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Energy transition will see global gas demand ‘either flourish or flounder’ – BP

[1]

Global demand for natural gas could either peak as soon as the mid-2020s or continue to grow out to 2050 and beyond depending on how quickly the world decarbonises, BP said today in its Energy Outlook 2020, illustrating the scale of uncertainty that the energy transition poses to the gas industry. Scenarios modelled in the report also bring forwards the likely date of peak oil demand into the mid-2020s, and raise the prospect that global crude consumption might never recover to pre-pandemic levels.

The 2020 edition of BP’s Energy Outlook explores possible paths for the global energy ?transition, how global energy markets may evolve over the next 30 years and the key ?uncertainties that may shape them. Looking out to 2050 – a decade further than in previous ?editions – the Outlook is focused around three main scenarios.: Rapid, Net Zero and Business as Usual (BAU).

Rapid assumes carbon emissions from energy use falling by around 70% by 2050 from ??2018 levels, while Net Zero assumes a 95% reduction by mid-century. BAU envisages carbon emissions reducing by only 10% over the same timeframe.

In Rapid, global demand for natural gas plus biomethane recovers from the near-term dip associated with Covid-19 and grows fairly strongly over the next 15 years or so, driven primarily by economies in developing Asia as they switch away from coal towards lower-carbon fuels, including gas.

Gas consumption declines in the subsequent 15 years as the impetus from developing Asia fades, compounded by increasing falls in the developed world, such that global gas demand by the end of the

Outlook period falls back close to its 2018 levels at around 4,000 Bcm.

The main regions of increasing gas production in Rapid are China and Africa, supported by rising domestic consumption. US and Middle Eastern gas production by 2050 are largely unchanged from 2018 levels, with marked falls in domestic demand offset by increased exports.

The growth of global gas demand in Net Zero is shorter lived, peaking in the mid-2020s, followed by a far faster decline such that demand by 2050 is around 35% below 2018 levels.

In contrast, gas demand increases throughout the next 30 years in BAU, increasing by a third to around 5,300 Bcm by 2050. This growth in gas consumption is relatively widespread, with particularly strong increases across developing Asia, Africa and the Middle East.

The much stronger demand growth in BAU is largely met by increases in output in the US, Middle East and Africa, which together account for around two-thirds of the increase in global supplies in this scenario.

End-use variations

The way that gas is used varies dramatically across the three scenarios. In Rapid, the shift to lower carbon energy sources, combined with significant gains in energy efficiency, means gas used in the industrial and power sectors – the two main sources of growth in gas consumption over the past 20 years – is largely unchanged over the Outlook, and falls materially in buildings.

Instead, the main source of gas demand growth out to 2050 is the growing use of natural gas to produce blue hydrogen, which accounts for almost 10% of global gas demand by 2050 in Rapid.

These shifts in the pattern of gas demand are even more pronounced in Net Zero, with the use of gas in the power sector and buildings falling by around 65% and 90% respectively, partially offset by a substantial increase in the use of gas to produce blue hydrogen.

In contrast, growth in global gas demand in BAU is broadly based across all sectors of the economy, led by the industrial and power sectors, which together account for around two-thirds of the increase. The growth in industrial demand stems entirely from emerging economies as they continue to industrialise, supported by significant coal-to-gas switching within China's industrial sector.

LNG boom

There is one 'winner' in both BAU and Rapid: LNG, demand for which grows under both scenarios.

In Rapid, LNG consumption bounces back strongly from the near-term Covid-19 hit, more than doubling from 425 Bcm in 2018 to around 1,100 Bcm by the mid-2030s. Under BAU, demand grows to ~1,000 Bcm by 2050.

In both cases, the US, Africa and the Middle East are the main source of incremental supply, with developing Asia the dominant destination for these increasing exports, along with the EU which remains an important balancing market for LNG in both scenarios.

However, there is a sting in the tail. Under Rapid, the pace of LNG exports declines more quickly than the nominal capacity of operating global liquefaction plants, "implying that towards the end of the Outlook some facilities need to be operated at less than full capacity or shutdown prematurely".

Peak oil

The picture is much more dour for oil and other liquid fuels. Under BAU, oil consumption recovers from the near-term pandemic shock but remains flat at around 100 million barrels/d for the next 20 years, before edging lower to around 95 million barrels/d by 2050.

Under Rapid and Net Zero, liquid fuels consumption never fully recovers from Covid-19, implying that global oil demand peaked in 2019 in both scenarios.

The consumption of liquid fuels falls significantly over the Outlook in both scenarios, declining to less than 55 million barrels/d and around 30 million barrels/d in Rapid and Net Zero respectively by 2050.

Falling demand is concentrated in the developed world and China, with consumption in India, other Asia and Africa broadly flat over the Outlook as a whole in Rapid, but falling below 2018 levels from the mid-2030s onwards in Net Zero. - SK

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