

Recommending Sustainable business practice

Greening Energy: A Sustainable Blueprint for BP

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Part A: Introduction

British Petroleum (BP), a firm with a history extending back more than a century, is one of the leaders in the world's energy sector. This worldwide corporation was created in 1908 and has roots in the manufacture, distribution, and marketing of oil and gas products (Garavini, 2019). BP's role in fulfilling the world's energy needs is clear given that its operations encompass numerous continents. 3.48 million barrels of oil equivalent were produced per day by BP as of 2021, according to their expected earnings of roughly \$180 billion (BP global, 2021). However, due to rising fears about climate change and environmental degradation, the energy sector—which is largely driven by fossil fuels—has been under severe scrutiny lately. The greenhouse gas emissions that cause global warming are directly ascribed to the burning of fossil fuels like oil and gas. BP is being attentively investigated as it is a prominent participant in this business.

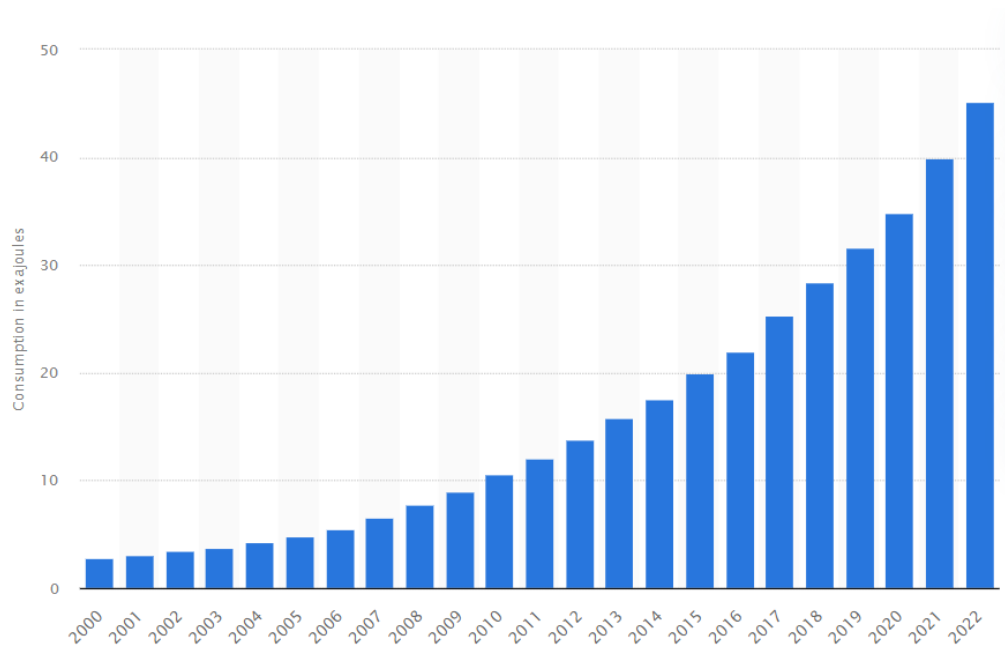


Figure: Global renewable energy consumption

Source: Statista, 2023

The energy industry as a whole is at a crucial crossroads. Fossil fuels accounted for roughly 84% of the energy utilised globally in 2020, suggesting a widespread reliance (Johnstone and McLeish, 2020). Despite this, global investments in renewable energy rose, growing by 2% from the previous year to \$303.5 billion in the same year. By 2040, renewables are predicted to account for 30% of the world's energy mix (IRENA, 2023). Even while BP today leads the fossil fuel business,

a change is necessary, as indicated by these new market trends and a global desire for sustainability. Companies like BP must now rethink their operational strategy in light of the global move to renewable energy sources and rising stakeholder demand. Global agreements have set tight targets to decrease global warming, such as the Paris Agreement. These aims influence not only governments but also corporations, notably those in the energy sector. This paper will explore BP's practises in-depth, compare them to newly developed sustainable practises in the industry, and make tactical ideas relevant to BP's position. In order to set the basis for a greener, more sustainable future for the energy giant, a specific focus will be made on examining and delivering sustainable solutions in one crucial operational area.

Part B: Knowledge and Understanding

Sustainable Business Operations in the Energy Sector

Modern civilization has long relied on the energy sector to power its companies, housing, and nearly every part of daily life. It has traditionally been a significant source of CO₂ emissions thanks to the dominance of fossil fuels as coal, oil, and gas, with the burning of these fuels accounting for around 73% of current global greenhouse gas emissions (Abdul Latif *et al.*, 2021). However, a paradigm revolution is currently underway in the industry. More sustainable energy solutions are urgently required as a consequence of the detrimental repercussions of climate change, societal demand, and international commitments like the Paris Agreement (Kuzemko *et al.* 2020). Renewable energy, which includes sources from the wind, sun, water, and soil, is no longer a niche business; rather, it is a developing one that is transforming the face of the energy industry.

Energy sector business models have had to alter as a consequence of innovation and necessity. Now that they are no longer solely oil and gas organisations, conventional energy corporations are diversifying their portfolios and becoming integrated energy companies. This requires transitioning to renewable energy generation as well as adopting cutting-edge technologies like carbon capture, utilisation, and storage (CCUS) and studying hydrogen's potential as a green fuel (McLaughlin *et al.*, 2023). Energy system decentralisation is another notable achievement. Energy production used to be centralised, with massive power plants spanning vast territories. We are now witnessing a more decentralised system where households and businesses produce their own energy and sell any excess back to the grid owing to developments in renewable technologies. This not only decentralises the creation of energy but also minimises gearbox losses and increases

system durability. The industry is further being changed by digitalisation. The energy distribution is becoming more effective thanks to "smart grids," which are sensor-equipped and connected via the Internet of Things (IoT) (Singh *et al.* 2023). In order to limit energy waste, they can estimate demand, improve supply, and even proactively fix faults.

British Petroleum (BP) in the New Energy Landscape

BP has accepted the necessity to redefine its position and respond to the shifting market dynamics amid these industry-wide transformations. BP has made considerable progress in its quest to transition from an International Oil Company (IOC) to an Integrated Energy Company (IEC). BP, a corporation that historically epitomised the oil and gas industry, has taken the daring vow to become a net-zero business by 2050 or sooner. This means cutting emissions from both its own operations and the oil and gas it produces. In the same time frame, BP also expects to cut the carbon intensity of its commodities by 50% (BP global, 2023).

BP has been diversifying its energy portfolio to accomplish these aims. It has expanded its solar energy investments and cooperated with Lightsource BP to construct solar projects across the world. Lightsource BP has 16 GW of solar projects in development as of current data, which indicates a substantial shift in BP's energy production methods (EnergyWorld, 2023). Last but not least, BP Ventures, the company's venture arm, has contributed considerably to the progress of innovation. BP Ventures makes guarantees that the firm remains at the forefront of the energy revolution by investing in start-ups creating cutting-edge technologies such as enhanced transportation and carbon capture.

Part C: Areas of concern

Concerns in the Energy Sector

The pace of climate change is substantially impacted by the global energy industry. Traditional fossil fuels like coal, oil, and natural gas, which have long been used to power economies, are at the core of it. Their environmental cost is now more clear than ever, though. According to the Intergovernmental Panel on Climate Change (IPCC), CO₂ emissions must decline by roughly 45% from 2010 levels by 2030 in order to attain "net zero" by 2050 in order to mitigate the severe consequences of climate change (de Andrade Correa and Voigt, 2021).

The primary difficulties affecting the sector are as follows:

1. High Carbon Emissions: According to Nong, Simshauser, and Nguyen (2020), the burning of fossil fuels accounts for the bulk of the world's total greenhouse gas emissions (73%).
2. Environmental Degradation: Local ecosystems may be badly affected by oil spills, drilling, and deforestation for infrastructure.
3. Resource Depletion: Oil and gas reserves are finite, and as the readily accessible reserves are consumed, extraction of these resources becomes costlier and damaging to the environment.

BP's Present Position and Methods

These broad concerns are mirrored in BP's business practises and have unique repercussions for the corporation as one of the main players in this industry:

1. Operational Emissions: BP creates a considerable quantity of greenhouse gas emissions throughout its operations, from drilling to transportation. According to Borodin *et al.* (2022), BP's direct operations created 55.5 million tonnes of CO₂ equivalent in 2019.
2. Product Emissions: BP's commodities, principally oil and gas, also contribute to emissions. In 2019, BP's production-related emissions were 361.9 million tonnes of CO₂ equivalent.
3. Dependence on Fossil Fuels: BP's principal industry is still oil and gas, which contributed for over 96% of its total production in 2019 (Borodin *et al.* 2022).
4. Historical Incidents: According to McGuire, Holtmaat, and Prakash (2021) BP has faced environmental crises in the past, most notably the Deepwater Horizon oil spill in 2010, which had substantial detrimental consequences on the ecosystem.

Comparison to Peers

Comparing BP to some of its rivals offers a confusing picture. ExxonMobil, for example, has been slower to adapt while corporations like Shell and Equinor are focused on incorporating renewable energy sources.

1. Renewable Investments: Although considerable, BP's pledges to renewable energy are less aggressive than Equinor's, which aims to dedicate 15-20% of its overall capital expenditure to them by 2030 (BP global, 2022).
2. Emission Reduction: Compared to BP's wider 2050 ambition, firms like Total have created stated intermediate milestones for net-zero aspirations, aiming for lower than 40 gCO₂/MJ by 2030.

New Sustainability Trends in the Energy Industry

New advancements in the energy business indicate a fast-shifting environment with the arrival of cutting-edge technology and methods. Energy Storage Systems (ESS) are becoming increasingly popular, which makes it simpler for consumers to utilise intermittent renewable energy sources and assures a consistent supply of power even when they are not generating any energy (PARVAR, 2019). Energy use may be reduced, system problems may be foreseen, and downtime can be minimised through digital transformation, which involves the use of AI and the Internet of Things (IoT) in operations. Additionally, there is a rising focus on the principles of the circular economy, with corporations reassessing waste streams as prospective resource inputs. Understanding and integrating these trends will help BP become a more forward-thinking leader in a sector where sustainability is a race against time, in addition to enhancing operational efficiency.

Despite being crucial for economic progress, the energy sector presents fundamental problems regarding the sustainability of the environment. BP, a key participant in the market, symbolises these issues but also has the authority and resources to increase industry standards. Even if BP has made remarkable gains in the direction of sustainability, it's evident that more aggressive action is required, especially when comparing its operations with those of some of its innovative rivals.

Part D: Evaluation of Business Practice

The Energy Sector's Prevailing Practises

The bulk of the time, the global energy business has functioned under a paradigm that is built on fossil fuels. While monetarily lucrative, this method has come at a huge environmental cost. Global CO₂ emissions from the combustion of fossil fuels set an all-time high of 36.8 billion tonnes in 2019, according to a report from the Global Carbon Project (Thompson, 2023). Such a trajectory jeopardises international commitments made under the Paris Agreement and exposes a sector that demands urgent innovation.

Alternative Business Solutions and Procedures

1. **Transition to Renewables:** Over the past 10 years, the renewable energy sector, notably solar and wind energy, has witnessed exponential growth. According to Shahsavari and Akbari (2018), prices for solar photovoltaic power have reduced by around 89% since 2010, making it competitive with fossil fuels in many locations. By moving capital from new oil and gas field development to renewable energy, energy corporations may be future-proofed against market volatility while lowering emissions.

2. Decentralised Energy Systems: Micro grids and distributed energy resources are becoming increasingly viable as energy storage technology advances. They promote local community empowerment, minimise transmission losses, and make it feasible for a more resilient energy infrastructure.

3. Carbon collection and storage: Although 100% decarbonisation is the ultimate target, interim methods like CCS may be highly helpful. CCS may lessen the environmental damage while easing the transfer to cleaner energy sources by capturing up to 90% of the CO₂ emissions created by the combustion of fossil fuels (Rubin, Chen, and Rao, 2019).

Current Position and Alternatives Considered by BP

With its considerable resources and large international reach, BP holds a vital role in this energy revolution. With an ambition to decrease oil and gas production by 40% by 2030 and expand investments in low-carbon technology tenfold, its "Reimagine Energy" plan, unveiled in 2020, does foreshadow a drastic transformation (BP global, 2023). Still, there are circumstances when additional effort could have a revolutionary effect:

1. Scaled Renewable Investments: BP presently has 2.5 GW of renewable energy capacity, with a goal of 50 GW by 2030. This aim may be attained sooner by reallocating even a tiny amount of the \$15 billion annually spent on oil and gas exploration (Parnell, 2020).

2. Electrification and Hydrogen Economy: BP may shift direction to concentrate on electrifying transport as a big stakeholder in the energy industry. With a focus on ecologically friendly hydrogen production and investments in electric vehicle charging infrastructure, firms may diversify their portfolios while providing the world's expanding energy demands.

3. R&D in Emerging Technologies: To preserve its leadership in the transforming energy paradigm, BP may devote more of its \$450 million in yearly R&D investment into ground-breaking technologies like enhanced biofuels, next-generation solar panels, or solid-state batteries (BP global, 2022).

Principles of the circular economy are incorporated comprehensively

The adoption of the circular economy, which breaks from the typical linear 'take-make-dispose' paradigm, signifies a significant departure in current business practises. According to Accenture (2019), implementing circularity may contribute to \$4.5 trillion in economic growth by 2030. This method translates into several implementable techniques for the energy business, including:

1. Resource lifetime Management: Energy organisations may take into consideration the complete lifespan of resources rather than concentrating simply on exploration and exploitation. Repurposing old oil rigs for other reasons, including marine conservation programmes or renewable energy structures, as well as repairing and reusing equipment are all part of this.

2. Collaborative Consumption: The shared economy has influenced a variety of sectors, including hospitality and transportation. Instead of merely supplying raw energy, BP may ponder about energy-as-a-service enterprises that give energy solutions adapted to particular community or industrial needs.

3. Eco-design and Systems Thinking: Future infrastructures may be built with decommissioning, reuse, and repurposing as part of the original concept rather than solely developing them with extraction in mind. This assures a reduction in environmental footprints and may, over time, result in economic savings.

By implementing these concepts, BP may increase the scope of its sustainability initiatives while boosting operating efficiency and decreasing waste. This integrated approach to resources and business operations presents BP as a forward-thinking company that is poised to shape the future of sustainable business, not only as an energy supplier.

Part E: Recommendation and Conclusion

Recommendation

1. Accelerated Transition to Renewables: Although it is positive that BP wants to boost renewable energy capacity to 50 GW by 2030, the urgency of the global issue demands for greater urgent action. A firmer commitment to sustainability would be displayed by defining an intermediate target of 30 GW by 2025. Capital expenditures would need to be reprioritized in order to transfer more money from fossil fuel projects to renewable energy programmes.

2. Invest in Advanced Technologies: BP should actively invest in cutting-edge sustainable technologies such as advanced biofuels, solid-state batteries, and green hydrogen in addition to traditional solar and wind power. Although still in their infancy, these disciplines present a competitive advantage in the future energy scenario. Significant innovation may be spurred by a 15% annual increase in the devoted R&D budget for some sectors.

3. Adopt circular economy practices: BP needs to set up a team exclusively for circular economy initiatives. Their key objective would be to build reuse plans for old equipment and limit operational waste by 20% by 2025.
4. Enhanced Stakeholder Collaboration: Join forces with local communities, NGOs, and governments to establish initiatives that are sustainable. Creating at least three significant multi-stakeholder partnerships per year that promote sustainability goals could be an important KPI.
5. Transparent Reporting: Make sure that emissions, garbage, and water usage are correctly and honestly recorded. An external audit undertaken by a third party could improve trust even more. By 2024, it would be ideal to achieve at least a 90% transparency rating on the global transparency indices.
6. Evolving Workforce Training: BP should sponsor courses for its workers' continuous learning that promote sustainable practices, cutting-edge technology, and stakeholder participation. By 2026, attempt to train 70% of the workforce in courses that prioritise sustainability.

Conclusion

In the course of its commercial history, BP stands at a crucial crossroads. The company's business actions will determine not only its profitability but also its social and environmental legacy as the energy industry faces profound upheavals. By following the aforementioned proposals, BP may position itself as a market leader in the area of sustainable energy, ensuring resilience, growth, and a beneficial effect on the globe. By embracing change today, BP and the many communities it serves will have a lucrative and sustainable future.

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