LNG market under increasing pressure

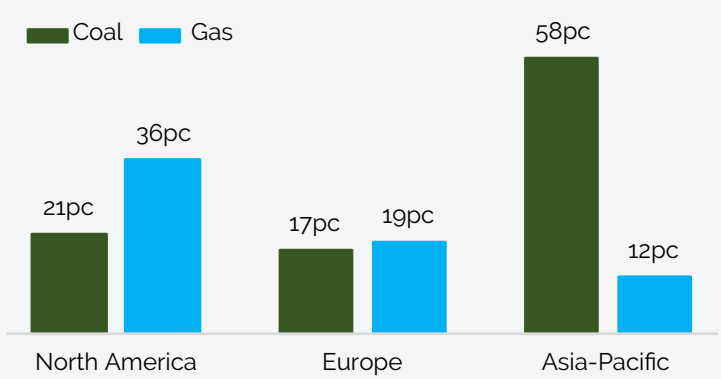
Gas and renewables have both been resilient during the pandemic, but pressure to decarbonise will soon challenge gas and LNG

The Covid-19 pandemic roiled energy markets during 2020, with estimated full-year global energy demand decreasing by 5pc. Oil demand was hit the hardest—plummeting approximately 10pc—due to mandatory lockdowns and curtailed mobility. By comparison, natural gas and power demand are less sensitive to reduced mobility and have therefore shown much greater resilience, declining by approximately 3pc and 2pc respectively, as residential electricity consumption increased during the lockdowns and commercial and industrial power consumption rebounded with economic reopening.

The short-term decline in electricity demand, as well as prices, has accentuated the value of flexible and low-cost generation sources, particularly renewables and gas, instead of inflexible and expensive coal plants. Global renewable energy supply increased by 1pc in 2020, whereas coal energy supply declined by 7pc. Wind and solar investment costs have fallen significantly over the last decade to the point where they now beat coal and gas on a levellised cost of electricity basis in many regions.

In this respect, the economic effects of the pandemic have intensified, rather than deterred, the climate-change imperative for the energy transition by further increasing the incentive to retire, or financially restructure, uneconomic energy production and generation sources.

FIG. 1: Coal and gas share of power generated 2019



55pc

EU Green Deal carbon cut aim for 2030

The replacement of coal-fired generation with renewable energy and gas in the US and EU, though incomplete, is already well underway. In 2000, coal accounted for 39pc of power generation in North America and Europe, but this declined to only 19pc in 2019. By contrast, Asian countries have installed a massive base of coal-fired generation over the last two decades to serve substantial economic growth. In 2019, Asia relied on coal for 58pc of its generated power, up from 51pc in 2000. One of the key challenges to global decarbonisation will be to curb carbon emissions without stymieing Asia's economic growth.

Accelerated decarbonisation

As the global economy recovers during 2021 and 2022, policymakers in the US and EU are poised to address the dual imperatives of economic stimulus and climate-change mitigation. In the US, the incoming Biden administration plans to rejoin the Paris Agreement, promote net-zero power generation by 2035 and reach a 100pc clean energy economy by 2050. Control of the US Senate, which hinges on 5 January runoff elections for two undecided seats in Georgia, will also affect the extent to which the Biden administration is able to swiftly implement wide-sweeping climate reform. However, even in the event of a divided Congress, there are promising signs of bipartisan support for escalating carbon taxes—meaning that expanded US decarbonisation efforts are likely on the horizon.

In Europe, the recently announced Green Deal aims to reduce carbon emissions to 55pc below 1990 levels by 2030 on the way to achieving full decarbonisation of the economy by 2050. Achieving the 2030 target will require increasing renewables' share of total energy supply to 32pc,

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including adding 40GW of green hydrogen electrolysis and aiming for 60GW of offshore wind.

Japan and South Korea have targeted a significant reduction of inefficient coal-fired generation by 2030 and 2034, respectively, and have recently pledged to reach carbon neutrality by 2050. China and other heavily coal-reliant economies plan to follow this path on a longer timeline. China has targeted the goal of carbon neutrality by 2060, and India has committed to cut its carbon footprint by increasing the share of non-fossil fuel power generation to 40pc by 2030. Replacing Asia's massive installed base of coal-fired power will require substantial growth of both renewable energy and gas generation.

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LNG exports and demand

Decarbonisation portends tremendous change for gas and LNG markets over the long term. In the US, net-zero power generation by 2035 or an escalating carbon tax would slash domestic gas demand by 25pc and Henry Hub prices by more than $1/mn Btu by 2035—developments that would liberate vast supplies of gas and stimulate LNG exports from North America.

However, without accelerated decarbonisation in other countries, the increased US LNG exports would primarily displace pipeline imports and domestic production in European and Asian import countries, with lesser impacts on foreign LNG exports.

Western Europe and East Asia are both likely to pursue intensified net-zero policies simultaneously with the US, which could cause Western European and East Asian gas demand to fall by up to 45pc by 2035. Partially offsetting these trends, China, India and other emerging Asian economies would first need to displace some coal generation with gas and would not begin to reduce gas consumption until after 2030. As a result, the overall decline in gas demand across the major economies of Asia, Western Europe and North America would be moderate until the early 2030s.

With US and European gas demand in decline and overall Asian gas and LNG demand continuing to grow, excess low-cost North American LNG supplies will in-

FIG. 2: Impact on LNG export volumes (global decarbonisation minus BAU)

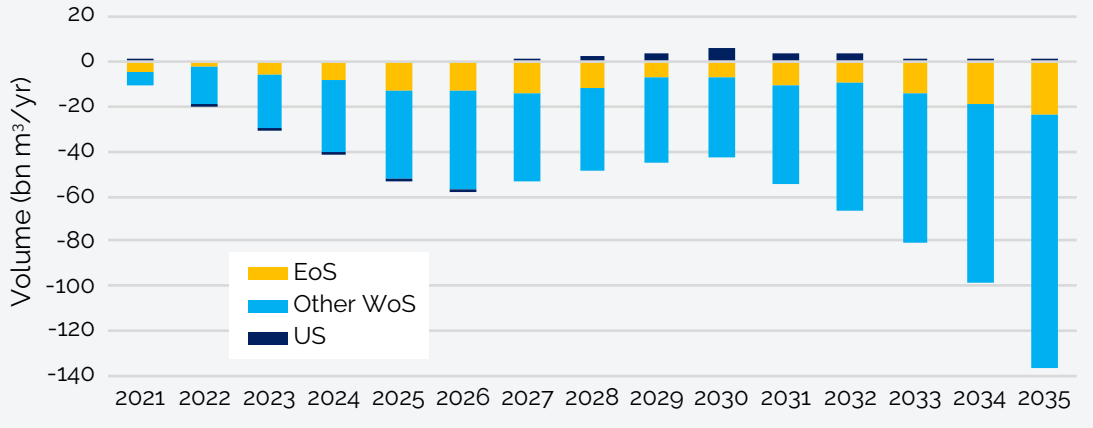
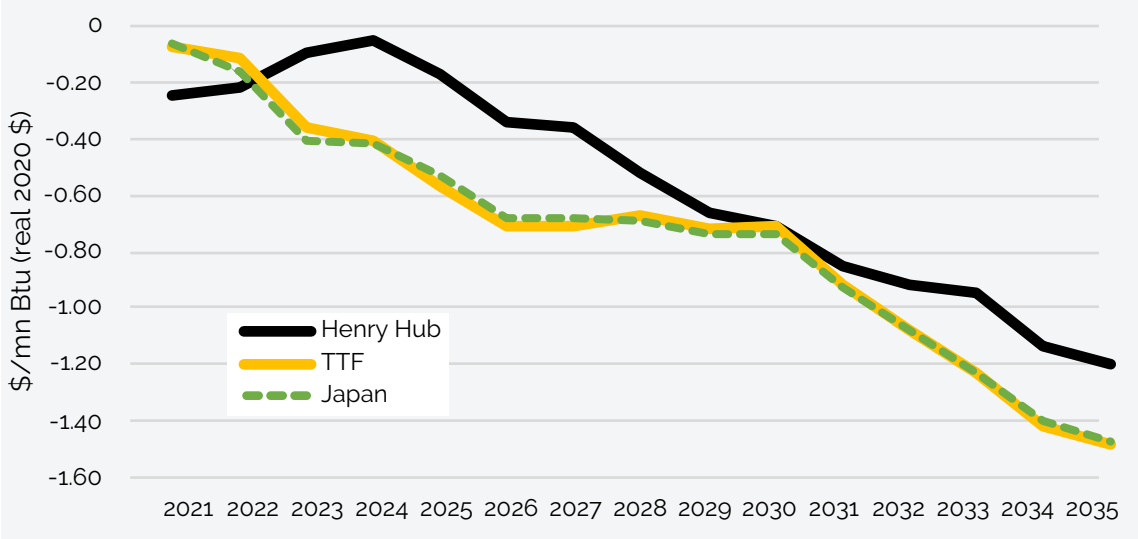


FIG. 3: Impact on global prices (global decarbonisation minus BAU)



crease the volume of LNG trade flows from West to East. Overall, however, the moderate decline in gas demand due to widespread decarbonisation efforts in these regions would have an amplified and devastating effect on global demand for LNG, as the marginal source of gas supply, such that LNG export volumes would decrease by 18pc by 2035. As a result, the decline in global gas prices would be dramatic, with non-US benchmarks falling from already low levels by almost $1.50/mn Btu by 2035.

These shocks to gas demand and prices would pose a severe challenge to the LNG industry, given its role as the world's marginal source of gas supply.

The coming energy transition will present industry leaders with formidable strategic and commercial opportunities and risks. With respect to new investments, the ample supply and exceptionally low prices would favour development of LNG import projects, such as floating storage and regassification units, but these same conditions would leave existing and under-construction LNG export projects unlikely to recoup expended capital and new greenfield projects unlikely to obtain financing and/or take FID.

With respect to LNG contracts, these developments would afford LNG buyers lower prices and ever greater commercial flexibility from new North American LNG supplies, in turn subjecting existing SPAs to greater demands for commercial renegotiation, price review and international arbitration. ■

This article is an abbreviated version of an upcoming white paper from consultancy BRG's energy and climate practice that analyses the near- and long-term effects of decarbonisation policy on global energy markets and the role of gas and LNG in the energy transition.