under development and faces several challenges that must be managed and mitigated. This

essay aims to provide a narrative on what I think about the project based on current progress, whether it is a success or failure to the energy sectors and reasons, lessons that could be learned from the Hinkley Point C project, and valid recommendations for a similar project in the future.

Thoughts based on the current project progress.

Hinkley Point C has completed the planning and permitting, design and engineering, and start of construction phases. These accomplishments show the project's progress and stakeholders' dedication to the nuclear power plant. Planning and permitting were essential for regulatory permits and environmental clearances (Glasson et al., 2021). This step entailed careful analyses and public engagements to resolve concerns and meet safety and environmental standards. This phase's success set the project's course. The project has also involved extensive analysis, simulations, and modifications. The start of the construction also marks a significant project milestone showing success. By December 2017, the project had established Sea Water Cooling Pipes Install (CRF). The sea walls have also created pressure vessels and some reactors (Daniel and Daniel, 2019). Despite these milestones, the Hinkley Point C project has faced several problems. However, these are common for big and complex projects. The project faces supply chain disruptions, underestimation of budget, regulatory changes, COVID -19 and Brexit.

Reasons I consider it a success for the future UK energy sector.

The UK's future energy sector will succeed based on the Hinkley Point C project. The project has progressed, but its long-term impact on the energy sector will also be positive. The UK will generate low-carbon electricity for 6 million homes through this project. As with any project of this size, there have been difficulties, uncertainties, and challenges. However, this project will positively impact the future energy sector of the UK.

First, the s Potential for Low-Carbon Electricity Generation: If completed and operational, Hinkley Point C can contribute significantly to low-carbon electricity generation in the UK. EPR technology, which is efficient and safe, can generate low-carbon electricity at Hinkley Point C (Glasson et al., 2021). If finished, the project can create electricity with low carbon emissions. EPR reactors use less nuclear fuel to generate more electricity (Daniel and Daniel, 2019). This efficiency increases power output per fuel unit, minimising greenhouse gas emissions and resource utilisation. Nuclear power generates electricity without emitting CO₂, making it a low-carbon energy source. This contrasts with fossil fuel power facilities that generate large amounts of CO₂, leading to climate change and air pollution. Hinkley Point C's EPR technology could aid the UK's green energy transition and carbon reduction (Smyth et al., 2018). It might help the nation reach its climate change commitments, particularly in the Paris Agreement, which aims to limit global temperature rise and mitigate climate change. EPR reactors must run effectively and safely throughout their lifespan to maximise low-carbon benefits. Maintaining plant reliability and safety requires regular maintenance, strict safety measures, and good waste management, which has been considered by this project, making it a success (Prabhu, 2016). Nuclear power can generate low-carbon electricity, but the energy mix must include wind, solar, and hydro. Diversified energy portfolios improve energy security, resilience, sustainability, and environmental impact.

The project can also be considered as it has led to Technological Advancement and Learning: The project's deployment of EPR technology represents a significant technological advancement in the nuclear power sector. The Hinkley Point C project uses modern European Pressurized Reactor (EPR) technology, advancing atomic power technology (Young, 2016). EPR reactors outperform older nuclear designs in safety, efficiency, and performance. This cutting-edge technology could increase atomic energy and the energy sector. EPR technology at Hinkley Point C allows nuclear

power sector knowledge transfer and learning. EPR reactor design, construction, and operation can teach advanced nuclear technology's complexities. Sharing this expertise with other nuclear programs worldwide encourages safety and innovation (Fewings and Henjewe, 2019). EPR technology can also enhance investors, policymakers, and energy stakeholders' trust in nuclear power as a viable and sustainable energy choice. It can prove that new reactor designs can make nuclear electricity safer and more efficient. The Hinkley Point C project can also help advance nuclear technologies and develop next-generation reactor designs. Reactor design and atomic engineering can improve technological obstacles, safety standards, and regulatory compliance. Hinkley Point C's success may also enhance nuclear energy's climate change image. It can help fight climate change by demonstrating safe and reliable nuclear power use.

Third, this project has led to Job Creation in the energy sector and Economic Boost. Energy jobs and economic growth have resulted from the Hinkley Point C project. The nuclear power plant has created thousands of jobs in the vicinity (Demirkesen and Ozorhon, 2017). Hinkley Point C has employed thousands of professional workers, engineers, technicians, and support staff during construction—the project specialised specialised specialised construction, engineering, logistics, and administration personnel. The structure and operation of Hinkley Point C will create 25,000 employment opportunities and up to 1,000 apprenticeships, and 64% of the project's construction value is predicted to go to UK companies. Skilled workers have helped the project and nearby companies by increasing consumer spending. More jobs are projected once the project enters operation. Reactor maintenance, safety monitoring, and administrative tasks require skilled and competent staff. Nuclear power facilities last decades; thus, Hinkley Point C's job prospects will last. Workers and contractors need support services during construction and operation, which boosts secondary businesses, including accommodation, transportation, and hospitality. Economic

growth generates tax income for local and national governments, funding public services and infrastructure. Economic benefits extend beyond building and operation. Nuclear power stations can attract investment and boost the local economy.

It will also lead to security in terms of energy/ power in the energy sector. Hinkley Point C helps secure the UK's energy supply. The project makes the nation more self-sufficient and less vulnerable to energy market swings and geopolitical concerns by generating electricity from domestic nuclear sources (Young, 2016). Many countries import natural gas and oil, including the UK. Foreign energy sources expose the nation to supply disruptions, price volatility, and geopolitical tensions that could impair energy supply stability. The UK diversifies its energy mix by adding a large capacity of local nuclear power, reducing import concerns. Nuclear power stations generate electricity year-round, unlike intermittent renewable sources like solar and wind. This continual availability provides a reliable base load of electricity, supporting the energy grid and complementing renewable sources. Hinkley Point C's ability to run for decades boosts energy security. Long-term investments in nuclear power projects ensure a reliable energy supply and reduce uncertainty (Chawla et al., 2018). It preserves the energy supply and boosts economic resilience. Businesses, industries, and homes need reliable energy to operate and flourish.

The successful completion of Hinkley Point C could have implications for energy prices in the UK. A stable and reliable supply of low-carbon electricity from nuclear power could contribute to price stabilisation and ensure affordable energy for consumers and industries. The completion and operation of Hinkley Point C could affect UK energy pricing. As a large-scale nuclear power project, it can deliver consistent, low-carbon electricity, stabilising prices and ensuring affordability for consumers and industries. Nuclear power can generate baseload electricity all day, regardless of the weather. Solar and wind energy, for example, are intermittent, and output varies.

Thus, nuclear power can promote renewable energy integration by providing a stable grid basis (Jenkins et al., 2017). Hinkley Point C's atomic capacity can cut the UK's fossil fuel use, particularly natural gas. Global markets, geopolitical conflicts, and supply interruptions affect natural gas prices. The UK can reduce energy price volatility by using nuclear power independent of foreign fuel markets. Financial incentives and regulations to support low-carbon electricity sources may lower the cost of nuclear-generated electricity for consumers as the nation moves to a greener energy mix (Padalkar and Gopinath, 2016). While Hinkley Point C's nuclear power helps stabilise energy prices, other factors can still affect electricity pricing. These include fuel pricing for power sources, regulatory policies, infrastructure investments, and global energy market dynamics.

Lastly, this project has also been used as an opening door for starting other complex sector projects in the UK, improving the energy sector. This project could be used for benchmarking and reference of projects. The successful completion of the Hinkley Point C project could spur the opening of other UK nuclear and energy projects (Kerzner, 2017). Hinkley Point C's completion shows that the UK can successfully handle large-scale energy infrastructure projects. Hinkley Point C's success would reassure investors, policymakers, and the public about nuclear power's reliability and sustainability. This favourable view could attract more nuclear energy investment, enabling the construction of more nuclear power stations (Putti and Tóth, 2017). The project can teach government and private players. Hinkley Point C's planning, construction, and operation can help future nuclear plants in project management regarding timelines and costs (Kerzner, 2017). Hinkley Point C's success encourages advanced topic technology research and development, improving energy efficiency. Technology can create nuclear energy jobs and companies.

Justification for the stance and highlight the lessons that could be learned from the project.

Hinkley Point C proves that UK nuclear power projects are feasible. Its successful planning, permitting, and construction phases demonstrate the country's ability to manage large energy infrastructure projects.

The project's completion can boost nuclear energy's reliability and low-carbon status. Hinkley Point C inspires future nuclear energy investment by investors and the government to make such investments. Domestic atomic power's role in energy security through reducing imports is important (Glasson et al., 2021). A broad energy mix, including nuclear, can provide national energy security. Hinkley Point C's low-carbon power generation meets UK aims. It shows how atomic power reduces carbon emissions and supports renewable energy options. Large-scale energy projects can boost local economies and provide jobs. It may inspire local communities to invest in similar projects.

Lessons Learned:

Proper Planning and Risk Management: Technical complications and supply chain interruptions have delayed Hinkley Point C. The project stresses preparation, risk assessment, and contingency measures to avoid risks that can lead to delays and cost overruns. Irrespective of the scope, Project success requires stakeholder engagement, including local communities and regulatory bodies. The project's stakeholder interactions ensure consensus-building, problem-solving, and public support, avoiding delays (Heagney, 2016). Large energy projects need enough money and investment. Financial planning and long-term investments are crucial for projects like Hinkley Point C. Compliance with nuclear safety and environmental rules is essential. Hinkley Point C shows the importance of tight regulatory compliance and ongoing inspection during construction and operation. Adequate timelines should be allocated to avoid delays caused by compliance and safety, as well as quality stakeholders (Fewings and Henjewe, 2019). EPR technology at Hinkley

Point C shows the possibilities of modern nuclear technologies. Nuclear innovation research can improve project efficiency, safety, and cost. Project managers need proper risk assessment, management, and adaptability to changes. Brexit and the COVID-19 outbreak slowed the project. Managing large-scale initiatives requires adaptability and proactivity.

Recommendation for a similar project

Recommendation 1: Comprehensive Risk Assessment and Management

Risk assessment and risk management should be significant priorities for future large-scale energy projects like Hinkley Point C. Early identification of risks and uncertainties will improve project planning and mitigation. The project team should keep a risk register and constantly examine it to prepare for any issues (Meredith et al., 2017). Engaging with risk management professionals can also help the project prepare for unexpected events.

Recommendation 2: Stakeholder Engagement and Communication

The project's success depends on Stakeholder Engagement and Communication. Energy initiatives depend on stakeholder engagement and communication. Transparent and continuing contact with all stakeholders—local communities, regulatory authorities, investors, and industry experts—is crucial (Heagney, 2016). Communicating project progress, addressing concerns, and soliciting feedback help build confidence and support. Stakeholder engagement can also improve project planning and outcomes.

Recommendation 3: Diversified Financing and Long-Term Investments

Diversifying financing and creating long-term investment plans are essential for future energy initiatives. Government or private funding alone can limit finances. Public-private partnerships, green bonds, and international engagement can help stabilise finances (Armenia et al., 2019).

Long-term investments with stable cash flows can support the project throughout its duration and avoid dependency on short-term market swings.

Recommendation 4: Adaptive Project Governance and Flexibility

Given the complexity and uncertainty of large-scale energy projects, maintaining adaptive project governance and flexibility is vital. The project team should adapt to regulatory changes, technological advances, and external events like Brexit or pandemics (Demirkesen and Ozorhon, 2017). Agile project management helps projects respond quickly to obstacles and opportunities. Project reviews and lessons-learned sessions can inform decision-making and continuous development.

Recommendation 5: Proper cost and timeline estimation

Cost and timeframe estimation must integrate risk factors for future large-scale energy projects. Risk assessments and estimating all potential risks can improve budgeting and scheduling. Technological complexity, supply chain interruptions, inflationary pressures, regulatory compliance, and labour shortages help assess the project's risks (Chawla et al., 2018). Stakeholders may make better decisions, mitigate risk, and improve project performance and financial feasibility with accurate cost and timetable estimates, thus avoiding cost overruns and delays, as in the case of the Hinkley Point C project.

Conclusion

In conclusion, the Hinkley Point C project has faced delays and overruns. Technological complexity, design modifications, supply chain disruptions, inflationary pressures, and Brexit and COVID-19 uncertainties caused these challenges. The project has created jobs, made several million stones, and had the potential to improve the UK's energy security, low-carbon electricity generation, economic growth, and sustainable energy future. Hinkley Point C's successful deployment of sophisticated EPR technology shows its ability to advance nuclear power technology and learning. The project's completion may inspire investors and governments to pursue new nuclear projects. Despite its challenges, Hinkley Point C can enable lessons for future large-scale energy projects. Similar projects risk assessment and management, stakeholder participation, diverse finance, adaptive project governance, and accurate cost and timeframe estimation. While Hinkley Point C faced problems, its influence on job creation, economic growth, and energy security shows how large-scale energy projects can benefit a nation. As the energy sector matures, Hinkley Point C knowledge will be crucial to improving energy infrastructure, meeting climate change goals, and securing a sustainable energy future for the UK.

References

- Armenia, S., Dangelico, R.M., Nonino, F. and Pompei, A., 2019. Sustainable project management: A conceptualization-oriented review and a framework proposal for future studies. *Sustainability*, 11(9), p.2664. Available at <https://www.mdpi.com/2071-1050/11/9/2664>
- Chawla, V., Chanda, A., Angra, S. and Chawla, G., 2018. The sustainable project management: A review and future possibilities. *Journal of Project Management*, 3(3), pp.157–170. Available at https://www.researchgate.net/publication/323864422_The_sustainable_project_management_A_review_and_future_possibilities
- Demirkesen, S. and Ozorhon, B., 2017. Impact of integration management on construction project management performance. *International journal of project management*, 35(8), pp.1639-1654. Available at <https://isiarticles.com/bundles/Article/pre/pdf/82827.pdf>
- Daniel, E. and Daniel, P.A., 2019. Megaprojects as complex adaptive systems: The Hinkley point C case. *International Journal of Project Management*, 37(8), pp.1017-1033. Available at <https://pdf.sciencedirectass.com>
- Fewings, P. and Henjeweile, C., 2019. *Construction project management: an integrated approach*. Routledge. Available at <https://www.routledge.com/Construction-Project-Management-An-Integrated-Approach/Fewings-Fewings-Henjeweile/p/book/9780815358657>
- Glasson, J., Durning, B., Broderick, M. and Welch, K., 2021. Monitoring and auditing the local socio-economic and environmental impacts of the early stage construction of Hinkley Point C Nuclear Power Station, UK. *Impact Assessment and Project Appraisal*, 39(2), pp.84-95. Available at <https://radar.brookes.ac.uk/radar/file/161c8877-2e5c-405a-821c-a5803022c6e0/1/Impacts%20of%20Hinkley%20Point%20C%20-%202020%20-%20Glasson%20Durning%20Broderick%20Welch.pdf>
- Heagney, J., 2016. *Fundamentals of project management*. Amacom.
- <https://www.power-technology.com/news/hinkley-point-c-project-costs-rise-again/>
- <https://www.edfenergy.com/energy/nuclear-new-build-projects/hinkley-point-c/about>
- <https://www.onr.org.uk/hinkley-point-c/assessment-reports.htm>
- <https://www.newcivilengineer.com/archive/hinkley-point-c-quality-management-needs-improvement-says-nuclear-regulator-16-03-2018/>
- <https://www.nsenergybusiness.com/projects/hinkley-point-c-nuclear-power-station-uk/>
- <https://www.bbc.co.uk/news/uk-england-somerset-58724732>

- Kerzner, H., 2017. *Project management: a systems approach to planning, scheduling, and controlling*. John Wiley & Sons. Available at <https://www.wiley.com/en-us/Project+Management%3A+A+Systems+Approach+to+Planning%2C+Scheduling%2C+and+Controlling%2C+13th+Edition-p-9781119805373>
- Jenkins, K., McCauley, D. and Warren, C.R., 2017. Attributing responsibility for energy justice: A case study of the Hinkley Point Nuclear Complex. *Energy Policy*, 108, pp.836–843. Available at <https://research-repository.st-andrews.ac.uk/handle/10023/13629>
- Lock, D., 2020. *Project management*. Routledge. Available at <https://www.routledge.com/Project-Management/Lock/p/book/9781409452690>
- Meredith, J.R., Shafer, S.M. and Mantel Jr, S.J., 2017. *Project management: a strategic managerial approach*. John Wiley & Sons. Available at <https://www.wiley.com/en-us/Project+Management%3A+A+Managerial+Approach%2C+11th+Edition-p-9781119803836>
- Padalkar, M. and Gopinath, S., 2016. Six decades of project management research: Thematic trends and future opportunities. *International journal of project management*, 34(7), pp.1305-1321. Available at <https://www.scirp.org/%28S%28lz5mqp453edsnp55rrgict55%29%29/reference/referencepapers.aspx?referenceid=2884347>
- Prabhu, S., 2016. Chinese Nuclear Renaissance at Hinkley Point-a Perspective. *IndraStra Global*, (10), p.3. Available at https://www.researchgate.net/publication/309607390_Chinese_Nuclear_Renaissance_at_Hinkley_Point_A_Perspective
- Putti, K. and Tóth, Z., 2017, June. Based on the available data and economic analysis of the Hinkley Point C nuclear power plant. In *2017 6th International Youth Conference on Energy (IYCE)* (pp. 1–7). IEEE. Available at <https://cris.brighton.ac.uk/ws/portalfiles/portal/484589/Jenkins+et+al.+2017+%28Submitted%29.pdf>
- Smyth, H., Lecoivre, L. and Vaesken, P., 2018. Co-creation of value and the project context: Towards application on the Hinkley Point C Nuclear Power Station case. *International journal of project management*, 36(1), pp.170-183. Available at <https://www.sciencedirect.com/science/article/abs/pii/S0263786317300157>
- Young, T.L., 2016. *Successful project management*. Kogan Page Publishers. Available at <https://www.worldcat.org/title/successful-project-management/oclc/829460135>