LONGREACH ENERGY

Monthly Report

March 2023

Longreach Energy Holdings LLC

FIRM INFORMATION

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1.0 Market and Portfolio Commentary

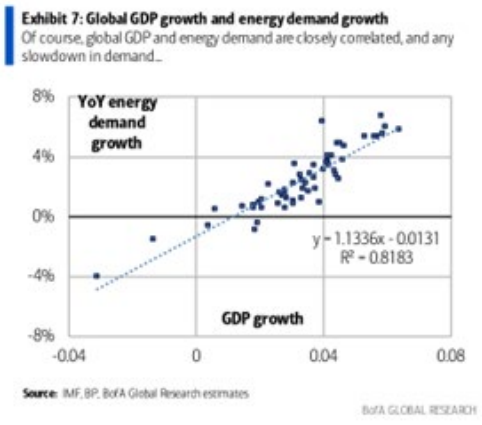
1.1 Macro Industry Commentary

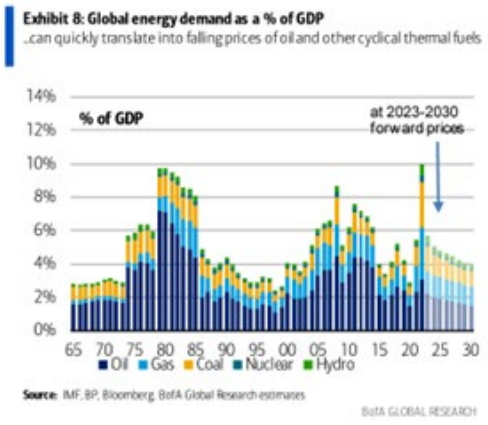
US Henry Hub gas prices fell through March however, supply remains strong, as the low price induced reduction in drilling activity has not yet produced a fall in natural gas production and the end of the winter heating season has delivered the usual reduction in gas demand with comfortable temperatures prevalent across most of the US. The prompt contract fell from $2.75/mmbtu at close on 28 February to $2.22/mmbtu at close on 31 March. Calendar 2023 was also down, moving from $3.267/mmbtu to $2.827/mmbtu over the same period.

Oil prices fell modestly. The prompt opened march at $77.05/bbl and closed the month at $75.67/bbl. Calendar 2023 also declined, starting the month at $75.96/bbl and closed at $74.51/bbl.

The failures of Silicon Valley Bank (SVB) and Signature Bank during March gave rise to concerns that financial system stress will drag down GDP. Global GDP and energy demand are closely correlated (LHS Figure 1), although this correlation is less relevant to natural gas demand which is heavily influenced by US weather. Slowdown in GDP quickly translates into falling prices for oil and other thermal fuels (RHS Figure 1).

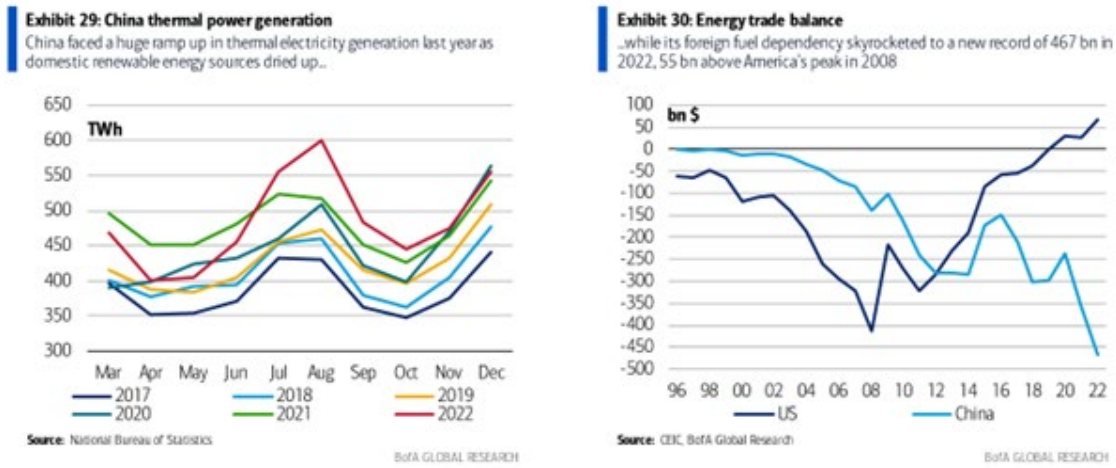
Figure 1: Global GDP and Energy Demand (Source: Bloomberg, via BofA)





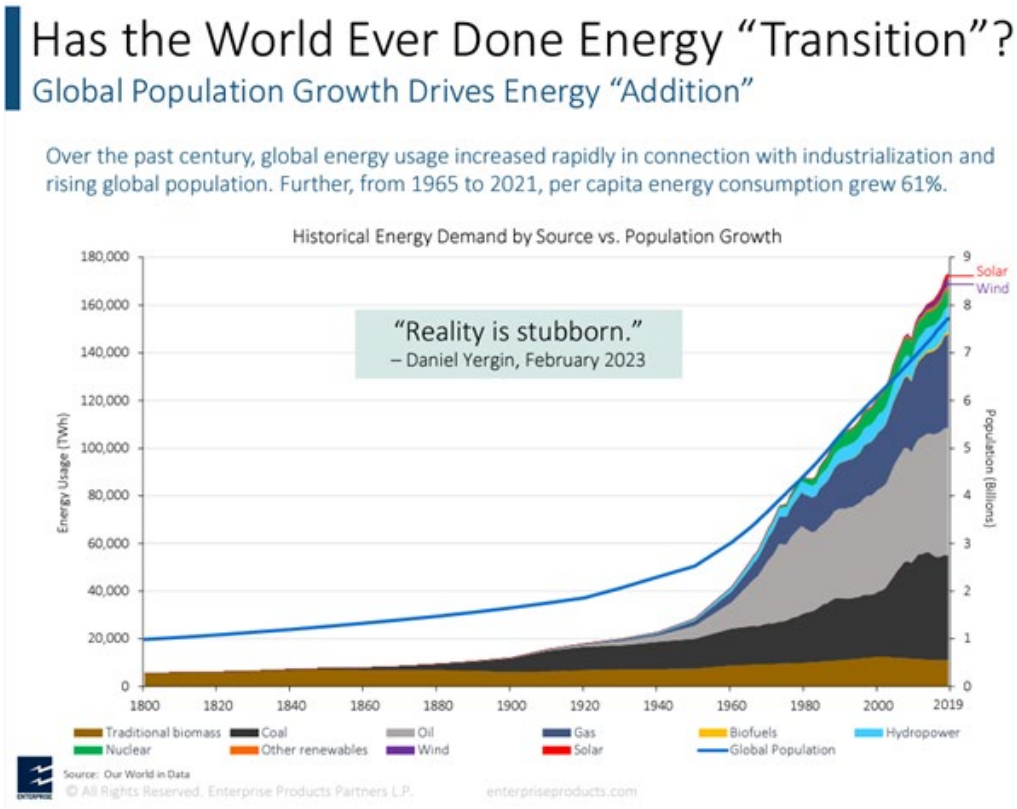
Chinese energy demand grew strongly in 2022 with a substantial increase in thermal electricity generation (LHS Figure 2). Most of the fuel to supply this thermal demand was imported. China paid international fuel suppliers a record $467b in 2022, $55b above America's peak net imports in 2008 before the shale revolution transformed US domestic energy supply (RHS Figure 2).

Figure 2: Chinese Thermal Power Generation and US and China Energy Trade Balances (Source: various, via BofA)



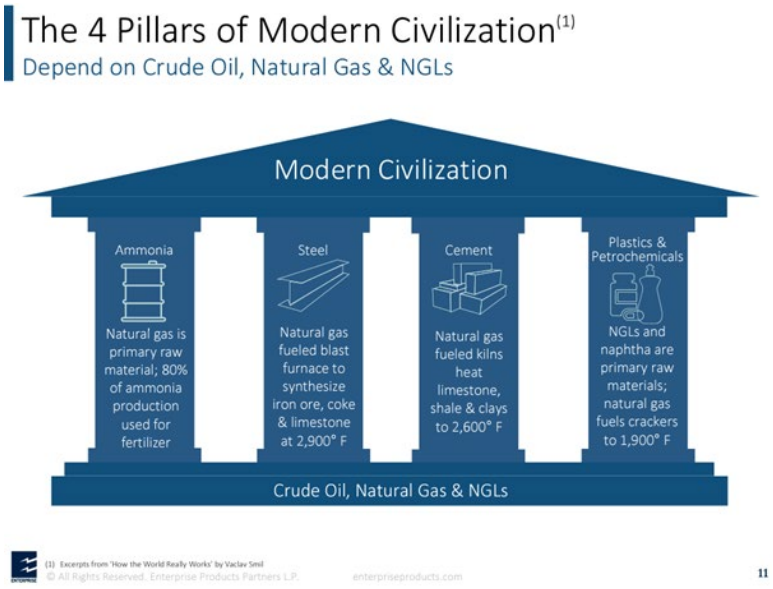
Enterprise Products, a US public midstream energy company, produced some thought-provoking material for their annual investor day. Enterprise has the view that the physics and economic reality of energy supply means that the world is not embarked upon an "Energy Transition" so much as an "Energy Addition". Figure 3 illustrates the core of their position; with current projections that global population is on target to reach 10 billion, reality is indeed stubborn.

Figure 3: Historic Energy Demand by Source vs Population Growth (Source: Our World in Data, via Enterprise Products)



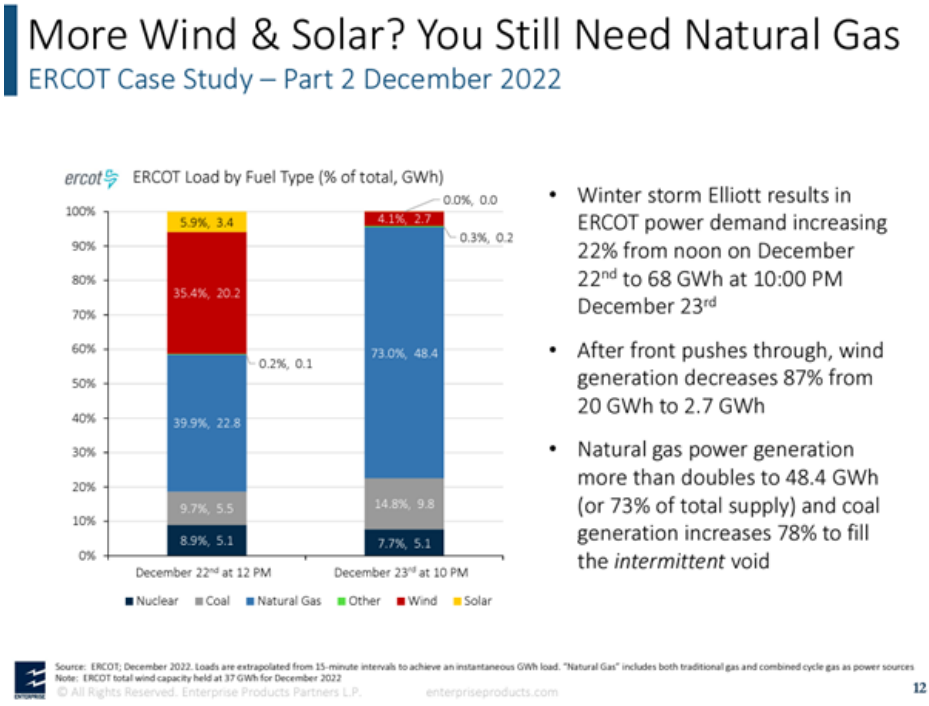
Vaclav Smil, distinguished professor emeritus at the University of Manitoba and author of over 40 books on topics including energy, environmental and population change, food production and nutrition and technical innovation, in his recent book, "How the World Really Works", identifies 4 pillars of Modern Civilisation: Ammonia (for fertilisers without which we could not feed the global population of 8 billion), steel and cement (without which we could not build the physical infrastructure of modern society), and plastics and petrochemicals (ubiquitous in just about everything we use every day). All depend on crude oil, natural gas, and natural gas liquids (Figure 4).

Figure 4: The 4 Pillars of Modern Civilisation (Source: Vaclav Smil, via Enterprise Products)



The Electric Reliability Council of Texas (ERCOT, the manager of Texas power supply), has released a study of power supply in Texas during winter storm Elliott on 22 and 23 December 2022 (Figure 5). At 12pm on 22 December wind generation provided 20 GWh of power generation and natural gas 22.9 GWh. As the weather front pushed through the state, by 10pm on 23 December total ERCOT power demand increased by 22% from 12pm on 22nd. Wind generation fell to 2.7 GWh (and, being night, solar to zero) and natural gas generation more than doubled to 48.4 GWh, to fill the void.

Figure 5: ERCOT Case Study (Source: ERCOT, via Enterprise Products)



The latest Baker Hughes rig count data follows. In March US total land rigs fell by 5 from 732 to 727. Oil rigs fell by 4 from 592 to 588 while gas rigs (surprisingly) rose by 3 from 154 to 157. Fall in miscellaneous and inland waters rigs made up the difference. Gas rig count declines should start to show in coming months.

Baker Hughes rig count

Baker Hughes

Rotary Rig Count

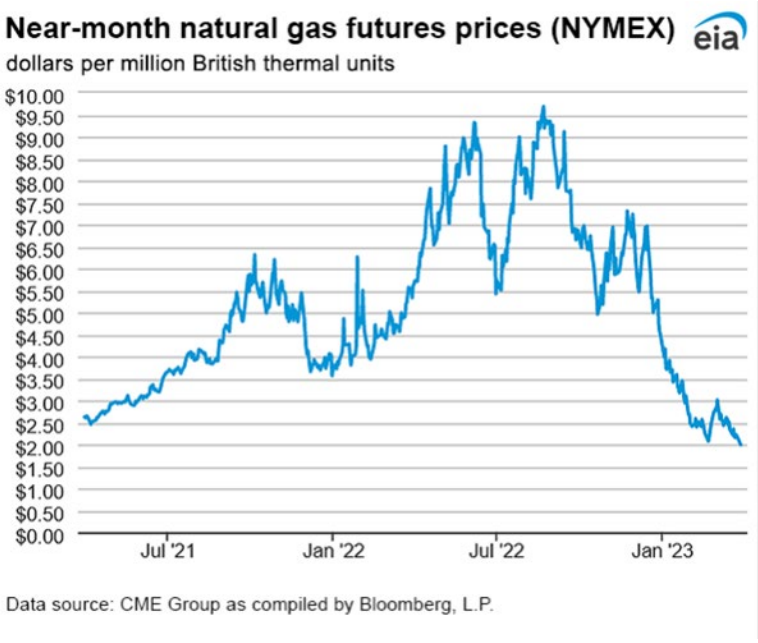
4/14/23

Location	Week	+/-	Week Ago	+/-	Year Ago
Land	727	-6	733	47	680
Inland Waters	1	0	1	0	1
Offshore	20	3	17	8	12
United States Total	748	-3	751	55	693
Gulf Of Mexico	18	2	16	6	12
Canada	111	-16	127	8	103
North America	859	-19	878	63	796
U.S. Breakout Information	**This Week**	**+/-**	**Last Week**	**+/-**	**Year Ago**
Oil	588	-2	590	40	548
Gas	157	-1	158	14	143
Miscellaneous	3	0	3	1	2
Directional	46	-5	51	14	32
Horizontal	683	-3	686	47	636
Vertical	19	5	14	-6	25

Gas Market

Prompt Henry Hub gas futures look to have found a floor at ~$2/mmbtu (Figure 6). Below this level higher cost operators in Marcellus and Utica and Haynesville are likely to start shutting in production.

Figure 6: Near Month Henry Hub Futures (Source: EIA)



The impact of a relatively warm winter in the eastern half of the US and the loss of 2bcf/d of LNG exports with the shutdown of the Freeport LNG terminal, can be seen in cumulative net withdrawals from South-Central storage during the winter heating season by week from 2011/12 through to 2022/23 (Figure 7). With just over 1,550 bcf of underground storage capacity, the South-Central storage region (Figure 8) is the largest in the US. And because high deliverability salt caverns make up nearly 30% of working storage capacity in the region, storage flows are more responsive to changes in temperature than other storage regions.

Figure 7: South-Central cumulative net winter withdrawals (Source: EIA)

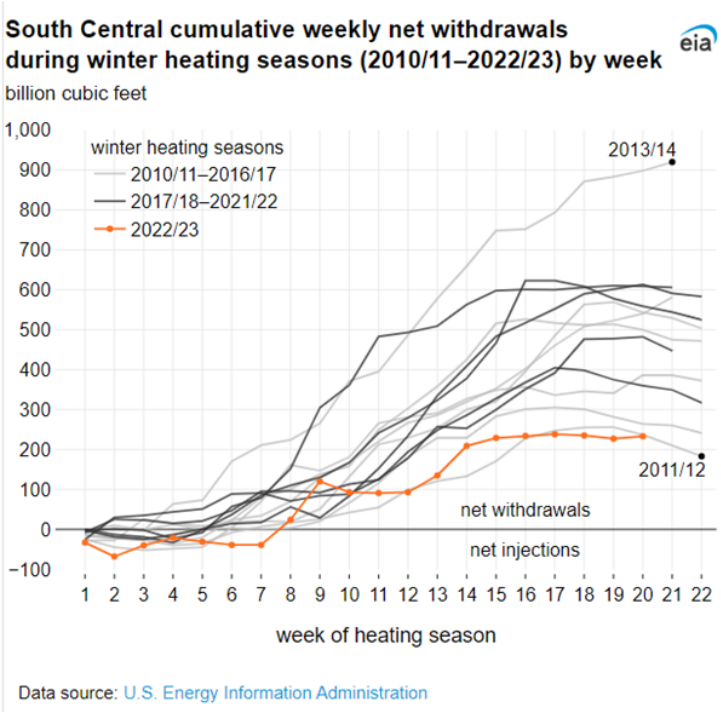
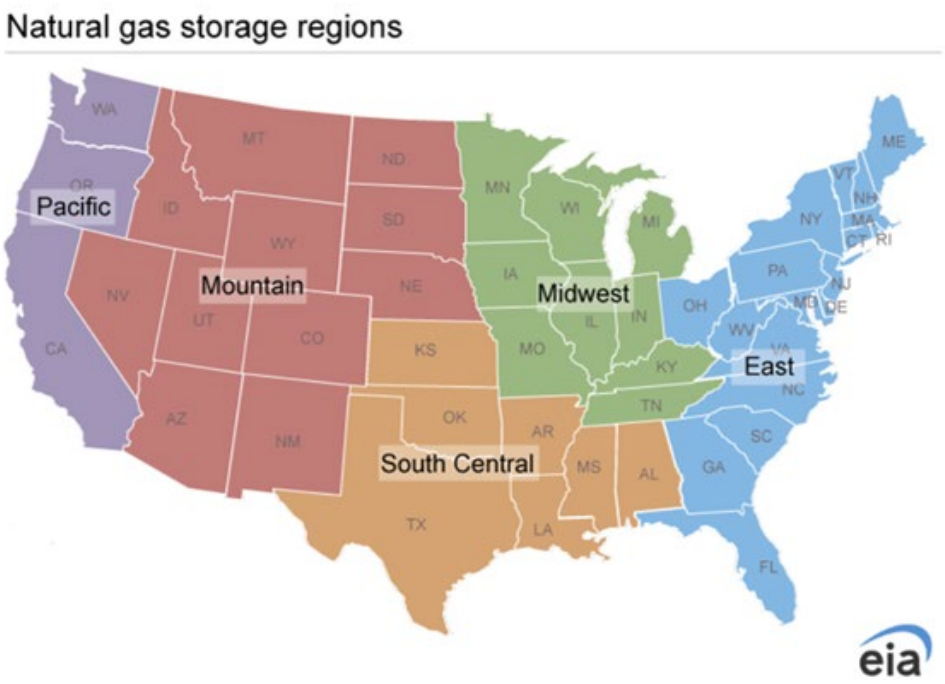
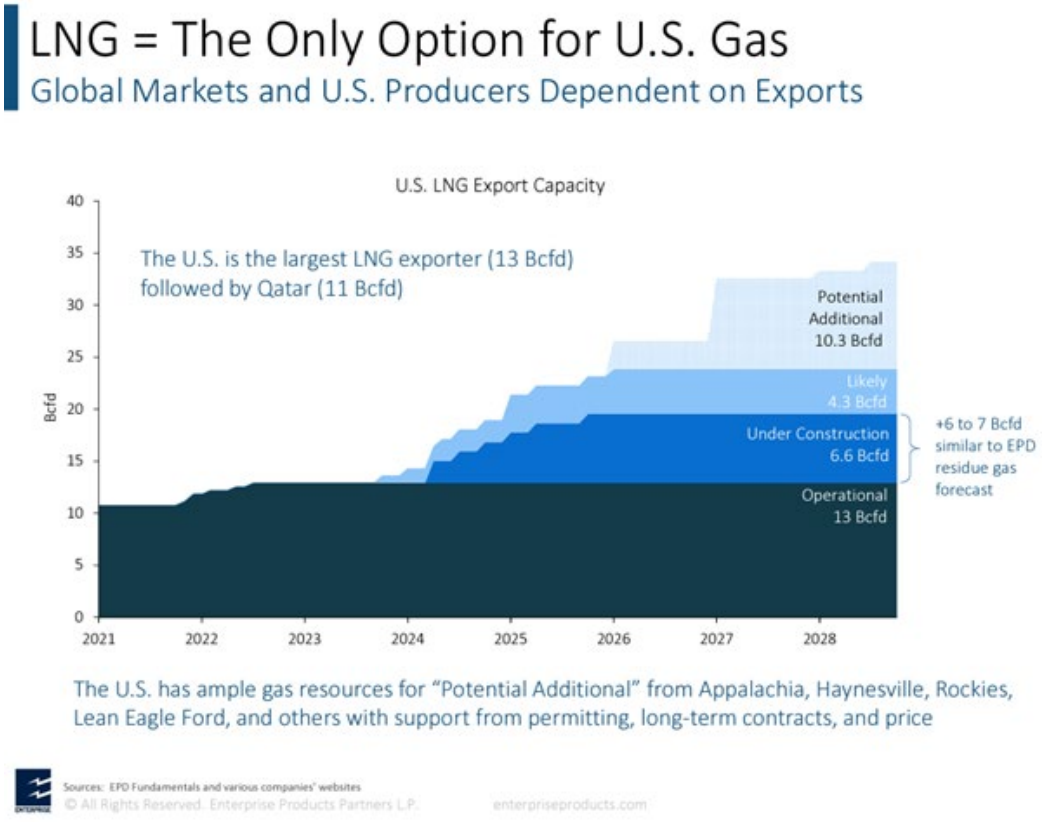


Figure 8: US Natural Gas Storage Regions (Source: EIA)



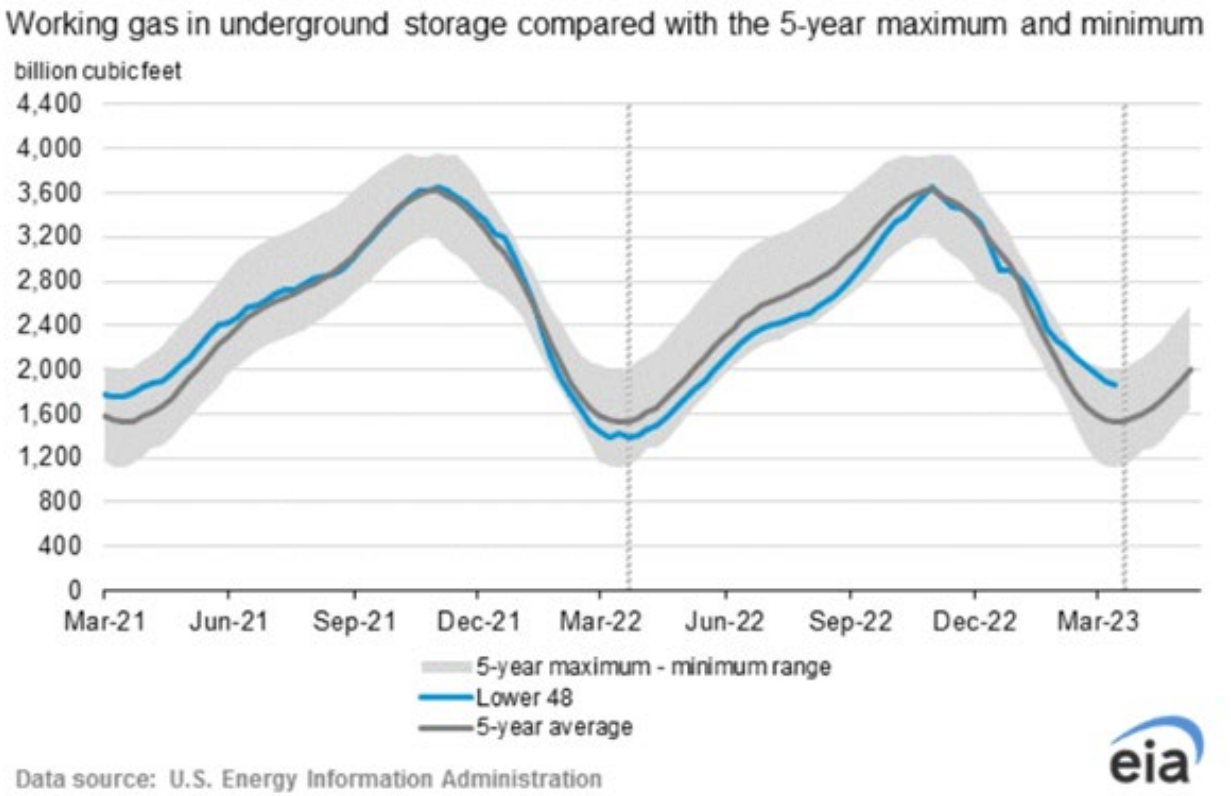
Enterprise Products believes that it is likely that US LNG export capacity will reach 23.9bcf/d by 2026 with potential for an additional 10.3bcf/d of capacity to be added before the end of the decade (Figure 9).

Figure 9: US LNG Export Capacity (Source: Enterprise Products)



Working gas in storage as of 24 March totalled 1,853 bcf, a decrease of 261 bcf since last month's report. Stocks were 442 bcf higher than last year at this time and 321 bcf above the 5-year average (Figure 10).

Figure 10: Change in Working Gas in Storage (Source: EIA)

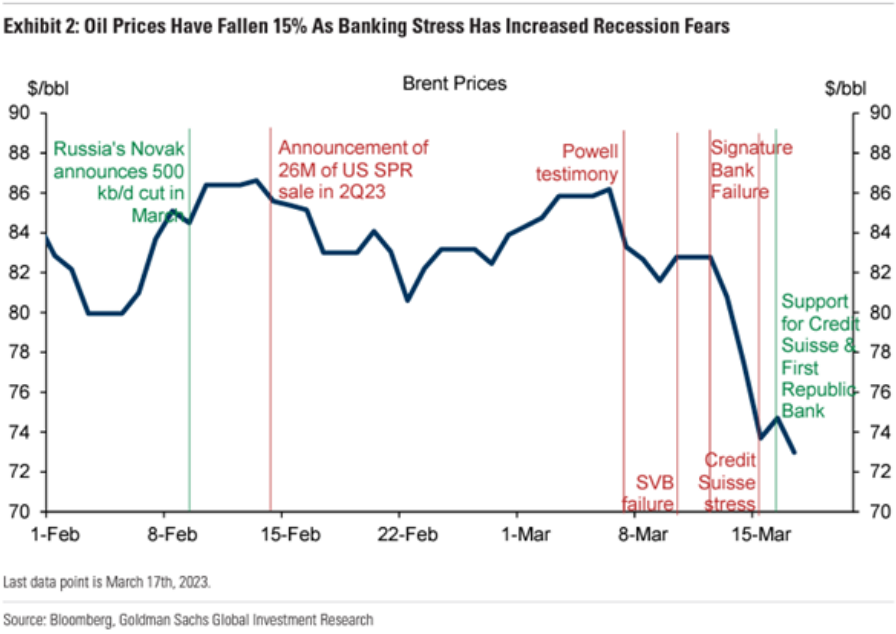


Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2018 through 2022. The dashed vertical lines indicate current and year-ago weekly periods.

Oil Market

Over the course of March oil prices fell (Figure 11) on banking stress, recession fears and exodus of investor flows. The most recent falls were substantially reversed after OPEC+ announced a surprise 1mmbbld production cut on 2 April.

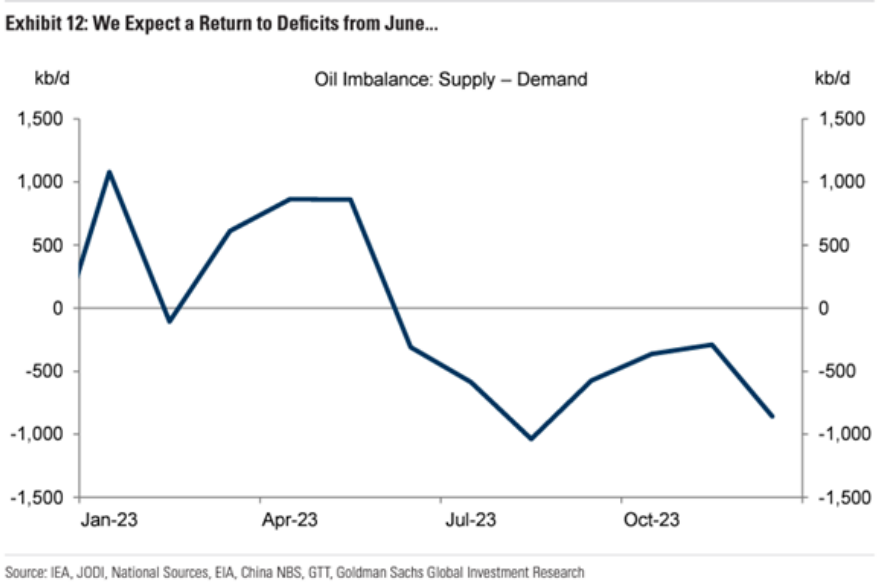
Figure 11: Oil Prices (Source: Bloomberg, via GS)



Before the OPEC+ cut was announced Goldman expected a return to global oil supply deficits by June (Figure 12). Goldman research noted on 18 March:

Focusing on US shale, which remains the key marginal supplier, we find it remarkable that long-dated prices are now below pre-war levels, and similar to levels in mid-2018. Our estimated marginal cost of US shale projects is now significantly higher than five years ago. In fact, input costs are c.30% above 2018 levels, geological trends are unfavourable, and the estimated cost of capital has risen by around 5 per centage points. With US shale rig counts already declining at c.$85/bbl Brent, it is unclear how current long-dated prices are sustainable in a market that still needs shale to grow, given the lack of long-cycle investment since 2014 and rising global oil demand.

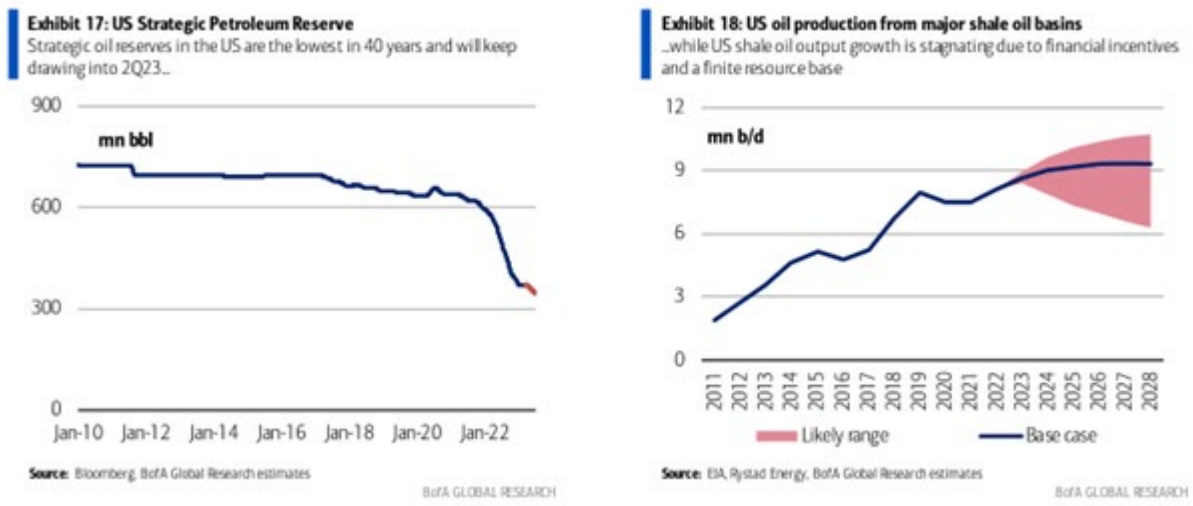
Figure 12: Oil Imbalance: Supply - Demand (Source: various, via GS)



Structural support for WTI relative to Brent will be provided from the inclusion by S&P Global Platts of the US WTI Midland Crude contract in the Brent oil benchmark from June. This change has been made because the volume of current North Sea crude products is in long-term structural decline.

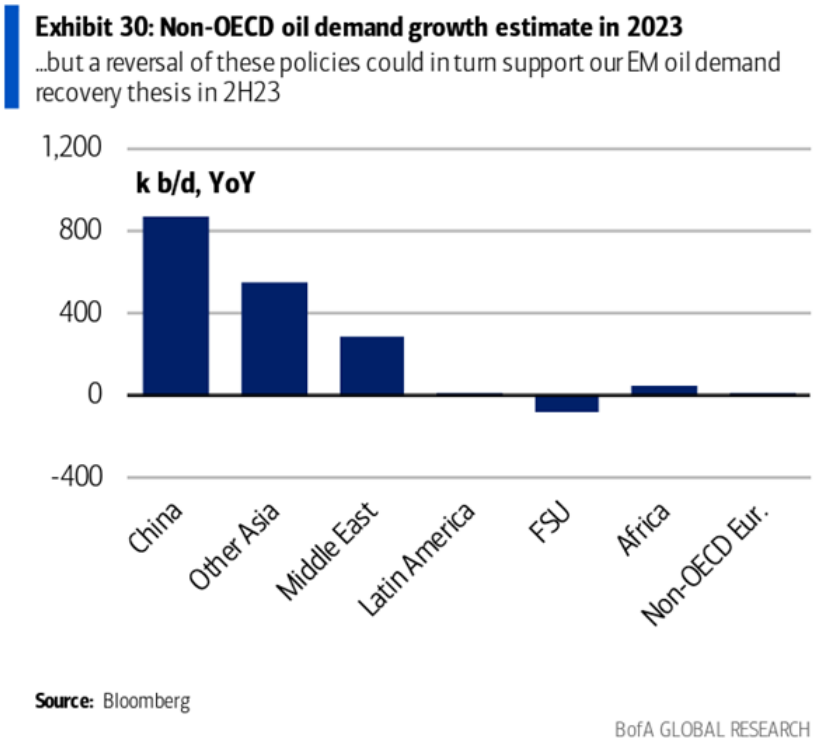
Additional price support will, at some point, be provided by the necessity for the US to refill its Strategic Petroleum Reserves, currently at their lowest in 40 years with further withdrawals ongoing (LHS Figure 13). Growth in US oil production is stagnating due to reduced investment and declines in average new well production (RHS Figure 13).

Figure 13: US Strategic Petroleum Reserves and Oil Production (Source: various, via BofA)



Oil demand growth in 2023 is likely to come from non-OECD countries, primarily China supported by Other Asia and the Middle East (Figure 14).

Figure 14: Non-OECD Oil Demand (Source: Bloomberg, via BofA)



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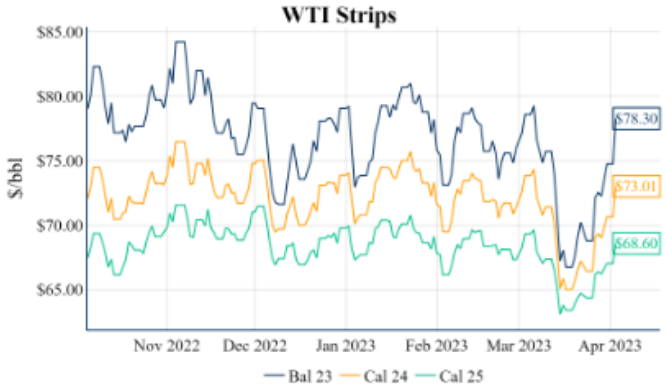
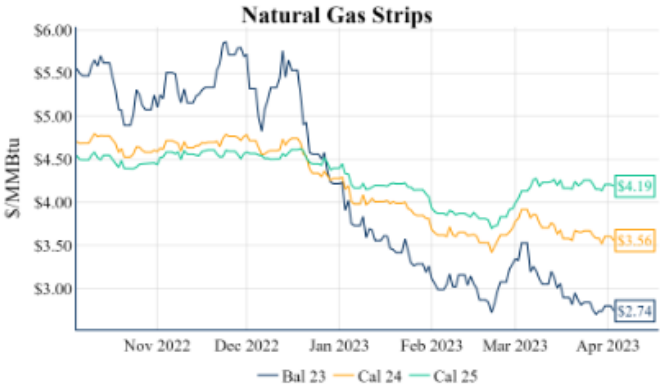
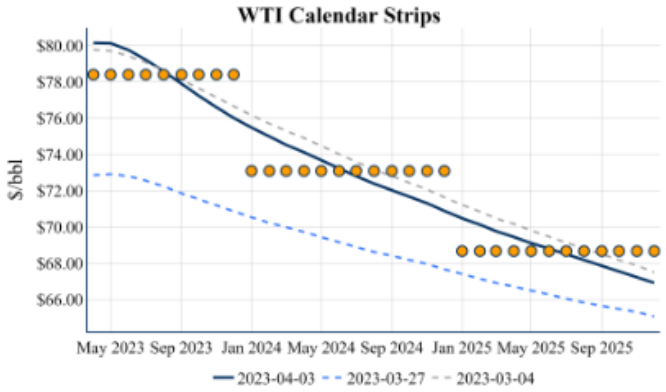
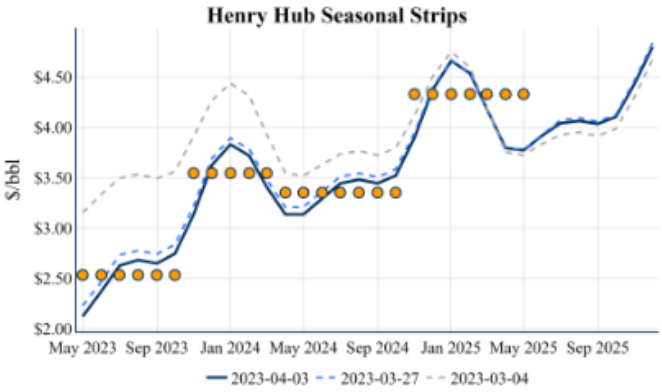
Gas and Oil Prices 3 April 2023









Swap Pricing	Bal 23	Cal 24	Cal 25	Cal 26
NYMEX WTI	$78.40	$73.09	$68.67	$65.25
ICE Brent	$82.52	$77.76	$73.89	$70.83
LLS	$80.49	$75.74	$71.48	$68.07
Mars	$76.46	$70.99	$66.30	$63.05
West TX Sour (WTS)	$77.58	$72.26	$67.84	$64.42

Swap Pricing	Month 1	Summer 23	Winter 23/24	Summer 24	Winter 24/25
Henry Hub Fixed	$2.114	$2.537	$3.549	$3.353	$4.327
Eastern Gas South	-$0.416	-$0.672	-$0.739	-$0.808	-$0.867
Waha	-$1.694	-$1.687	-$1.037	-$0.993	-$0.722
TETCO M3	-$0.347	-$0.503	$2.373	-$0.569	$2.104
Houston Ship Channel	-$0.244	-$0.233	-$0.151	-$0.350	-$0.228
Columbia Gulf Mainline	-$0.195	-$0.288	-$0.257	-$0.275	-$0.280
Panhandle East	-$0.291	-$0.394	$0.140	-$0.410	$0.136
NGPL MidCon	-$0.227	-$0.318	$0.049	-$0.337	$0.034
SoCal	$0.538	$1.922	$3.721	$0.862	$2.819
AECO	-$0.355	-$0.860	-$0.880	-$0.992	-$0.971
Chicago City-Gates	$0.032	-$0.074	$0.485	-$0.150	$0.432

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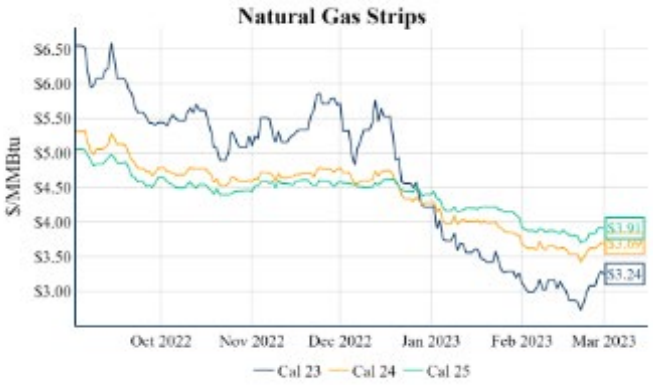
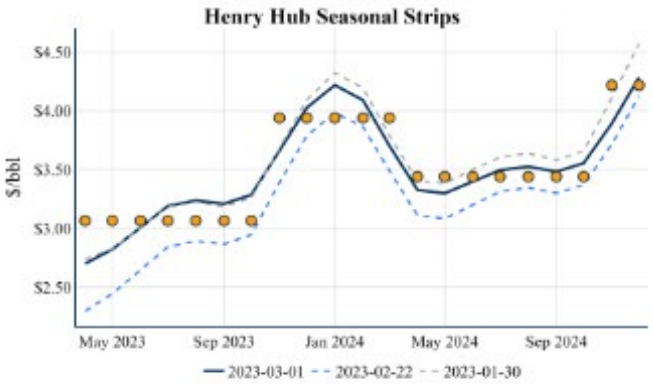
Gas and Oil Prices 1 March 2023





Swap Pricing	Cal 23	Cal 24	Cal 25	Cal 26
NYMEX WTI	$75.62	$71.35	$67.36	$64.04
ICE Brent	$80.93	$76.46	$72.47	$69.30
LLS	$78.38	$74.01	$69.92	$66.62
Mars	$73.94	$69.55	$64.98	$61.82
West TX Sour (WTS)	$74.80	$70.04	$66.09	$62.76

Swap Pricing	Month 1	Winter 22/23	Summer 23	Winter 23/24	Summer 24
Henry Hub Fixed	$2.705	$2.489	$3.070	$3.938	$3.442
Eastern Gas South	-$0.502	-$0.383	-$0.771	-$0.855	-$0.891
Waha	-$1.289	-$1.099	-$1.339	-$0.800	-$0.932
TETCO M3	-$0.352	$0.011	-$0.558	$2.494	-$0.619
Houston Ship Channel	-$0.298	-$0.272	-$0.279	-$0.241	-$0.368
Columbia Gulf Mainline	-$0.229	-$0.210	-$0.282	-$0.302	-$0.261
Panhandle East	-$0.333	-$0.319	-$0.425	$0.145	-$0.396
NGPL MidCon	-$0.313	-$0.160	-$0.353	$0.047	-$0.337
SoCal	$0.754	$2.937	$1.268	$2.923	$0.690
AECO	-$0.555	-$0.145	-$1.046	-$1.274	-$1.186
Chicago City-Gates	$0.034	$0.047	-$0.147	$0.433	-$0.161

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