



Longreach Energy Holdings LLC

FIRM INFORMATION

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1.0 Market and Portfolio Commentary

1.1 Macro Industry Commentary

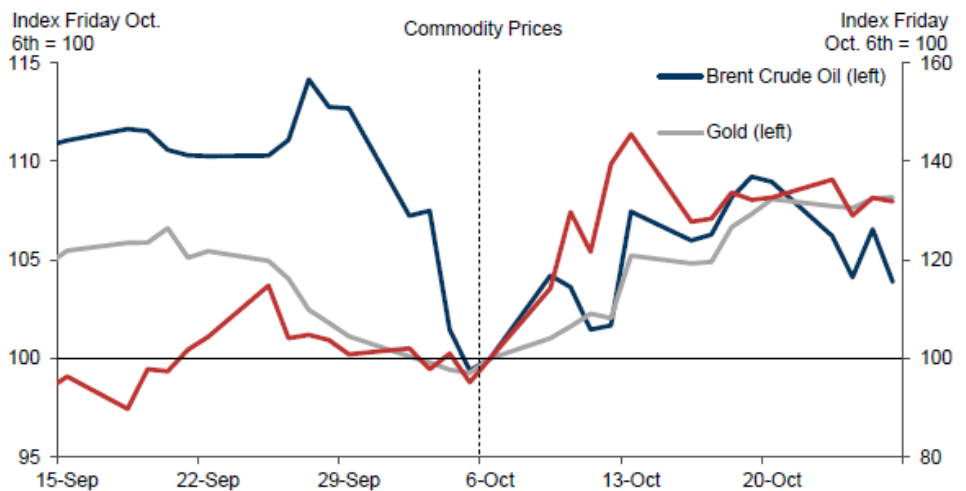
US Henry Hub prompt gas prices rose again in October, mainly driven by the approach of the winter heating season. The prompt was \$2.93/mmbtu at close on 29 September and finished at \$3.58/mmbtu at close on 31 October. Calendar 2023 also rose, beginning October at \$3.12/mmbtu and closing at \$3.58/mmbtu.

Oil prices fell. The prompt opened October at \$90.79/bbl and closed the month at \$81.02/bbl. Calendar 2023 started the month at \$88.88/bbl and closed at \$80.56/bbl.

The conflict in the Middle East between Israel and Hamas has currently not affected oil supply and the fall in oil prices over October suggests that the market does not expect any future disruption. There has been a modest reduction in global gas supply with the shutdown on the Tamar natural gas field in Israel lowering October global LNG exports by 1.2%. This disruption underlines the reduced ability of the gas market to respond to adverse shocks in its current supply-constrained state, following the 2022 loss of Russian supply. This explains why European natural gas prices have risen by 32% since the attacks on Israel, significantly more than Brent crude prices (4%) and gold (8%, Figure 1).

Figure 1: European Gas, Brent Crude and Gold Prices after attacks on Israel) (Source: ICE, Bloomberg, vis GS)

Exhibit 1: Brent Oil and TTF European Natural Gas Prices Have Increased by 4% and 32%, Respectively, Since the Attacks in Israel



Source: ICE, Bloomberg, Goldman Sachs Global Investment Research

The US Energy Information Administration (EIA) has released its International Energy Outlook 2023. This is an analysis of global energy supply and demand. Figure 2 has the highlights.

Figure 2: International Energy Outlook Highlights (Source: EIA)

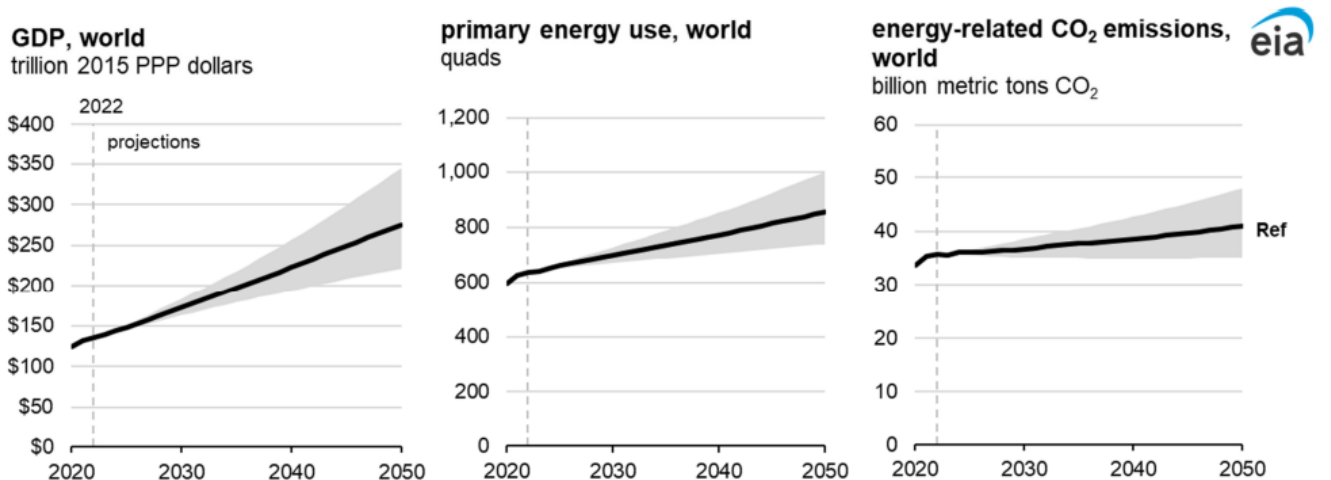
IEO2023 Highlights

- Increasing population and income offset the effects of declining energy and carbon intensity on emissions.
- The shift to renewables to meet growing electricity demand is driven by regional resources, technology costs, and policy.
- Energy security concerns hasten a transition from fossil fuels in some countries, although they drive increased fossil fuel consumption in others.

Historically, population growth has delivered matching growth in primary energy use. While energy and carbon intensity are both decreasing, upward pressure of more people living better lives will drive continued growth in primary energy use (Figures 3 and 4).

Figure 3: GDP, Primary Energy Use and Energy Related CO2 Emissions (Source: EIA)

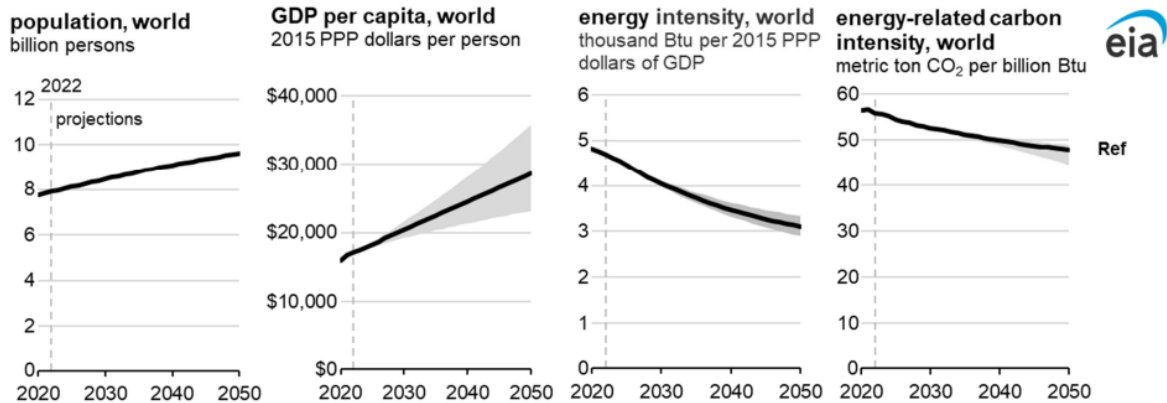
Across most cases, energy-related CO₂ emissions continue to rise through 2050 under current laws



Data source: U.S. Energy Information Administration, *International Energy Outlook 2023* (IEO2023)
 Note: Shaded regions represent maximum and minimum values for each projection year across the IEO2023 Reference case and side cases. Ref=Reference case; GDP=gross domestic product; quads=quadrillion British thermal units; PPP=purchasing power parity.

Figure 4: Population, GDP per capita, Energy and Carbon Intensity (Source: EIA)

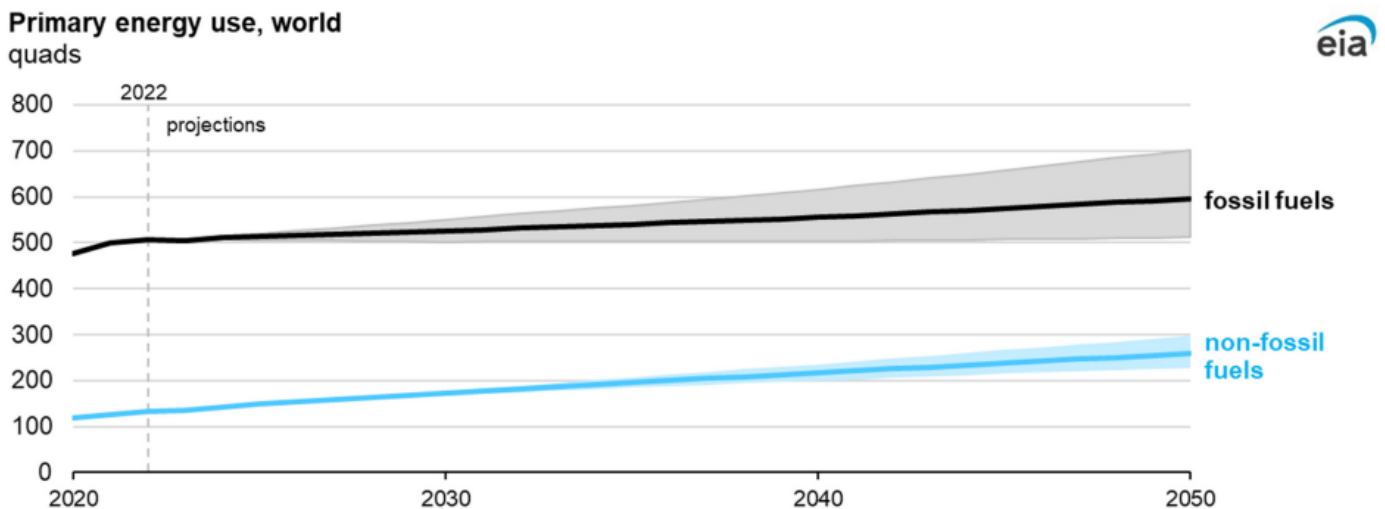
The upward pressures of population and GDP growth outweigh the downward pressures of energy and carbon intensity on emissions



Both fossil fuel and non-fossil fuel sources of energy are forecast to continue to grow from now until 2050 (Figure 5).

Figure 5: World Primary Energy Use (Source: EIA)

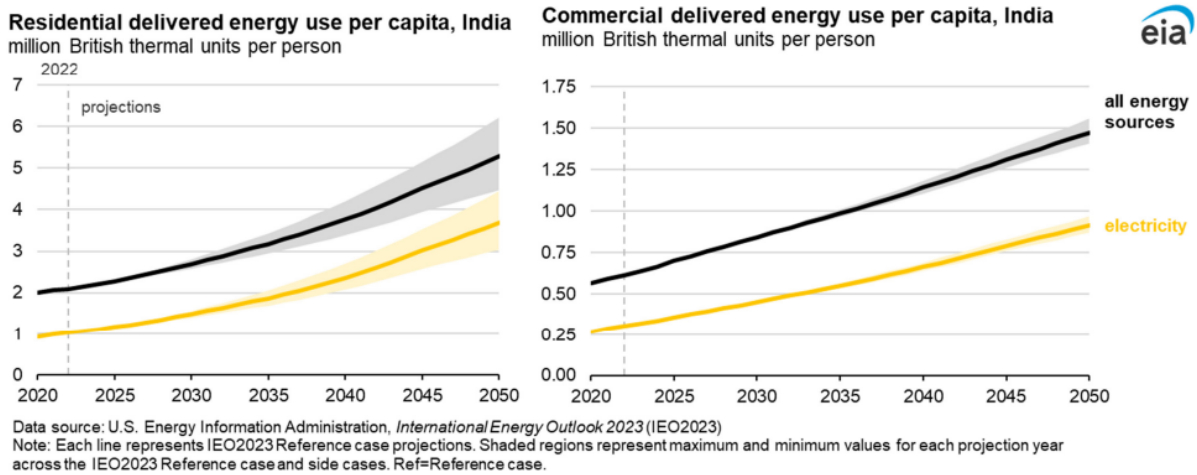
Increasing demand and current policies drive steady growth in fossil fuel energy—and faster growth in non-fossil fuel sources



Population and economic growth in India will drive a large increase in Indian energy demand. In homes, electricity use will almost triple (Figure 6).

Figure 6: Indian Residential and Commercial Energy Use (Source: EIA)

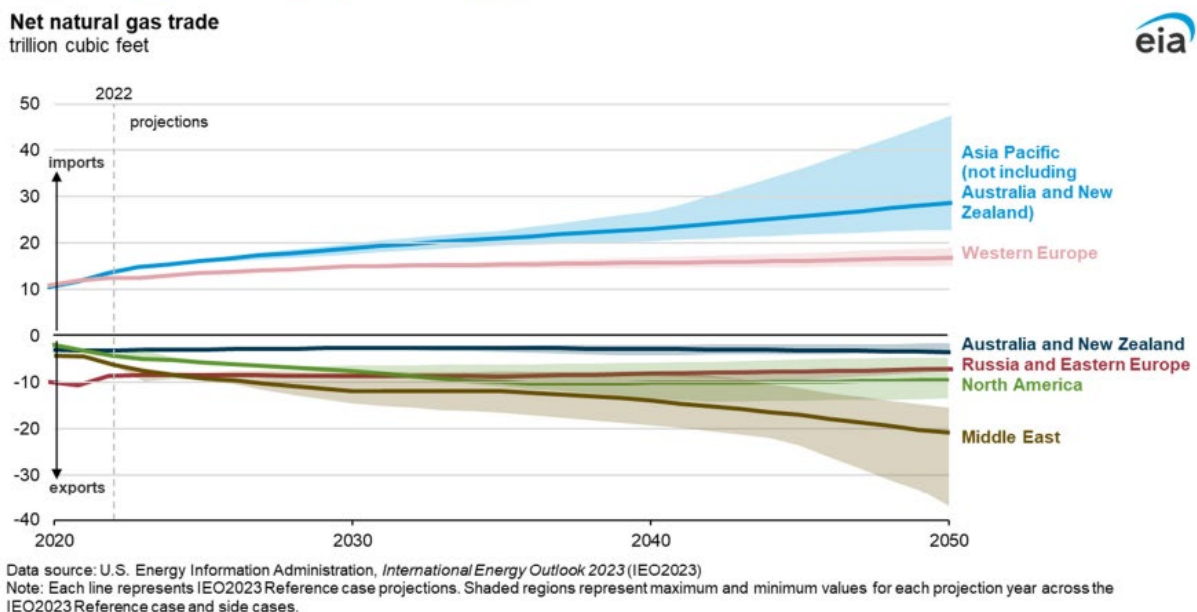
As India's economy expands, building electrification supports a rapidly expanding service sector and electricity use almost triples in homes




Asia and Europe will need to import more natural gas to meet growing demand. In the early years, the forecast LNG growth comes from the US, while in later years LNG export capacity growth is driven by the Middle East (Figure 7).

Figure 7: Net Natural Gas Trade (Source: EIA)

Asia and Europe import more natural gas to meet growing demand, mostly supplied by growing production from the Middle East



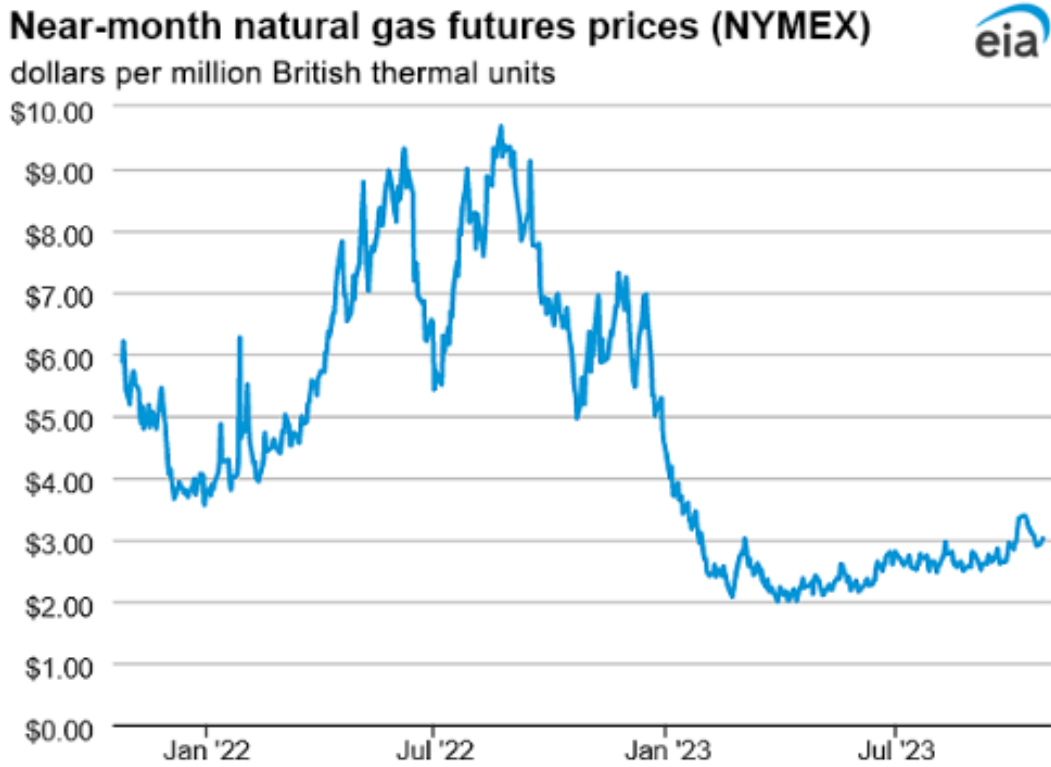
The latest Baker Hughes rig count data follows. In October US total land rigs continued to fall, decreasing by 2 from 596 to 594. Oil rigs fell by 1 from 497 to 496 while gas rigs remained at 118.

Baker Hughes rig count		Baker Hughes 			
Rotary Rig Count					
11/3/23					
Location	Week	+/-	Week Ago	+/-	Year Ago
Land	594	-6	600	-160	754
Inland Waters	3	2	1	1	2
Offshore	21	-3	24	7	14
United States Total	618	-7	625	-152	770
Gulf Of Mexico	19	-3	22	6	13
Canada	196	0	196	-13	209
North America	814	-7	821	-165	979
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago
Oil	496	-8	504	-117	613
Gas	118	1	117	-37	155
Miscellaneous	4	0	4	2	2
Directional	54	1	53	11	43
Horizontal	549	-9	558	-156	705
Vertical	15	1	14	-7	22

Gas Market

In October, prompt Henry Hub gas futures traded consistently above \$3.00/mmbtu (Figure 8).

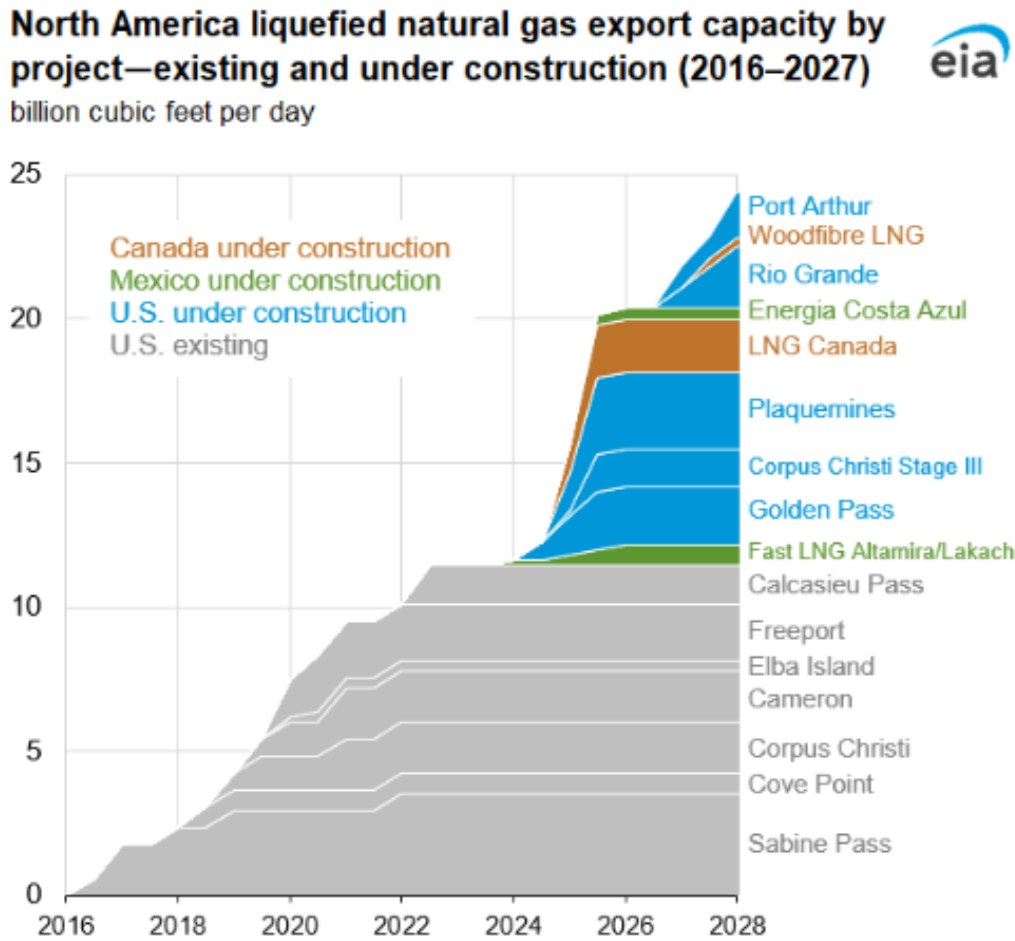
Figure 8: Near Month Henry Hub Futures (Source: EIA)



Data source: CME Group as compiled by Bloomberg, L.P.

By 2026, completion of LNG facilities currently under construction will see North American export capacity grow from its current average of 11.4bcfd to exceed 20bcfd. By 2028 total capacity will approach 25bcfd (Figure 9).

Figure 9: North American LNG Export Capacity by Project (Source: EIA)




Data source: U.S. Energy Information Administration, [Liquefaction Capacity File](#); trade press.

Note: LNG=liquefied natural gas. Export capacity shown is project's baseload capacity. Online dates of LNG export projects under construction are estimates based on trade press.

These facilities are mostly based in the Gulf of Mexico coast (Figure 10). Longreach Energy has focused its gas portfolio on Oklahoma and Texas, both regions with excellent transport links to provide unconstrained supply to LNG export facilities.

Figure 10: North American LNG Export Capacity by Project (Source: EIA)

North America liquefied natural gas export facilities—existing and under construction (2016–2027)

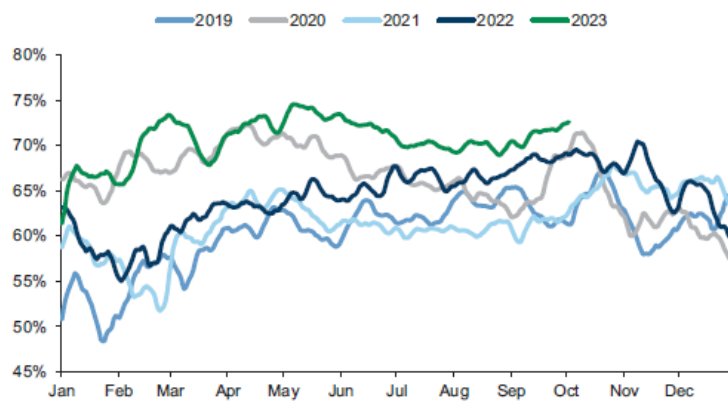



Data source: U.S. Energy Information Administration, *Liquefaction Capacity File*; trade press.

This year price-driven coal-to-gas switching has supported the use of gas for thermal electricity generation (Figure 11). Over \$3/mmbtu there is less incentive for thermal generators to burn gas rather than coal and accordingly we should expect lower gas demand for power if prices stay at current levels.

Figure 11: Gas Share of Thermal Generation, % (Source: EIA via GS)

Exhibit 13: Price-driven coal-to-gas switching has supported burns
Gas share in thermal generation, %



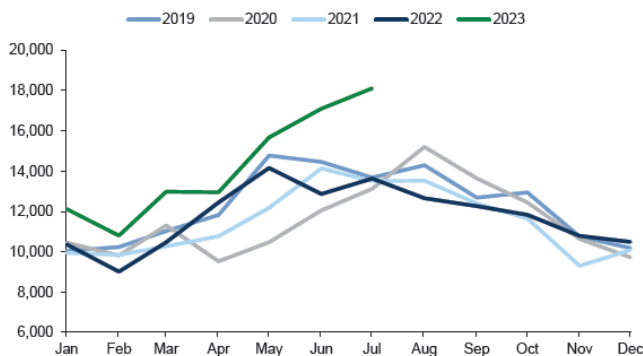
Source: EIA, Goldman Sachs Global Investment Research

Gas generation demand has also been strong from Mexico (LHS Figure 12). Mexican economic growth and lower domestic production will increase US pipeline gas exports (RHS Figure 12). The new Mexican LNG export facilities under construction will also be partially supplied by US gas.

Figure 12: Mexico Gas Generation, Gas Production Growth and Economic Activity Growth (Source: various, via GS)

Exhibit 9: Mexican imports have been supported by strong gas-for-power

Mexico gas generation, GWh



Source: SENER, Goldman Sachs Global Investment Research

Exhibit 10: We expect strong domestic economic activity and lower production growth to support gas exports to Mexico

Mexico domestic gas production growth (Bcf/d, left) and Economic Activity Index (% yoy, right)



Source: INEGI, Haver Analytics, Wood Mackenzie, Goldman Sachs Global Investment Research

The fall in US natural gas prices from average of \$6.45/mmbtu in 2022 to \$2.50/mmbtu, for the period 1 Jan to 20 Oct 2023 (Figure 13), has led to a 24% decline in the number of operating US natural gas rigs since the start of 2023 (Figure 14). When natural gas prices are low, producers often decrease their drilling activity, reducing the number of active drilling rigs deployed. Logistics and contractual commitments mean it generally takes four to six months for the reaction to take effect.

Figure 13: Weekly and Average Annual Henry Hub Spot Price (6 Jan 2017 – 20 Oct 2023, Source: EIA)

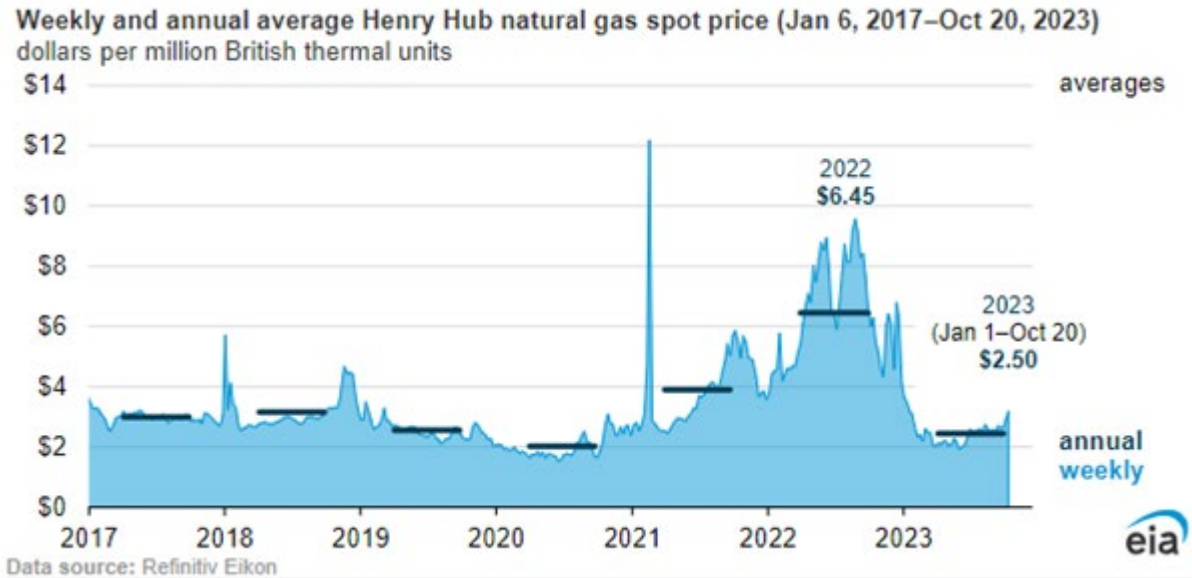


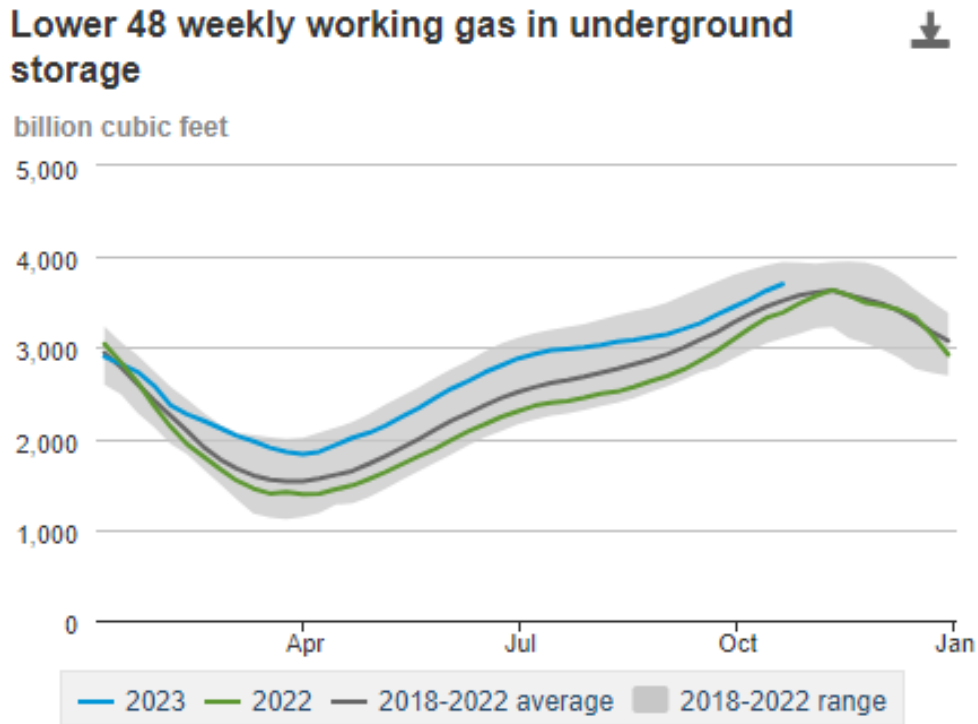
Figure 14: US Weekly Natural Gas Rig Count (6 Jan 2017 – 20 Oct 2023, Source: Baker Hughes, via EIA)

The number of operating U.S. natural gas rigs has declined 24% since start of 2023



Net injections into storage totalled 74bcf for the week ending 20 October, compared to the five-year (2018-2022) average net injections of 66bcf and last year's net injections of 61bcf during the same week. Working natural gas stocks now total 3,700bcf, which is 183bcf (5%) more than the five-year average and 313bcf (9%) more than last year at this time (Figure 15).

Figure 15: US Lower 48 Weekly Working Gas in Underground Storage (Source: EIA)

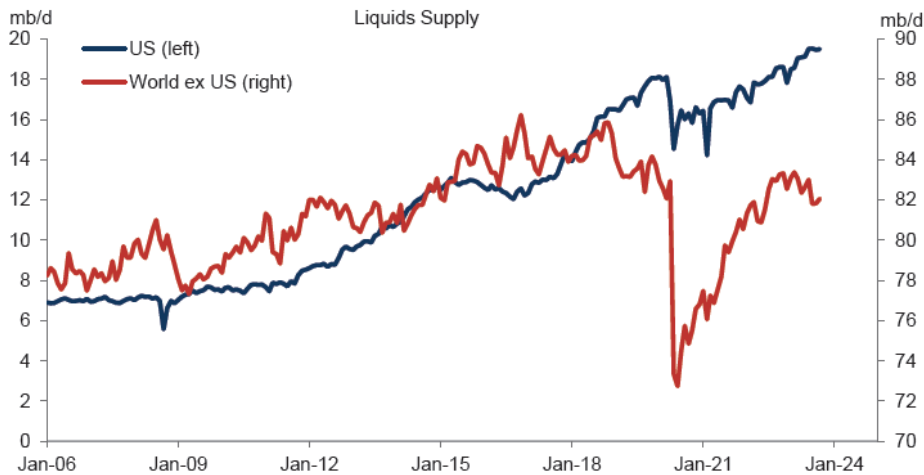


Oil Market

The US has driven all the growth in global oil supply, both over the past decade and over the past year (Figure 16).

Figure 16: Liquids Supply (Source: IEA, via GS)

Exhibit 1: The US Drives Growth in Global Oil Supply

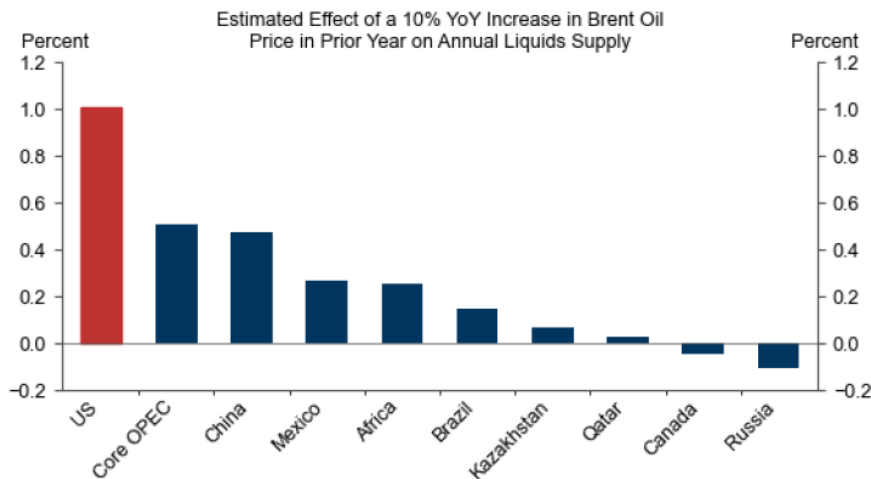


Source: IEA, Goldman Sachs Global Investment Research

The large number of US oil and gas operators together with their ability to rapidly drill wells and bring them onto production, means that oil supply is more elastic in the US (Figure 17). When margins are strong production increases rapidly, correspondingly when they are weak activity drops and production falls.

Figure 17: Estimate of Oil Supply Elasticity (Source: various, via GS)

Exhibit 5: Oil Supply Is More Price Elastic in the US



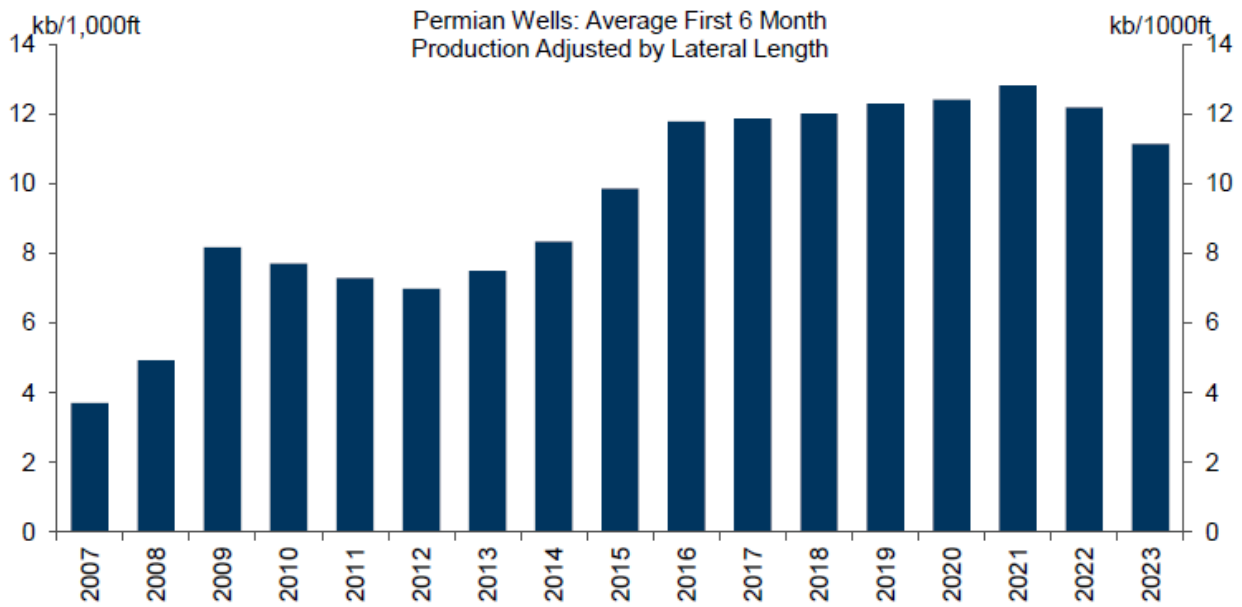
Core OPEC sums Saudi Arabia, the UAE, and Kuwait. We show the 10 largest producers excluding the Fragile Five (i.e. Iran, Iraq, Libya, Nigeria and Venezuela) where disruptions drive supply fluctuations. The sample is 2016Q1-2023Q3.

Source: IEA, ICE, Goldman Sachs Global Investment Research

The Permian Basin in West Texas is the region with the largest oil production in the US. While aggregate Permian production has continued to grow, in recent years underlying well productivity (the average production from a new well) has stopped rising (Figure 18). This means that future annual increases in total Permian oil production will require more wells to be drilled in each successive year than were drilled in the prior year. Year-on-year growth is now more difficult to achieve than it was when next year's well was simply better than last year's.

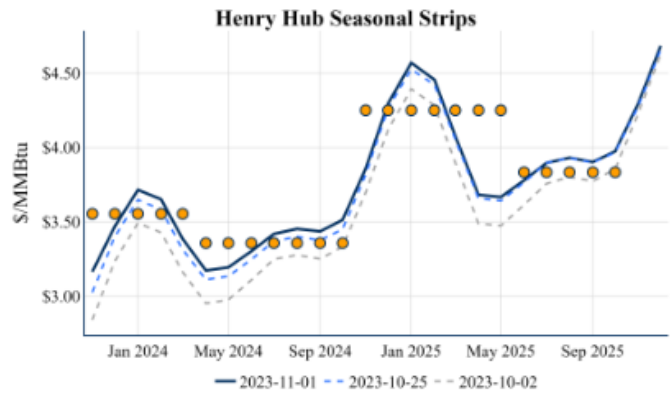
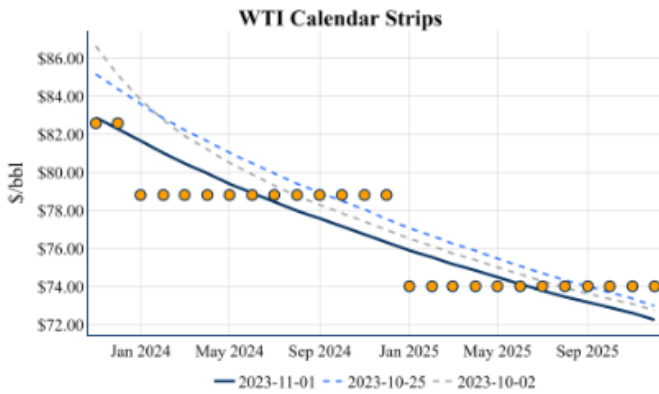
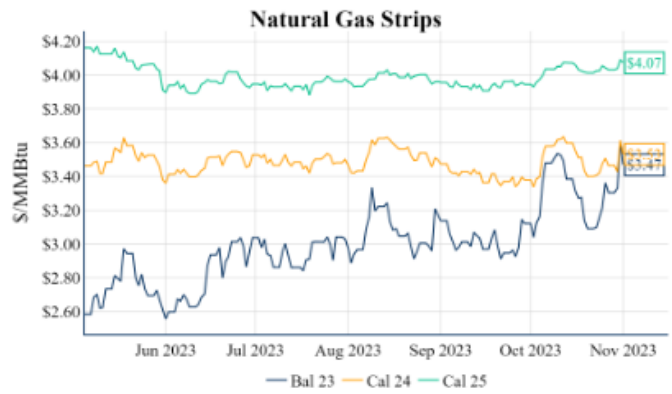
Figure 18: Permian Well Productivity by Year (Source: various, via GS)

Exhibit 7: The Underlying Permian Well Productivity Trend Has Stopped Rising



2023 estimates are preliminary.

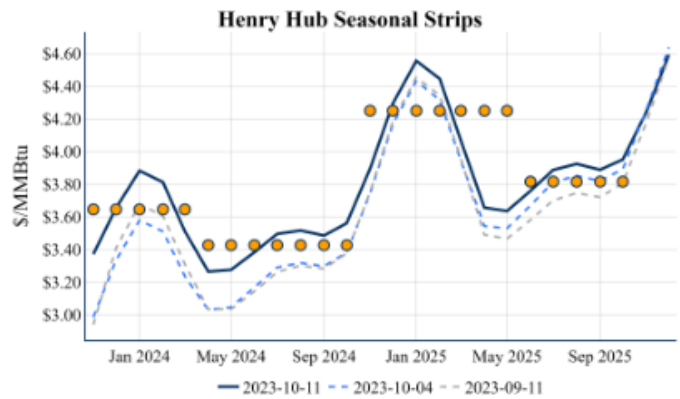
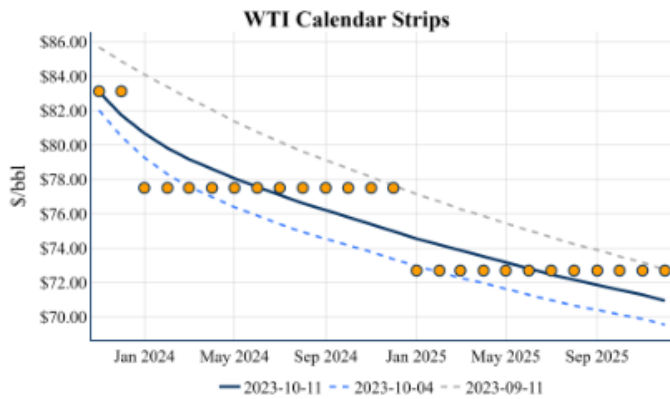
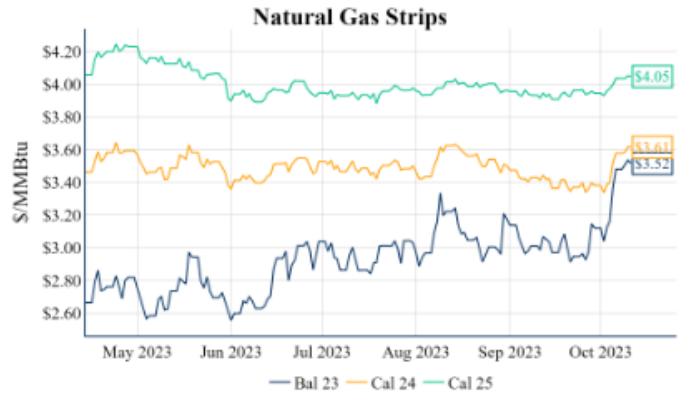
Source: Enverus, Goldman Sachs Global Investment Research

Gas and Oil Prices 1 November 2023


Swap Pricing	Bal 23	Cal 24	Cal 25	Cal 26
NYMEX WTI	\$82.61	\$78.81	\$74.02	\$70.58
ICE Brent	\$86.60	\$83.00	\$78.63	\$75.54
LLS	\$84.79	\$81.10	\$76.62	\$73.33
Mars	\$81.89	\$78.19	\$71.62	\$68.38
West TX Sour (WTS)	\$81.42	\$78.03	\$73.35	\$70.08

Swap Pricing	Month 1	Summer 25	Winter 23/24	Summer 24	Winter 24/25
Henry Hub Fixed	\$3.472	\$3.840	\$3.555	\$3.359	\$4.246
Eastern Gas South	-\$0.921	-\$1.196	-\$0.754	-\$1.091	-\$0.882
Waha	-\$0.504	-\$0.766	-\$0.212	-\$0.894	-\$0.336
TETCO M3	\$0.899	-\$1.016	\$1.982	-\$0.924	\$0.995
Houston Ship Channel	-\$0.273	-\$0.339	\$0.057	-\$0.355	-\$0.087
Columbia Gulf Mainline	-\$0.294	-\$0.257	-\$0.240	-\$0.288	-\$0.244
Panhandle East	\$0.032	-\$0.464	\$0.307	-\$0.458	\$0.113
NGPL MidCon	-\$0.004	-\$0.382	\$0.238	-\$0.367	\$0.068
SoCal	\$4.820	\$0.679	\$3.578	\$0.951	\$2.513
AECO	-\$1.205	-\$1.120	-\$1.242	-\$1.359	-\$1.281
Chicago City-Gates	\$0.307	-\$0.256	\$0.508	-\$0.230	\$0.326

Gas and Oil Prices 1 October 2023



Swap Pricing	Bal 23	Cal 24	Cal 25	Cal 26
NYMEX WTI	\$83.10	\$77.50	\$72.69	\$69.16
ICE Brent	\$85.81	\$81.47	\$77.25	\$74.09
LLS	\$85.32	\$79.94	\$75.29	\$71.91
Mars	\$81.60	\$76.52	\$70.29	\$66.96
West TX Sour (WTS)	\$82.64	\$76.84	\$72.21	\$68.51

Swap Pricing	Month 1	Summer 25	Winter 23/24	Summer 24	Winter 24/25
Henry Hub Fixed	\$3.372	\$3.817	\$3.649	\$3.428	\$4.247
Eastern Gas South	-\$1.281	-\$1.188	-\$0.855	-\$1.106	-\$0.879
Waha	-\$0.890	-\$0.738	-\$0.316	-\$0.831	-\$0.299
TETCO M3	-\$0.911	-\$1.007	\$1.255	-\$0.945	\$0.992
Houston Ship Channel	-\$0.474	-\$0.304	-\$0.046	-\$0.332	-\$0.043
Columbia Gulf Mainline	-\$0.470	-\$0.233	-\$0.257	-\$0.254	-\$0.236
Panhandle East	-\$0.456	-\$0.431	\$0.159	-\$0.416	\$0.117
NGPL MidCon	-\$0.411	-\$0.350	\$0.123	-\$0.335	\$0.071
SoCal	\$2.226	\$0.702	\$3.663	\$0.961	\$2.258
AECO	-\$1.245	-\$1.127	-\$1.247	-\$1.314	-\$1.288
Chicago City-Gates	-\$0.298	-\$0.218	\$0.348	-\$0.223	\$0.321

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