

**Brewing a Sustainable Future:
New Belgium's Comprehensive Plan for
Net Zero 2040 and Sustainable Alcohol Consumption**

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Executive Summary

This sustainability plan aims to enhance the brewery's environmental, social, and economic sustainability. It outlines two sustainable initiatives as ways of advancing New Belgium's sustainability efforts; the Net Zero 2040 Initiative and the Sustainable Alcohol Consumption Initiative. The report identifies each of these in detail, along with potential benefits, a timeline, organizational resources required, and academic theories applied. Furthermore, it emphasizes the importance of organizational strategy, measurements, and assessments for ongoing success.

The Net Zero 2040 Initiative

With the introduction of net-zero goals to the brewery industry, environmental sustainability has reached an all-new level of ambition and comprehensiveness. With the *"Paris Agreement of 2015"* (United Nations, n.d.), net-zero initiatives aim to keep global warming below two degrees Celsius above pre-industrial levels, and below 1.5 degrees Celsius, as the *"Intergovernmental Panel on Climate Change"* urged (Science Based Targets, 2015). There is a race to zero by 2050 among *"countries, cities, businesses, and other institutions"* and New Belgium and the beer industry must join (United Nations, n.d.).

Instead of simply balancing emissions, net-zero goals reduce and offset greenhouse gasses (GHG) throughout the entire production process (World Economic Forum, n.d.). A net-zero organization must balance all GHG emissions, not just carbon dioxide, with equivalent removals or offsets (Teske and Nagrath, 2022).

Organizations aiming for net-zero emissions must understand and address Scope 1, 2 and 3 emissions. Using them, can categorize and account for “*both direct and indirect GHG emissions*” (Courtnell, 2022):

- Scope 1 emissions come directly from a business, such as on-site fuel combustion in production processes or company-owned vehicles.
- Scope 2 emissions are indirect GHG released from purchased energy consumption. Examples include electricity and heat.
- Scope 3 emissions are all indirect GHG emissions created throughout the entire value chain, from raw material extraction to product disposal.

As Scope 3 emissions span the entire supply chain, they are difficult to quantify and control (Schulman, Bateman, Greene, 2021). However, without accounting for Scope 3 emissions, most companies underestimate their climate change impact and will not achieve net-zero.

Description of New Belgium’s Net Zero 2040 Initiative

For New Belgium to achieve net-zero, it must set ambitious, science-based targets (SBTs) to reduce emissions across its entire value chain and remove emissions using a robust strategy for carbon removal. There are six critical areas for New Belgium to tackle in their “*reduction pathway*” as recommended by the Society of Independent Brewers (SIBA) (Net Zero The Guide for the Brewing and Hospitality Sector. Matching your net zero ambition with a credible strategy, n.d.).

Energy Use

Energy use is the first area to address. Brewing is an energy-intensive business (Brewers Association, n.d.). For example, a craft beer barrel consumes

“nearly 80.5 kWh” (Sloane, 2012). New Belgium must embrace energy efficiency innovation across its value chain, including renewable energy and circular economy *“waste-to-energy”* solutions, such as anaerobic digestion and thermochemical conversion (Ortiz et al., 2019).

Ingredients

The sustainability of the supply chain is another area to address. Independent breweries reduce their supply chain's environmental impact in two ways: by *“sourcing sustainable ingredients and engaging with suppliers”* (Dropbox, n.d.). Working with local farmers is the most effective way and collaborating together effectively will bring the most change.

Transport and Logistics

Transport and logistics account for up to *“10% of independent breweries’ emissions”* (Dropbox, n.d.). Therefore, energy efficient refrigeration and electric vehicles are essential for green breweries. Finding local suppliers who use eco-friendly transportation and partnering with innovative companies like *“Sustainable Beverage Technologies”* (SBT) who invented *“BrewVo”*, which reduces emissions by *“one fifth while producing concentrated beer”* (Lederman, n.d.) will be needed to effectively reduce transport emissions.

Packaging and Recycling

Packaging accounts for up to *“40% of the beer industry’s carbon footprint”* (www.inside.beer, 2022). Minimizing environmental impact will require eco-friendly materials such as recycled paper, cardboard, and biodegradable plastics. Net-zero companies must also partner with circular economy companies such as *“Conscious*

Container", which is working towards reusing all the glass bottles used in brewing (Conscious Container, n.d.).

Solid Waste Management

The majority of brewery waste comes from spent grain (Ortiz et al., 2019). Breweries can reduce their carbon footprint by investing in *"waste-to-energy"* technologies, such as *"anaerobic generators"* that produce *"biomethane that can meet 15% of their heating needs"* (Dropbox, n.d.). Waste can also be used to feed cattle. For New Belgium to reach net-zero, continued efforts and innovation in reusing and recycling waste will be crucial.

Water

Water plays a crucial role in cleaning and sanitation and is extensively used in the brewing process, typically using *"five pints of water for every pint produced"* (Dropbox, n.d.). Net-zero requires sustainable water management (Anon, n.d.). To reduce its *"water footprint,"* New Belgium must adopt *"water-saving technology"* and implement *"closed-loop recycling systems"* (Anon, n.d.).

Carbon Removals

Following the definition of their emission reduction pathway, the scale of carbon removal needed to eliminate remaining emissions will become clear. Credible carbon offsetting relies on principles set by organizations such as SBTi (Net Zero The Guide for the Brewing and Hospitality Sector. Matching your net zero ambition with a credible strategy, n.d.).

The Business Case for Going Net Zero

The brewing industry has compelling business cases for net-zero goals. First, net-zero-emission brewing companies are more likely to gain brand loyalty and reputation through their commitment to sustainability (Staples et al., 2020). With net-zero goals, breweries can mitigate risks associated with potential future carbon pricing by navigating regulatory landscapes that promote eco-friendly practices (www.global-counsel.com, n.d.). As well as risk management, net-zero initiatives save money through energy efficiency, waste reduction, and ethical sourcing. Achieving net-zero goals isn't just a moral imperative; it's an opportunity and strategic business decision for breweries.

Applied Academic Theories and Concepts for Net Zero

New Belgium will need academic theories and concepts to achieve net-zero. In order to fully understand the environmental impacts of the brewing supply chain, a *“Life Cycle Analysis”* (LCA) is crucial (Baitz, 2018). Supply chain management theories will be imperative to managing and optimizing complex networks. Environmental economics concepts will provide New Belgium with practical insights into managing and reducing Scope 3 emissions (Hanley, Shogren, and White, 1997). In addition, environmental laws and policies (www.apu.apus.edu, n.d.), circular economy principles for reducing waste (Cimini and Moresi, 2021), and carbon accounting methods (Stechemesser and Guenther, 2012) will all prove critical. Finally, theories in innovation and technology management will empower New Belgium to identify and implement technologies that reduce emissions at various production and distribution stages (Violino et al., 2020).

Timeframe & Resources

The industry timeframes for achieving net-zero emissions are “90% reductions in Scope 1 & 2 emissions by 2030”, and “57%–78% reductions in Scope 3 emissions by 2040”. In order to achieve this, New Belgium must set long-term and medium-term goals. Developing a net-zero trajectory requires significant technological, financial, and human resources. It will require investment capital, operating budgets, technology and infrastructure, human capital, data and monitoring systems, and carbon offsets. Many companies use internal carbon prices to plan their transition to net-zero. This approach can help “*reduce costs, manage risks, and drive innovation*” (Net Zero The Guide for the Brewing and Hospitality Sector, n.d.).

Organizational Strategy

Implementing a strategy is imperative for launching and reaching net-zero (www.gep.com, n.d.). New Belgium should follow these steps;

- Measure emissions. Use Scopes 1, 2 and 3 to develop a detailed understanding of the company's carbon footprint.
- Set science-based targets (SBTs). Align New Belgium's goals with climate science (Science Based Targets, 2015).
- Build a roadmap. Outline actionable steps to achieve targets. The company should identify “*quick wins*” and “*strategic milestones.*”
- Collaboration. Work with stakeholders, suppliers, and industry peers to have a greater impact.
- Develop a credible carbon removal strategy. By following credible carbon offsetting principles.

- Monitor and report on performance. Through performance measures and KPIs.

(Net Zero The Guide for the Brewing and Hospitality Sector. Matching your net zero ambition with a credible strategy, n.d.).

Performance Measures

New Belgium's sustainability performance should be optimized with the "*triple bottom line*" (TBL) method (Hourneaux , Gabriel and Vázquez, 2018). It allows the company to prioritize long-term success and positive contributions to society.

Maintaining TBL measures will help the company reach both initiatives; net-zero and sustainable alcohol consumption.

Assessment Plan - Key Performance Indicators (KPI's)

In order to measure the success of breweries' net-zero strategies, KPIs are crucial (www.gep.com, n.d.). To achieve net-zero, New Belgium will need to set numerous KPIs, including ones measuring greenhouse gas emissions, supply chain waste, recycling rates, energy consumption, water consumption, sustainable sourcing, circular economy practices, and consumer awareness (Key, 2023).

Reporting

New Belgium must consistently report progress on its net-zero goals (Nations, n.d.). This will provide stakeholders with transparency, accountability, and a measurable framework for measuring sustainability commitments. It will also foster trust among investors, customers, and the wider community by showcasing the

company's tangible actions towards mitigating climate change

(www.theclimatedrive.org, n.d.).

The Sustainable Alcohol Consumption Initiative

Introduction

Alcohol consumption poses a conflict of interest for the brewing industry since excessive or irresponsible drinking can cause health issues, accidents, and societal harm (Jiang et al., 2016). The tension between profitability and public health must be navigated by breweries (Mialon and McCambridge, 2018). This initiative will address this head-on and create long-term success across New Belgium's triple bottom line (TBL).

To encourage sustainable alcohol consumption, New Belgium should take a comprehensive approach, emphasizing both environmental and social aspects. This key initiative includes:

- Producing New Belgium non-alcoholic (NA) beers. This will meet consumer health-conscious preferences and further reduce the brewery's carbon footprint.
- Developing educational and marketing campaigns that emphasize drinking in moderation and NA beers' positive impact on health.
- Spearheading collaborative initiatives advocating moderate alcohol consumption.

By embracing this initiative, New Belgium will position its breweries as advocates for responsible consumption and sustainable development.

The Business Case for Sustainable Alcohol Consumption

The sustainable alcohol consumption initiative will bring New Belgium significant business advantages. First, tapping into the NA drink market responds to changing consumer preferences and healthier lifestyles (Wells, 2019). This rapidly growing market, which “*grew by 39% in 2020*”, offers breweries an opportunity to increase their market share. The insight firm CGA’s “*predicts the global non-alcoholic beer market will reach \$23.27 Billion in 2025, at a CAGR of 8.7%*” (Dingwall, n.d.). This is a window of opportunity for breweries. Additionally, as sustainability becomes a key driver of consumer loyalty, breweries that champion eco-friendly practices that include *social sustainability* such as sharing responsibility for reduced alcohol consumption will strengthen their brand image and reputation (www.bevindustry.com, n.d.). Furthermore, the incorporation of NA beers may also help them achieve environmental goals since NA beers have a significantly lower carbon footprint (NT, 2022). As New Belgium tackles sustainable alcohol consumption, they will remain competitive, attract a broader audience, and demonstrate a commitment to both public well-being and environmental stewardship.

Time Schedule and Resources

This initiative will require varying timescales and resource allocations. Overall it aims to position New Belgium as an industry leader of NA beers by 2040. Regarding resources, in the short term, there will be upfront costs associated with investment capital, product design adjustments, employee training, and implementation of energy efficiency measures for NA brewing. Ongoing efforts will include investments in monitoring and reporting, marketing and consumer education

(Net Zero The Guide for the Brewing and Hospitality Sector. Matching your net zero ambition with a credible strategy, n.d.) .

Applied Academic Theories and Concepts for Sustainable Alcohol Consumption

For this initiative to be successful, it will require the application of academic theories and concepts. The company must apply environmental economics to determine the true costs of the NA sector (Chen, 2019). Behavioral economics will understand consumer preferences and incentivize sustainable choices (National Academies Of Sciences Engineeri et al., 2024). Stakeholder theory will guide educational initiatives by understanding all relevant parties' interests (Kujala et al., 2022). In addition, the initiative will also benefit from theories related to innovation and technology management as it seeks to identify and implement novel technologies (Butler, 1988).

Organizational Strategy

New Belgium's sustainable alcohol consumption initiative demands a strategy. To begin, they should conduct thorough market research. Next, the company must design an original NA product range, develop a marketing strategy, create an educational roadmap to educate consumers about NA beer, and collaborate with industry stakeholders. Additionally, investments in cutting-edge technology and human capital will be necessary. Lastly, once the initiative is launched, ongoing customer feedback will inform adaptations.

Assessment Plan - Key Performance Indicators (KPIs)

Sustainable alcohol consumption considers social and economic factors. Measurement and promotion of sustainable alcohol consumption involves KPIs *in-addition* to net-zero environmental KPIs. New Belgium will need to develop KPIs specific to measuring education efforts, consumer awareness, and social impact.

Recommendations

This report makes the following recommendations to advance these two New Belgium sustainability initiatives:

- Establish a strategy oversight committee.
- Communicate the revised sustainability criteria to relevant shareholders and stakeholders.
- Keep employees informed and committed to these initiatives
- Build a sustainability culture through internal communication, recognizing and celebrating achievements, and encouraging employees to contribute ideas for improvement.

Conclusion

This plan outlines strategic initiatives for New Belgium's environmental, social, and economic sustainability. In Net Zero 2040, emissions are reduced in energy use, ingredients, transport, packaging, waste, and water. In line with academic theories, the timeline, resources, and strategy stress science-based targets, collaboration, and continuous monitoring. In the Sustainable Alcohol Consumption Initiative, we examine consumer preferences, market growth, and societal health. This strategy includes market research, product development, marketing, education, and technology investment. With a commitment to these initiatives, New Belgium will

position itself as an industry leader, fostering innovation, competitiveness, and social responsibility.

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