EY Price Point: global oil and gas market outlook

Q4 | October 2021

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Q3 in review

We begin the last quarter of 2021 with heightened confidence that oil and gas can be profitable in the near and medium term and that there is time to formulate and execute on transition strategies. Crude oil prices were stable at sustainable levels, oil and gas company earnings and cash flows returned to pre-pandemic levels, and natural gas and LNG markets rose to levels that haven't been seen in the last decade.

Oil markets finished the quarter roughly where they started it. Oil consumption inched upward in Q3 to roughly 97% of where it was in Q3 of 2019. Demand in Q2 was 96% of what it was in the same period in 2019. On the supply side, OPEC producers (with about 1/3 of the world market) accounted for over 60% of the increase in output while at the same time the Biden Administration is calling for additional crude. Throughout the coronavirus crisis, OPEC+ producers have targeted inventory levels as the indicator of progress toward market normalcy. If that's the case, normalcy appears to be at hand. OECD commercial inventories continue to fall and forecasts show them reaching their lowest levels since 2015 before the end of the year.

Evidence of structural undersupply in natural gas and LNG markets continues to accumulate. As we approach the end of the third quarter, Henry Hub prices are 40% higher than at the end of Q2 and the spread between the Henry Hub and Asian LNG is up 47%. This runup is particularly remarkable in that it occurs in the late northern hemisphere summer when traders typically use the lull in demand (and spot prices) to build inventory in anticipation of winter. LNG spreads have ratcheted up continuously since mid-February when they bottomed out after their winter highs.

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Q4 theme

The theme for Q4 is **contingency**. Developments in the gas and LNG markets have underscored the value of gas infrastructure in maintaining reliable electricity supplies. The reaction to temporary interruptions in renewable energy, and the payoff to gas production and LNG trade, has created an opportunity to test natural gas' viability as a complement to wind, solar and hydroelectric power and the value of liquids investment as a hedge against delay in EV uptake and the arrival of other alternative technologies.

Weather patterns in Europe and the Americas have impacted wind and hydroelectric output and the change in natural gas generation in both regions has mirrored. In the western US, a 5 terawatt-hours (TWh) increase in gas generation in the first half of 2021 almost completely offset a 6 TWh deficit in hydroelectric power. In the UK, a wind power reduction of 5 TWh in Q1 was offset by a 5 TWh increase in gas generation. Layer in disrupted Russian supplies and intense competition from Asian buyers, and European gas storage sat at 72% of capacity in late September, the lowest level for this time of year (by 6 percentage points) in the last 10 years.

Looking forward in the oil markets, no one knows what will happen when oil demand returns to pre-COVID-19 levels and if it resumes a trajectory that follows GDP. Investment across the petroleum value chain has lagged since the 2014-15 downturn, reflecting investor reluctance to fund a business that many perceive as being in its sunset, making a bet on the delayed energy transition with a perceived higher-value potential.

As usual, pricing optionality and allocating capital will occupy many agendas and there may be a big payoff for companies that crack the code.

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- How high can LNG prices go with depleted storage in Europe if there's a cold winter there or in Asia?
- How long will the uptick in natural gas and LNG prices last and will investors respond with new capital?
- How big is the risk of oil price spikes as demand grows past pre-pandemic levels in the wake of underinvestment?
- What choices will oil and gas companies make when it comes to allocating renewed cash flows between return of capital to shareholders, investment in legacy business and funding alternatives?

Q4 trends

Oil markets stable

Since shortly after oil demand crashed as the COVID-19 pandemic unfolded, OPEC+ countries have agreed to keep the market undersupplied, maintain prices at sustainable levels and draw down inventories. Success has been remarkable and that trend continued this quarter.

Spending and activity levels lagging the commodity recovery

Crude oil, natural gas and LNG prices are at or above where they were before the coronavirus pandemic. Capital market reluctance has kept exploration and development from responding and a classic supply-driven up cycle could be on the horizon.

Gas demand outpacing supply

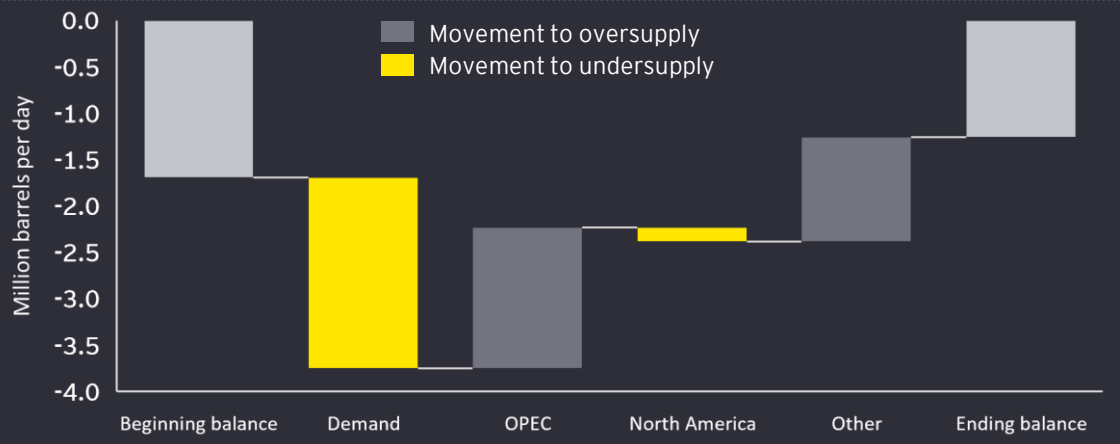
A confluence of events has pushed natural gas and LNG prices to levels not seen in some time, particularly in the summer. Time will tell what happens when low inventories and winter weather cross paths, if favorable economics can be sustained and how the capital markets will respond.

Energy transition not evident

Governments and industry continue to design policies and business strategies to bring about a decarbonized energy complex. In the here and now, most expect fossil fuel consumption's CO2 emissions to return to near pre-pandemic levels this year.

Market fundamentals

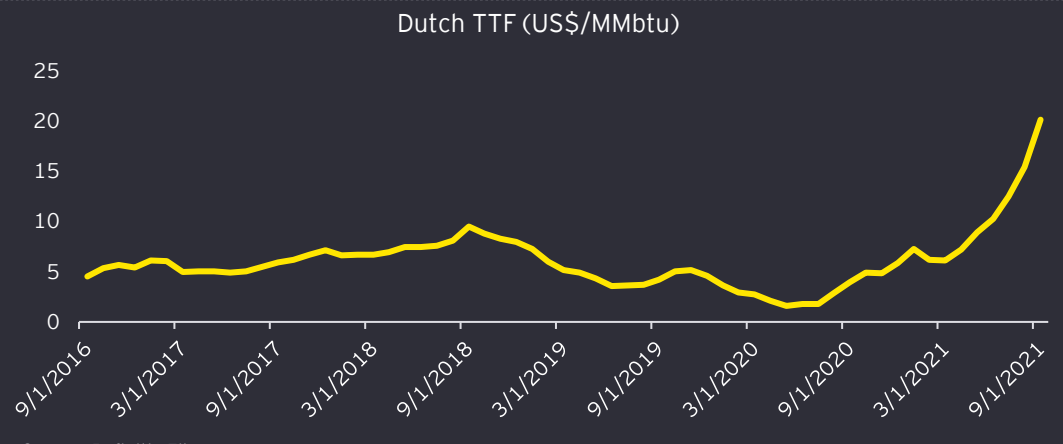
Supply increases in near lockstep with demand



Source: EIA

- Oil market balance ended the third quarter almost exactly where it started. Global oil demand increased by 2% compared to the previous quarter (2Q21). OPEC and non-OPEC producers outside of North America increased output while US supplies lagged.
- Demand growth during the third quarter was weaker than anticipated as COVID-19 cases in Asia surged but demand is expected to rebound with an eventual return to normal economic activity and travel patterns. The IEA and OPEC expect global oil demand to expand by 5.2 million barrels per day (mmb/d) and 6.0 mmb/d, respectively, in 2021.
- Supply concerns continue to linger. While OPEC countries are increasing their oil production by 400,000 bpd (per month) until October, North American output came in lower than anticipated due to Hurricane Ida and a fire at an offshore platform in Mexico. Reduced capital expenditures are expected to be an ongoing drag on production. OPEC has revised down non-OPEC liquids supply growth in 2021 by 0.17 mmb/d from the previous assessment.

LNG prices continue to rise

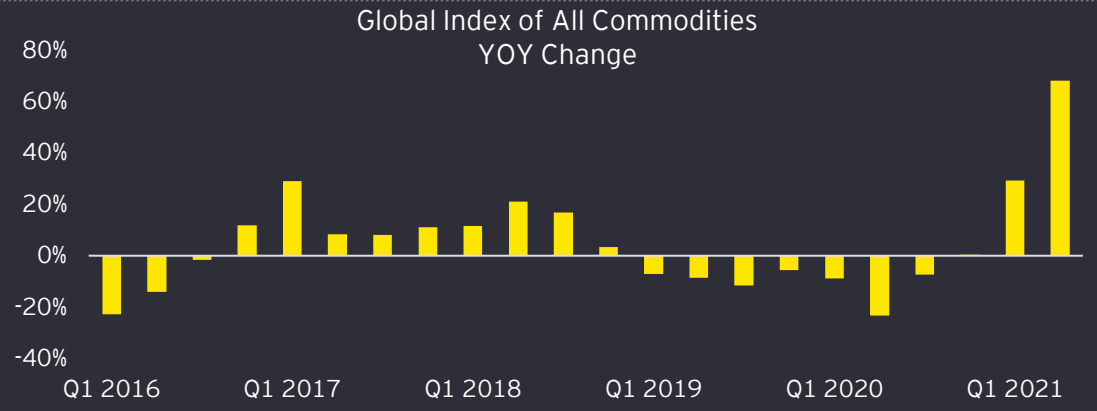


Source: Refinitiv Eikon

- Gas markets are tightening with storage levels in Europe, considered as the market of last resort, at record low levels. Gas storage in Europe is 72% full, about 15% less than the five-year average for September. European LNG prices are at record high levels for the late summer, with Dutch TTF at US$20/MMBtu (the highest in four years).
- European LNG demand was high due to above-average power demand and reduced wind production in the North Sea. Additionally, carbon permit pricing has made gas a more attractive power generation fuel. High demand and competition for LNG from Asia (and higher prices) have led to erosion of gas inventory and a delay in starting the injection period.
- To further complicate matters, European gas supply has been strained owing to reduced pipeline flows from Russia. Unusual maintenance at gas facilities has also led to a reduced supply.
- Gas supplies are expected to continue to be tight in the short run. Heating season always strains supplies and the uncertainty surrounding Russian supply and low inventories is bound to create some anxiety in the markets.

Market fundamentals

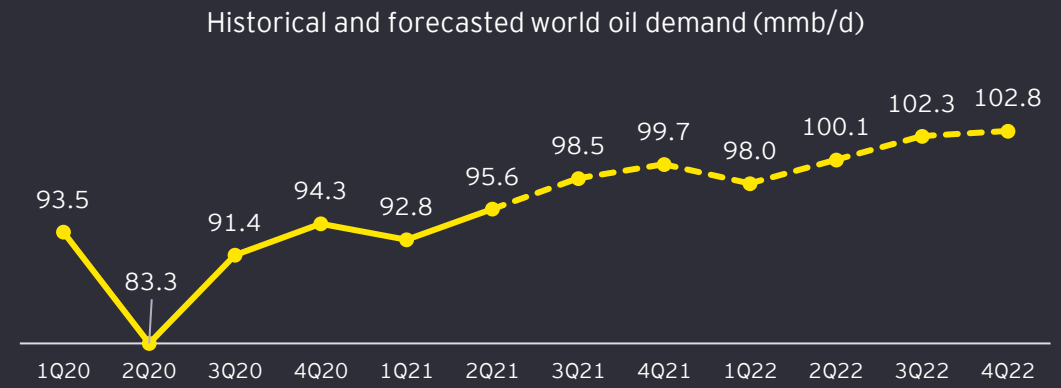
Inflation concerns continue



Source: International Monetary Fund

- Global economic recovery, pent-up demand, permissive monetary policy, labor shortages, and logistics issues are creating tight commodity markets. The year-over-year change in a leading commodity price index is at a high.
- Central bankers are optimistic that inflation is 'transitory' and have indicated they will begin to taper emergency stimulus measures introduced last year, but tightening of money supplies will depend on economic recovery. Speculation that the Federal Reserve will increase interest rates to curb inflation may force investors to reduce their exposure to oil and other commodities.
- The US Bureau of Labor Statistics Consumer Price Index (CPI) increased by 5.3% from August 2020 to August 2021 (vs. 5.4% YOY increase in July 2021) continuing a run of inflation much higher than the Federal Reserve's target of 2%. Notwithstanding commodity price pressures and a spike in the CPI, medium-term inflation expectations are elevated but measured. The inflation rate implied by 10-year inflation-protected US Treasury bonds peaked at 2.5% in May 2021.

OPEC+ increasing output to meet demand

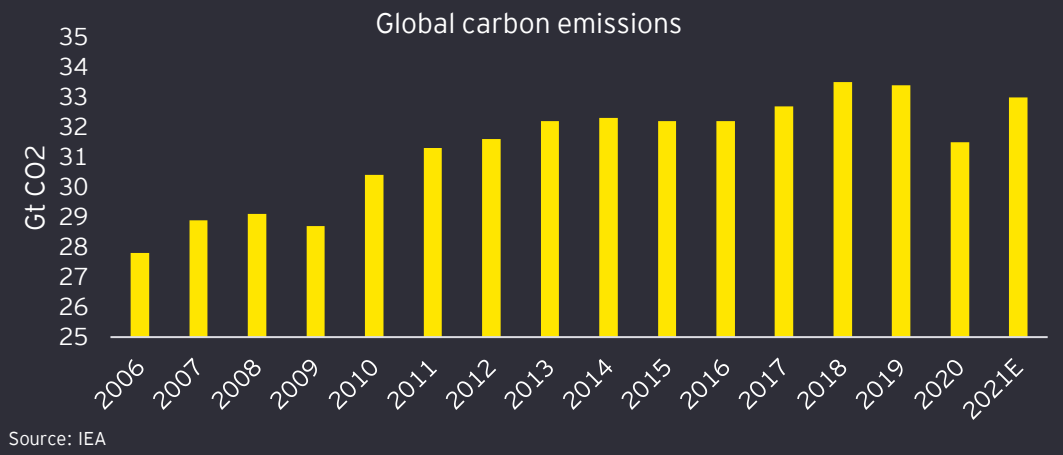


Source: OPEC Monthly Oil Market Report, September 2021

- In the first week of September, OPEC+ agreed to continue with its plan to increase crude oil production by 400,000 barrels per day. Ongoing strengthening of demand and falling OECD stocks support that decision. Increased supplies were offset by disruptions in North American output from Hurricane Ida in the US and a fire at offshore production facilities in Mexico.
- The group has revised its quarterly demand forecasts for 2021, considering both the rise in mobility in OECD countries and an increase in COVID-19, related risks to oil demand. As vaccination programs accelerate and global mobility improves, the group expects global oil demand to increase by 6 mmb/d in 2021 and further by 4.2 mmb/d in 2022, exceeding pre-pandemic levels.
- OPEC+ has deliberately engineered the supplies to maintain a state of near-perfect balance. With oil prices stabilizing at over US$70/barrel and a tight market outlook, OPEC+ is likely to continue to increase production in the near term. In addition, economic stimulus and continued efforts across the countries to curb COVID-19 infections will further support the positive demand outlook.

Market fundamentals

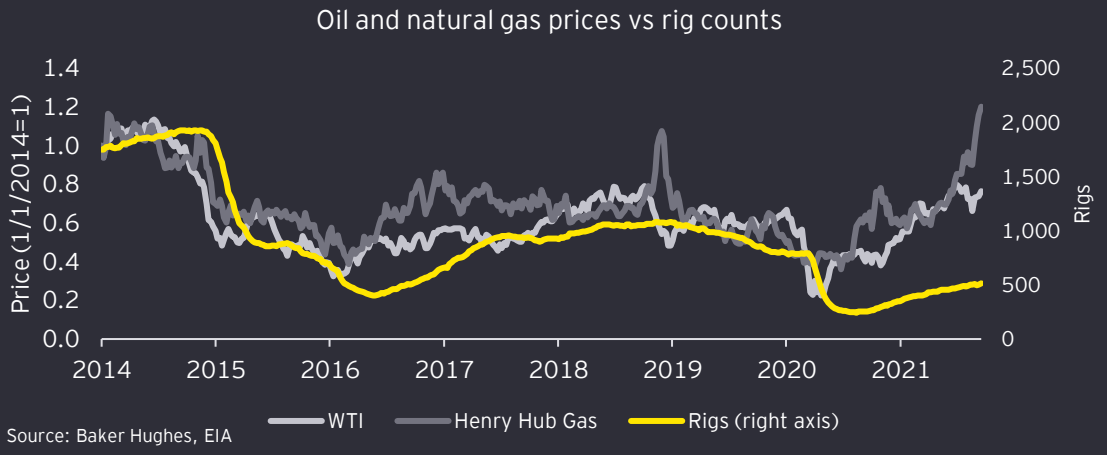
CO2 emissions returning to pre-COVID-19 levels



Source: IEA

- The energy sector accounts for nearly three-quarters of global greenhouse gas emissions. Despite many pledges and commitments, energy-related carbon dioxide emissions have increased at an average annual growth rate of 1% over 2006-20. Global energy-related CO_2 emissions fell by 6% YOY in 2020 due to the COVID-19 pandemic.
- Oil demand is approaching pre-pandemic levels and electricity demand (which was relatively stable) is growing briskly again. During 2020, growth in renewables was able to displace coal and gas generation and emissions fell dramatically. Based on IEA estimates, emissions will grow by 5% in 2021, bouncing back to pre-pandemic levels.
- Governments accounting for over half of the world's emissions have committed to ambitious net zero targets but current committed climate ambitions and investments are not enough to bend the emissions curve to net zero. The IEA projects that spending on clean energy technologies and efficiency will be US$750 billion, falling far short of what is needed to meet climate goals.

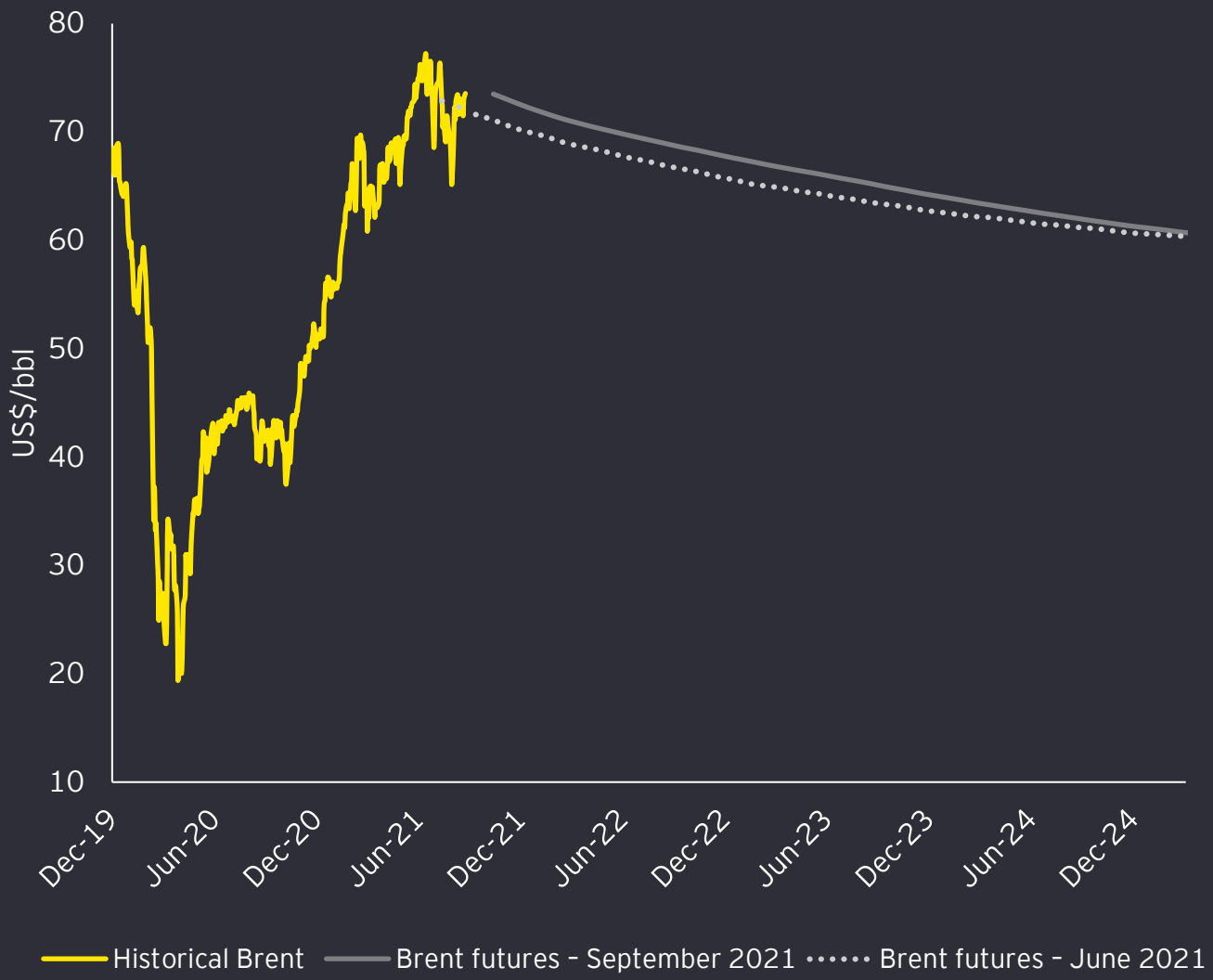
Upstream spending lags



Source: Baker Hughes, EIA

- During the pandemic, oil, gas and LNG prices fell dramatically. Operators reduced their activity and US rig counts fell from almost 800 to less than 250. US dry gas production declined by 12% during the period to settle at 75 bcm in June 2020 and oil production fell from almost 13 million barrels per day in late 2019 to less than 10 million barrels per day in May 2020.
- According to the Energy Information Administration (EIA), the number of drilled but uncompleted (DUC) wells in the US has continuously declined over the last 12 months. Since August 2020, the cumulative DUC count dropped by 35%, reaching 5,713 in August 2021 (lowest level in the past two years).
- Commodity prices are at or above 2019 levels but the increase in drilling activity has been slow. ESG risks have the attention of companies and capital providers are reluctant to fund yet another expansion of shale production. Rig counts increased to just over 500 in early September but are still about half of what they were in mid-2019. It is unclear when, if ever, activity will increase, and pressures on supply are inevitable.

Brent futures



Source: Bloomberg

Brent futures have increased slightly given global COVID-19 vaccination programs, increased mobility and the continued supply discipline of OPEC+.

Going forward, there will be continued scrutiny on global vaccine distribution, changes in mobility patterns, decarbonization, and capital allocation that will continue to impact medium- to long-term oil demand.

Futures data is effective as of 13 September 2021.

Oil price outlook

For both benchmarks, banks and brokers (on average) forecast a wider range of oil prices throughout the forecast period.

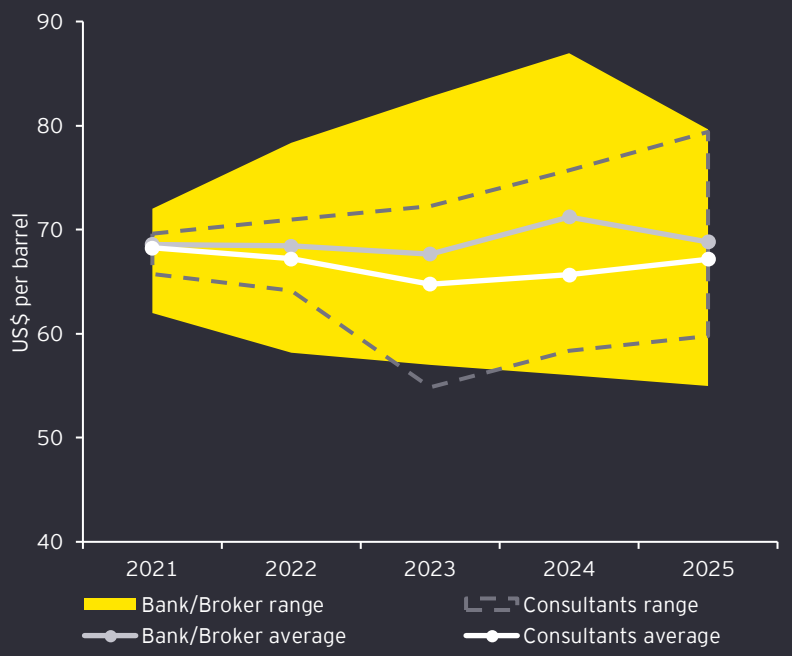
Consultants focus primarily on the analysis of a long-term sustainable oil price, whereas banks and brokers balance their views on the basis of current market conditions.

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.

This data is effective as of 13 September 2021.

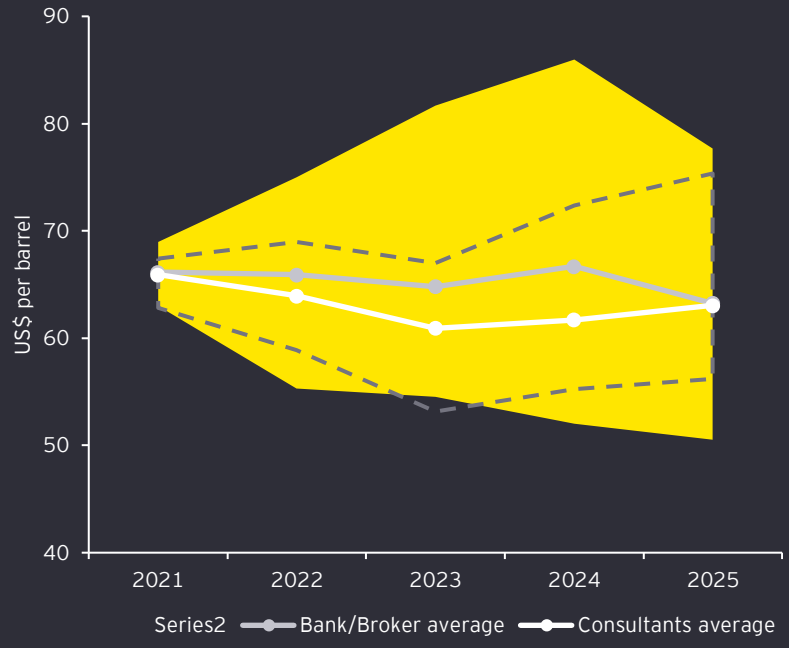
Brent

Bank/broker and consultant price estimates, ranges and averages



WTI

Bank/broker and consultant price estimates, ranges and averages



Brent: US$67.2

Average price per bbl forecast in 2025 – consultants

WTI: US$63.0

Average price per bbl forecast in 2025 – consultants

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

Note: The wide range of long-term price estimates reflects the degree of uncertainty within the market. Both the lower and upper ends 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 consultants' forecasts (on average) are wider for Henry Hub and NBP throughout the forecast period.

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.

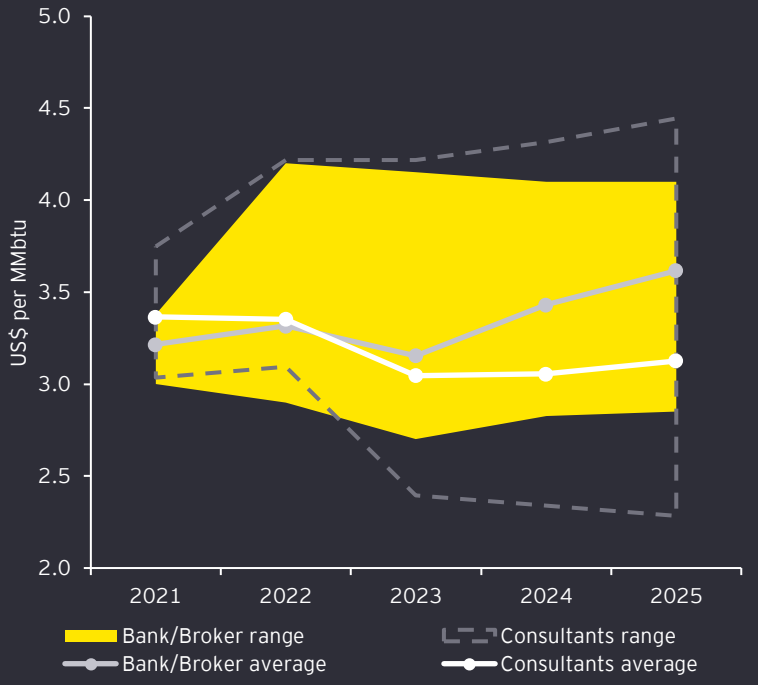
Consultant ranges include estimates of recognized market consultants. Where consultant estimates are updated only annually (for example, the EIA and the IEA), such estimates are included within the range of estimates from 2023 onward (or combined with short-term estimates published by the same consultant) 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 seven and four forecasts released by banks and brokers and consultants, respectively.

This data is effective as of 13 September 2021.

Henry Hub

Bank/broker and consultant price estimates, ranges and averages

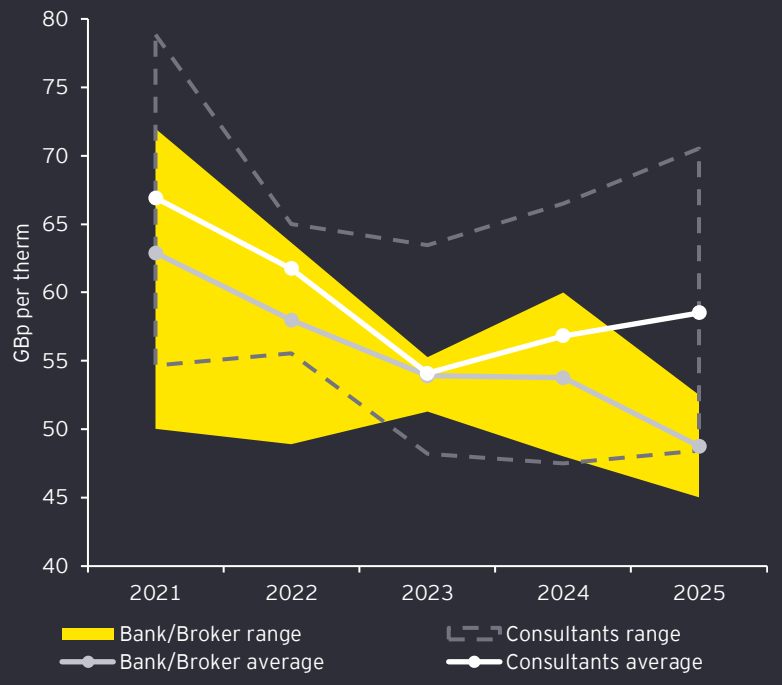


Henry Hub: US$3.1

Average price per MMBtu forecast in 2025 – consultants

UK NBP

Bank/broker and consultant price estimates, ranges and averages



UK NBP: GBp58.5

Average price per therm forecast in 2025 – consultants

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

Note: The wide range of long-term price estimates reflects the degree of uncertainty within the market. Both the lower and upper ends 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 13 September 2021.

Bank/broker	2021 (US$/bbl)	2022 (US$/bbl)	2023 (US$/bbl)	2024 (US$/bbl)	2025 (US$/bbl)
High	72.0	78.4	82.8	87.0	79.7
Average	68.6	68.4	67.7	71.2	68.8
Median	68.6	69.0	66.5	71.2	71.8
Low	62.0	58.2	57.0	56.0	55.0

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	69.6	71.0	72.2	75.7	79.4
Average	68.2	67.2	64.8	65.7	67.2
Median	68.6	66.3	65.0	63.7	64.9
Low	65.8	64.2	54.9	58.3	59.8

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 13 September 2021.

Bank/broker	2021 (US$/bbl)	2022 (US$/bbl)	2023 (US$/bbl)	2024 (US$/bbl)	2025 (US$/bbl)
High	69.0	75.0	81.7	86.0	77.7
Average	66.2	65.9	64.8	66.7	63.2
Median	66.5	65.5	63.6	68.4	62.4
Low	63.0	55.3	54.5	52.0	50.5

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	67.4	69.0	67.0	72.4	75.4
Average	65.9	64.0	60.9	61.7	63.0
Median	66.3	63.5	62.4	61.0	62.2
Low	62.8	58.9	53.1	55.3	56.2

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 13 September 2021.

Bank/broker	2021 (US$/MMBtu)	2022 (US$/MMBtu)	2023 (US$/MMBtu)	2024 (US$/MMBtu)	2025 (US$/MMBtu)
High	3.4	4.2	4.2	4.1	4.1
Average	3.2	3.3	3.2	3.4	3.6
Median	3.2	3.3	3.0	3.4	3.9
Low	3.0	2.9	2.7	2.8	2.9

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	3.7	4.2	4.2	4.3	4.4
Average	3.4	3.4	3.0	3.1	3.1
Median	3.3	3.2	2.9	2.9	3.0
Low	3.0	3.1	2.4	2.3	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 13 September 2021.

Bank/broker	2021 (£p/therm)	2022 (£/therm)	2023 (£/therm)	2024 (£/therm)	2025 (£/therm)
High	72.0	63.7	55.3	60.0	52.5
Average	62.9	58.0	53.9	53.8	48.8
Median	64.2	59.1	54.5	53.3	48.8
Low	50.0	48.9	51.3	48.0	45.0

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 (£/therm)	2022 (£/therm)	2023 (£/therm)	2024 (£/therm)	2025 (£/therm)
High	78.9	65.0	63.4	66.5	70.5
Average	66.9	61.7	54.1	56.8	58.5
Median	67.1	63.2	52.3	56.7	57.5
Low	54.6	55.5	48.2	47.5	48.5

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.

Note: Consultant ranges include estimates of recognized market consultants. Where consultant estimates are updated only annually, 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.

Key contacts

Important notice

Price outlook data included in this publication is effective as of 13 September 2021. 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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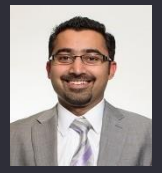

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