Research on the Transformation Path of BP under the Dual-carbon Background

Xueying Wang

China University of Petroleum (Beijing), Changping District, Beijing, 102249, China

Abstract. Nowadays, the oil and gas industry is facing a huge financial challenge, because it has been hit by the double blow of the COVID-19 pandemic and low oil prices. This, coupled with the global consensus on low-carbon energy, forces BP to seek a balance between oil business and low-carbon, sustainable development, and began to look for new value growth points to accelerate the pace of low-carbon transformation.

Keywords: British Petroleum (BP); Low Carbon; Energy; Transition.

1. Introduction

BP is an integrated energy company, covering upstream business, downstream business and renewable energy. At present, BP operates in 79 countries and regions around the world, with proven oil and gas reserves of 19.341 billion barrels of oil equivalent and annual crude oil trading volume of 4 billion barrels, accounting for 20% of the global crude oil trading volume.

2. BP's Zero-carbon Goal

In February 2020 BP set out their ambition to be a net zero company by 2050 or sooner and to help the world get to net zero. This ambition is supported by 10 aims. Taken collectively, these set out a path that BP believe is consistent with the Paris goals.

2.1 Objective Statement

Aim 1: net zero operations

BP's aim 1 is to be net zero across their entire operations on an absolute basis by 2050 or sooner. This aim relates to Scope 1 and 2 GHG emissions (around 55Mte CO₂e in 2019).

Aim 2: net zero oil and gas

Aim 2 is to be net zero on an absolute basis across the carbon in their upstream oil and gas production by 2050 or sooner.

Aim 3: halving intensity

BP's aim 3 is to cut the carbon intensity of the products they sell by 50% by 2050 or sooner. This is a life cycle carbon intensity approach, per unit of energy. It covers marketing sales of energy products and potentially, in future, certain other products.

Aim 4: reducing methane

Their aim 4 is to install methane measurement at all BP's existing major oil and gas processing sites by 2023, publish the data, and then drive a 50% reduction in methane intensity of their operations. And BP will work to influence their joint ventures to set their own methane intensity targets of 0.2%.

Aim 5: more investment for new energies

Aim 5 is to increase the proportion of investment BP make into their non-oil and gas businesses. Over time, as investment goes up in low and zero carbon, we see it going down in oil and gas.

Aim 6: Advocating

Aim 6 is to more actively advocate for policies that support net zero, including carbon pricing. BP have stopped corporate reputation advertising campaigns and this is enabling BP to redirect resources to promote well designed climate policies.

Aim 7: Incentivizing employees

Aim 7 is to incentivize BP's global workforce to deliver on their aims and mobilize them to become advocates for net zero. This will include continuing to allocate a percentage of remuneration linked to emissions reductions for leadership and employees.

Aim 8: Aligning associations

Aim 8 is to set new expectations for BP's relationships with trade associations around the globe. BP will make the case for their views on climate change within the associations BP belong to and they will be transparent where they differ.

Aim 9: Transparency leader

Aim 9 is to be recognized as an industry leader for the transparency of BP's reporting. On 12 February 2020, BP declared their support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Aim 10: Clean cities and corporates

Aim 10 is to launch a new team to create integrated clean energy and mobility solutions. BP launched their regions, cities and solutions team in 2020. It will help countries, cities and corporations around the world decarbonize.

2.2 Strategic Path to Achieve the Goal

1. Low carbon electricity and energy

Through BP's gas & low carbon energy business, they aim to grow scale. BP's low carbon businesses are complemented by integrated gas, which has an important role in the energy transition.

(1) Growing BP's renewables portfolio, including offshore wind and solar.

(2) Building an integrated low carbon electricity position in select developed and emerging markets.

(3) Growing BP's integrated gas position, building on BP's high-value equity upstream gas, BP's LNG portfolio and BP's marketing capability.

(4) Scaling BP's bioenergy business, focusing on biofuels, biogas and biopower.

(5) Accelerating to take early positions in hydrogen and carbon capture, use and storage.

2. Convenience and mobility

BP's customers & products business group is an integral part of BP's growth and returns strategy. BP aim to put customers at the heart of everything they do.

(1) Expanding and scaling BP's differentiated fuels and lubricants offers in growth markets, aiming to help shape these markets over time to lean into the transition to low carbon mobility.

(2) Redefining convenience through partnerships with some of the world's leading brands and continuing to develop innovative offers, making buying BP's retail goods and fuels even more convenient for customers.

(3) Developing next-gen mobility solutions, including electrification, sustainable fuels and hydrogen.

3. Resilient and focused hydrocarbons

BP aim to produce the affordable hydrocarbon energy and products the world needs, and generate cash to fund BP's operations and BP's transformation to an Integrated Energy Company.

(1) Always putting safety first. Aiming to eliminate life-changing injuries and the most serious process safety events.

(2) Reducing emissions, aligned with BP's aims, while delivering the energy the world needs. Transforming operations and improving efficiency.

(3) Maintaining a resilient portfolio through investment efficiency and high grading. Flexibly deploying talent to BP's most valuable opportunities and to solve BP's biggest issues.

3. Natural Gas Business

3.1 New Natural Gas Production Project

Of the 31 new upstream projects put into production by BP in 2016-2021, 18 are natural gas projects, as shown in figure 1. Of the nine oil and gas production projects in 2019, four are natural gas projects.

Table 1. BP's newly commissioned natural gas projects in 2015-2021

Project Name	Production Time	Project Description	Area
Matapal	September 2021	BP Trinidad and Tobago LLC (bpTT) confirms its Matapal project has safely achieved first gas. The major milestone was achieved ahead of schedule and under budget despite the constraints brought about by the COVID-19 pandemic.	Trinidad
Trans Adriatic Pipeline	November 2020	The Trans Adriatic Pipeline is a strategic piece of energy infrastructure that forms the last link in the mega Southern Gas Corridor (SGC) project. SGC covers several separate energy projects that stretch over 3,500 kilometres, crossing seven countries and involving more than a dozen major companies.	Seven countries including Greece, Albania and Italy
West Nile Delta - Giza / Fayoum	February 2019	The project produces natural gas from the Giza and Fayoum gas fields and is developed for long-distance recharge as deep water for existing onshore plants.	Egypt
Angelin, Trinidad	February 2019	The Angelin project developed four wells and built a new platform at a depth of about 215 feet 40 miles off the southeast coast of Trinidad. Natural gas from Anjilin flows through a new 13-mile pipeline to the Serrette platform hub.	Trinidad
Culzean, North Sea, UK	June 2019	Culzean is a 1.2Tcf high pressure and high temperature (HPHT) lean gas condensate field, located about 140miles east of Aberdeen in block 22 / 25a in the central North Sea with a water depth of 300ft.	United Kingdom-North Sea
India KGD6 – MJ	June 2019	In the third phase of natural gas development in KG D6, seven undersea wells will be connected to a new floating production and storage tanker to process and separate liquids.	India
Atoll Phase 1, Egypt	February 2018	The atoll phase I project is an early production plan that involves the upgrading of existing exploration and production wells, the drilling of two other wells, the installation of the necessary submarine infrastructure and the upgrading of existing onshore facilities required for on-site production.	Egypt
Shah Deniz Stage 2, Azerbaijan	June 2018	The \$28 billion project run by BP is the first undersea development in the Caspian Sea. The project includes 26 undersea oil wells, an undersea production system, two offshore platforms connected to bridges and 500 km of subsea oil pipelines.	Azerbaijan
Western Flank B	October 2018	The Western Flank B project will develop the Keast, Dockrell, Sculptor-Rankin, Lady Nora and Pemberton fields through eight subsea wells connected to the Goodwyn A platform.	Australia
West Nile Delta – Taurus / Libra, Egypt	March 2017	The WND development includes five gas fields spanning two offshore concession blocks operated by BP (Northern Alexandria and Western Mediterranean Deepwater).	Egypt

Trinidad Onshore Compression, Trinidad and Tobago	April 2017	The Trinidad onshore compression project will use additional imported compressors from the Point Fortin Atlantic LNG plant to increase production of BP Trinidad and Tobago LLC (bpTT) low pressure wells in the existing area of the Columbus Basin.	Trinidad
Persephone, Australia	July 2017	The Persephone gas field is located 135km northwest of Karasa City, Western Australia, with a water depth of about 126m. It costs \$1.50.	Australia
Juniper, Trinidad and Tobago	August 2017	The Juniper network facility will use the Corallita and Lantana fields 50 miles off the southeast coast of Trinidad to produce natural gas at a depth of about 360ft.	Trinidad
Khazzan Phase 1, Oman	September 2017	Mining the gas tightly hidden in Kazan's ancient hard rock is challenging.	Oman
Zohr, Egypt	December 2017	The field, a joint venture between Eni and Egyptian General Petroleum Corporation (EGPC), is the largest natural gas discovery to date in the Mediterranean.	Egypt
Point Thomson, Alaska	April 2016	The project will remove condensed water from the produced gas for export and then re-inject natural gas into the reservoir.	Alaska
In Amenas Compression, Algeria	December 2016	The In Amenas joint venture, one of the largest wet gas projects in Algeria, involves the development and production of natural gas and gas-liquid from oilfields in the Illizi basin in southeastern Algeria.	Algeria
Angola LNG (restart)	June 2016	Angola resumes production of liquefied natural gas (LNG), which is expected to be loaded and exported in the near future.	Angola

3.2 Natural Gas M&A Project

1. On December 5, 2017, BP acquired a 3.06% stake in the Tangji liquefied Natural Gas (LNG) project.

2. In February 2018, BP announced a \$7.2 billion offer for a 30% stake in 23 oil and gas contracts operated by Reliance Industries of India.

3. In July 2018, BP acquired BHP Billiton's onshore assets in the United States.

4. In August 2018, BP began to lay out the Oceania natural gas market and signed a natural gas procurement agreement with Papua New Guinea.

5. In October 2020, BP started production from the Ghazeer field in the Omani desert ahead of schedule.

6. In April 2021, BP announces gas production from third stage of West Nile Delta development in Egypt.

4. New Energy Business

4.1 New Energy Business Development Scale

(1) Wind Power

BP's wind assets in the United States include 11 onshore wind farms, ranging from Maui in Hawaii to the hills of northeastern Pennsylvania. Net generating capacity exceeds 1000MW, which is enough to power all houses in Dallas.

(2) Biofuels

Biofuel technology is the key to achieving a "farm of the future" for BP's biofuel business in Brazil. BP's 50% stake in BP Bunge Bioenergia, a Brazilian joint venture with Bunge Limited, a leading agricultural commodities company, has boosted its existing biofuel business by more than 50%.

(3) Solar Energy

LightsBP'sce BP, a subsidiary of BP, has acquired three solar projects in Aragon, Spain, with a total capacity of 703MW. The company said the portfolio was acquired from Grupo Jorge and that three projects would be built in 2022.

(4) Energy Storage Battery

In 2018, BP announced that it had reached an agreement to acquire Chargemaster, the largest electric vehicle (EV) charging company in the UK. Chargemaster is the largest electric vehicle charging network operator in the UK and a leading supplier of electric vehicle charging facilities.

4.2 Acquisitions and Mergers of New Energy Businesses

The following table lists the new energy projects that BP has acquired and acquired after 2015.

Table 2. New energy projects acquired by BP

year	Type	Project profile
December 2017	Solar Energy	Buy a 43% stake in British solar company Light sBP'sce for \$200 million, and return to the solar industry.
June 2018	Electricity	BP to acquire the UK's largest electric vehicle charging company--Chargemaster
July 2019	Solar Energy	LightsBP'sce BP acquires about two GW greenfield solar projects from Enerlife, which are at various stages of development in Brazil.
October 2019	Solar Energy	Enter the Spanish solar market by acquiring a portfolio of 300MW projects in Zaragoza, Spain.
December 2019	Solar Energy	BP will acquire an additional stake in LightsBP'sce BP, increasing its interest in the company from 43% to 50%. This creates a new 50/50 joint venture between the management of LightsBP'sce BP and BP.
November 2020	Hydrogen	BP and Ørsted signed a Letter of Intent (LOI) to work together to develop a project for industrial-scale production of green hydrogen.
September 2020	Offshore wind	BP has announced a new strategic partnership with Equinor to develop major offshore wind assets in the fast-growing US market and to jointly pursue further offshore wind opportunities in the country.
July 2021	Offshore wind	BP has formed an exclusive consultancy agreement with Quaybridge: a leading UK-based renewables consultancy with global expertise in offshore wind.
May 2021	Solar energy	Lightsource BP announces €900 million solar investment in Portugal. The projects are in the early development stage and will be located in the regions of Moura, Castelo Branco, Mogadouro, Chamusca and Viseu.
March 2021	Hydrogen	Proposed project in Teesside would be the largest in the UK, producing up to 1GW of 'blue' hydrogen – 20% of the UK's hydrogen target – by 2030 and supporting development of region as UK's first hydrogen transport hub.

References

- [1] BP Group Annual Report (2020-2015).
- [2] BP Group Sustainability Report (2020-2015).
- [3] BP Group Investor Handbook (2020-2015).