

Global Energy Weekly

The gas fracker's dilemma

Henry Hub prices collapsed 55% since the start of winter

Thermal fuels suffered this winter as warmer than normal weather blanketed the northern hemisphere (see [Winter weather melts global gas](#)), curbing heating demand. In the US, Henry Hub natural gas prices suffered added pain due to ramping supply into the end of 2023. A short burst of cold weather in January led to >70Bcf of freeze-offs, a spike in heating and power demand, and an LNG outage that continues to fester. Storage dropped from ~400Bcf above the five-year average to just 130Bcf over two weeks, but market tightness quickly turned to looseness, and now storage is 500Bcf above the five-year average. Deteriorating balances caused Henry Hub prices to fall 55% from October to February, but prices bounced off recent lows on E&P activity cuts.

E&Ps must choose: cut and risk market share or ride it out

Gas prices collapsed to stoke more demand or destroy supply, but it is unclear how quickly the market will rebalance. Front month Henry Hub prices are above OPEX levels but below half-cycle breakevens for many gas assets. Yet, the curve is in steep contango, with Cal2025 trading ~\$3.40. Thus, prospects are much better in nine months. The setup is similar to 2023, with many E&Ps looking past near-term pain and maintaining output ahead of LNG led demand growth in 2H24-2025. Cashflow constraints will cause some E&Ps to cut, while others could cut opportunistically due to better financial positions. Indeed, one major gas E&P plans to slow completions and delay well starts until demand improves, translating to a supply cut of ~20% or 685mmcf/d YoY in '24 for the company.

Output is falling but persistent low prices needed in 1H

Pipeline scrapes suggest production is already responding to prices, dropping from a high of 106Bcf/d in February to ~101-102Bcf/d on March 1. Some of the decline has been attributed to midstream maintenance but also to E&Ps slowing well starts and possibly choking back operational wells too. If this is the case, E&Ps may have pent up supply to unleash in 4Q24+ at prices that are nearly double the nearby contract. Output should fall across the gas basins, while a new pipeline enables a 2H24 production ramp in the Permian. We forecast US L-48 gas production to stay below 102Bcf/d in summer before ramping to 103Bcf/d by December 2024, leading to 0.6Bcf/d lower supply YoY.

We cut our 2024 HH gas price forecast to \$2.40/mmbtu

Production is responding to weak prices, and we think prices must stay low in 1H24 to keep supply depressed and curb inventory builds. We were bearish in November (see [Energy Strategist](#)) and thought prices could fall below \$2 in a warm winter, but the current setup is looser than we envisioned, so we cut our 2024 Henry Hub price forecast from \$3/mmbtu to \$2.40/mmbtu. Low prices could also stimulate demand, especially for power as coal-to-gas switching picks up in shoulder season. US natural gas demand should increase 2.1Bcf/d YoY due to rising res/com and industrial consumption and higher LNG exports and shipments to Mexico, while power demand remains flat YoY. These assumptions yield ~2.3Tcf of gas storage by end of March and 4.1Tcf by end of October. Risks to our view are the pace of LNG ramp up, price sensitivity of supply, and weather, which can materially affect demand.

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Refer to important disclosures on page 16 to 17.

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Exhibit 1: BofA Commodity Research Themes and Outlook

Key takeaways

	View	Recent reports
Macro outlook	■ Our economists see world GDP rising 3% in 2023 and expanding by 2.8% in 2024.	
WTI and Brent crude oil	■ We project Brent and WTI to average \$80/bbl and \$75/bbl, respectively, in 2024. ■ The global oil balance should remain in a mild surplus during 2024, as OPEC+ withholds more supply from the market to counteract slowing demand growth ■ We forecast global demand growth of 2.3mn b/d YoY in 2023 and 1.2mn b/d in 2024. ■ Non-OPEC supply should grow roughly 2.24mn b/d YoY in 2023 and 1.35mn b/d in 2024. ■ We project total US crude and NGL supply to rise 1.5mn b/d in 2023 and 700k b/d in 2024. ■ OPEC crude oil supplies are set to fall 470k b/d in 2023 and 260k b/d in 2024 as OPEC+ actively manages balances	<ul style="list-style-type: none"> • Can (geo)politics Trump fundamentals? 04 January 2024 • The grind of the oil bulls 26 September 2023 • Money breaks oil's back 08 May 2023 • OPEC+'s whatever it takes moment 05 April 2023 • Global Energy Paper: Medium-term oil outlook 26 February 2023
Atlantic Basin oil products	■ Refined product markets face risks from OPEC+ cuts, a looming recession, and the pace of global refining capacity growth. ■ We forecast RBOB-Brent to average \$13/bbl in 2024, and we see ULSD-Brent cracks averaging \$26/bbl over the same period. ■ OPEC+ cuts, rising complex refining capacity, lower gasoline and diesel cracks create upside for 3.5% fuel oil cracks, which we see averaging -\$12/bbl in 2024.	<ul style="list-style-type: none"> • Waiting for Dangot(e) 31 October 2023 • Diesel weasels out of a cyclical downturn 29 August 2023 • In the fuel oil market, high sulfur is king 31 July 2023
US natural gas	■ US gas supply should shrink more than 500mmcf/d, while demand rises 2.1Bcf/d, helping cap storage at 4.1Tcf at end of October. ■ We forecast US Henry Hub natural gas prices will average \$2.40/mmbtu in 2024.	<ul style="list-style-type: none"> • The gas fracker's dilemma 04 March 2024 • US nat gas rollercoaster nears the bottom 17 February 2023
LNG	■ Near term downside risk for global gas prices, but LNG supply to rise just 1.7% in 24, which counters softer demand growth ■ A rebound in global manufacturing, LNG delays/outages, and weather could tighten balances in 24, but China remains a wildcard	<ul style="list-style-type: none"> • Winter weather melts global gas prices 13 February 2024 • LNG is now a buyer's market 17 April 2023
Thermal coal	■ Seaborne coal prices pulled back on softer balances. Yet, China has come back in earnest, more than doubling thermal coal imports ■ We are constructive in 2024 on strong Asian demand and declining Russian supply	<ul style="list-style-type: none"> • China coal floors global gas 05 September 2023 • King coal loses its crown 31 March 2023

Source: BofA Global Research estimates

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Exhibit 2: BofA Global Research Commodity Price Forecasts

(period averages)

	units	1Q23F	2Q23F	3Q23F	4Q23F	2023F	1Q24F	2Q24F	3Q24F	4Q24F	2024F
WTI Crude Oil	(\$/bbl)	76	74	82	82	78	73	75	77	75	75
Brent Crude Oil	(\$/bbl)	82	78	86	86	83	78	80	82	80	80
US NY Harbor ULSD (HO) Cracks to Brent Crude Oil	(\$/bbl)	41	25	40	37	36	30	25	25	25	26
US RBOB Cracks to Brent Crude Oil	(\$/bbl)	23	31	29	7	22	11	21	14	7	13
NWE Low Sulphur Gasoil Cracks to Brent Crude Oil	(\$/bbl)	31	17	32	29	27	23	20	20	19	21
NWE Eurobob Cracks to Brent Crude Oil	(\$/bbl)	15	22	27	7	18	5	14	10	3	8
NWE 1% Residual Cracks to Brent Crude Oil	(\$/bbl)	-13	-8	-3	-7	-8	-6	-5	-5	-5	-5
NWE 0.5% Residual Cracks to Brent Crude Oil	(\$/bbl)	2	2	4	3	3	2	2	2	2	2
NWE 3.5% Residual Cracks to Brent Crude Oil	(\$/bbl)	-23	-11	-4	-14	-13	-13	-12	-12	-12	-12
US Natural Gas	(\$/MMBtu)	2.74	2.32	2.66	2.92	2.66	2.10	2.10	2.50	2.90	2.40
Thermal coal, Newcastle FOB	(\$/t)	253	160	147	145	176	148	148	151	153	150
Aluminium	\$/t	2,401	2,260	2,160	2,250	2,268	2,250	2,500	2,750	2,750	2,563
Copper	\$/t	8,941	8,461	8,367	8,000	8,442	8,000	8,500	8,750	9,250	8,625
Lead	\$/t	2,137	2,118	2,171	2,200	2,156	2,000	2,000	2,000	2,000	2,000
Nickel	\$/t	25,973	22,277	20,392	18,500	21,786	18,500	18,500	19,000	19,000	18,750
Zinc	\$/t	3,132	2,527	2,435	2,500	2,648	2,500	2,500	2,250	2,250	2,375
Gold	\$/oz	1892	1977	1927	1900	1924	1950	1950	2000	2000	1975
Silver	\$/oz	23	24	24	23	23	23	23	24	24	23
Platinum	\$/oz	995	1,027	932	950	976	1,000	1,000	1,100	1,100	750
Palladium	\$/oz	1,568	1,445	1,254	1,250	1,379	900	800	700	600	750

Source: BofA Global Research estimates

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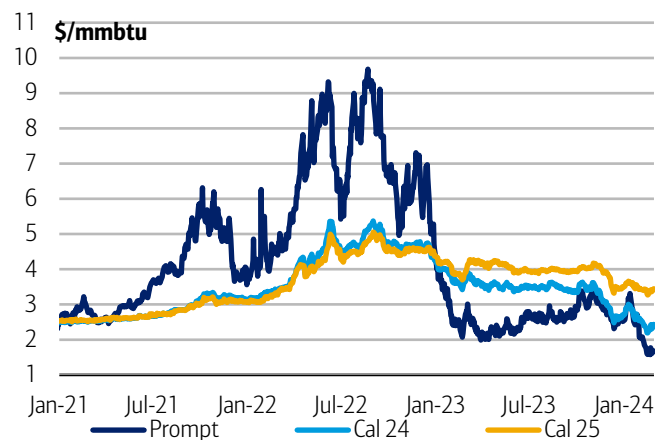
The gas fracker's dilemma

US natural gas prices cratered more than 50% since October 2023...

Henry Hub natural gas prices struggled this winter, collapsing at the start of November as warm weather and high production loosened balances. After a brief shot of cold weather helped juice prices mid-January, the market started to unravel once again. Front month prices fell 55% from a high of \$3.39/mmbtu on January 9 to a low of \$1.51/mmbtu on February 27 and have since stabilized above \$1.80 recently (Exhibit 3). The calendar strip for 2024 has lost more than \$1/mmbtu since the beginning of winter and sits near \$2.50 today (Exhibit 4), while prices in 2025 have remained more buoyant.

Exhibit 3: Henry Hub natural gas prices

Front month prices fell 55% from a high of \$3.39/mmbtu on January 9 to a low of \$1.51/mmbtu on February 27 and have since stabilized above \$1.80

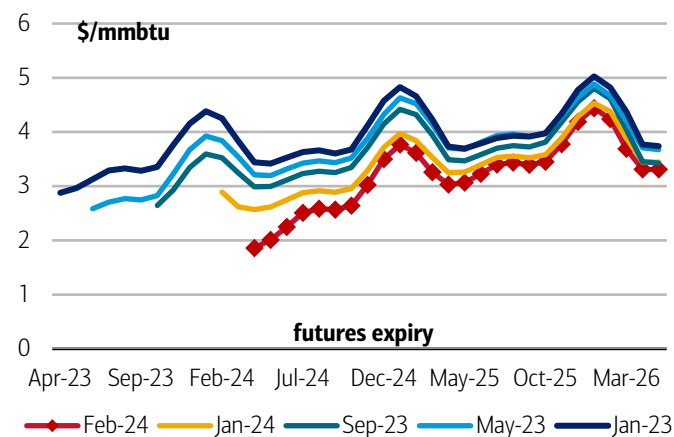


Source: Bloomberg

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Exhibit 4: Henry Hub natural gas forward curve

The calendar strip for 2024 lost more than \$1/mmbtu since the beginning of winter and sits near \$2.50, while 2025 prices have remained more buoyant



Source: Bloomberg

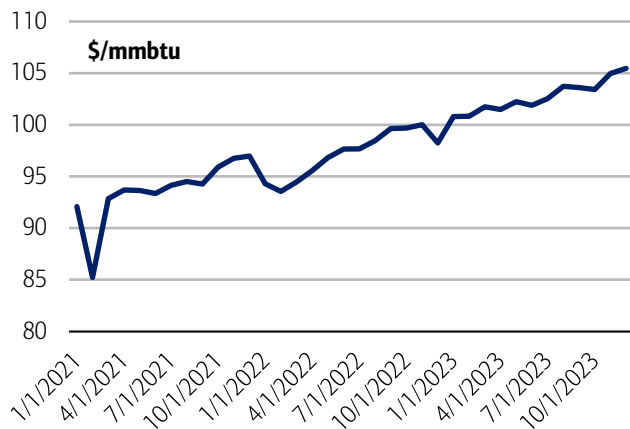
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...as shale gas production roared higher into the winter season...

This winter's path for Henry Hub prices has mirrored last year, albeit at a much lower price level. In 2023, prices averaged \$2.66/mmbtu, a significant step down from the 2022 average of \$6.54/mmbtu, yet L-48 natural gas production growth didn't skip a beat. This was partly due to momentum built up during the high prices of the prior year (see [Shale shifts into low gear](#)) and was helped by the continued build-out of midstream infrastructure in the Permian, Bakken, and elsewhere. By the end of 2023, production had soared to 105.5Bcf/d, up 6.3Bcf/d from the December 2022 and 1.9Bcf/d from end of 3Q23 levels (Exhibit 5). On a year-over-year basis, activity has started to slow, with oil completions declining in 2H23 and natural gas completions flat to down by late 2023 (Exhibit 6). This suggests the market was already in the process of dialing back activity even before the recent price collapse.

Exhibit 5: US L-48 natural gas production

By the end of 2023, production had soared to 105.5Bcf/d, up 6.3Bcf/d from the December 2022 and 1.9Bcf/d from end of 3Q23 levels



Source: EIA

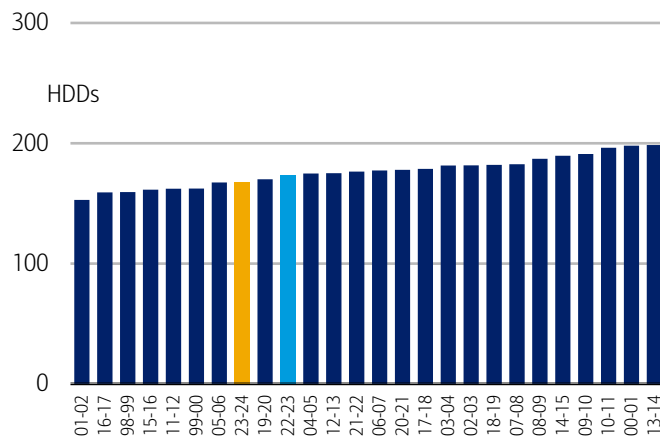
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...and the US experienced its second consecutive warm winter

Much like other regions in the northern hemisphere, temperatures in the US have been warmer than normal this winter (see [Winter weather melts global gas prices](#)), and slightly warmer than in 2022/23 (Exhibit 7). This has caused a drop in heating demand, particularly across the residential and commercial space. Indeed, winter-to-date heating demand has fallen nearly 2Bcf/d YoY, from about 38Bcf/d in 2022/23 to just 36.2Bcf/d in 2023/24 (Exhibit 8). Historically, residential and commercial demand has exhibited a strong positive correlation with HDDs.

Exhibit 7: Winter to date average weekly HDDs by winter

Much like other regions in the northern hemisphere, temperatures in the US have been warmer than normal this winter and slightly warmer YoY...

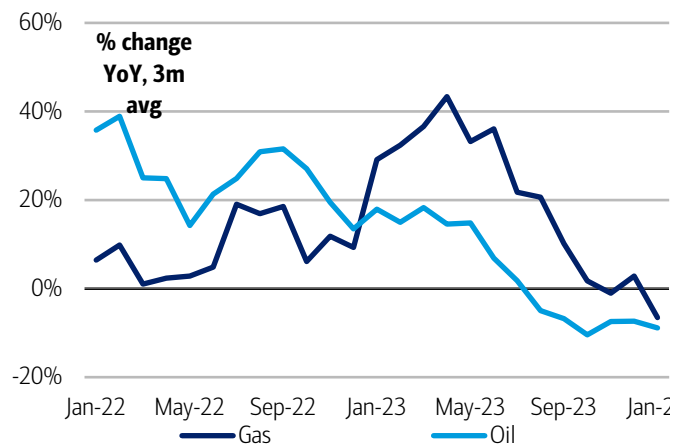


Source: Bloomberg, BofA Global Research

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Exhibit 6: Well completion activity in major gas and oil basins

On a year-over-year basis, activity has started to slow, with oil completions declining YoY in 2H23 and natural gas completions flat to down by late 2023

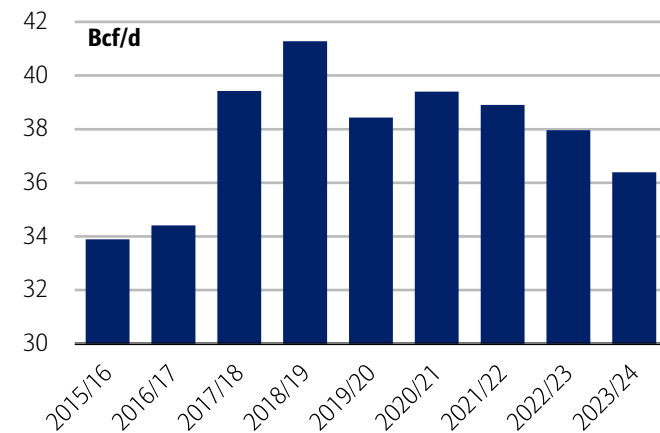


Source: EIA

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Exhibit 8: Residential and commercial gas demand estimate (winter-to-date)

...which caused a drop in heating demand, particularly across the residential and commercial space



Source: Bloomberg

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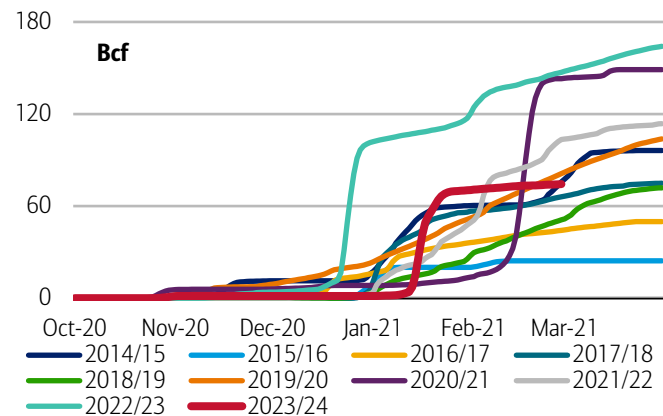
A cold burst briefly tightened balances, but the market has loosened...

In mid-January, temperatures across the middle of the country dropped to levels that caused freeze-offs in Texas, Oklahoma, and the Bakken and resulted in roughly 74Bcf of lost gas supply so far this winter, according to Genscape estimates (Exhibit 9). Lost supply coincided with a spike in heating demand, which helped rapidly drain inventories over a two-week period. Since then, supply has rebounded, heating demand has slumped, and balances have rapidly loosened again. On the demand side, a lingering outage at Freeport LNG has led to an estimated 25Bcf of lost feedgas demand. With the train

expected down for at least another week, another 4-5Bcf of consumption from the LNG sector (Exhibit 10).

Exhibit 9: Cumulative L-48 natural gas supply lost due to freeze-offs

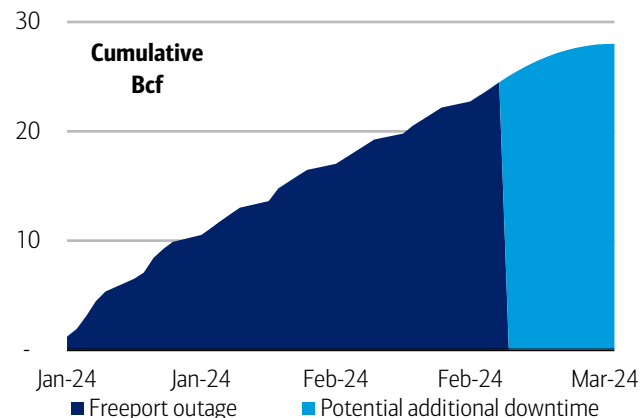
Freeze-offs in Texas, Oklahoma, and the Bakken resulted in roughly 74Bcf of lost gas supply so far this winter



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Exhibit 10: Cumulative LNG feedgas demand lost from Freeport outage

A lingering outage at Freeport LNG stemming from the cold blast led to an estimated 25Bcf of lost feedgas demand



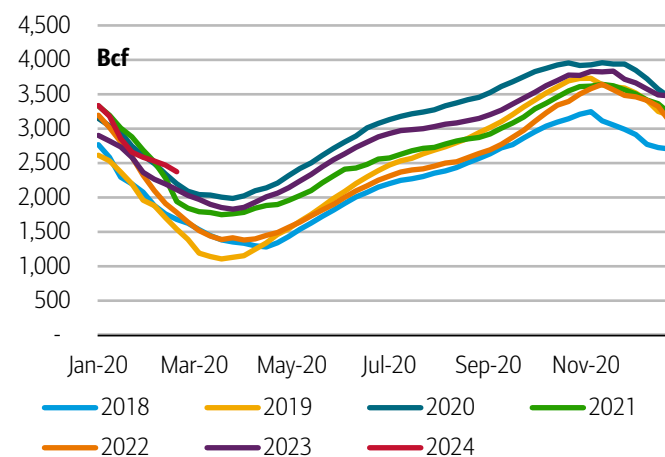
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...with Inventories soaring to ~500Bcf above the five-year average

US natural gas inventories have declined ~1.4Tcf since the start of winter and now sit at 2.37Tcf (Exhibit 11), the highest seasonal level since 2016, when an even warmer winter kept inventories propped up near 2.58Tcf. January's cold spell took inventories from nearly 400Bcf above the five year average to just 130Bcf higher (Exhibit 12), but a quick production rebound and flagging demand has pushed storage to nearly 500Bcf above the five year average since then, setting the market up for very soft pricing heading into shoulder season.

Exhibit 11: US natural gas working storage

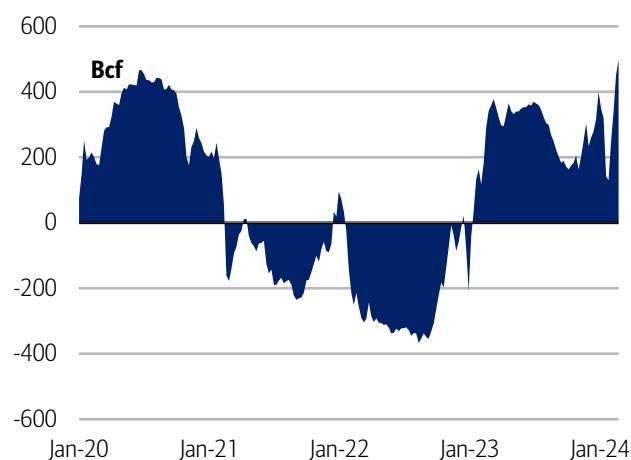
US natural gas inventories have declined ~1.4Tcf since the start of winter and now sit at 2.37Tcf, the highest seasonal level since 2016



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Exhibit 12: US natural gas working inventories vs five-year average levels

January's cold spell caused inventories to dip versus the five-year average, but a quick supply rebound and warmer weather caused the surplus to soar again



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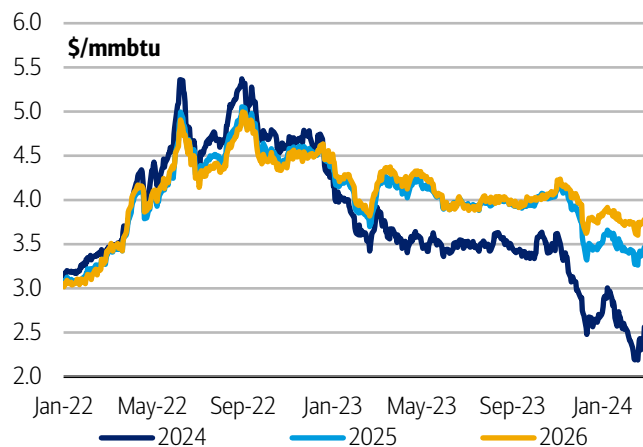
Now, nearby gas prices are below new well breakeven economics for E&Ps...

The Henry Hub forward curve has softened substantially in the past two years, but most of the work has been at the front end. The Cal24 strip price fell from a November 2023 high of roughly \$3.60/mmbtu to a low of less than \$2.20 in February and has since settled in above \$2.50/mmbtu (Exhibit 13). Meanwhile, Cal25 and Cal26 prices have been

better supported, trading near \$3.50 and \$3.75. For producers looking to turn inline wells this year, the current strip is unlikely to give them anywhere close to the returns they sought when those wells were first spud. In fact, at a strip price of about \$2.60/mmbtu, many marginal wells would not earn a positive return at all, especially in higher cost basins like the Haynesville (Exhibit 14). This is why producers have started to announce that they are dialing back activity this year.

Exhibit 13: Henry Hub natural gas calendar strip prices

The Cal24 strip price fell from a November 2023 high of roughly \$3.60/mmbtu to just \$2.60/mmbtu recently

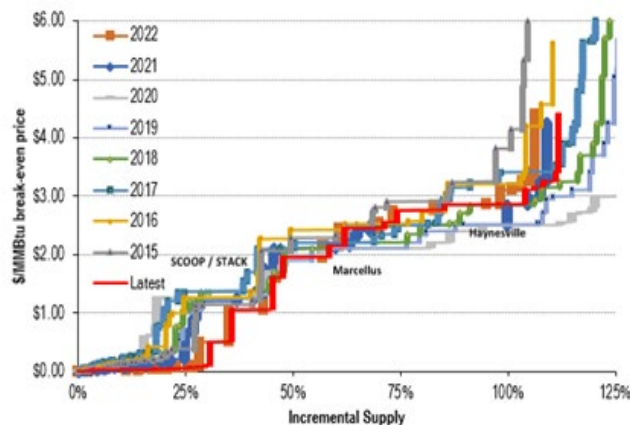


Source: Bloomberg

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Exhibit 14: The marginal cost of supply: ~\$2.75/mcf

Current 2024 pricing challenges the economics of many wells set to start up this year



Source: BofA Global Research

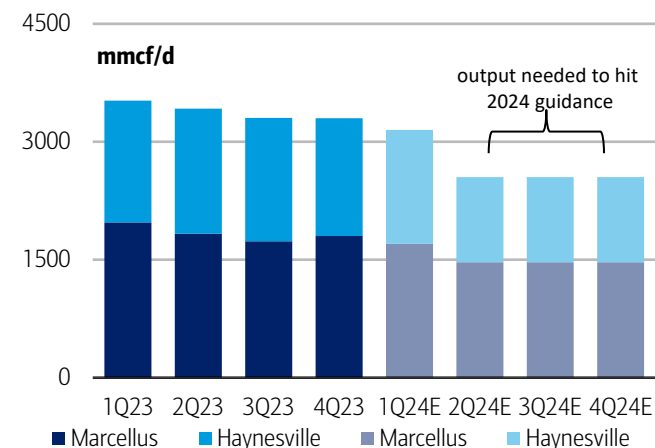
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...and some E&Ps have cut 2024 D&C plans and output is slowing

Unlike prior cycles, when US shale producers had higher reinvestment and leverage ratios, E&Ps are likely to respond differently during the current price downturn due to improved financial health and less aggressive cashflow reinvestment rates. Some producers have suggested they would hold production flat, while others have noted that they will cut drilling and completion activity, which will affect output 6-9 months down the road. Still others have suggested that they will curtail completion activity and postpone well start-ups, which has a more immediate impact on output (Exhibit 15). Additionally, while prices are above average well level opex costs, some producers may be willing to curtail output at certain sub-optimal assets at present. Pipeline scrapes suggest that after a rapid rebound post January, natural gas output has started to rollover, declining from a mid-February high of more than 106Bcf/d to a low of less than 102Bcf/d (Exhibit 16). Some of this decline may be explained by maintenance and also supply curbs, whether from holding off on new well starts or curbing existing output.

Exhibit 15: Chesapeake realized production and guidance

Some producers like Chesapeake have opted to defer well completions and starts, but others with higher debt burdens don't have that luxury

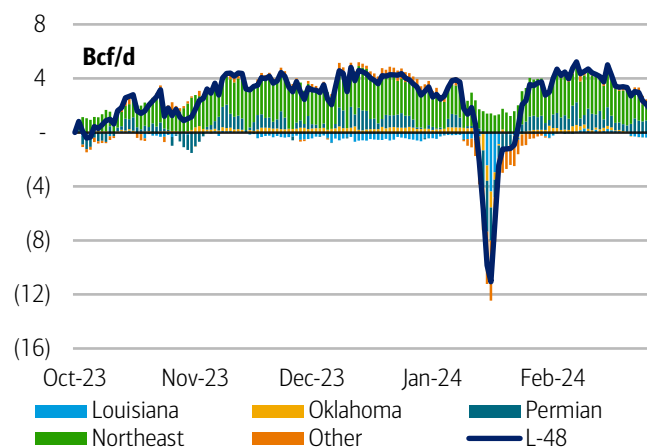


Source: Chesapeake, BofA Global Research

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Exhibit 16: Cumulative change in natural gas production by basin

Pipeline scrapes suggest output has started to rollover, declining from a mid-February high of more than 106Bcf/d to a low of less than 102Bcf/d



Source: Genscape

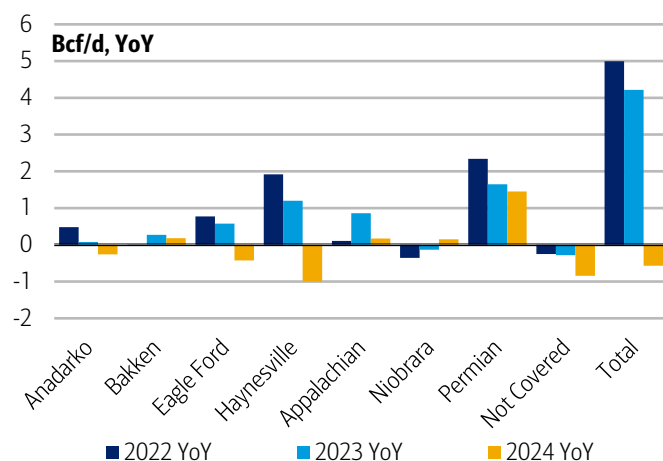
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US gas output to fall ~0.6Bcf/d YoY in 2024, remains price path dependent

In the current price environment, we see headwinds to natural gas output from the gas basins, while the outlook for oil basins looks set to rise. Low prices should curb activity in the Haynesville, leading to a YoY decline in output of roughly 1Bcf/d (Exhibit 17). Meanwhile, output in the Northeast is nearly flat. Across both basins, we see low nearby prices causing delays to well start-ups leading to a decline in output into 2H24 before staging a small recovery into 2025 (Exhibit 18). Amongst the oil basins, we expect output to decline in the Eagle Ford as producers either redirect capital away from the basin or towards oilier acreage there. Meanwhile, we see Permian output rising close to 2Bcf/d YoY as new gas gathering, processing, and takeaway capacity put output higher there. We expect gas production to decline by roughly 0.6Bcf/d in 2024, driven by the Haynesville.

Exhibit 17: US L-48 natural gas production growth

We expect gas production to decline by roughly 550mmcf/d in 2024, driven by the Haynesville

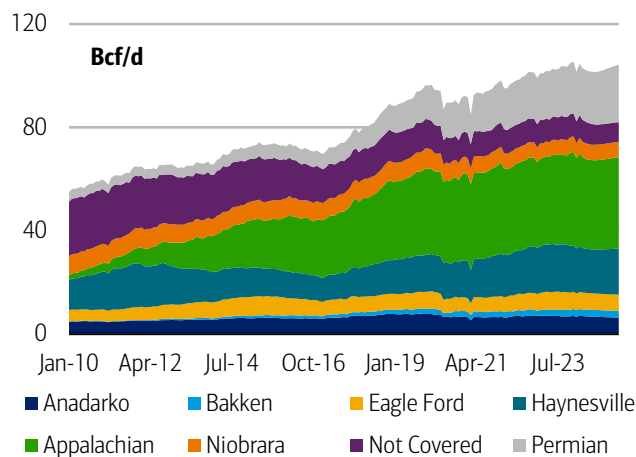


Source: US L-48 natural gas production growth

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Exhibit 18: US L-48 natural gas production

Output should trough through 3Q before starting to ramp up ahead of higher winter pricing



Source: Genscape, EIA, BofA Global Research estimates

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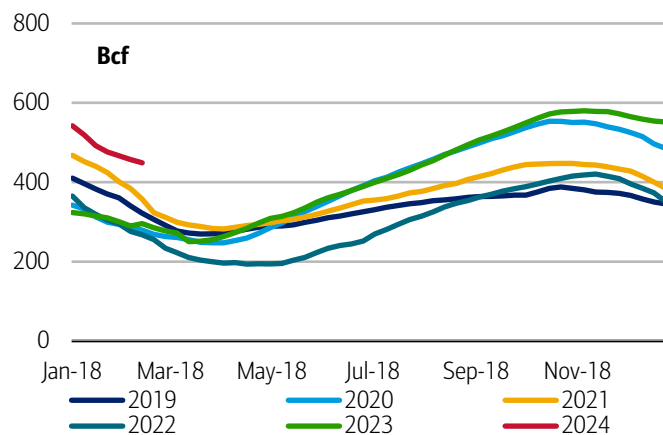
Canada imports should remain high until LNG Canada starts up

North of the border, drilling activity in Canada remains robust, tracking in-line with year-ago levels as producers there shrug off dismal AECO prices and focus on increased demand from LNG Canada later this year. In the immediate term, strong output has

pushed inventories to exceptionally high seasonal levels (Exhibit 19), which should lead to steady stronger gas exports to the US (Exhibit 20).

Exhibit 19: Western Canada gas storage

Strong output and mild weather pushed Western Canadian inventories to exceptionally high seasonal levels...

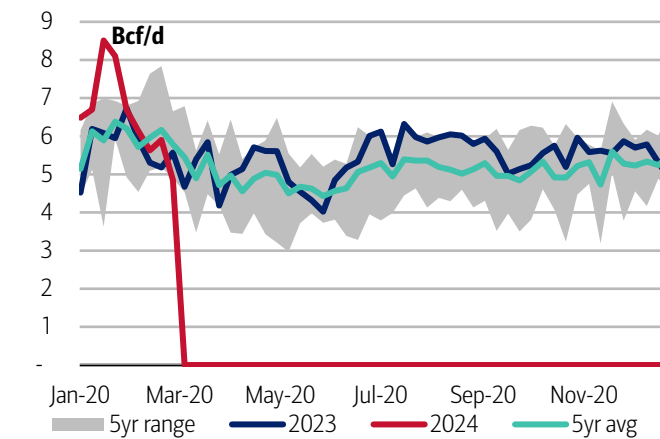


Source: Platts

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Exhibit 20: Canada gas exports to the US

...which should support stronger gas exports to the US this year



Source: Bloomberg

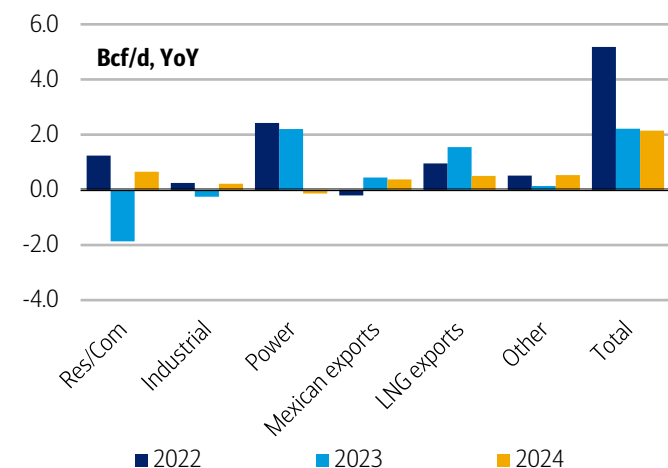
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Diversified strength in demand, with consumption up 2.1Bcf/d YoY

US natural gas demand growth should continue this year, albeit at a slightly slower pace than in 2023 (Exhibit 21). We see demand rising 2.1Bcf/d driven by a recovery in residential, commercial, and industrial demand, along with steady growth in exports to Mexico and via LNG. We continue to expect strong natural gas power burns and think power sector consumption will be nearly flat with 2023 levels, despite high renewable capacity growth. In total, US L-48 natural gas demand growth should rise from 106.7bcb/d to 108.9Bcb/d this year (Exhibit 22).

Exhibit 21: US natural gas demand growth by sector

We see demand rising 2.1Bcf/d, driven by growth across most sectors, save for power generation

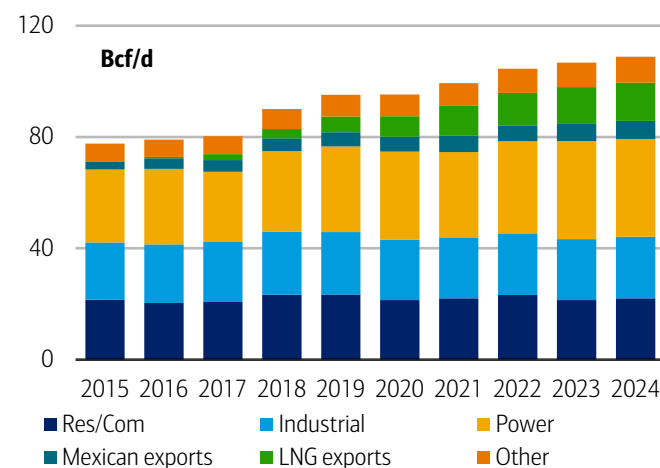


Source: EIA, Genscape, BofA Global Research estimates

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Exhibit 22: US natural gas demand by sector

US L-48 natural gas demand growth should rise from 106.7bcb/d to 108.9Bcb/d this year



Source: EIA, Genscape, BofA Global Research estimates

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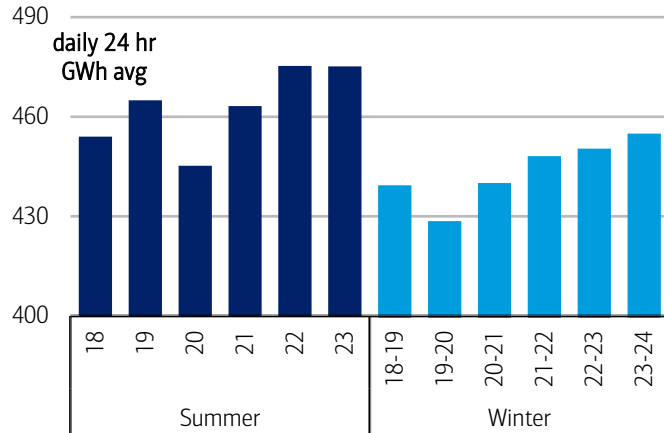
In the power stack, we see significant renewables capacity growth...

After several years of drifting sideways within a range, US net generation appears to have started to move higher in the past two years (Exhibit 23). The buildout of data centers and electrification of the vehicle fleet are likely two drivers behind this trend. Winter-to-date generation has also stepped higher YoY despite weather being warmer,

suggesting these dynamics may have overshadowed traditional electric heating related power demand. 2024 should bring higher nuclear generation on lower maintenance and the start of the 1.1GW Vogtle Unit 4 generator. We also expect record solar capacity additions to push total wind and solar adds to roughly 38GW (Exhibit 24).

Exhibit 23: Lower 48 net generation by season and year

After several years of drifting sideways within a range, US net generation appears to have started to move higher in the past two years

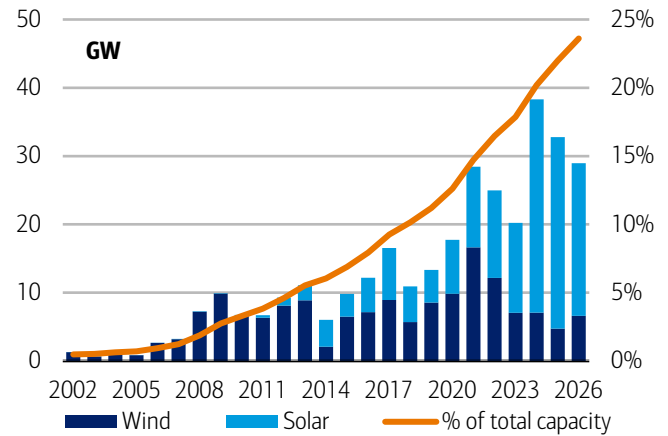


Source: Bloomberg

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Exhibit 24: US renewable capacity additions

Soaring solar installations should push total renewable capacity additions to roughly 38GW this year



Source: EIA, BofA Global Research

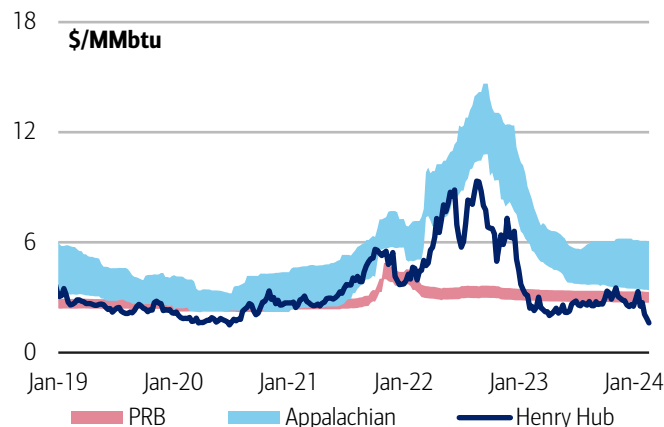
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...but load growth and coal plant retirements work in gas' favor

Soaring renewable power capacity presents a risk for natural gas power burns this year. Fortunately, expectations for load growth and more coal-to-gas switching should help assuage concerns. Indeed, the collapse in prices makes natural gas a more competitive feedstock versus coal in the power stack (Exhibit 25), which should lead to higher gas generation as a % of total thermal power. Steady coal retirements and mixed performance of intermittent power sources has kept gas power burns on an upward trajectory in the past two years, with early data suggesting burns could still improve further this year versus weather (Exhibit 26).

Exhibit 25: Coal to gas switching windows

The collapse in prices makes natural gas a more competitive feedstock versus coal in the power stack

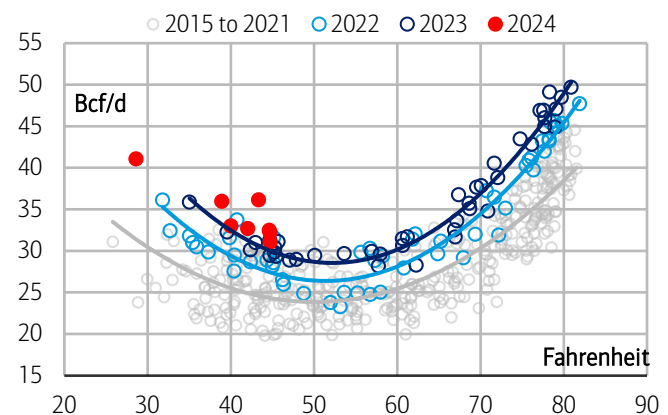


Source: Bloomberg, Platts, EIA, BofA Global Research estimates

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Exhibit 26: Weekly average powerburn versus Lower 48 temperatures

Steady coal retirements and mixed performance of intermittent power sources kept gas power burns on an upward trajectory in the past two years



Source: Bloomberg, BofA Global Research

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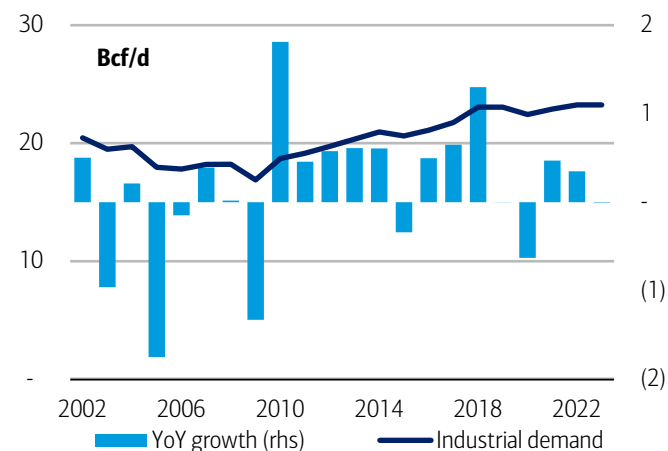
Industrial gas use could benefit from a manufacturing recovery

One area that experienced much slower growth during the pandemic was industrial gas demand. After collapsing in 2020, industrial consumption slowly recovered and in 2022 finally exceeded 2019 levels (Exhibit 27). Sluggish manufacturing activity is likely to

blame for the slowdown in industrial demand growth during 2022-23, but manufacturing PMIs appear to have bottomed, and some indicators point to the early stages of a return to growth. This could help breathe life into industrial gas demand this year. Meanwhile, exports to Mexico had a very strong 2H23, averaging 0.8Bcf/d higher YoY. Daily assessments for gas shipments to Mexico remain strong, with flows estimated at 500-600mmcf/d higher YoY (Exhibit 28), slightly ahead of the 400mmcf/d increase in Mexico exports that we forecast for the year.

Exhibit 27: US industrial gas demand

A rebound in manufacturing activity could boost industrial gas demand this year

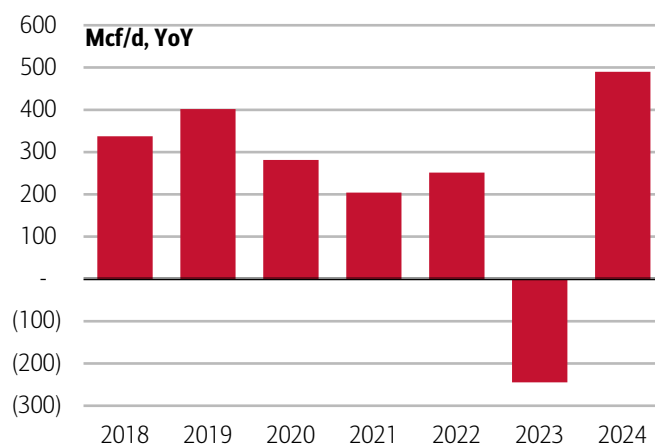


Source: Bloomberg

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Exhibit 28: YTD US exports to Mexico

Daily assessments for gas shipments to Mexico remain strong, with flows estimated at 500-600mmcf/d higher YoY



Source: Bloomberg

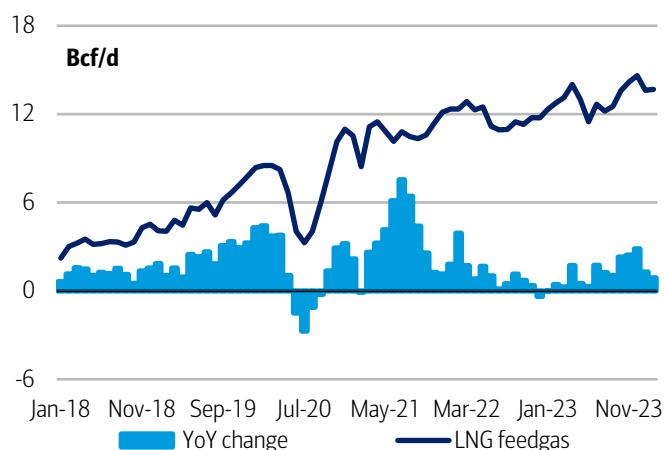
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New LNG export facilities to help lift US gas demand in late 2024

LNG feedgas demand continues to perform well, with shipments up an estimated 1.1Bcf/d YoY during January and February. This growth is likely attributable to the return of Freeport LNG, although feedgas usage there remains constrained due to an outage at one of the facility's 700mmcf/d trains (Exhibit 29). Three major projects are set to ramp up in the next 18 months, Plaquemines Ph 1 (13mn mt), Golden Pass (18mn mt), and Corpus Christi state 3 (10mn mt). We still assume Plaquemines will be commissioned in 2024, taking feedgas in 4Q, but we have pushed back our estimation for the start up at Golden Pass to 1Q25 (Exhibit 30). LNG exports should rise 500mmcf/d YoY in 2024 as a result of Plaquemines, among other factors.

Exhibit 29: LNG exports

LNG feedgas demand continues to perform well, with shipments up an estimated 1.1Bcf/d YoY during January and February

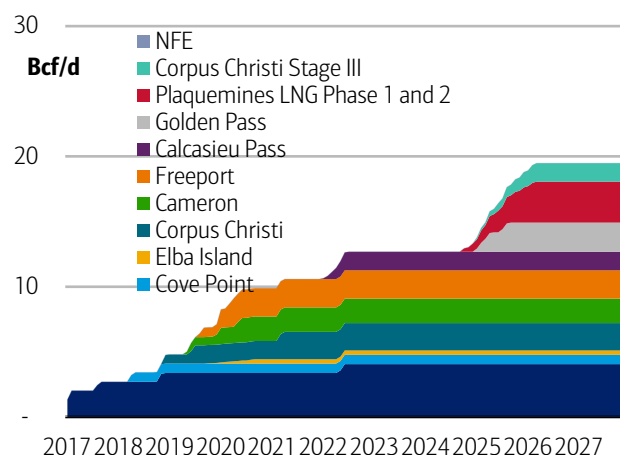


Source: Bloomberg

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Exhibit 30: LNG export capacity

LNG exports should rise 500mmcf/d YoY in 2024 as a result of the Plaquemines start up in 4Q, among other factors



Source: Bloomberg, Company reports, BofA Global Research estimates

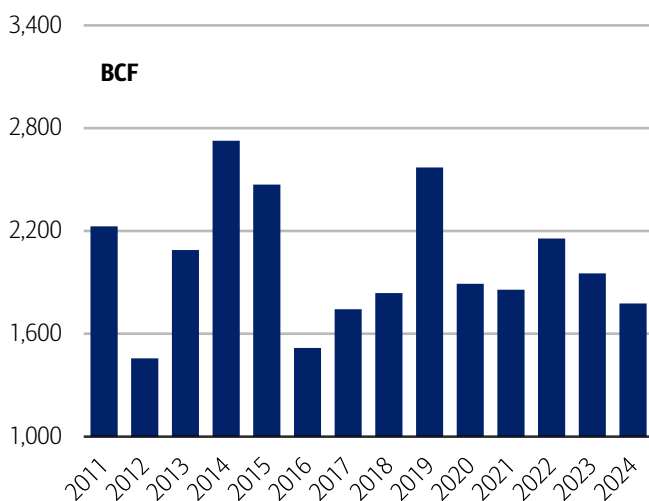
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We see storage at 2.3Tcf by March-end, 4.1Tcf by end of October...

As warm weather points to slower inventories draws in March, end of season storage should top 2.3Tcf, marking the highest end of season storage level since 2016, when storage hovered near 2.5Tcf. Persistent low prices should keep production in check during 1H24 and cause output to trough in late summer 2024. Meanwhile, demand should rise 2.1Bcf/d YoY and help contribute to below average injections during the April-October period, though a higher starting point also plays a role (Exhibit 31). In total, we see natural gas storage reaching 4.1Tcf by the end of October before a ramp up in LNG demand accelerates the drawdown of inventories into 2025, helping bring inventories down toward 1.7Tcf by end of March 2025 (Exhibit 32).

Exhibit 31: Historical and projected summer (Apr-Oct) injections

We see room for the storage surplus to narrow versus the five-year average and below average injections during the April-October period

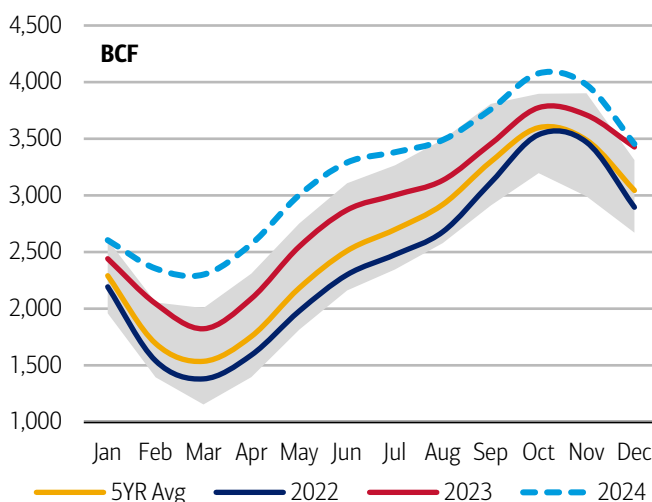


Source: Bloomberg, BofA Global Research

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Exhibit 32: US natural gas storage history and forecast

Gas storage should hit 4.1Tcf at the end of October before falling toward 1.7Tcf by end of March 2025



Source: Bloomberg, EIA, BofA Global Research estimates

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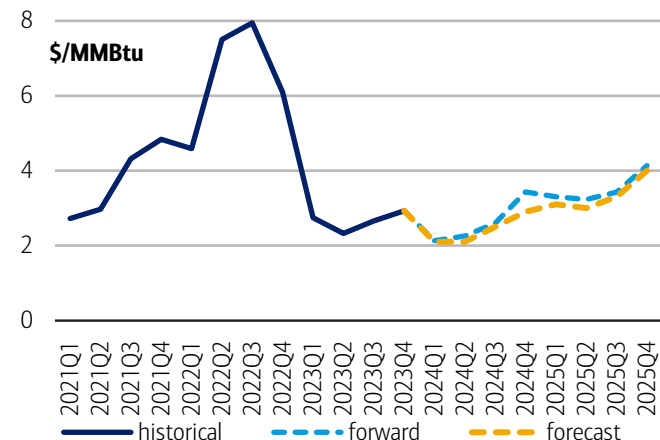
...and cut our '24 HH forecast to \$2.40/mmbtu and see \$3.35/mmbtu in '25

We are bearish versus the forward curve in 2024 and see prices averaging \$2.40, or \$0.20/mmbtu below the forward curve (Exhibit 33). Given the uncertainty around current production levels, we think prices will need to remain low through summer to keep

production pointed in a downward trajectory into the fall and expect the forward curve to roll down during this period. Current 4Q24 pricing looks rich and should attract more hedging and production growth ahead of winter. Fortunately, we see LNG demand ramping into winter, which should support higher prices into 2025 as balances tighten leaving end of March storage around 1.7Tcf. Yet, several factors could lead to substantially different outcomes for inventories. Power burns could repeat their strong performance seen in 2023, which would deplete storage by spring. Flat production near 103Bcf/d during 2024 would leave the market with limited room by October (Exhibit 34), and an accelerated pace of LNG startups could leave the market tighter by spring.

Exhibit 33: Henry Hub historical prices, forward curve, and forecast

We are bearish in 2024 and see Henry Hub prices averaging \$2.40, or ~\$0.20/MMBtu below the forward curve

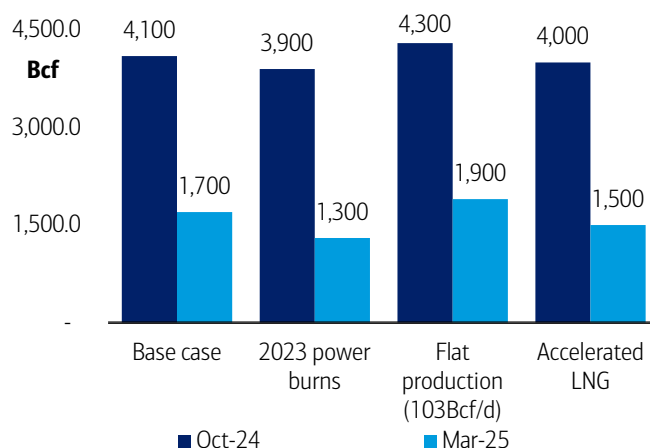


Source: Bloomberg, BofA Global Research estimates

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Exhibit 34: End of summer and end of winter storage under different scenarios

Several factors could lead to substantially different outcomes for end of season inventories



Source: EIA, BofA Global Research estimates

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Exhibit 35: US natural gas supply/demand balance

Monthly and seasonal balances for US Lower 48 natural gas

Month	Dry production	Canadian imports	LNG imports	Total Supply	Res/Com	Industrial	Power	Mexican exports	LNG exports	Plant fuel	Pipe loss	Vehicle	Total Demand	Ending storage
Nov-21	97.4	5.2	0.1	102.6	27.1	23.3	28.9	5.5	11.2	5.3	3.2	0.1	104.7	3,505
Dec-21	98.1	4.6	0.1	102.8	34.3	23.8	28.3	5.4	12.2	5.3	3.6	0.1	113.0	3,185
Jan-22	95.2	6.7	0.2	102.2	48.5	25.3	30.9	5.7	12.5	5.1	4.3	0.2	132.6	2,193
Feb-22	95.0	6.4	0.2	101.5	44.7	24.7	29.0	5.5	12.4	5.1	4.1	0.2	125.7	1,541
Mar-22	96.7	4.9	0.1	101.6	31.3	23.2	25.1	5.5	12.9	5.2	3.3	0.2	106.6	1,381
Apr-22	97.4	5.5	0.0	102.9	21.9	22.3	24.9	5.9	12.1	5.2	2.9	0.2	95.3	1,591
May-22	98.2	4.9	0.0	103.1	12.3	20.8	29.8	6.0	12.5	5.2	2.6	0.2	89.4	1,979
Jun-22	98.5	5.3	0.0	103.8	9.0	20.7	38.2	6.1	11.0	5.2	2.8	0.2	93.2	2,300
Jul-22	99.5	5.9	0.1	105.5	8.2	20.4	45.1	6.1	10.7	5.3	3.1	0.2	98.9	2,478
Aug-22	100.0	5.1	0.1	105.2	7.8	20.7	44.3	5.9	10.7	5.3	3.0	0.2	97.9	2,680
Sep-22	101.5	5.7	0.0	107.2	8.7	20.6	37.3	5.6	10.9	5.4	2.8	0.2	91.5	3,114
Oct-22	101.3	5.4	0.0	106.7	14.9	21.0	30.6	5.5	11.1	5.3	2.8	0.2	91.4	3,537
Nov-22	101.3	5.2	0.0	106.5	28.7	23.0	30.0	5.4	11.3	5.3	3.4	0.2	107.2	3,470
Dec-22	99.2	6.2	0.1	105.4	42.6	23.1	32.0	5.1	12.2	5.2	4.1	0.2	124.4	2,896
Jan-23	100.9	5.4	0.1	106.4	40.9	23.3	31.1	5.4	12.2	5.3	4.0	0.1	122.3	2,441
Feb-23	101.0	5.1	0.1	106.2	39.3	23.8	31.0	5.5	13.1	5.3	3.9	0.1	122.0	2,045
Mar-23	101.9	4.6	0.0	106.5	33.4	22.7	30.0	5.7	13.3	5.3	3.6	0.1	114.2	1,823
Apr-23	101.7	4.8	0.0	106.5	19.6	21.8	28.9	5.6	14.1	5.3	2.9	0.1	98.4	2,090
May-23	102.6	4.4	0.1	107.1	12.2	20.3	32.1	6.2	13.4	5.4	2.7	0.1	92.3	2,548
Jun-23	102.4	5.2	0.0	107.6	9.2	20.2	39.1	6.8	12.4	5.4	2.9	0.1	96.1	2,872
Jul-23	102.5	5.7	0.0	108.3	8.2	20.0	47.3	6.7	12.8	5.4	3.2	0.1	103.6	3,003
Aug-23	103.7	5.7	0.0	109.5	8.0	20.6	47.1	6.9	12.9	5.4	3.2	0.1	104.2	3,134
Sep-23	103.6	5.1	0.0	108.7	8.6	20.6	39.6	6.7	13.0	5.4	2.9	0.1	97.0	3,455
Oct-23	103.4	5.3	0.0	108.7	14.5	21.1	32.7	6.5	13.9	5.4	2.9	0.1	97.1	3,775
Nov-23	105.0	5.4	0.0	110.4	27.9	23.2	32.1	6.0	14.2	5.5	3.5	0.1	112.5	3,710
Dec-23	105.5	8.9	0.1	114.4	34.4	25.3	32.6	5.6	13.6	5.5	3.8	0.1	121.1	3,428
Jan-24	101.5	6.9	0.3	108.7	48.4	24.9	37.2	6.1	13.2	5.7	4.6	0.2	140.3	2,605
Feb-24	104.7	5.2	0.2	110.0	36.8	23.5	34.4	5.9	13.3	5.8	4.0	0.2	124.0	2,355
Mar-24	102.9	5.8	0.1	108.8	29.6	22.6	28.4	6.0	14.3	5.7	3.5	0.2	110.5	2,302
Apr-24	102.2	5.7	0.0	108.0	20.2	22.1	27.6	6.2	14.0	5.7	3.1	0.2	99.0	2,571
May-24	101.8	5.5	0.0	107.4	12.3	21.2	31.2	6.6	13.4	5.7	2.9	0.2	93.4	3,003
Jun-24	101.5	5.8	0.0	107.4	9.1	20.9	39.1	7.0	12.7	5.7	3.1	0.2	97.8	3,291
Jul-24	101.5	5.8	0.1	107.4	8.3	20.5	46.7	7.1	12.7	5.7	3.3	0.2	104.5	3,381
Aug-24	101.5	5.7	0.1	107.3	8.0	20.7	46.0	7.1	12.8	5.7	3.3	0.2	103.8	3,490
Sep-24	101.8	5.5	0.0	107.3	9.0	20.7	38.7	6.9	14.1	5.7	3.1	0.2	98.4	3,760
Oct-24	102.2	5.9	0.0	108.1	14.5	21.4	32.2	6.6	14.3	5.7	3.1	0.2	97.9	4,078
Nov-24	102.7	5.2	0.1	108.0	28.8	23.3	28.7	6.4	14.7	5.7	3.5	0.2	111.4	3,976
Dec-24	103.1	5.6	0.2	108.8	38.9	23.6	31.7	6.2	15.3	5.8	4.0	0.2	125.6	3,455
Jan-25	103.5	5.6	0.2	109.3	47.1	23.7	34.9	6.6	15.8	5.8	4.4	0.2	138.4	2,553
Feb-25	103.9	5.1	0.2	109.2	42.1	22.9	33.4	6.6	16.6	5.8	4.2	0.2	131.7	1,922
Mar-25	104.2	4.5	0.1	108.8	32.0	22.1	27.9	6.8	16.5	5.8	3.6	0.2	114.9	1,733
Summer (April - October)														
Summer 21	94.1	4.8	0.0	99.0	11.3	20.8	33.0	6.2	10.7	5.1	2.6	0.1	89.8	3,635
Summer 22	99.5	5.4	0.0	104.9	11.8	20.9	35.7	5.9	11.3	5.3	2.8	0.2	94.0	3,537
Summer 23	102.9	5.2	0.0	108.1	11.4	20.7	38.1	6.5	13.2	5.4	2.9	0.1	98.4	3,775
Summer 24	101.8	5.7	0.0	107.6	11.6	21.1	37.4	6.8	13.4	5.7	3.1	0.2	99.2	4,078
Winter (November - March)														
Winter 20-21	90.6	5.5	0.1	96.2	37.6	23.4	26.7	5.5	10.4	4.9	3.3	0.1	111.9	1,778
Winter 21-22	96.5	5.6	0.1	102.1	37.2	24.1	28.4	5.5	12.3	5.2	3.7	0.2	116.5	1,381
Winter 22-23	100.8	5.3	0.1	106.2	37.0	23.2	30.8	5.4	12.4	5.3	3.8	0.2	118.0	1,823
Winter 23-24	103.9	6.4	0.1	110.5	35.4	23.9	33.0	5.9	13.8	5.7	3.9	0.2	121.7	2,302
Winter 24-25	103.5	5.2	0.1	108.8	37.8	23.1	31.3	6.5	15.8	5.8	3.9	0.2	124.4	1,733
Annual														
Cal 2021	93.6	5.1	0.1	98.8	22.0	21.9	30.7	5.9	10.7	5.1	2.9	0.1	99.3	3,185
Cal 2022	98.6	5.6	0.1	104.3	23.2	22.2	33.1	5.7	11.7	5.2	3.3	0.2	104.5	2,896
Cal 2023	102.9	5.5	0.0	108.4	21.3	21.9	35.3	6.1	13.2	5.4	3.3	0.1	106.7	3,428
Cal 2024	102.3	5.7	0.1	108.1	22.0	22.1	35.2	6.5	13.7	5.7	3.5	0.2	108.9	3,455

Source: EIA, Genscape, Platts, Rystad Energy, BofA Global Research estimates

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Exhibit 36: Acronym list

Acronym	Definition
\$/bbl	dollars per barrel
2H	Second half of the year
avg	average
b/d	barrels per day
bbl	barrel
bn	billion
boe	barrel of oil equivalent
Btu	British thermal unit
CB	central bank
CPI	consumer price index
D&C	Drilling and completion
DM	developed market
E&P	Exploration and production
ECB	European Central Bank
EM	European market
EM	emerging market
EUAs	European Union Allowances
EUR	Euro
EV	electric vehicle
FID	Final Investment Decision
FPSO	Floating production storage and offloading
GoM	Gulf of Mexico
GWh	gigawatt hours
Hz	Horizonntal
IEA	International Energy Agency
IMO	International Maritime Organization
JKM	Japan Korea Marker
JPY	Japanese Yen
LNG	liquified natural gas
MA	moving average
mcm	million cubic meters
ME	Middle East
Mfg	manufacturing
MMBtu	million British thermal units
mn	million
mt	metric ton
MWh	Megawatt hours
NBS	National Bureau of Statistics of China
NEV	New Electric Vehicle
ngl	natural gas liquids
NWE	North west Europe
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
OPEC+	OPEC countries plus ten additional countries
PMI	purchasing managers index
rhs	righthand side
SPR	Strategic Petroleum Reserve
TMX	Trans Mountain Expansion
TTF	Dutch TTF
TWh	terawatt hours
VLSFO	very low sulfur fuel oil
WCS	Western Canadian Select
WTI	West Texas Intermediate
YoY	year over year
yr	year

Source: BofA Global Research

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