



EY Price Point: global oil and gas market outlook

Q1 | January 2021



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Q1 overview

We enter 2021 on a note of cautious optimism for global health, the world economy, and the oil and gas markets. The first weeks of December brought approval in the US and the UK of the first of several COVID-19 vaccines. The speed with which vaccine development occurred is unprecedented, but certainly welcome. In the weeks following the early November announcement of 90+% effectiveness by the manufacturer of the first approved vaccine, the price of WTI crude oil increased by US\$10/bbl to US\$48/bbl, the highest level since early March. Sustainability hasn't returned yet, and whatever time it takes to get the world to normal, it will take even longer for normalization within the oil and gas markets. Inventories remain at historically high levels and, optimistically, it will take until April before inventory returns to levels observed in the preceding five years. That's an estimate, and there has obviously been some difficulty properly calibrating the expectations of how balance will return and how long it will take. In late November, OPEC met to adjust its output plans because of the anemic rebound in demand. In mid-December, the IEA lowered its demand forecast for 2021 due mostly to continued sluggishness in aviation fuel demand.

A mild winter has interrupted a recovery in North American natural gas prices after a run-up motivated by curtailed capital expenditures, upstream activity and production. After an initial meltdown, with cargo cancellations and dramatic price reversal, LNG markets have made a remarkable comeback, and the spread between Asia and Henry Hub has reached a level we haven't seen in almost three years. It may be the case that interruption in FIDs has brought us to the cusp of a balance that can support reliable returns.



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Q1 theme

The theme for this quarter is **guarded**. While it appears the world is about to come around a corner, we have no idea just how wide the turn might be. While vaccine development was a Herculean challenge, deployment could be challenging and time consuming. The logistics of transporting and storing the first vaccines are daunting, full effectiveness requires two doses spaced several weeks apart and the public's attitudes toward vaccine safety have yet to be tested. Most of the vaccine doses that we know can be produced in the early part of next year have been spoken for by frontline medical staff, the elderly and other high-risk individuals. Epidemiologists predict case loads and hospitalizations won't go down quickly, and the markets were rattled by the emergence of a new coronavirus strain in the UK. However, the prospect of an eventual return to normal might be enough to sustain market confidence until they do.

LNG markets, stuck at unsustainable levels even before the pandemic, are showing signs of life. Chinese gas demand is expected to grow 10% from last year, and the relatively light second wave of COVID-19 in Asia (less than one-fifth of the new cases but well over half of the world's population), the rapid recovery of the Asian economy and the rebound in gas demand may have caught the market by surprise. It is possible demand growth, coupled with the pause in investment, may provide an opportunity for long-lived balance.

US gas markets, mostly stable through the crisis, showed strength before it became apparent warm weather would dampen demand. Capital has been constrained, gas-directed rigs are at historic lows, and production is about 10 Bcf/day lower than it was at its peak. Investors were hopeful markets might tighten up for the winter, but that didn't happen. January futures have fallen US90 cents/MMBtu.



- ▶ Can market confidence be sustained until COVID-19 vaccination programs start to bend the curve on cases?
- ▶ Can OPEC supply discipline hold until they do?
- ▶ Have LNG markets turned the corner or is the uptick in prices an aberration?
- ▶ How much lower might US gas (and oil) production go until capital comes back (if it does)?

Vaccine news leads oil market rally

In rapid succession, COVID-19 vaccines were approved for distribution in the US and UK. The return to normal is still distant, but the oil market has begun to price it in.

LNG markets show signs of rebalancing

LNG spreads are at levels not seen in the last three years. The rapid recovery of the Asian economy, the onset of winter and the pause in FIDs have conspired to accelerate the process of balancing supply and demand.

Aviation fuel demand slow to recover

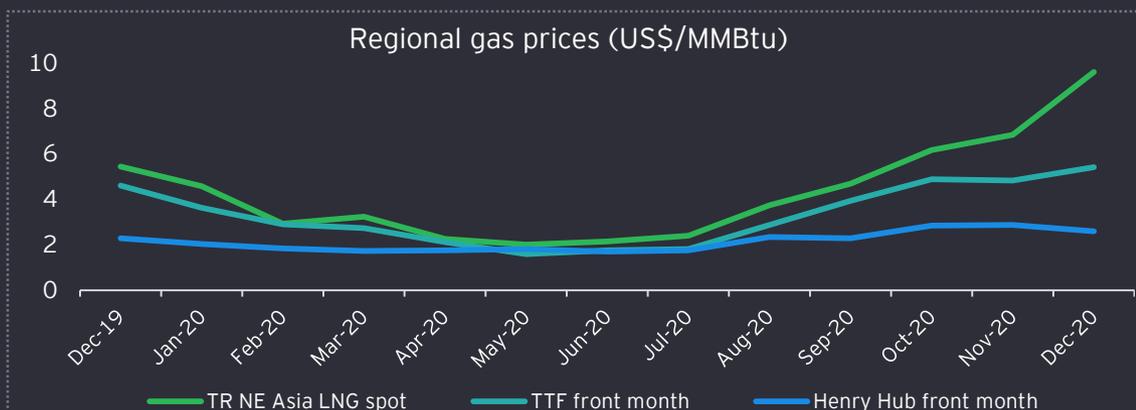
Aviation fuel has been the hardest-hit segment of oil demand. It remains to be seen how soon vacationers and business travelers will get back in the air when large-scale vaccination occurs and the threat of disease has abated.

Measured equity market response to IOC transition ambitions

The immediate impact of COVID-19 on oil economics and the uncertainties created by energy transition have led many oil companies to consider strategic alternatives to hydrocarbons. Share prices have yet to respond in a way that suggests investors are seeing oil companies as anything other than oil companies.

Market fundamentals

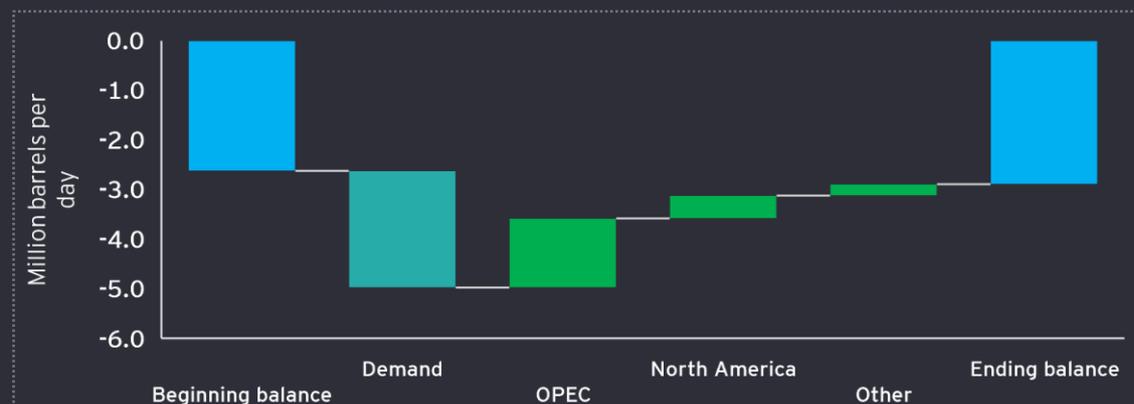
Regional gas price spread widens with winter weather



Source: Refinitiv

- ▶ The global LNG market is rebalancing with regional gas price spreads higher than before the virus outbreak. The difference between Asian LNG spot prices and US Henry Hub has increased ~35x from US\$0.2/MMBtu in May to US\$7/MMBtu in December, representing the highest spread in three years.
- ▶ Asian LNG spot prices have risen more rapidly than other regions globally as colder than predicted winters boosted LNG demand. Gas stocks in Europe peaked (at 98% of capacity) in late October and are 80% full as of this writing. US gas prices are up annually but still below the five-year average as warm weather continues to confound the market's demand expectations.
- ▶ A pause in sanctioning new LNG capacity, coupled with delays in projects under development, could cause markets to tighten further.
- ▶ While an LNG deal between a US seller and a Chinese buyer signaled a revival of long-term LNG trade between the countries, uncertainty still exists as the US has imposed new sanctions on Russia's Nord Stream 2 pipeline to Europe.

Oil demand and supply recover in lockstep

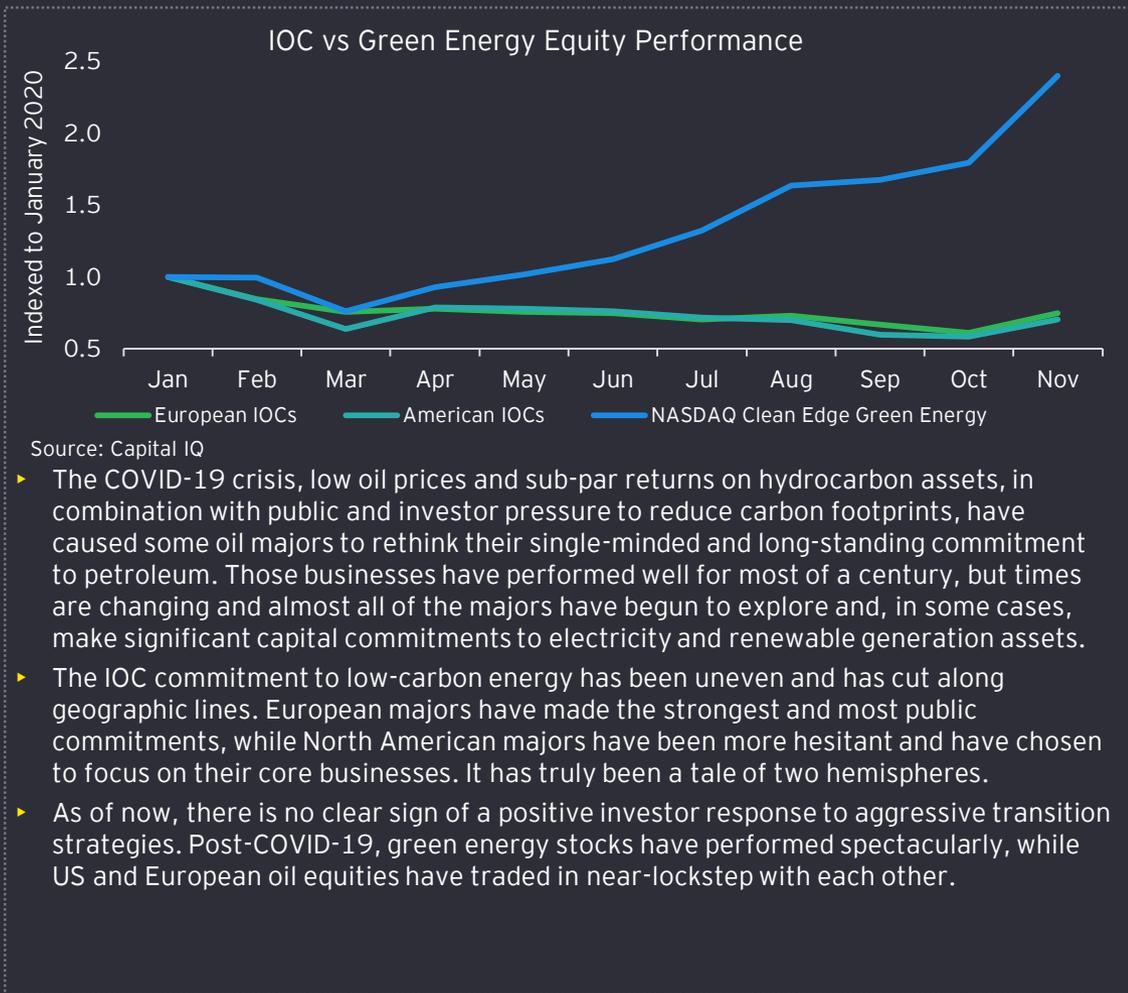


Source: US EIA

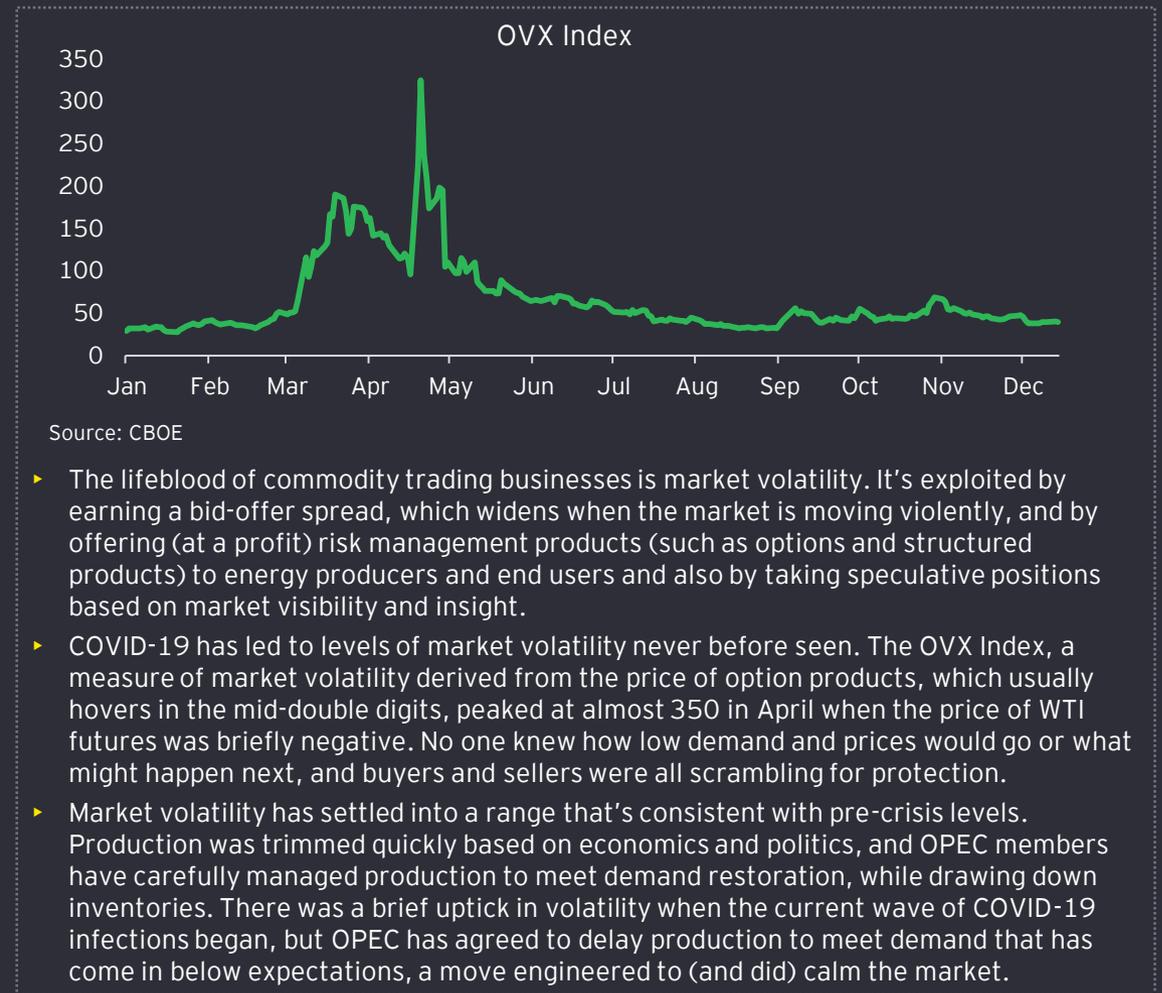
- ▶ Supply-demand balance in the global oil markets since the start of the COVID-19 pandemic has been remarkably stable after the initial shock of losing 20 million barrels per day (mmbpd) of demand in the wave of infections and lockdowns that began in March. Recovery has been slow but relatively steady, and the US EIA projects demand in December 2020 will be within 5 mmbpd of where it was in December 2019.
- ▶ Crude oil production in the US bottomed out in May at about 2.5 mmbpd less than its peak of 12.5 mmbpd in November 2019. Economics have prevailed. Marginal production has been shut in, and exploration and development have been cut to a bare minimum. Output has recovered slightly, but capital investment cuts have (and will) get in the way of production growth, which makes it unlikely production will recover to output levels projected before the crisis.
- ▶ OPEC, as in previous cycles, has played the role of the market balancer and has restored just enough production to meet demand recovery. A recent agreement delayed planned production increases in response to the slower than expected demand rebound.

Market fundamentals

Equity markets discount IOC commitment to green energy

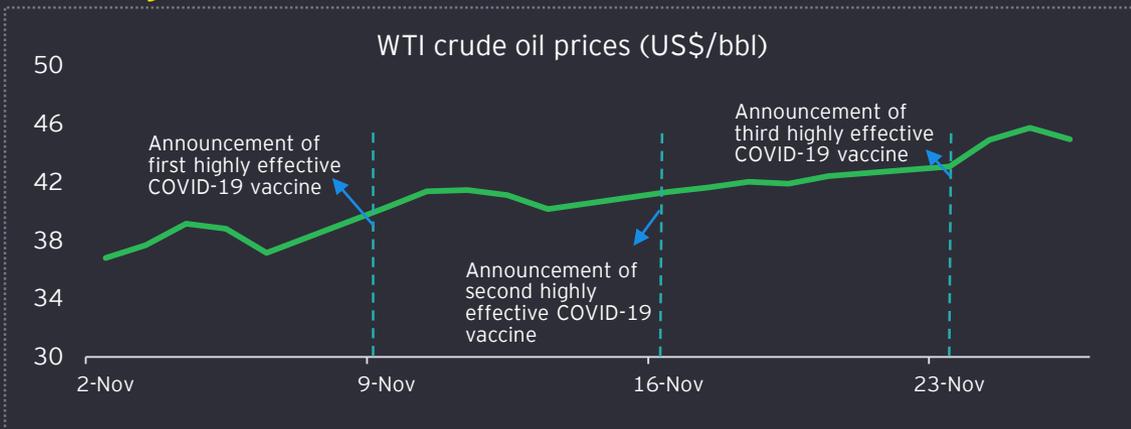


Peak oil market volatility has come and gone



Market fundamentals

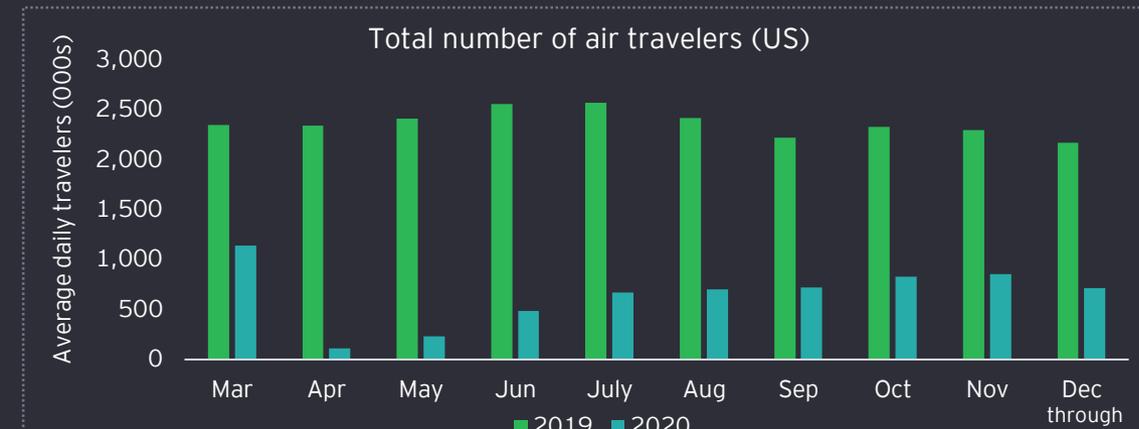
Vaccine news creates bullish sentiment in oil markets but for how long?



Source: S&P Capital IQ

- ▶ During November, WTI crude oil prices increased by nearly 25%. This rally is largely driven by a run of positive news related to COVID-19 vaccine effectiveness. WTI reached an eight-month high of US\$45.7/bbl during the last week of November on the announcement of a third highly effective COVID-19 vaccine, driving hopes of global oil demand recovery in 2021.
- ▶ While the markets reacted positively to vaccine news, rallies have stalled as the market digested the details and the likely impact on oil markets. Questions about the distribution and storage of vaccines, and the scale and speed of vaccination, remain unanswered. It will take several months until a significant percentage of the world population is vaccinated and any meaningful impact on oil demand is apparent.
- ▶ The impacts of COVID-19 will continue to expand well into 2021 until vaccine accessibility is widespread. The world (and the oil market) has adapted to a ratcheting up of expectations of infection levels and hospitalizations, and it is apparent the impact on the economy, mobility, oil demand and oil prices has peaked.

Jet fuel demand could remain muted for years

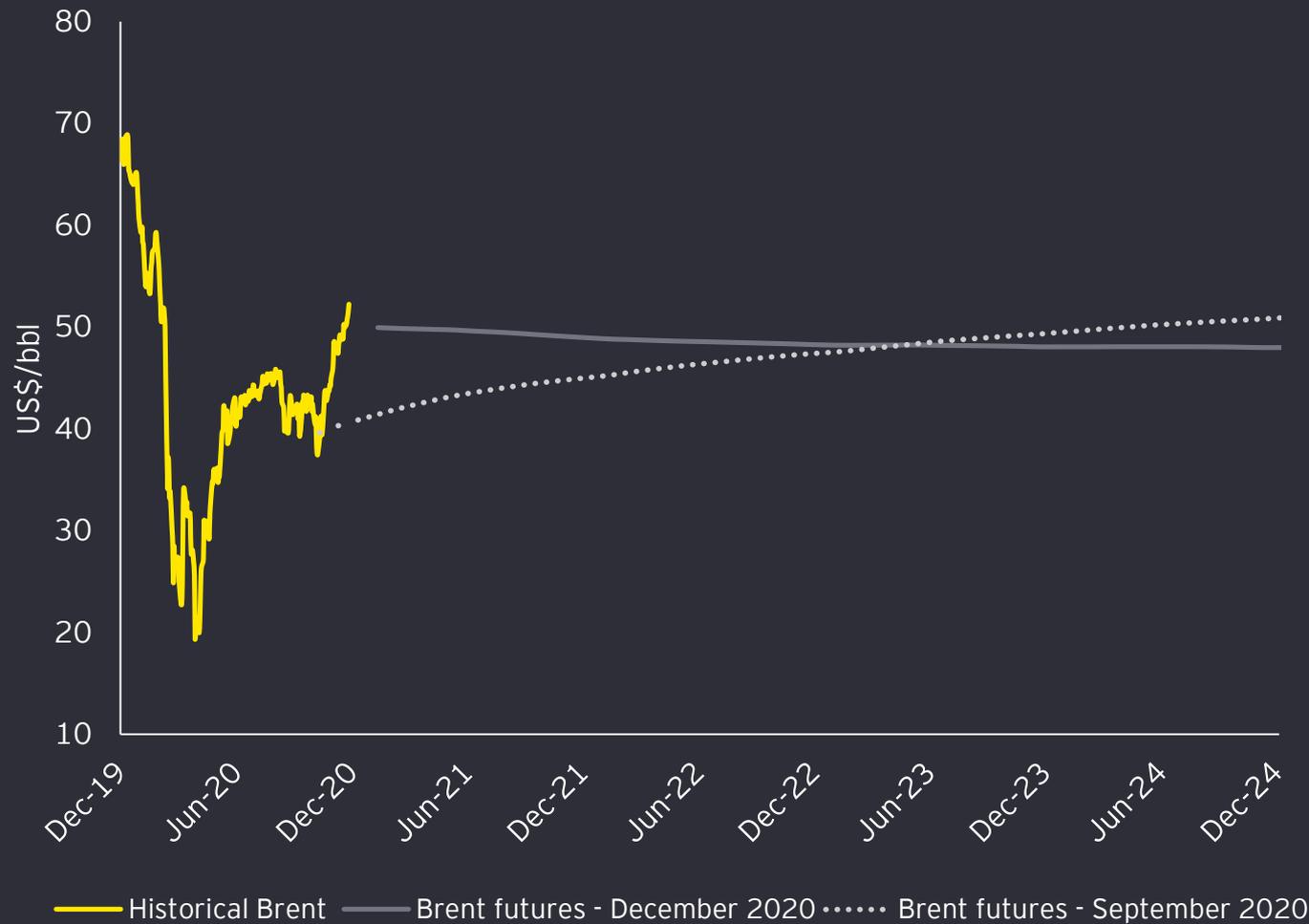


Source: US Transportation Security Administration

- ▶ Air travel has been hard hit by the COVID-19 pandemic. Government restrictions on international movement, economic slowdown and the general fear of virus transmission in closed spaces have caused the number of air travelers in the US to fall by 73%, from an average of 2.4 million in 2019 to 0.6 million in 2020.
- ▶ According to the EIA, passenger traffic in August was 57% below normal in the US, 64% below normal in Europe and 40% below normal in China.
- ▶ In December, both the IEA and OPEC revised their 2021 crude oil demand forecasts downward in large part because of sluggish recovery in aviation fuel demand, which in a normal year accounts for almost 7 mmbpd out of almost 100 mmbpd of global demand. A sustained, material reduction in jet fuel demand could disrupt the supply-demand balance for years to come.
- ▶ Notwithstanding the possibility of large-scale vaccination, the threat of permanent changes in air travel habits is a real possibility. Virus fears could persist well beyond the pandemic, and new ways of working and doing business have emerged that could become part of the future landscape.



Brent futures



Brent futures have increased in the short term given that multiple manufactures have announced highly effective COVID-19 vaccines and distribution has begun across the US and UK. Additionally, OPEC has continued to delay production increases to better align the balance between supply and demand.

Although this has created an increase in the short-term Brent futures, there will be continued scrutiny on global vaccine acceptance and distribution, changes in mobility patterns, decarbonization and actions by OPEC that will continue to impact medium- to long-term oil demand.

Futures data is effective as of 11 December 2020.

Source: Bloomberg

Oil price outlook

For both benchmarks, consultants (on average) forecast higher oil prices throughout the forecast period.

Consultants focus primarily on the analysis of a long-term sustainable oil price, whereas banks and brokers balance their views on the basis of current market conditions.

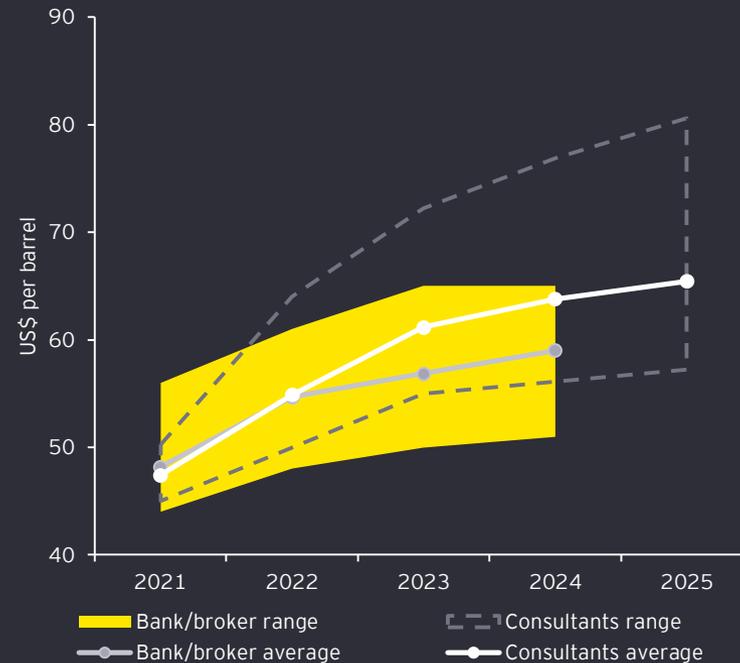
Consultant ranges include estimates of recognized market consultants. Where consultant estimates are updated only annually (for example, the EIA and the IEA), such estimates are included within the range of estimates from 2023 onward (or combined with short-term estimates published by the same consultant) to prevent near-term ranges being impacted by estimates that are not considered to reflect current market dynamics. Brent price estimates derived under the IEA's "Stated Policies" and "Sustainable Development" scenarios (inflation adjusted to reflect nominal pricing) are reflected within the consultant ranges from 2023 onward.

Consultant forecasts result in averages of US\$65.4/bbl and US\$60.3/bbl for Brent and WTI, respectively, in 2025.

This data is effective as of 11 December 2020.

Brent

Bank/broker and consultant price estimates, ranges and averages



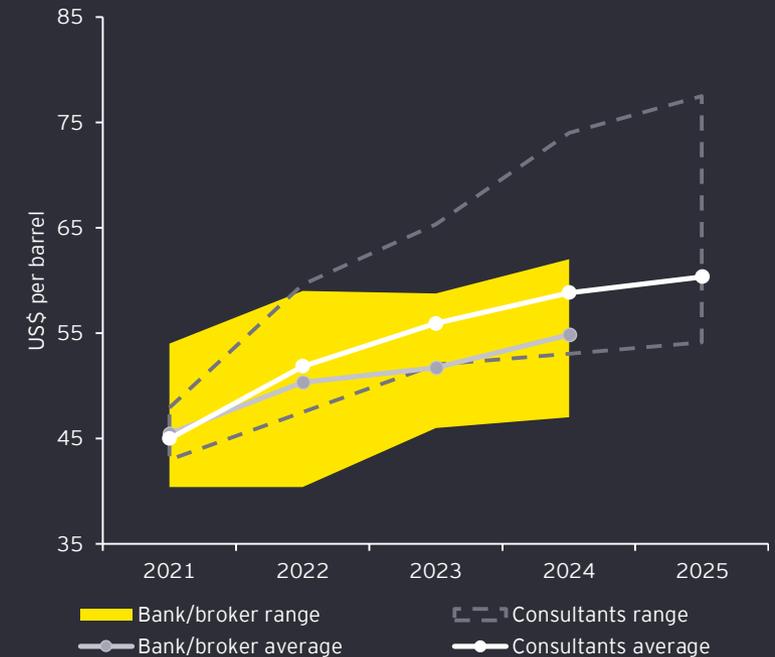
Brent: US\$65.4

Average price per bbl forecast in 2025 – consultants

Source: Bloomberg; bank/broker reports; consultants' websites and reports

WTI

Bank/broker and consultant price estimates, ranges and averages



WTI: US\$60.3

Average price per bbl forecast in 2025 – consultants

Note: The wide range of long-term price estimates reflects the degree of uncertainty within the market. Both the lower and upper end of the range provided are supported by the estimates of credible market participants. Given the width of the range, the average of estimates should be used as a starting point for the assessment or generation of estimates.

Gas price outlook

The banks and brokers forecasts (on average) are wider than consultants for Henry Hub. The trend is reversed for NBP.

Consultants focus primarily on the analysis of a long-term sustainable gas price, whereas banks and brokers balance their views on the basis of current market conditions.

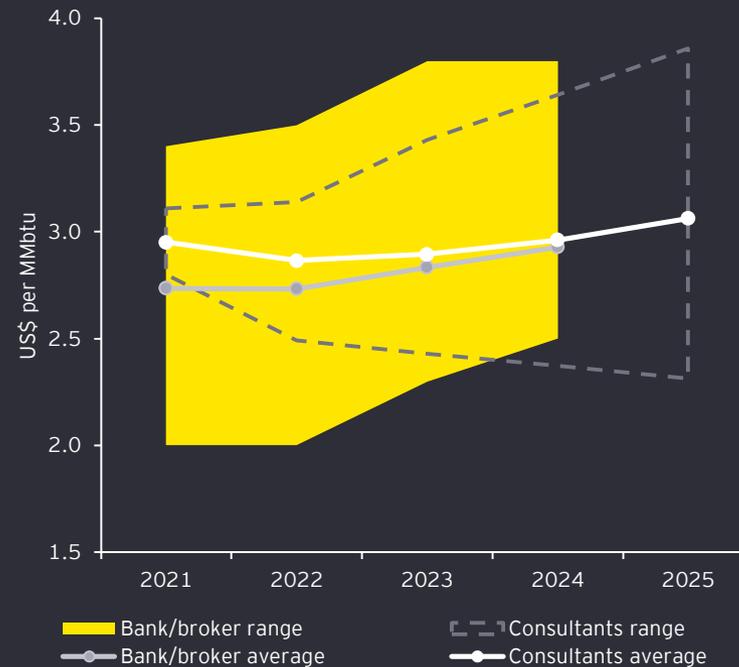
Consultant ranges include estimates of recognized market consultants. Where consultant estimates are updated only annually (for example, the EIA and the IEA), such estimates are included within the range of estimates from 2023 onward (or combined with short-term estimates published by the same consultant) to prevent near-term ranges being impacted by estimates that are not considered to reflect current market dynamics. Henry Hub price estimates derived under the IEA's "Stated Policies" and "Sustainable Development" scenarios (inflation adjusted to reflect nominal pricing) are reflected within the consultant ranges from 2023 onward.

NBP price estimates are scarce, with only five and four forecasts released by banks and brokers and consultants, respectively.

This data is effective as of 11 December 2020.

Henry Hub

Bank/broker and consultant price estimates, ranges and averages



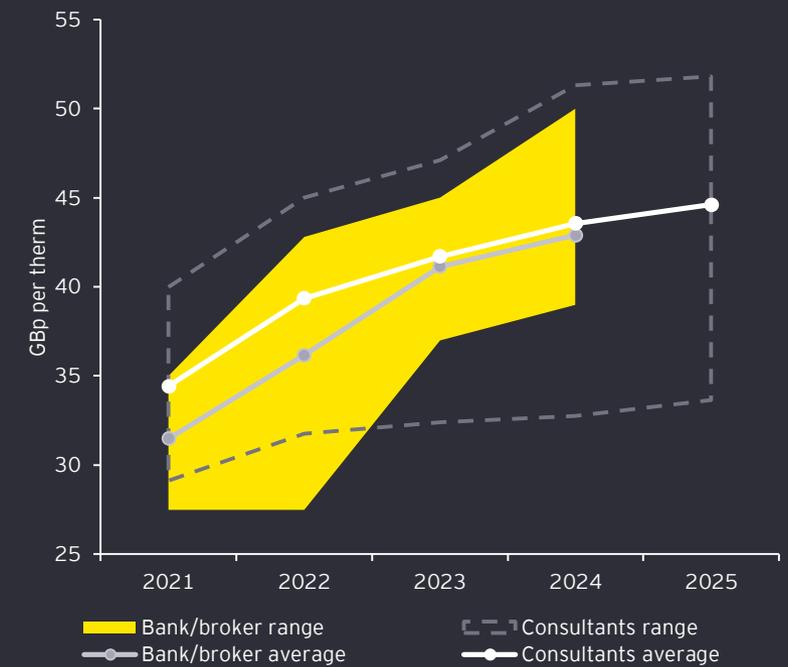
Henry Hub: US\$3.1

Average price per MMBtu forecast in 2025 – consultants

Source: Bloomberg; bank/broker reports; consultants' websites and reports.

UK NBP

Bank/broker and consultant price estimates, ranges and averages



UK NBP: GBp44.6

Average price per therm forecast in 2025 – consultants

Note: The wide range of long-term price estimates reflects the degree of uncertainty within the market. Both the lower and upper end of the range provided are supported by the estimates of credible market participants. Given the width of the range, the average of estimates should be used as a starting point for the assessment or generation of estimates.

*NBP: National Balancing Point

Appendix

Brent oil price estimates

This data is effective as of 11 December 2020.

Bank/broker	2021 (US\$/bbl)	2022 (US\$/bbl)	2023 (US\$/bbl)	2024 (US\$/bbl)	2025 (US\$/bbl)
High	56.0	61.0	65.0	65.0	–
Average	48.2	54.7	56.9	59.0	–
Median	48.0	55.0	58.0	60.0	–
Low	44.0	48.0	50.0	51.0	–

Source: Bloomberg; bank/broker reports

*Certain price estimates included within the summary above may reflect real vs. nominal pricing as the bank/broker assumptions are not explicitly stated within Bloomberg or the respective reports.

Consultant	2021 (US\$/bbl)	2022 (US\$/bbl)	2023 (US\$/bbl)	2024 (US\$/bbl)	2025 (US\$/bbl)
High	50.3	64.0	72.2	76.9	80.6
Average	47.4	54.9	61.2	63.8	65.4
Median	48.0	54.1	58.4	60.7	62.8
Low	45.0	50.0	55.0	56.1	57.2

Source: Consultants' websites and reports; Oxford Economics

Note: Consultant ranges include estimates of recognized market consultants. Where consultant estimates are updated only annually (for example, the EIA and the IEA), such estimates are included within the range of estimates from 2023 onward (or combined with short-term estimates published by the same consultant) to prevent near-term ranges being impacted by estimates that are not considered to reflect current market dynamics. Price estimates derived under the IEA's "Stated Policies" and "Sustainable Development" scenarios (inflation adjusted to reflect nominal pricing) are reflected within the consultant ranges from 2023 onward.

Appendix

WTI oil price estimates

This data is effective as of 11 December 2020.

Bank/broker	2021 (US\$/bbl)	2022 (US\$/bbl)	2023 (US\$/bbl)	2024 (US\$/bbl)	2025 (US\$/bbl)
High	54.0	59.0	58.8	62.0	–
Average	45.4	50.4	51.7	54.9	–
Median	45.0	51.0	51.0	55.0	–
Low	40.4	40.4	46.0	47.0	–

Source: Bloomberg; banks and brokers reports

*Certain price estimates included within the summary above may reflect real vs. nominal pricing as the bank/broker assumptions are not explicitly stated within Bloomberg or the respective reports.

Consultant	2021 (US\$/bbl)	2022 (US\$/bbl)	2023 (US\$/bbl)	2024 (US\$/bbl)	2025 (US\$/bbl)
High	47.9	59.6	65.4	74.0	77.5
Average	45.0	51.9	55.9	58.9	60.3
Median	45.0	50.7	53.0	56.0	57.3
Low	43.0	47.5	52.0	53.1	54.1

Source: Consultants' websites and reports; Oxford Economics; EY analysis

Note: Consultant ranges include estimates of recognized market consultants. Where consultant estimates are updated only annually (for example, the EIA), such estimates are included within the range of estimates from 2023 onward (or combined with short-term estimates published by the same consultant) to prevent near-term ranges being impacted by estimates that are not considered to reflect current market dynamics.

Appendix

Henry Hub gas price estimates

This data is effective as of 11 December 2020.

Bank/broker	2021 (US\$/MMBtu)	2022 (US\$/MMBtu)	2023 (US\$/MMBtu)	2024 (US\$/MMBtu)	2025 (US\$/MMBtu)
High	3.4	3.5	3.8	3.8	–
Average	2.7	2.7	2.8	2.9	–
Median	2.7	2.7	2.8	2.8	–
Low	2.0	2.0	2.3	2.5	–

Source: Bloomberg; banks and brokers reports

* Where brokers have reported figures in US\$/mcf, we have used a conversion ratio of 1.037 for mcf conversion to MMBtu.

**Certain price estimates included within the summary above may reflect real vs. nominal pricing as the bank/broker assumptions are not explicitly stated within Bloomberg or the respective reports.

Consultant	2021 (US\$/MMBtu)	2022 (US\$/MMBtu)	2023 (US\$/MMBtu)	2024 (US\$/MMBtu)	2025 (US\$/MMBtu)
High	3.1	3.1	3.4	3.6	3.9
Average	3.0	2.9	2.9	3.0	3.1
Median	3.0	2.8	2.9	2.9	3.0
Low	2.8	2.5	2.4	2.4	2.3

Source: Consultants' websites and reports; Oxford Economics

Note: Consultant ranges include estimates of recognized market consultants. Where consultant estimates are updated only annually (for example, the EIA and the IEA), such estimates are included within the range of estimates from 2023 onward (or combined with short-term estimates published by the same consultant) to prevent near-term ranges being impacted by estimates that are not considered to reflect current market dynamics. Price estimates derived under the IEA's "Stated Policies" and "Sustainable Development" scenarios (inflation adjusted to reflect nominal pricing) are reflected within the consultant ranges from 2023 onward.

Appendix

NBP gas price estimates

This data is effective as of 11 December 2020.

Bank/broker	2021 (GBp/therm)	2022 (GBp/therm)	2023 (GBp/therm)	2024 (GBp/therm)	2025 (GBp/therm)
High	35.0	42.8	45.0	50.0	–
Average	31.5	36.2	41.1	42.9	–
Median	32.1	35.5	41.3	39.7	–
Low	27.5	27.5	37.0	39.0	–

Source: Bloomberg; banks and brokers reports

* Where brokers have reported figures in US\$/mcf, we have used a conversion ratio of 1.037 for mcf conversion to MMBtu and the brokers' forecasted FX rates.

**Certain price estimates included within the summary above may reflect real vs. nominal pricing as the bank and broker assumptions are not explicitly stated within Bloomberg or the respective reports.

Consultant	2021 (GBp/therm)	2022 (GBp/therm)	2023 (GBp/therm)	2024 (GBp/therm)	2025 (GBp/therm)
High	40.0	45.0	47.1	51.3	51.8
Average	34.4	39.4	41.7	43.5	44.6
Median	34.3	40.3	43.7	45.1	46.5
Low	29.1	31.8	32.4	32.8	33.6

Source: Consultants' websites and reports; Oxford Economics

* Where consultants have reported figures in US\$/MMBtu, we have used the particular consultants' forecast FX rate for the purpose of our conversion.

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Key contacts

Important notice

Price outlook data included in this publication is effective as of 11 December 2020. Given the rapidly evolving nature of the market and views of market participants, analysis can quickly become outdated. It should be noted that EY analysis is not for the purpose of providing an independent view of the outlook for oil and gas prices. Instead, we are collating the views of market participants.

Price outlook data should not be applied mechanistically. Instead, careful consideration should be given to the purpose of any value assessment, with price forecasts assessed in the context of other key assumptions, such as resources and reserves classification, production rates, discount rates and cost escalation rates, together with an appreciation of the key sensitivities in any such analysis.



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