

US Natural Gas

January price gets its wings

** This will be the last US Natural Gas note of the year. We want to thank all of our readers for another spectacular year of ups and downs in the US natural gas market and look forward to continuing the conversation in the new year. Happy Holidays!!*

Largely driven by the potential for increased cold in January, the prompt futures contract finds itself higher than where it started the month, now comfortably above \$3.60/MMBtu at the time this publication was penned. We believe that the moves higher at the front of the forward curve this week are likely the result of unwinds of residual bearish positioning while also new allocation of length is likely being entertained. This length is supported by three structural risk factors that continue to lend to increased tightness in the supply and demand balance: 1) fairly robust natural gas power burns, 2) a strong starting ramp higher in feedgas flows to Plaquemines, and 3) production continuing to underperform our expectations.

We caution that weather will be the most important risk factor to watch, and if weather were to turn warmer, much of the premium that has been embedded in the market will likely drain out. But with structural tightness from both supply and demand underpinning the balance, any colder additions to weather – particularly in the eastern half of the country – will likely elicit outsized moves higher in price. This is particularly true since the market – including ourselves – are unsure as to how quickly production can respond and at what price point we could actually see gas-to-coal switching in a meaningful way to alleviate any increase in weather demand.

As a final point, we would encourage our readers to watch Henry Hub cash pricing in January. If weather is to perform in the South Central region, an increase in feedgas flows to Plaquemines could continue to manifest just as a major pipeline network – NGPL – is expected to [undergo maintenance](#) from January 3 to January 17, potentially reducing flows headed toward Henry Hub. Over the past several months, Henry Hub cash rallies – which have elicited Nymex-related rallies – have ensued as maintenance on this pipeline network has occurred. We think this will offer the market glimpses of just how tight Henry Hub can get in 1H25 as Plaquemines continues to ramp higher in feedgas flows.

Based on revisions to our balance that we describe below, our current end-October storage trajectory points to 3.98 Tcf with the reduction in the current month's weather demand. That said, we think there are plenty of opportunities between now and the end of winter to see that end-October storage trajectory move significantly in either direction – lending to what we believe will be increased volatility in price during summer 2025.

December weather retreats to the 10-year normal

See page 8 for analyst certification and important disclosures, including non-US analyst disclosures.

J.P. Morgan does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Global Commodities Research

Shikha Chaturvedi

(1-212) 834-3245
shikha.chaturvedi@jpmorgan.com
JPMorgan Chase Bank NA

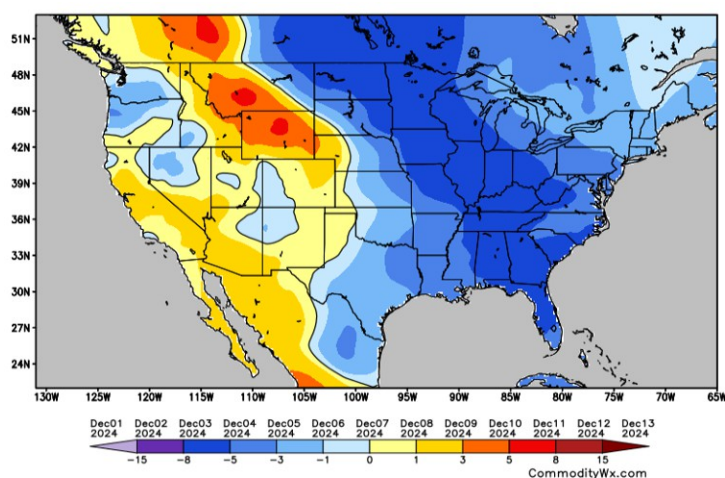
Otar Dgebuadze, CFA

(44-20) 3493-8246
otar.dgebuadze@jpmorgan.com
J.P. Morgan Securities plc

At the start of the month, December weather forecasts indicated that the month would realize more than 1-standard deviation colder than the 10-year normal; however, that was not meant to be. Today, weather forecasts from CWG indicate that the lower-48 will likely realize 775 heating degree days, which is just shy of the 10-year normal. The retreat in weather forecasts has been due to increased warming in the eastern half of the country, but, of late, blocking of that warmth has the potential of reforming, suggesting that increasing cold could be in the cards for January. CWG has introduced more cold to its January weather forecast, now 900 HDDs – 3 HDDs warmer than the 10-year normal.

Figure 1: Surface temperature anomaly vs 10-year normal – Dec 1-13

Fahrenheit



Note: December 1-13
 Source: CommodityWx.com, CWG

December power generation outperforms our expectations

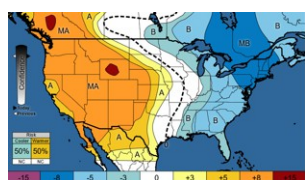
Despite weather now expected to come in near the 10-year normal, we find that power burns have continued to outperform our expectations. During the first 13 days of the month, EIA 930 data suggest that natural gas–fired power generation has likely outperformed our monthly average expectation by as much as 3.7 Bcf/day. This is likely to do with the cold start to the month experienced in the eastern half of the country (see Figure 1).

Despite the expectation of warmer weather in the 6-10 day period (Figure 3), in the near term, another bout of cold is anticipated to cover much of the eastern half of the United States (Figure 2). This near-term cold blast is likely to bolster heating-related power generation demand, suggesting that despite warmth anticipated in the offing, our power generation estimate for December is likely too low at 33 Bcf/day. Therefore, **we have revised our December natural gas power burn level higher by 700 MMcf/day since our last publication, now at 33.7 Bcf/day.**

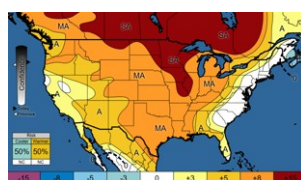
We would point out that this underestimation has been a consistent theme with our US natural gas balance. And as we look forward to the remaining peak months of winter, we continue to believe that our model is reflecting a benign power burn profile. With January weather that is anticipated to be close to last year’s weather for the lower 48 states and with a regional breakdown that suggests increased cold in the East and Midwest yoy, we believe it is necessary to raise our January natural gas power burn average by at least 1.5 Bcf/day to 33.7 Bcf/day – flat to December.

Price will play an important role going forward in any gas-to-coal switching that could present. While it is still too early for us to triangulate, we are noticing that the first half of the month resulted in a sizeable increase in coal-fired power generation. Coal-fired power generation is currently accounting for more than 18% of the power stack, owing to the increased weather-related demand during the first half of the month, versus November, when it was ~15% of the stack, and last year when it was 17% of the stack. Notably, December 2023 weather was significantly warmer than normal. We do believe that at current price levels some switchback to coal should occur, but we are the first to admit that we are in the dark as to how much of much switching can actually manifest. While in 2024 there were limited coal-fired plant retirements – with ~1.9 GW retired through September and another 420 MW expected to be retired this month according to EIA-860 data – that data also suggest that another ~11 GW could be retired next year. This large amount of retirements could potentially make switching that much more difficult to achieve. For us this suggests far more volatility for natural gas price, particularly this summer, with those switching price levels largely unknown to market participants.

Figure 2: 1-5 day forecast – as of December 19th
 Figure 3: 6-10 day forecast – as of December 19th



Source: CWG



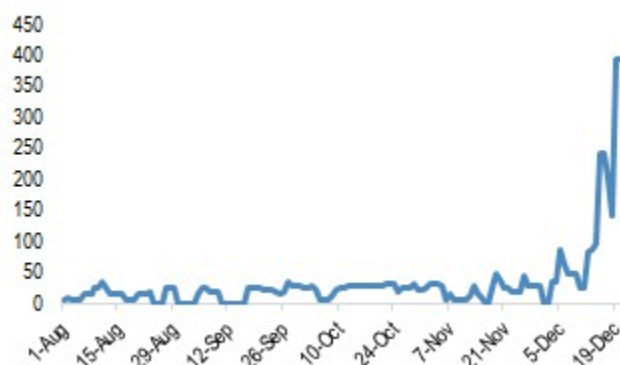
Source: CWG

Plaquemines achieves first liquefaction

Alongside strength in natural gas burns, the operator of Plaquemines [announced](#) last weekend that its facility had achieved first liquefaction. Since then, feedgas flows to Plaquemines have increased to nearly 400 MMcf/day, suggesting enough gas for at least four trains. We currently have January feedgas for Plaquemines averaging 350 MMcf/day, which is clearly starting to look too low. **We will refrain from adjusting our Plaquemines higher just yet, but continue to caution to our readers that there is a potential for its increase in feedgas flows to outpace market expectations with flows having the potential of surpassing 1 Bcf/day by the end of January. We are now at the mercy of the mechanics of the facility and will watch the ramp closely. Though, we do believe risks are mounting to adjusting our feedgas flows to the facility higher in January and beyond.**

Figure 4: Plaquemines LNG Feedgas Flows

MMcf/day



Source: Bloomberg Finance L.P., J.P. Morgan Commodities Research

In addition to Plaquemines taking more feedgas, Corpus Christi’s expansion appears to be also progressing closer to first liquefaction. The facility received permission by FERC to [introduce cold nitrogen gas into the LNG rundown line](#). We estimate that by the end of 1Q25 the expansion will likely result in additional 150-200 MMcf/day of feedgas flowing to the facility.

Production continues to underperform our expectations

While we were expecting production to average 105 Bcf/day this month, so far Wood Mackenzie/Springrock daily production prints suggest that production is actually averaging nearly 1 Bcf/day lower. While production is performing relative to our expectations in the three key gas producing regions of the Northeast, Haynesville, and Permian, a further push of production that was anticipated at higher prices at this time of year in other regions has not yet manifested. From the daily production data, we can see some increases in production from the Mid-continent – rising nearly 200 MMcf/day on average from October. But beyond this push in production and the already manifested push higher in Northeast production to meet seasonal demand, the question becomes where will more production come from if colder-than-normal weather presents.

We have long been hearing about turn-in-lines (TILs) and drilled, but uncompleted (DUCs) wells that are likely to come on line to respond to increased demand and higher price in 2025. However, we do believe that there is a mismatch in timing that could present between demand and the appearance of that supply. As one producer has already highlighted, there is at least 1 Bcf/day of spare capacity of new production through TILs and DUCs that can come on line in 2025. And we absolutely believe that this production and then some is there; but the question remains, if weather presents in January, can that production manifest fast enough to make market participants comfortable enough to stand in front of the type of price rallies that have realized this past week? We think that it will be difficult to see a significant amount of production to react to the potential for an outsized increase in weather-related demand. Ultimately, we believe that spare capacity in production is likely nearly tapped in the near term. Rather, the market will have to incentivize new production to come on line through sustained higher prices.

We think that alongside the demand portion of the balance beginning to structurally perform (through increased LNG feedgas and robust natural gas power burn), the lack of response from the supply side may be providing support for the robust strength in price this week amid the potential for weather in January to appear and alongside the cleanup of any residual bearish positioning. We continue to believe that summer 2025 production will struggle to breach significantly higher than 106 Bcf/day given the lack of increased drilling activity. That said, with enough of a price incentive early in 2025, we do believe that production can grow to nearly 108 Bcf/day by the end of the year – a necessary feat with the anticipated growth from LNG feedgas demand expected this year.

Figure 5: J.P. Morgan Commodities Nymex NG price forecast

| In \$/MMBtu | 1Q24 | 2Q24 | 3Q24 | 4Q24 | 2024 | 1Q25 | 2Q25 | 3Q25 | 4Q25 | 2025 | 1Q26 | 2Q26 | 3Q26 | 4Q26 | 2026 |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Current Forecast* | ... | ... | ... | ... | ... | 3.55 | 3.10 | 3.55 | 3.80 | 3.50 | 4.00 | 3.50 | 4.00 | 4.25 | 3.94 |
| Previous Forecast** | ... | ... | ... | ... | ... | 3.55 | 3.10 | 3.55 | 3.80 | 3.50 | ... | ... | ... | ... | ... |
| Actual To Date | 2.39 | 1.97 | 2.36 | 2.62 | 2.33 | 3.27 | ... | ... | ... | ... | ... | ... | ... | ... | ... |

All forecasts are averages of the contract months within the quarter. Actual to date prices are as of December 20, 2024. *As of November 25, 2024. **As of October 14, 2024.

Source: JPMorgan Natural Gas Research

20 December 2024

Figure 6: J.P. Morgan Commodities 2024 Lower 48 natural gas balance

| Bcf/day | 2024F | | | | | | | | | | 2024F | | | 2024F Win 23-24 | | Sum 24 | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|-------|--------|-------|-------|-------|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 1Q | 2Q | 3Q | 4Q | Year | | |
| Total Supply | 110.0 | 109.9 | 105.6 | 105.7 | 106.2 | 107.9 | 110.0 | 108.6 | 107.1 | 108.6 | 108.9 | 110.9 | 108.5 | 106.6 | 108.6 | 109.5 | 108.3 | 109.3 | 107.7 |
| Dry Gas Production | 102.5 | 104.9 | 101.6 | 100.7 | 100.6 | 101.9 | 103.3 | 102.3 | 101.2 | 102.4 | 102.6 | 104.0 | 103.0 | 101.1 | 102.3 | 103.0 | 102.3 | 103.9 | 101.8 |
| Net Canadian Imports | 7.3 | 4.9 | 4.0 | 5.0 | 5.5 | 6.0 | 6.6 | 6.3 | 5.8 | 6.2 | 6.3 | 6.8 | 5.4 | 5.5 | 6.2 | 6.4 | 5.9 | 5.4 | 5.9 |
| LNG Imports | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Domestic Consumption | 117.1 | 98.8 | 89.7 | 77.8 | 74.4 | 80.3 | 87.8 | 86.2 | 79.9 | 78.0 | 89.1 | 107.4 | 101.9 | 77.5 | 84.6 | 91.5 | 88.9 | 99.4 | 80.6 |
| Power Generation | 36.6 | 31.5 | 29.7 | 29.3 | 33.7 | 41.4 | 49.3 | 48.0 | 40.9 | 33.4 | 31.4 | 33.7 | 32.6 | 34.8 | 46.0 | 32.8 | 36.6 | 32.5 | 39.4 |
| Industrial | 25.1 | 24.2 | 23.8 | 22.6 | 21.9 | 21.5 | 21.7 | 21.8 | 22.2 | 22.8 | 23.9 | 25.6 | 24.4 | 22.0 | 21.9 | 24.1 | 23.1 | 24.4 | 22.1 |
| Residential/Commercial | 45.5 | 33.9 | 27.5 | 17.5 | 10.8 | 9.1 | 8.0 | 7.9 | 8.7 | 13.2 | 25.0 | 38.7 | 35.6 | 12.5 | 8.2 | 25.6 | 20.5 | 33.4 | 10.7 |
| Lease, Plant, and Fuel | 9.8 | 9.2 | 8.8 | 8.3 | 8.1 | 8.3 | 8.8 | 8.5 | 8.2 | 8.6 | 8.8 | 9.4 | 9.3 | 8.2 | 8.5 | 8.9 | 8.7 | 9.1 | 8.4 |
| Total Exports* | 19.8 | 19.6 | 19.0 | 18.3 | 19.3 | 19.5 | 18.9 | 19.7 | 19.6 | 19.0 | 19.5 | 19.9 | 19.4 | 19.0 | 19.4 | 19.5 | 19.3 | 19.7 | 19.2 |
| Pipeline to Mexico | 6.0 | 5.9 | 5.9 | 6.4 | 6.5 | 6.8 | 7.0 | 6.9 | 6.9 | 6.4 | 5.9 | 6.0 | 5.9 | 6.6 | 6.9 | 6.1 | 6.4 | 5.8 | 6.7 |
| Feedgas for LNG exports | 13.8 | 13.7 | 13.1 | 11.9 | 12.8 | 12.7 | 11.9 | 12.8 | 12.7 | 12.6 | 13.6 | 13.9 | 13.5 | 12.5 | 12.5 | 13.4 | 13.0 | 13.9 | 12.5 |
| LNG Exports | 12.8 | 12.4 | 11.9 | 10.1 | 11.9 | 11.9 | 10.4 | 11.7 | 12.1 | 11.3 | 12.3 | 12.5 | 12.4 | 11.3 | 11.4 | 12.0 | 11.8 | 12.7 | 11.4 |
| Net Injection to storage** | -26.9 | -8.4 | -3.1 | 9.6 | 12.4 | 8.1 | 3.3 | 2.7 | 7.6 | 11.7 | 0.2 | -16.3 | -12.8 | 10.1 | 4.5 | -1.5 | 0.1 | -9.8 | 7.9 |
| Net Injection to storage (Bcf)** | -834 | -244 | -95 | 288 | 385 | 244 | 102 | 84 | 229 | 362 | 6 | -506 | -1166 | 915 | 418 | -134 | 27 | -1489 | 1695 |
| End of period storage level (Bcf) | 2573 | 2328 | 2233 | 2521 | 2906 | 3150 | 3252 | 3336 | 3565 | 3927 | 3933 | 3427 | 2233 | 3150 | 3565 | 3427 | 3427 | 2233 | 3927 |

Note: * Total exports do not include exports to Canada. Pipeline exports to Canada are included in Net Canadian Imports in the Total Supply section. ** Withdrawals represented as a negative number.

Source: JPMorgan Natural Gas Strategy, EIA, corporate reports

Figure 7: J.P. Morgan Commodities 2025 Lower 48 natural gas balance

| Bcf/day | 2025F | | | | | | | | | | | | 2025F | | | 2025F Win 24-25 | | Sum 25 | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|-------|--------|-------|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 1Q | 2Q | 3Q | 4Q | Year | | |
| Total Supply | 112.2 | 111.7 | 110.6 | 109.8 | 109.9 | 110.2 | 110.9 | 111.0 | 111.4 | 111.7 | 113.3 | 114.0 | 111.5 | 110.0 | 111.1 | 113.0 | 111.4 | 110.9 | 110.7 |
| Dry Gas Production | 105.6 | 105.5 | 104.9 | 104.3 | 104.4 | 104.7 | 105.1 | 105.3 | 105.7 | 106.2 | 107.6 | 107.9 | 105.3 | 104.4 | 105.4 | 107.3 | 105.6 | 104.5 | 105.1 |
| Net Canadian Imports | 6.5 | 6.0 | 5.7 | 5.5 | 5.5 | 5.5 | 5.7 | 5.7 | 5.7 | 5.5 | 5.7 | 6.0 | 6.1 | 5.5 | 5.7 | 5.7 | 5.8 | 6.3 | 5.6 |
| LNG Imports | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Domestic Consumption | 116.2 | 109.8 | 94.7 | 79.4 | 73.9 | 79.2 | 86.9 | 86.2 | 79.2 | 78.9 | 92.3 | 105.7 | 106.9 | 77.5 | 84.1 | 92.3 | 90.2 | 103.4 | 80.5 |
| Power Generation | 33.7 | 31.4 | 29.7 | 28.6 | 31.6 | 40.0 | 48.2 | 47.4 | 39.9 | 33.6 | 31.0 | 31.8 | 31.6 | 33.4 | 45.1 | 32.1 | 35.6 | 32.0 | 38.5 |
| Industrial | 26.4 | 26.1 | 24.6 | 23.5 | 22.3 | 22.1 | 22.5 | 22.6 | 23.0 | 25.1 | 25.8 | 25.7 | 22.6 | 22.4 | 24.6 | 23.8 | 25.3 | 22.6 | |
| Residential/Commercial | 46.2 | 43.1 | 31.7 | 18.9 | 12.0 | 8.8 | 7.9 | 7.8 | 8.6 | 13.7 | 27.5 | 38.7 | 40.3 | 13.2 | 8.1 | 26.6 | 22.1 | 36.9 | 11.1 |
| Lease, Plant, and Fuel | 9.8 | 9.2 | 8.8 | 8.3 | 8.1 | 8.3 | 8.8 | 8.5 | 8.2 | 8.6 | 8.8 | 9.4 | 9.3 | 8.2 | 8.5 | 8.9 | 8.7 | 9.2 | 8.4 |
| Total Exports* | 20.2 | 20.3 | 20.2 | 20.0 | 20.6 | 20.8 | 20.4 | 21.7 | 21.8 | 21.7 | 22.1 | 22.5 | 20.2 | 20.5 | 21.3 | 22.1 | 21.0 | 20.0 | 21.0 |
| Pipeline to Mexico | 6.0 | 6.0 | 6.0 | 6.4 | 6.5 | 6.8 | 7.0 | 7.1 | 7.1 | 6.6 | 5.9 | 6.0 | 6.0 | 6.6 | 7.1 | 6.2 | 6.4 | 6.0 | 6.8 |
| Feedgas for LNG exports | 14.2 | 14.3 | 14.2 | 13.7 | 14.0 | 14.1 | 13.4 | 14.6 | 14.7 | 15.1 | 16.2 | 16.5 | 14.2 | 13.9 | 14.2 | 16.0 | 14.6 | 14.0 | 14.2 |
| LNG Exports | 12.8 | 12.9 | 12.8 | 12.3 | 12.6 | 12.6 | 12.0 | 13.1 | 13.2 | 13.6 | 14.6 | 14.9 | 12.8 | 12.5 | 12.8 | 14.4 | 13.1 | 12.6 | 12.8 |
| Net Injection to storage** | -24.2 | -18.4 | -4.2 | 10.4 | 15.4 | 10.1 | 3.5 | 3.1 | 10.4 | 11.1 | -1.1 | -14.2 | -15.6 | 12.0 | 5.7 | -1.4 | 0.2 | -12.6 | 9.2 |
| Net Injection to storage (Bcf)** | -751 | -516 | -132 | 311 | 479 | 304 | 110 | 96 | 313 | 345 | -33 | -440 | -1408 | 1091 | 523 | -127 | 58 | -1902 | 1961 |
| End of period storage level (Bcf) | 2676 | 2161 | 2029 | 2340 | 2819 | 3123 | 3233 | 3329 | 3642 | 3986 | 3953 | 3513 | 2029 | 3123 | 3642 | 3513 | 3513 | 2029 | 3986 |

Note: * Total exports do not include exports to Canada. Pipeline exports to Canada are included in Net Canadian Imports in the Total Supply section. ** Withdrawals represented as a negative number.

Source: JPMorgan Natural Gas Strategy, EIA, corporate reports

20 December 2024

Figure 8: J.P. Morgan Commodities 2026 Lower 48 natural gas balance

| Bcf/day | 2026F | | | | | | | | | | 2026F | | | | 2026F Win 25-26 | | Sum 26 | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|-------|--------|-------|-------|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 1Q | 2Q | 3Q | 4Q | Year | | |
| Total Supply | 114.3 | 114.5 | 114.4 | 114.3 | 114.2 | 114.1 | 114.0 | 114.3 | 114.7 | 115.2 | 115.8 | 116.4 | 114.4 | 114.2 | 114.3 | 115.8 | 114.7 | 114.1 | 114.4 |
| Dry Gas Production | 108.2 | 108.4 | 108.4 | 108.3 | 108.2 | 108.0 | 108.0 | 108.3 | 108.7 | 109.2 | 109.8 | 110.3 | 108.3 | 108.2 | 108.3 | 109.8 | 108.6 | 108.1 | 108.4 |
| Net Canadian Imports | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 5.9 | 6.0 |
| LNG Imports | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Domestic Consumption | 115.3 | 110.4 | 95.4 | 79.9 | 74.5 | 79.9 | 87.8 | 87.1 | 79.9 | 79.4 | 92.6 | 106.0 | 107.1 | 78.1 | 84.9 | 92.7 | 90.7 | 103.8 | 81.2 |
| Power Generation | 32.4 | 31.7 | 30.0 | 28.7 | 31.8 | 40.3 | 48.7 | 47.9 | 40.2 | 33.7 | 30.9 | 31.8 | 31.3 | 33.6 | 45.6 | 32.1 | 35.6 | 31.4 | 38.7 |
| Industrial | 26.6 | 26.3 | 24.8 | 23.7 | 22.5 | 22.3 | 22.7 | 22.8 | 23.2 | 25.3 | 26.0 | 25.9 | 22.8 | 22.6 | 24.8 | 24.0 | 25.7 | 22.8 | |
| Residential/Commercial | 46.2 | 43.1 | 31.7 | 18.9 | 12.0 | 8.8 | 7.9 | 7.8 | 8.6 | 13.7 | 27.5 | 38.7 | 40.3 | 13.2 | 8.1 | 26.6 | 22.1 | 37.4 | 11.1 |
| Lease, Plant, and Fuel | 10.0 | 9.4 | 9.0 | 8.5 | 8.3 | 8.5 | 9.0 | 8.7 | 8.4 | 8.8 | 9.0 | 9.6 | 9.5 | 8.4 | 8.7 | 9.1 | 8.9 | 9.3 | 8.6 |
| Total Exports* | 23.4 | 23.6 | 23.5 | 23.4 | 24.2 | 24.6 | 23.7 | 25.1 | 24.9 | 24.8 | 25.0 | 25.2 | 23.5 | 24.1 | 24.6 | 25.0 | 24.3 | 23.0 | 24.4 |
| Pipeline to Mexico | 6.4 | 6.4 | 6.4 | 6.8 | 6.9 | 7.2 | 7.4 | 7.5 | 7.5 | 7.0 | 6.3 | 6.4 | 6.4 | 7.0 | 7.5 | 6.6 | 6.8 | 6.2 | 7.2 |
| Feedgas for LNG exports | 17.0 | 17.2 | 17.1 | 16.7 | 17.3 | 17.5 | 16.3 | 17.6 | 17.5 | 17.8 | 18.7 | 18.8 | 17.1 | 17.1 | 17.1 | 18.4 | 17.5 | 16.8 | 17.2 |
| LNG Exports | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15.4 | 15.4 | 15.4 | 16.6 | 15.7 | 5.9 | 0.0 |
| Net Injection to storage** | -24 | -20 | -5 | 11 | 16 | 10 | 2 | 2 | 10 | 11 | -2 | -15 | -16 | 12 | 5 | -2 | 0 | -12.7 | 8.8 |
| Net Injection to storage (Bcf)** | -756 | -548 | -140 | 332 | 481 | 285 | 76 | 64 | 295 | 340 | -54 | -459 | -1455 | 1094 | 441 | -171 | -23 | -1925 | 1878 |
| End of period storage level (Bcf) | 2757 | 2210 | 2070 | 2402 | 2882 | 3168 | 3244 | 3308 | 3603 | 3943 | 3890 | 3430 | 2070 | 3168 | 3603 | 3430 | 3430 | 2070 | 3943 |

Note: * Total exports do not include exports to Canada. Pipeline exports to Canada are included in Net Canadian Imports in the Total Supply section. ** Withdrawals represented as a negative number.

Source: JPMorgan Natural Gas Strategy, EIA, corporate reports

Source:

Disclosures

Analyst Certification: The Research Analyst(s) denoted by an “AC” on the cover of this report certifies (or, where multiple Research Analysts are primarily responsible for this report, the Research Analyst denoted by an “AC” on the cover or within the document individually certifies, with respect to each security or issuer that the Research Analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect the Research Analyst’s personal views about any and all of the subject securities or issuers; and (2) no part of any of the Research Analyst’s compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the Research Analyst(s) in this report. For all Korea-based Research Analysts listed on the front cover, if applicable, they also certify, as per KOFIA requirements, that the Research Analyst’s analysis was made in good faith and that the views reflect the Research Analyst’s own opinion, without undue influence or intervention.

All authors named within this report are Research Analysts who produce independent research unless otherwise specified. In Europe, Sector Specialists (Sales and Trading) may be shown on this report as contacts but are not authors of the report or part of the Research Department.

Important Disclosures

Company-Specific Disclosures: Important disclosures, including price charts and credit opinion history tables, are available for compendium reports and all J.P. Morgan–covered companies, and certain non-covered companies, by visiting <https://www.jpmm.com/research/disclosures>, calling 1-800-477-0406, or e-mailing research.disclosure.inquiries@jpmorgan.com with your request.

Explanation of Equity Research Ratings, Designations and Analyst(s) Coverage Universe:

J.P. Morgan uses the following rating system: Overweight (over the duration of the price target indicated in this report, we expect this stock will outperform the average total return of the stocks in the Research Analyst’s, or the Research Analyst’s team’s, coverage universe); Neutral (over the duration of the price target indicated in this report, we expect this stock will perform in line with the average total return of the stocks in the Research Analyst’s, or the Research Analyst’s team’s, coverage universe); and Underweight (over the duration of the price target indicated in this report, we expect this stock will underperform the average total return of the stocks in the Research Analyst’s, or the Research Analyst’s team’s, coverage universe. NR is Not Rated. In this case, J.P. Morgan has removed the rating and, if applicable, the price target, for this stock because of either a lack of a sufficient fundamental basis or for legal, regulatory or policy reasons. The previous rating and, if applicable, the price target, no longer should be relied upon. An NR designation is not a recommendation or a rating. In our Asia (ex-Australia and ex-India) and U.K. small- and mid-cap Equity Research, each stock’s expected total return is compared to the expected total return of a benchmark country market index, not to those Research Analysts’ coverage universe. If it does not appear in the Important Disclosures section of this report, the certifying Research Analyst’s coverage universe can be found on J.P. Morgan’s Research website, <https://www.jpmorganmarkets.com>.

J.P. Morgan Equity Research Ratings Distribution, as of October 05, 2024

| | Overweight (buy) | Neutral (hold) | Underweight (sell) |
|--|---------------------|-------------------|-----------------------|
| J.P. Morgan Global Equity Research Coverage* | 49% | 38% | 13% |
| IB clients** | 50% | 46% | 38% |
| JPMS Equity Research Coverage* | 46% | 41% | 13% |
| IB clients** | 71% | 67% | 54% |

*Please note that the percentages may not add to 100% because of rounding.

**Percentage of subject companies within each of the "buy," "hold" and "sell" categories for which J.P. Morgan has provided investment banking services within the previous 12 months.

For purposes of FINRA ratings distribution rules only, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category. Please note that stocks with an NR designation are not included in the table above. This information is current as of the end of the most recent calendar quarter.

Equity Valuation and Risks: For valuation methodology and risks associated with covered companies or price targets for covered companies, please see the most recent company-specific research report at <http://www.jpmorganmarkets.com>, contact the primary analyst or your J.P. Morgan representative, or email research.disclosure.inquiries@jpmorgan.com. For material information about the proprietary models used, please see the Summary of Financials in company-specific research reports and the Company Tearsheets, which are available to download on the company pages of our client website, <http://www.jpmorganmarkets.com>. This report also sets out within it the material underlying assumptions used.

A history of J.P. Morgan investment recommendations disseminated during the preceding 12 months can be accessed on the Research & Commentary page of <http://www.jpmorganmarkets.com> where you can also search by analyst name, sector or financial instrument.

Analysts' Compensation: The research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues.

Registration of non-US Analysts: Unless otherwise noted, the non-US analysts listed on the front of this report are employees of non-US affiliates of J.P. Morgan Securities LLC, may not be registered as research analysts under FINRA rules, may not be associated persons of J.P.

20 December 2024

Morgan Securities LLC, and may not be subject to FINRA Rule 2241 or 2242 restrictions on communications with covered companies, public appearances, and trading securities held by a research analyst account.

Company-Specific Disclosures: Important disclosures, including price charts and credit opinion history tables, are available for compendium reports and all J.P. Morgan-covered companies, and certain non-covered companies, by visiting <https://www.jpmm.com/research/disclosures>, calling 1-800-477-0406, or e-mailing research.disclosure.inquiries@jpmorgan.com with your request.

Other Disclosures

J.P. Morgan is a marketing name for investment banking businesses of JPMorgan Chase & Co. and its subsidiaries and affiliates worldwide.

UK MIFID FICC research unbundling exemption: UK clients should refer to [UK MIFID Research Unbundling exemption](#) for details of J.P. Morgan's implementation of the FICC research exemption and guidance on relevant FICC research categorisation.

All research material made available to clients are simultaneously available on our client website, J.P. Morgan Markets, unless specifically permitted by relevant laws. Not all research content is redistributed, e-mailed or made available to third-party aggregators. For all research material available on a particular stock, please contact your sales representative.

Any long form nomenclature for references to China; Hong Kong; Taiwan; and Macau within this research material are Mainland China; Hong Kong SAR (China); Taiwan (China); and Macau SAR (China).

J.P. Morgan Research may, from time to time, write on issuers or securities targeted by economic or financial sanctions imposed or administered by the governmental authorities of the U.S., EU, UK or other relevant jurisdictions (Sanctioned Securities). Nothing in this report is intended to be read or construed as encouraging, facilitating, promoting or otherwise approving investment or dealing in such Sanctioned Securities. Clients should be aware of their own legal and compliance obligations when making investment decisions.

Any digital or crypto assets discussed in this research report are subject to a rapidly changing regulatory landscape. For relevant regulatory advisories on crypto assets, including bitcoin and ether, please see <https://www.jpmorgan.com/disclosures/cryptoasset-disclosure>.

The author(s) of this research report may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so.

Exchange-Traded Funds (ETFs): J.P. Morgan Securities LLC ("JPMS") acts as authorized participant for substantially all U.S.-listed ETFs. To the extent that any ETFs are mentioned in this report, JPMS may earn commissions and transaction-based compensation in connection with the distribution of those ETF shares and may earn fees for performing other trade-related services, such as securities lending to short sellers of the ETF shares. JPMS may also perform services for the ETFs themselves, including acting as a broker or dealer to the ETFs. In addition, affiliates of JPMS may perform services for the ETFs, including trust, custodial, administration, lending, index calculation and/or maintenance and other services.

Options and Futures related research: If the information contained herein regards options- or futures-related research, such information is available only to persons who have received the proper options or futures risk disclosure documents. Please contact your J.P. Morgan Representative or visit <https://www.theocc.com/components/docs/riskstoc.pdf> for a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options or http://www.finra.org/sites/default/files/Security_Futures_Risk_Disclosure_Statement_2018.pdf for a copy of the Security Futures Risk Disclosure Statement.

Changes to Interbank Offered Rates (IBORs) and other benchmark rates: Certain interest rate benchmarks are, or may in the future become, subject to ongoing international, national and other regulatory guidance, reform and proposals for reform. For more information, please consult: https://www.jpmorgan.com/global/disclosures/interbank_offered_rates

Private Bank Clients: Where you are receiving research as a client of the private banking businesses offered by JPMorgan Chase & Co. and its subsidiaries ("J.P. Morgan Private Bank"), research is provided to you by J.P. Morgan Private Bank and not by any other division of J.P. Morgan, including, but not limited to, the J.P. Morgan Corporate and Investment Bank and its Global Research division.

Legal entity responsible for the production and distribution of research: The legal entity identified below the name of the Reg AC Research Analyst who authored this material is the legal entity responsible for the production of this research. Where multiple Reg AC Research Analysts authored this material with different legal entities identified below their names, these legal entities are jointly responsible for the production of this research. Research Analysts from various J.P. Morgan affiliates may have contributed to the production of this material but may not be licensed to carry out regulated activities in your jurisdiction (and do not hold themselves out as being able to do so). Unless otherwise stated below, this material has been distributed by the legal entity responsible for production. If you have any queries, please contact the relevant Research Analyst in your jurisdiction or the entity in your jurisdiction that has distributed this research material.

Legal Entities Disclosures and Country-/Region-Specific Disclosures:

Argentina: JPMorgan Chase Bank N.A Sucursal Buenos Aires is regulated by Banco Central de la República Argentina ("BCRA"- Central Bank of Argentina) and Comisión Nacional de Valores ("CNV"- Argentinian Securities Commission - ALYC y AN Integral N°51). **Australia:** J.P. Morgan Securities Australia Limited ("JPMSAL") (ABN 61 003 245 234/AFS Licence No: 238066) is regulated by the Australian Securities and Investments Commission and is a Market Participant of ASX Limited, a Clearing and Settlement Participant of ASX Clear Pty

Limited and a Clearing Participant of ASX Clear (Futures) Pty Limited. This material is issued and distributed in Australia by or on behalf of JPMSAL only to "wholesale clients" (as defined in section 761G of the Corporations Act 2001). A list of all financial products covered can be found by visiting <https://www.jpmm.com/research/disclosures>. J.P. Morgan seeks to cover companies of relevance to the domestic and international investor base across all Global Industry Classification Standard (GICS) sectors, as well as across a range of market capitalisation sizes. If applicable, in the course of conducting public side due diligence on the subject company(ies), the Research Analyst team may at times perform such diligence through corporate engagements such as site visits, discussions with company representatives, management presentations, etc. Research issued by JPMSAL has been prepared in accordance with J.P. Morgan Australia's Research Independence Policy which can be found at the following link: [J.P. Morgan Australia - Research Independence Policy](#). **Brazil:** Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. Ombudsman J.P. Morgan: 0800-7700847 / 0800-7700810 (For Hearing Impaired) / ouvidoria.jp.morgan@jpmorgan.com. **Canada:** J.P. Morgan Securities Canada Inc. is a registered investment dealer, regulated by the Canadian Investment Regulatory Organization and the Ontario Securities Commission and is the participating member on Canadian exchanges. This material is distributed in Canada by or on behalf of J.P.Morgan Securities Canada Inc. **Chile:** Inversiones J.P. Morgan Limitada is an unregulated entity incorporated in Chile. **China:** J.P. Morgan Securities (China) Company Limited has been approved by CSRC to conduct the securities investment consultancy business. **Dubai International Financial Centre (DIFC):** JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - The Gate, West Wing, Level 3 and 9 PO Box 506551, Dubai, UAE. This material has been distributed by JP Morgan Chase Bank, N.A., Dubai Branch to persons regarded as professional clients or market counterparties as defined under the DFSA rules. **European Economic Area (EEA):** Unless specified to the contrary, research is distributed in the EEA by J.P. Morgan SE ("JPM SE"), which is authorised as a credit institution by the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB). JPM SE is a company headquartered in Frankfurt with registered address at TaunusTurm, Taunustor 1, Frankfurt am Main, 60310, Germany. The material has been distributed in the EEA to persons regarded as professional investors (or equivalent) pursuant to Art. 4 para. 1 no. 10 and Annex II of MiFID II and its respective implementation in their home jurisdictions ("EEA professional investors"). This material must not be acted on or relied on by persons who are not EEA professional investors. Any investment or investment activity to which this material relates is only available to EEA relevant persons and will be engaged in only with EEA relevant persons. **Hong Kong:** J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong, and J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027) is regulated by the Securities and Futures Commission in Hong Kong. JP Morgan Chase Bank, N.A., Hong Kong Branch (CE Number AAL996) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission, is organized under the laws of the United States with limited liability. Where the distribution of this material is a regulated activity in Hong Kong, the material is distributed in Hong Kong by or through J.P. Morgan Securities (Asia Pacific) Limited and/or J.P. Morgan Broking (Hong Kong) Limited. **India:** J.P. Morgan India Private Limited (Corporate Identity Number - U67120MH1992FTC068724), having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina, Santacruz - East, Mumbai - 400098, is registered with the Securities and Exchange Board of India (SEBI) as a 'Research Analyst' having registration number INH000001873. J.P. Morgan India Private Limited is also registered with SEBI as a member of the National Stock Exchange of India Limited and the Bombay Stock Exchange Limited (SEBI Registration Number - INZ000239730) and as a Merchant Banker (SEBI Registration Number - MB/INM000002970). Telephone: 91-22-6157 3000, Facsimile: 91-22-6157 3990 and Website: <http://www.jpmipl.com>. JPMorgan Chase Bank, N.A. - Mumbai Branch is licensed by the Reserve Bank of India (RBI) (Licence No. 53/ Licence No. BY.4/94; SEBI - IN/CUS/014/ CDSL : IN-DP-CDSL-444-2008/ IN-DP-NSDL-285-2008/ INBI00000984/ INE231311239) as a Scheduled Commercial Bank in India, which is its primary license allowing it to carry on Banking business in India and other activities, which a Bank branch in India are permitted to undertake. For non-local research material, this material is not distributed in India by J.P. Morgan India Private Limited. Compliance Officer: Spurthi Gadamsetty; spurthi.gadamsetty@jpmchase.com; +912261573225. Grievance Officer: Ramprasadh K, jpmipl.research.feedback@jpmorgan.com; +912261573000. Registration granted by SEBI and certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors. **Indonesia:** PT J.P. Morgan Sekuritas Indonesia is a member of the Indonesia Stock Exchange and is registered and supervised by the Otoritas Jasa Keuangan (OJK). **Korea:** J.P. Morgan Securities (Far East) Limited, Seoul Branch, is a member of the Korea Exchange (KRX). JPMorgan Chase Bank, N.A., Seoul Branch, is licensed as a branch office of foreign bank (JPMorgan Chase Bank, N.A.) in Korea. Both entities are regulated by the Financial Services Commission (FSC) and the Financial Supervisory Service (FSS). For non-macro research material, the material is distributed in Korea by or through J.P. Morgan Securities (Far East) Limited, Seoul Branch. **Japan:** JPMorgan Securities Japan Co., Ltd. and JPMorgan Chase Bank, N.A., Tokyo Branch are regulated by the Financial Services Agency in Japan. **Malaysia:** This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X), which is a Participating Organization of Bursa Malaysia Berhad and holds a Capital Markets Services License issued by the Securities Commission in Malaysia. **Mexico:** J.P. Morgan Casa de Bolsa, S.A. de C.V. and J.P. Morgan Grupo Financiero are members of the Mexican Stock Exchange and are authorized to act as a broker dealer by the National Banking and Securities Exchange Commission. **New Zealand:** This material is issued and distributed by JPMSAL in New Zealand only to "wholesale clients" (as defined in the Financial Markets Conduct Act 2013). JPMSAL is registered as a Financial Service Provider under the Financial Service providers (Registration and Dispute Resolution) Act of 2008. **Philippines:** J.P. Morgan Securities Philippines Inc. is a Trading Participant of the Philippine Stock Exchange and a member of the Securities Clearing Corporation of the Philippines and the Securities Investor Protection Fund. It is regulated by the Securities and Exchange Commission. **Singapore:** This material is issued and distributed in Singapore by or through J.P. Morgan Securities Singapore Private Limited (JPMSS) [MDDI (P) 068/08/2024 and Co. Reg. No.: 199405335R], which is a member of the Singapore Exchange Securities Trading Limited, and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore), both of which are regulated by the Monetary Authority of Singapore. This material is issued and distributed in Singapore only to accredited investors, expert investors and institutional investors, as defined in Section 4A of the Securities and Futures Act, Cap. 289 (SFA). This material is not intended to be issued or distributed to any retail investors or any other investors that do not fall into the classes of "accredited investors," "expert investors" or "institutional investors," as defined under Section 4A of the SFA. Recipients of this material in Singapore are to contact

JPMS or JPMCB Singapore in respect of any matters arising from, or in connection with, the material. **South Africa:** J.P. Morgan Equities South Africa Proprietary Limited and JPMorgan Chase Bank, N.A., Johannesburg Branch are members of the Johannesburg Securities Exchange and are regulated by the Financial Services Conduct Authority (FSCA). **Taiwan:** J.P. Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. Material relating to equity securities is issued and distributed in Taiwan by J.P. Morgan Securities (Taiwan) Limited, subject to the license scope and the applicable laws and the regulations in Taiwan. According to Paragraph 2, Article 7-1 of Operational Regulations Governing Securities Firms Recommending Trades in Securities to Customers (as amended or supplemented) and/or other applicable laws or regulations, please note that the recipient of this material is not permitted to engage in any activities in connection with the material that may give rise to conflicts of interests, unless otherwise disclosed in the "Important Disclosures" in this material. **Thailand:** This material is issued and distributed in Thailand by JPMorgan Securities (Thailand) Ltd., which is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission, and its registered address is 3rd Floor, 20 North Sathorn Road, Silom, Bangrak, Bangkok 10500. **UK:** Unless specified to the contrary, research is distributed in the UK by J.P. Morgan Securities plc ("JPMS plc") which is a member of the London Stock Exchange and is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. JPMS plc is registered in England & Wales No. 2711006, Registered Office 25 Bank Street, London, E14 5JP. This material is directed in the UK only to: (a) persons having professional experience in matters relating to investments falling within article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) (Order) 2005 ("the FPO"); (b) persons outlined in article 49 of the FPO (high net worth companies, unincorporated associations or partnerships, the trustees of high value trusts, etc.); or (c) any persons to whom this communication may otherwise lawfully be made; all such persons being referred to as "UK relevant persons". This material must not be acted on or relied on by persons who are not UK relevant persons. Any investment or investment activity to which this material relates is only available to UK relevant persons and will be engaged in only with UK relevant persons. Research issued by JPMS plc has been prepared in accordance with JPMS plc's policy for prevention and avoidance of conflicts of interest related to the production of Research which can be found at the following link: [J.P. Morgan EMEA - Research Independence Policy](#). U.S.: J.P. Morgan Securities LLC ("JPMS") is a member of the NYSE, FINRA, SIPC, and the NFA. JPMorgan Chase Bank, N.A. is a member of the FDIC. Material published by non-U.S. affiliates is distributed in the U.S. by JPMS who accepts responsibility for its content.

General: Additional information is available upon request. The information in this material has been obtained from sources believed to be reliable. While all reasonable care has been taken to ensure that the facts stated in this material are accurate and that the forecasts, opinions and expectations contained herein are fair and reasonable, JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) make no representations or warranties whatsoever to the completeness or accuracy of the material provided, except with respect to any disclosures relative to J.P. Morgan and the Research Analyst's involvement with the issuer that is the subject of the material. Accordingly, no reliance should be placed on the accuracy, fairness or completeness of the information contained in this material. There may be certain discrepancies with data and/or limited content in this material as a result of calculations, adjustments, translations to different languages, and/or local regulatory restrictions, as applicable. These discrepancies should not impact the overall investment analysis, views and/or recommendations of the subject company(ies) that may be discussed in the material. J.P. Morgan accepts no liability whatsoever for any loss arising from any use of this material or its contents, and neither J.P. Morgan nor any of its respective directors, officers or employees, shall be in any way responsible for the contents hereof, apart from the liabilities and responsibilities that may be imposed on them by the relevant regulatory authority in the jurisdiction in question, or the regulatory regime thereunder. Opinions, forecasts or projections contained in this material represent J.P. Morgan's current opinions or judgment as of the date of the material only and are therefore subject to change without notice. Periodic updates may be provided on companies/industries based on company-specific developments or announcements, market conditions or any other publicly available information. There can be no assurance that future results or events will be consistent with any such opinions, forecasts or projections, which represent only one possible outcome. Furthermore, such opinions, forecasts or projections are subject to certain risks, uncertainties and assumptions that have not been verified, and future actual results or events could differ materially. The value of, or income from, any investments referred to in this material may fluctuate and/or be affected by changes in exchange rates. All pricing is indicative as of the close of market for the securities discussed, unless otherwise stated. Past performance is not indicative of future results. Accordingly, investors may receive back less than originally invested. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. This material may include views on structured securities, options, futures and other derivatives. These are complex instruments, may involve a high degree of risk and may be appropriate investments only for sophisticated investors who are capable of understanding and assuming the risks involved. The recipients of this material must make their own independent decisions regarding any securities or financial instruments mentioned herein and should seek advice from such independent financial, legal, tax or other adviser as they deem necessary. J.P. Morgan may trade as a principal on the basis of the Research Analysts' views and research, and it may also engage in transactions for its own account or for its clients' accounts in a manner inconsistent with the views taken in this material, and J.P. Morgan is under no obligation to ensure that such other communication is brought to the attention of any recipient of this material. Others within J.P. Morgan, including Strategists, Sales staff and other Research Analysts, may take views that are inconsistent with those taken in this material. Employees of J.P. Morgan not involved in the preparation of this material may have investments in the securities (or derivatives of such securities) mentioned in this material and may trade them in ways different from those discussed in this material. This material is not an advertisement for or marketing of any issuer, its products or services, or its securities in any jurisdiction.

Confidentiality and Security Notice: This transmission may contain information that is privileged, confidential, legally privileged, and/or exempt from disclosure under applicable law. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or use of the information contained herein (including any reliance thereon) is STRICTLY PROHIBITED. Although this transmission and any attachments are believed to be free of any virus or other defect that might affect any computer system into which it is

Shikha Chaturvedi ^{AC} (1-212) 834-3245
shikha.chaturvedi@jpmorgan.com
JPMorgan Chase Bank NA
Otar Dgebuadze, CFA (44-20) 3493-8246
otar.dgebuadze@jpmorgan.com

North America Commodities
Research
US Natural Gas
20 December 2024

J.P.Morgan

received and opened, it is the responsibility of the recipient to ensure that it is virus free and no responsibility is accepted by JPMorgan Chase & Co., its subsidiaries and affiliates, as applicable, for any loss or damage arising in any way from its use. If you received this transmission in error, please immediately contact the sender and destroy the material in its entirety, whether in electronic or hard copy format. This message is subject to electronic monitoring: <https://www.jpmorgan.com/disclosures/email>

MSCI: Certain information herein (“Information”) is reproduced by permission of MSCI Inc., its affiliates and information providers (“MSCI”) ©2024. No reproduction or dissemination of the Information is permitted without an appropriate license. MSCI MAKES NO EXPRESS OR IMPLIED WARRANTIES (INCLUDING MERCHANTABILITY OR FITNESS) AS TO THE INFORMATION AND DISCLAIMS ALL LIABILITY TO THE EXTENT PERMITTED BY LAW. No Information constitutes investment advice, except for any applicable Information from MSCI ESG Research. Subject also to [msci.com/disclaimer](https://www.msci.com/disclaimer)

Sustainalytics: Certain information, data, analyses and opinions contained herein are reproduced by permission of Sustainalytics and: (1) includes the proprietary information of Sustainalytics; (2) may not be copied or redistributed except as specifically authorized; (3) do not constitute investment advice nor an endorsement of any product or project; (4) are provided solely for informational purposes; and (5) are not warranted to be complete, accurate or timely. Sustainalytics is not responsible for any trading decisions, damages or other losses related to it or its use. The use of the data is subject to conditions available at <https://www.sustainalytics.com/legal-disclaimers>. ©2024 Sustainalytics. All Rights Reserved.

"Other Disclosures" last revised December 07, 2024.

Copyright 2024 JPMorgan Chase & Co. All rights reserved. This material or any portion hereof may not be reprinted, sold or redistributed without the written consent of J.P. Morgan. It is strictly prohibited to use or share without prior written consent from J.P. Morgan any research material received from J.P. Morgan or an authorized third-party (“J.P. Morgan Data”) in any third-party artificial intelligence (“AI”) systems or models when such J.P. Morgan Data is accessible by a third-party. It is permissible to use J.P. Morgan Data for internal business purposes only in an AI system or model that protects the confidentiality of J.P. Morgan Data so as to prevent any and all access to or use of such J.P. Morgan Data by any third-party.

Completed 20 Dec 2024 07:33 AM EST

Disseminated 20 Dec 2024 07:33 AM EST