

2022
September

Gas Supply in the Short to Medium Term – Security, Recovery and Volatility



CEO Roundtable White Paper

The Al-Attiyah Foundation



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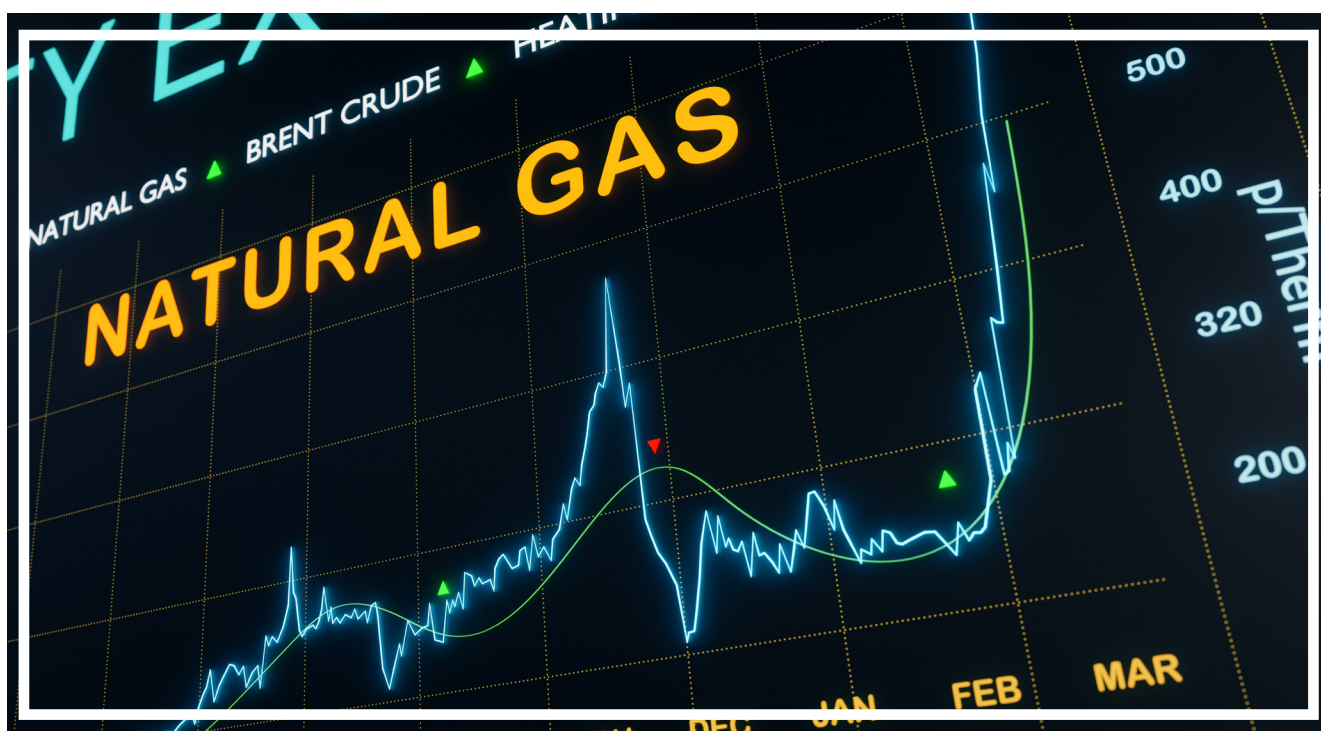


One may be forgiven for believing that the recent spike in gas prices and shortening supply are unheralded. However, some facets of the current situation could have been forecast with a quick analysis of trends from the previous decade. The low prices for both oil and gas of the period between 2010 and 2020 constrained investment. Companies found it difficult to make Final Investment Decisions (FIDs) when prices were low, despite arguments about the benefits of counter cyclical investments.

CEO WHITE PAPER

H.E. Abdullah Bin Hamad Al-Attiah created the Foundation as a platform for knowledge exchange and to support the global community in the quest towards a sustainable energy future.

The CEO Roundtable is an opportunity for CEOs, Members, and Foundation Partners to meet in one room and examine pertinent energy and sustainable development topics.





In the past decade, gas demand was driven by population growth and the propensity for all populations to try and improve living standards by consuming more energy. Arguments advanced about gas being a clean and efficient fuel, at least for climate change reasons, further encouraged the growth in demand for gas.

The COVID-19 pandemic caused a huge drop in demand for all fossil fuels. Contract prices for gas were of course linked by oil indexation and were equally dragged down. Spot prices crashed or showed high volatility. These factors meant investment in gas supply and infrastructure lagged considerably behind forecast demand.

Some economies rebounded quickly after successful vaccine rollouts and diminishing COVID-19 infections, others did not. Rebounding economies and recurring plant problems caused volatility in a very tight market. Break downs in pipelines,

interconnectors and plants also exacerbated the tightness of supply and price volatility.

Then on 24 February 2022, Russia invaded Ukraine. In the days and weeks following the invasion, Russian gas to Europe was cut back and much of its crude and refined product embargoed. This has caused an unprecedented strain on the market for gas as Russia was the main supplier to many European countries, including Germany, the largest economy on the continent.

Today, prices are at record levels. Supply is constrained and will take time to increase. Russia has cut back on supplies to Europe and while some diversion of Russian gas has occurred, it is a challenge to switch suppliers. The market is now divided into those who can take Russian gas and those who are trying to switch to other suppliers.

The current predicament is reminiscent of the famous line from the Game of Thrones novel, "winter is coming." That ominous warning set an appropriate backdrop for the Roundtable, titled 'Looking at the Supply of Gas in the Short to Medium Term'.

'Looking at the Supply of Gas in the Short to Medium Term' was moderated by Eithne Treanor, an international broadcaster and Founder & CEO of ETreanor Media, and convened CEOs of member companies of the Al-Attiah Foundation and expert guest speakers.

SUMMARY OF KEY POINTS RAISED

- The ongoing competitions such as, Europe versus Asia for gas supplies; long versus short contracts; Russia versus Europe in terms of sanctions and supplies; and government policy versus market setting prices, were discussed extensively and attributed as the causes of current market volatility.
- Today's record prices could have been averted by European gas buyers if they had foreseen the need to diversify their sources of supply and different types of contracts.
- While the price spikes in gas prices and the supply situation pose some challenges in the short to medium-term, the situation could be turned into opportunities in the longer-term, if suppliers and buyers are prepared to apply lessons learned and avoid the repeat of past mistakes.
- Trust needs to be built between producing nations and consuming nations.

WEBINAR SPEAKERS

Moderator:



Eithne Treanor, is the Founder & CEO of ETreanor Media.

Speaker



Hiroshi Hashimoto, is the Head of Gas Group, Fossil Energies & International Cooperation Unit at the Institute of Energy Economics Japan (IEJ).

Speaker



Anne-Sophie Corbeau is a Global Research Scholar at the Center on Global Energy Policy at Columbia University's School of International and Public Affairs.

Speaker



Jeffrey Moore, is the manager of Asian LNG Analytics at S&P Global Platts.

Speaker



Gilles Farrer, the Head of LNG and Gas Asset Research at Wood Mackenzie.



At the start of the Roundtable, the moderator invited His Excellency Abdullah Bin Hamad Al-Attiah to welcome members and the guest speakers. H.E. said it was his pleasure to see so many colleagues and opined that the Roundtable was well timed as security of supply was of paramount importance to the global community. Each of the featured speakers then opened the dialogue with a short presentation.

Hiroshi Hashimoto showed slides which illustrated the current changes in gas flows. He mentioned that China's economy is slowing, partially due to recurring COVID-19 restrictions but also due to a general market conditions. Consequently, gas flows to Asia are down and flows to Europe are up and some cargoes are diverted. He noted that gas prices in Europe (using the benchmark TTF) are at the highest level ever. This is not just because of a shortage of supply but also because of logistical constraints. For instance, the shipping distance

for the main suppliers to Europe is much longer than to Asia (except for the United States through the Gulf of Mexico).

Jeff Moore told the attendees that United States' liquefaction capacity may grow up to 2025/2026 but is not expected to rise beyond, unless a new wave of capacity comes online. US prices (measured by the benchmark Henry Hub) are at an all-time high. Some efforts are now being made to remove logistical bottlenecks by pipeline additions and these may improve availability somewhat. Gas production comes from two main sources – the Permian basin, which is predominately an oil play, and mostly associated gas; and the Haynesville, which is a source of dry gas. We are currently seeing gas contract prices with higher oil indexation slopes than normal. Nevertheless, oil indexation with Henry Hub still provides a cheaper alternative to spot gas. It is not expected that gas prices will come down until the next wave of capacity comes on stream.

Gilles Farrer spoke of the outlook for supplies during the European winter. Gas storage is nearly full despite Russian cutbacks. However, further Russian cutbacks may still occur which will present problems not for this winter but for the next as the replenishment of storage during the summer of 2023 will be difficult. Currently there is a wide differential between British and European prices as the United Kingdom is well supplied by Norwegian gas, its own production and LNG imports through large import terminals. Capacity to export gas to Europe from the UK is limited. However, there are many Floating Storage and Regasification Terminals (FSRUs) in the planning stage so the differentials may disappear in a few years. As part of the effort to decarbonise the energy markets, Europe plans to reduce gas consumption by one third before 2030 which would push gas prices down in the long term, Mr Farrer concluded.

Ann-Sophie Corbeau emphasised that Europe now prioritises obtaining cheap gas over security of supply. She noted that imports of Russian gas are now at just one sixth of that in 2021 and those are through Ukrainian pipelines which remain at risk. It is expected that some price rules may change from marginal prices to the imposition of price caps but such measures are only just being talked about and are too late to be in place by this winter. Supplies of gas to industrial customers may be hit, and this will affect employment in many countries and bring social unrest.





The floor was then opened to participants of the Roundtable for comments and requests for further questions or for clarifications from the expert speakers. The following were some highlights from the session:

- The first question concerned the constraints on US capacity and exports. In response, it was noted that it takes considerable time to increase capacity and to gain export approvals. Furthermore, participants remarked that it takes approximately four years to build a liquefaction plant and that existing US suppliers are probably fully contracted now.
- Further questions were raised on the availability of FSRUs, which are currently in short supply. It was pointed out that newly built FSRUs and converted LNG tankers are gradually becoming available.
- Several participants asked about possible short-term solutions to the energy supply crisis. It was observed that countries, companies and other entities are exploring various solutions and therefore, a portfolio of options are required. Unfortunately, not all countries have yet realised this, and hence the reason for Germany's problems. Other countries have taken steps to broaden their access to LNG by building LNG terminals.
- We have seen major shifts in policy to burn more coal both in Europe and Asia. Coal and nuclear plants have been brought out of shutdown status in both continents. Concurrently, there is a move to speed up the approval of operational permit applications for renewable solutions. We have seen a shift of LNG cargoes diverted from Asia to Europe, where they currently attract higher prices. Europe should prepare, however, for zero gas flows from Russia.

- It was observed that Europe has sufficient levels of gas in storage for the short-term. However, efforts to conserve gas by cutting back on heavy industry usage may cause an increase in unemployment and the possibility of social unrest.
- It was pointed out that gas was still the best solution for reducing carbon emissions in the medium-term but that the high prices are leading to demand destruction for gas.
- Some attendees agreed that governments need to implement clear policies to combat high energy prices as part of the solution to tackle soaring inflation.
- The problems of financing gas infrastructure were raised. It was noted that banks need long-term supply contracts to support the building of ships, terminals, interconnectors, and liquefaction plants. Spot markets do not guarantee the certainty required by banks. Although a move towards long-term contracts is taking place, the push towards renewable energy makes defining the long-term difficult and this creates a fundamental challenge for gas suppliers and gas users.
- Towards the end of the session, Hiroshi Hashimoto emphasised the need for clear government policies. Ann-Sophie Corbeau said that energy supply to Europe was now at a critical junction, and she is very concerned about the situation in the continent with winter looming. Jeff Moore reiterated the need to improve the flexibility of supply by all possible means. Gilles Farrer observed that there was pain in the market because of supply demand imbalances.
- H.E. Al-Attiah stated, that now more than ever, there is a need for producer–consumer dialogues that are aimed at, addressing pragmatically, the supply and demand imbalances, and building trust between producers and consumers.





The moderator concluded that issues relating to gas supply and price volatility, will continue to dominate the global debate on energy security and climate change for some time, and as long as the Russian-Ukrainian crisis continues. The moderator reiterated that the topic for the Roundtable was timely and hope that the insights shared during the discussion would contribute to advancing a more stable and sustainable gas market.

In closing, H.E. Abdullah bin Hamad thanked the speakers and guests for their attendance and contributions to the discussion and said he is very much looking forward to the next CEO Roundtable in December of this year.

Figure 1

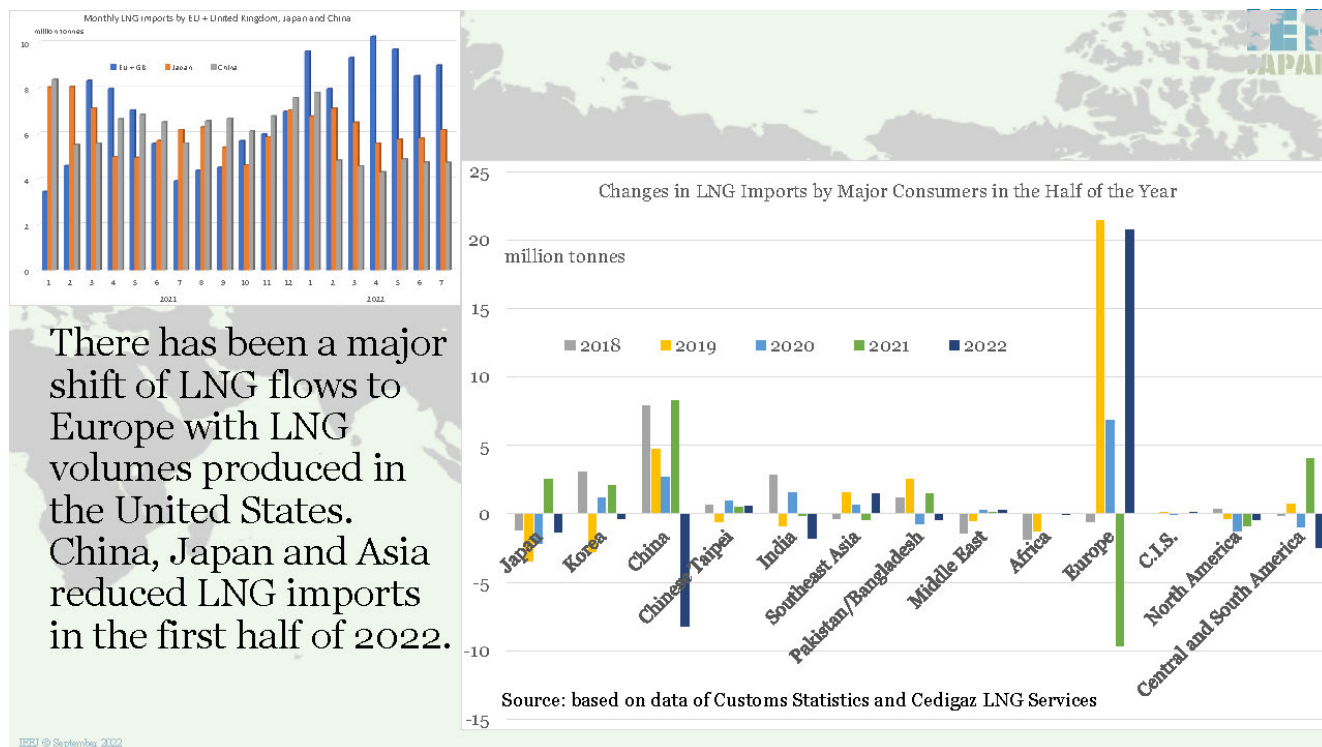


Figure 2

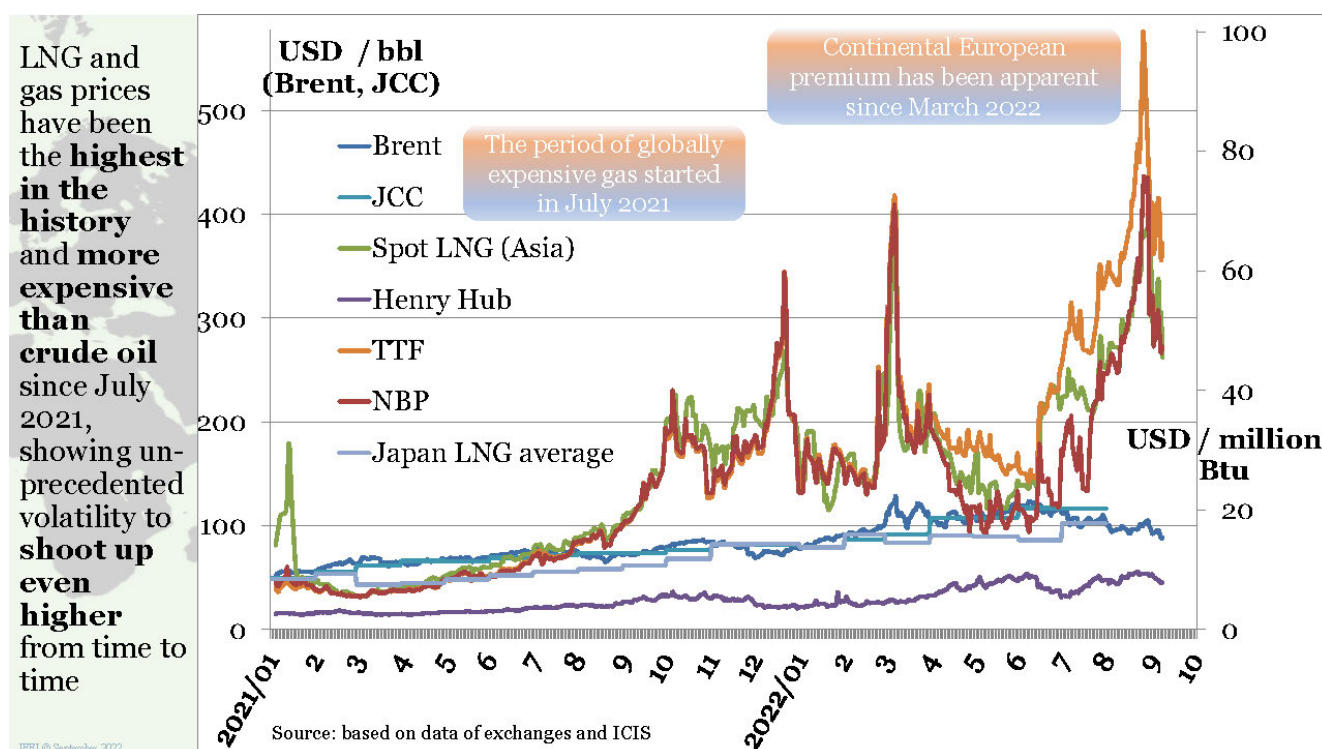
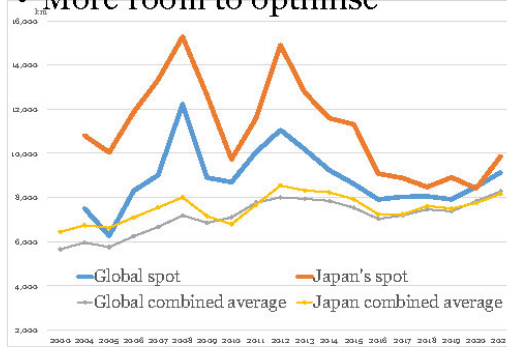


Figure 3

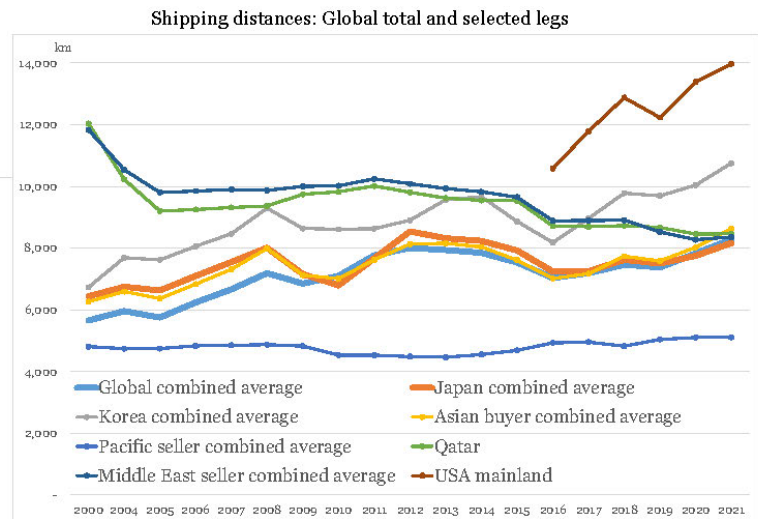
How to optimise logistics is also a key



- Shipping distances have been getting longer
- As transactions grow from the USA to Europe, growth of distances is expected to be slower in 2022
- More room to optimise



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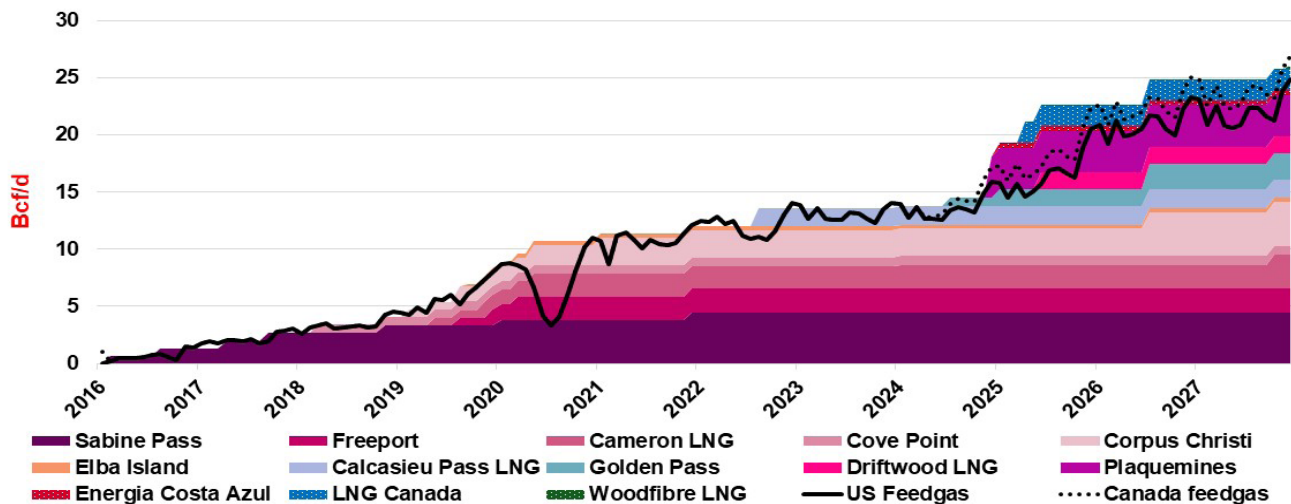
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APPENDIX 2

Figure 4

North American LNG export capacity additions flatline late-2022 to mid-2022 before large 'third wave' of liquefaction capacity begins to enter service

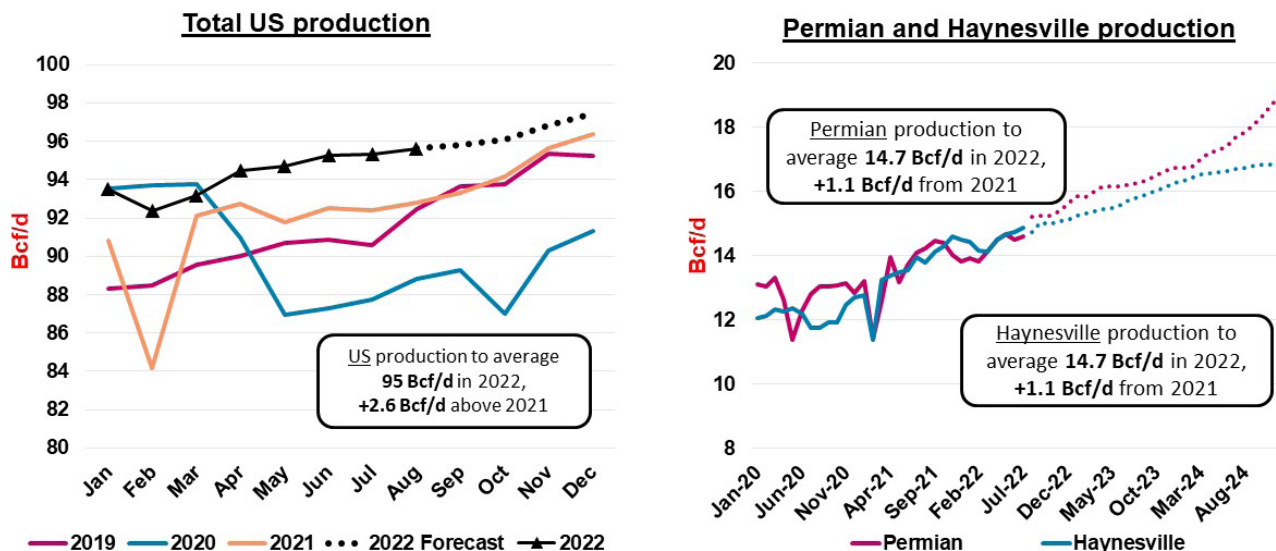
North America LNG export capacity and buildouts



S&P Global
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Figure 5

Meaningful production growth has yet to show up so far in 2022 despite high price environment; summer production forecast to average 95 Bcf/d

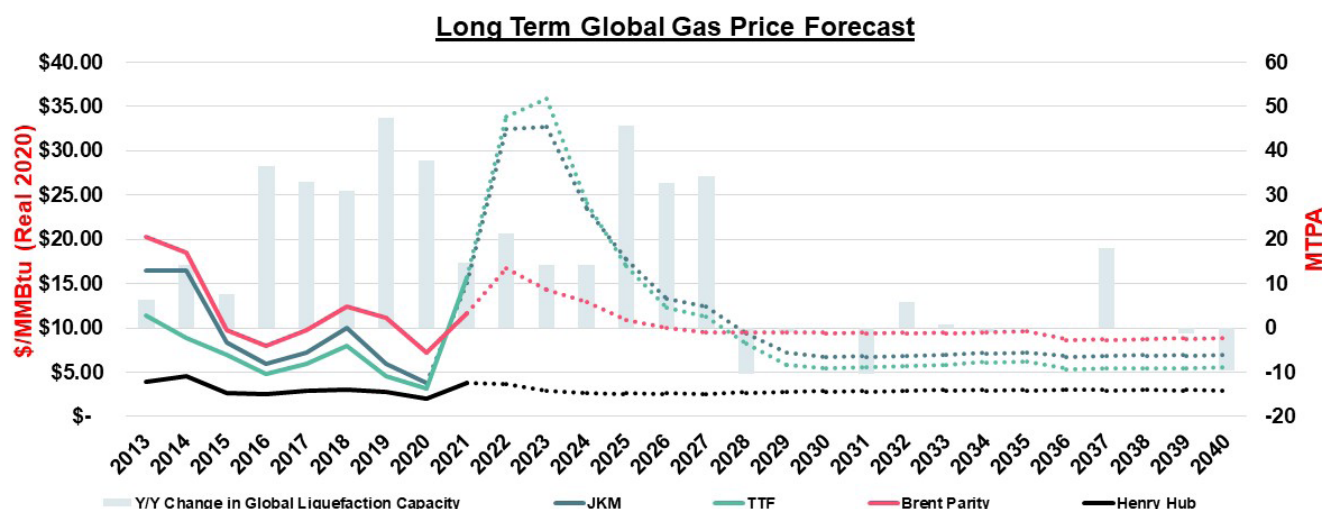


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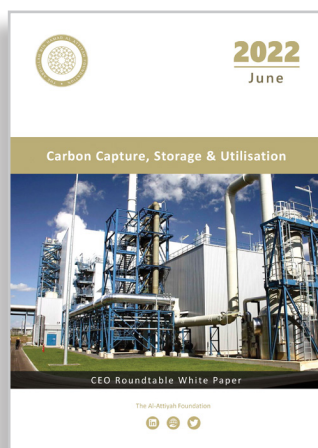
Figure 6

LNG spot prices will another round of pressure in the back half of this decade due to supply deluge



Source: Platts Analytics

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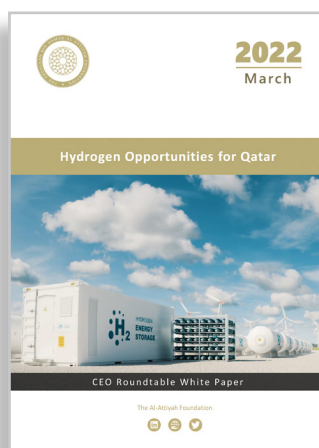
June – 2022

Carbon Capture, Storage & Utilisation

Carbon capture and storage (CCS), or carbon capture, utilisation, and storage (CCUS), is a suite of technologies to capture CO₂ from carbon-emitting. CCUS involves three steps aimed at reducing the release of anthropogenic CO₂ emissions into the atmosphere.



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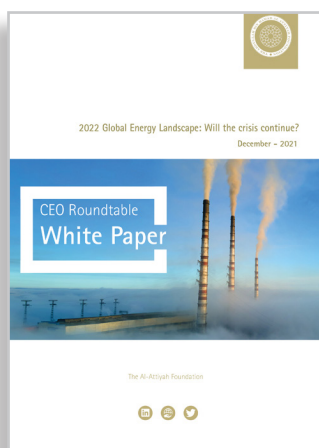
March – 2022

Hydrogen Opportunities for Qatar

The race towards carbon neutrality by mid-century has certainly gathered momentum in the past few years. Netzero carbon aspirations are now increasingly common for countries, subnational regions, and companies, with about 70% of the global economy now covered by firm or indicative net-zero targets.



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December – 2021

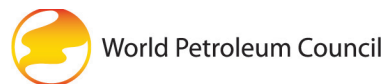
2022 Global Energy Landscape: Will the crisis continue?

The Abdullah Bin Hamad Al-Attiyah International Foundation for Energy and Sustainable Development provides robust and practical knowledge and insights on global energy and sustainable development topics, communicating these for the benefit of the Foundation's members and community.



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Our partners collaborate with The Al-Attiyah Foundation on various projects and research within the themes of energy and sustainable development.





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