LONGREACH ENERGY

Monthly Report

Longreach Energy Investments LLC

September 2021

FIRM INFORMATION

Investment Manager
Longreach Alternatives Ltd
ABN 25 082 852 364
AFSL 246747

Sub-Advisor
Longreach Energy Holdings LLC
Delaware registered #565928

KEY INVESTMENT PERSONNEL

Andrew Sinclair
Principal – Commercial Director

Thomas Wagenhofer
Principal – Technical Director

CONTACT US

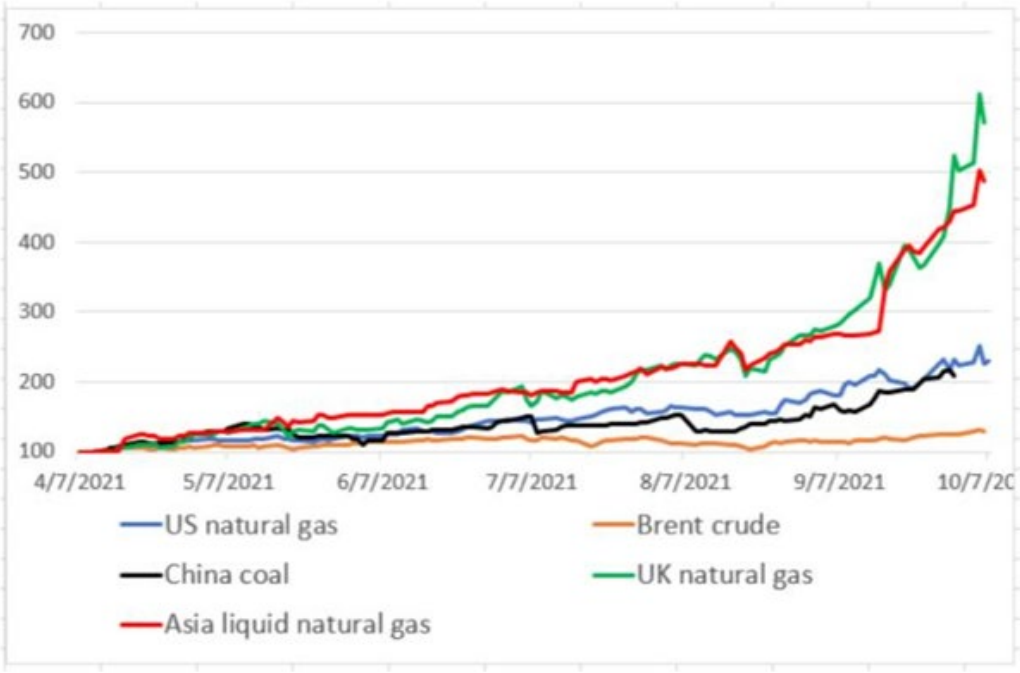
Longreach Alternatives Ltd
Level 13
1 Margaret Street
Sydney NSW 2000
T+61 2 9135 0428
client.services@longreachalternatives.com

1. Market and Macro Industry Commentary

General Market Commentary

Across much of the world fuel shortages, particularly in natural gas and coal, have caused large spikes in commodity prices, in some instances to all-time highs. Daily press is now littered with articles discussing a present Energy Crisis. Figure 1, depicting prices of various global fossil fuels rebased to 100 six months ago, illustrates the price increases. Some of the moves have been stratospheric – UK natural gas up 6X, Asian LNG up 5X. Chinese coal and US natural gas have merely doubled! Specific commentary on both gas and oil markets follows below.

Figure 1: Global Fossil Fuel Prices Rebased, 7 April 2021 = 100 (Source: FT)



UK natural gas prices hit an astounding 400 Pence per therm (£40/mmbtu) on 7 Oct before retreating after Russia's President indicated that Russia would look to increase the supply of gas to Europe. The Nov and Dec UK natural gas futures are currently trading at 255 and 259 Pence per therm (~£25/mmbtu or ~$34/mmbtu at current exchange rates).

Power prices in Europe have been rising for several months. By the end of August, power prices had surged to their highest levels in over a decade, with prompt month baseload futures topping €100/MWh in most countries. In July 2020 European day ahead power prices averaged €34/MWH.

Figure 2 shows live day-ahead power prices for Europe on 10 October – Poland has lowest prices at €94.48/MWh while the rest of the Union ranges from €143/MWh to €193/MWh. These are all-time high prices.

Figure 2: European Day-Ahead Power 10 October 2021 (Source: EnergyLive.cloud)

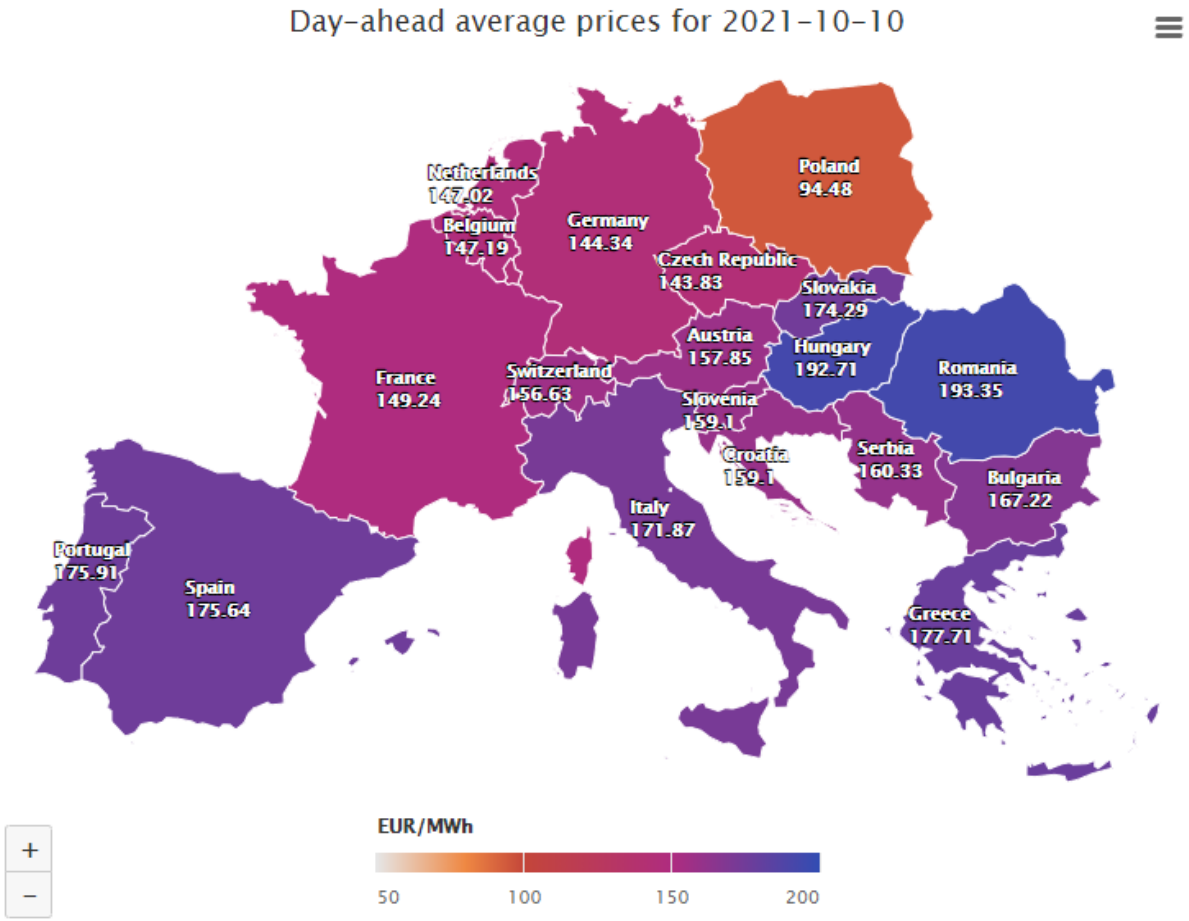
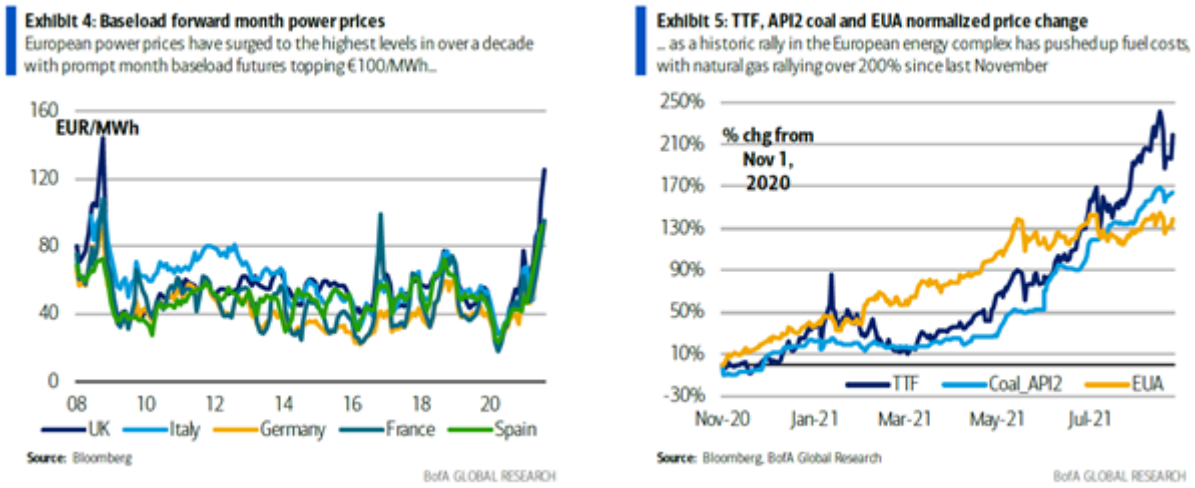


Figure 3 shows historic European power prices up to the start of September together with TTF (the European spot LNG benchmark), coal and average EU power.

Figure 3: European Energy Prices to end Aug 2021 (Source: Bloomberg, via BofA)



The challenges to Europe's gas market have been brewing for some time. A prolonged winter drained storage (Figure 4). The lack of LNG cargoes this summer and strong demand for gas with low renewables generation (mainly wind, Figure 5) have kept storage low. Lower pipeline supplies from Russia and sharply declining domestic gas production have heightened fears of a real supply crunch in the winter.

Figure 4: EU Natural Gas Inventories (Source: EIA)

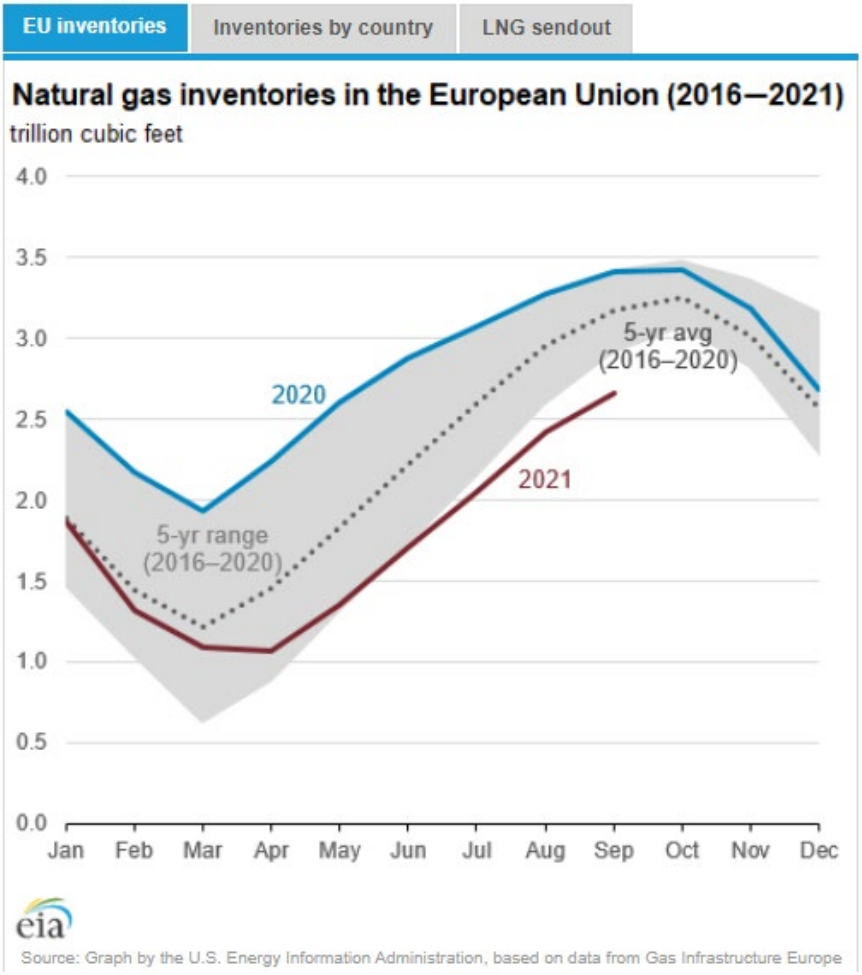
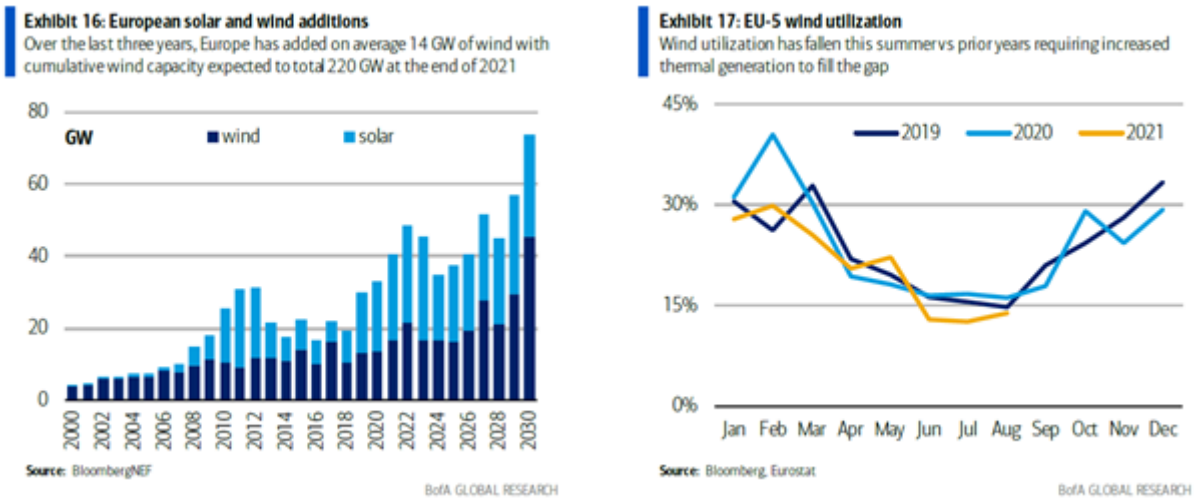


Figure 5: EU Solar and Wind additions and Wind Utilisation (Source: Bloomberg, via BofA)



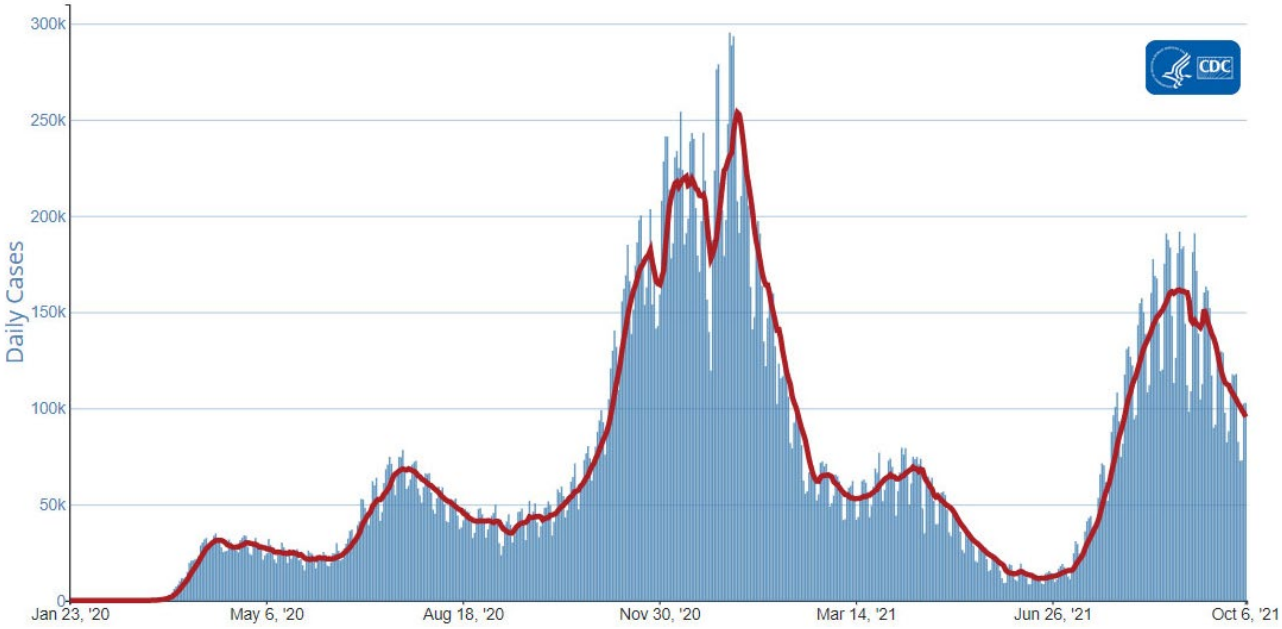
As natural gas prices have increased, across the world power producers have been forced to rely more on coal. According to India's power ministry, the 135 thermal power plants of Asia's third-largest economy had an average of just four days of coal stocks as of 1 October, down from 13 days of supplies in early August. Bloomberg reported that on 1 October one German power plant had been closed after it ran out of coal.

In China power supply shortages have already started to hit the economy, the manufacturing sector last month suffered its first contraction since the start of the pandemic. Beijing has ordered state-owned energy companies to secure fossil fuel supplies at all costs to stave off winter shortages.

Recent moves in the global energy market show how little margin of safety there is in the world's energy system, which has important implications for the future. Over the next few decades, the world will need to fundamentally retool the way it produces and consumes energy. But this process is complicated and will take time. So far, the supply side is adjusting faster than consumption patterns. This increases the probability for further instability and squeezes. Investment in US natural gas production is a positive contribution to market stability. Without market and price stability it is difficult to see consumers embracing the changes required to ameliorate the impact of climate change.

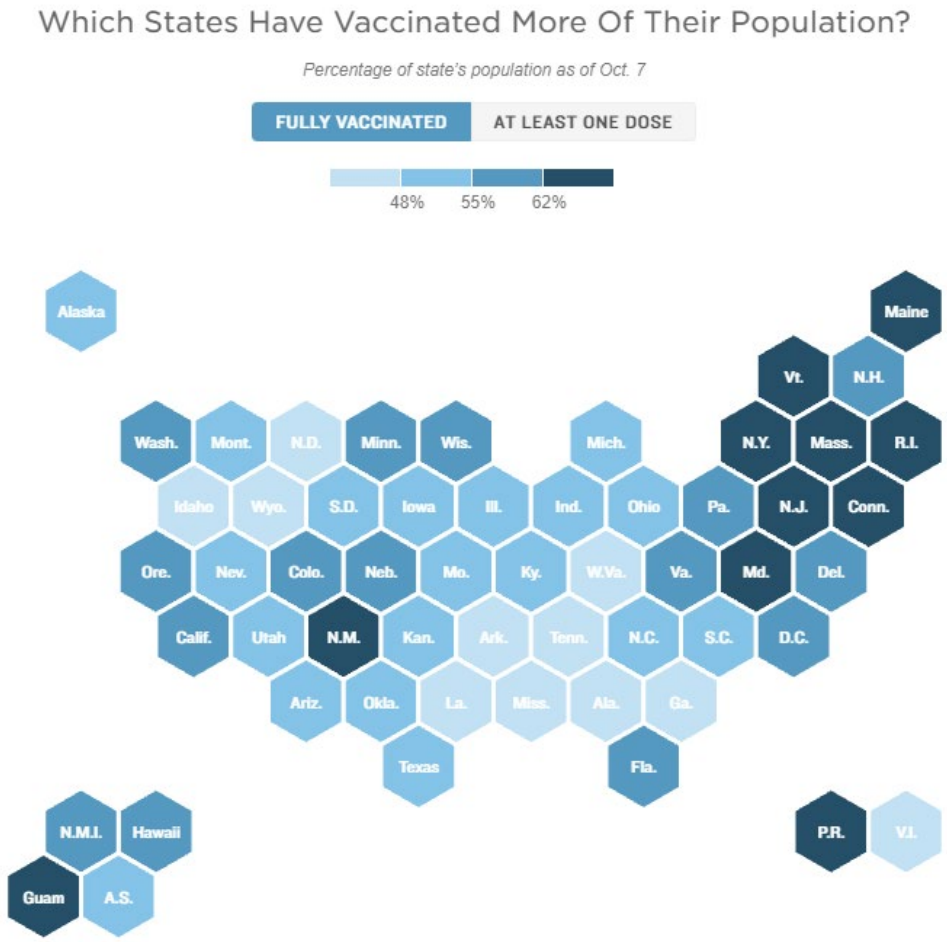
Globally the impact of Covid-19 on economic activity is declining. The US is now coming down off a second peak (Figure 6) with current 7-day Covid Cases average of 95,448 cases, down 11.6% from the prior week.

Figure 6: US Covid Cases (Source: US CDC)



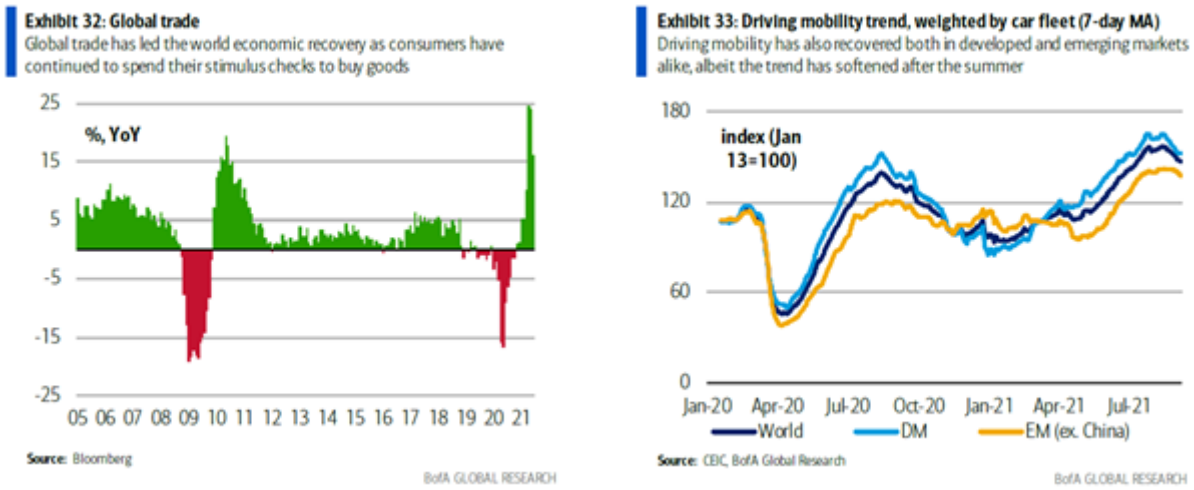
Vaccination rates are climbing, but in the US vary greatly between states.

Figure 7: US Covid Vaccination by State (Source: US CDC, via NPR)



Global trade and driving mobility data illustrate the economic recovery (Figure 8).

Figure 8: Global Trade and Driving Mobility (Source Bloomberg, CEIC, via BofA)



The latest Baker Hughes rig count data follows. In Sept US total rigs increased by 36 from 497 to 533 and land rigs increased by 25 from 495 to 520. Oil rigs increased by 39 from 394 to 433 as producers respond to higher oil prices. Gas drilling continues to show restraint despite very strong prices, with gas rigs dropping by 3 from 102 to 99.

Baker Hughes rig count

Baker Hughes

Rotary Rig Count

10/8/21

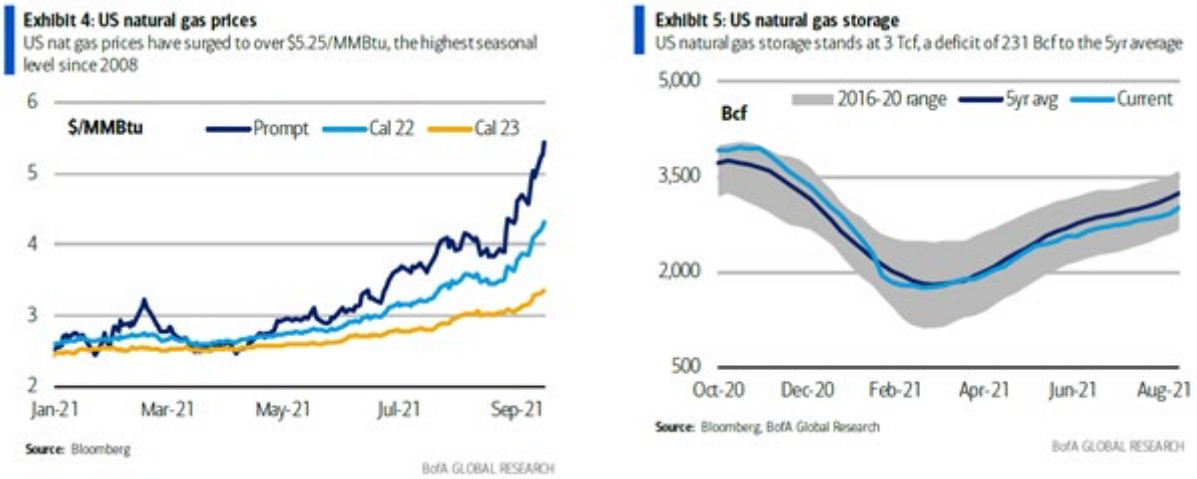
Location	Week	+/-	Week Ago	+/-	Year Ago
Land	520	7	513	266	254
Inland Waters	2	0	2	1	1
Offshore	11	-2	13	-3	14
United States Total	533	5	528	264	269
Gulf Of Mexico	10	-1	11	-4	14
Canada	167	2	165	87	80
North America	700	7	693	351	349
U.S. Breakout Information	**This Week**	**+/-**	**Last Week**	**+/-**	**Year Ago**
Oil	433	5	428	240	193
Gas	99	0	99	26	73
Miscellaneous	1	0	1	-2	3
Directional	22	0	22	1	21
Horizontal	483	9	474	250	233
Vertical	28	-4	32	13	15

Gas Market

The US natural gas market's historic summer rally has continued as prices have surged over $6/mmbtu intra-day, reaching 13-year seasonal highs and the highest absolute prices since 2014. The October Henry Hub futures contract expired at $5.841/mmbtu, an increase of $1.464/mmbtu on the prompt close at end August. The rally has not been limited to just the front of the curve, Cal '22 and Cal '23 increased by $0.63/mmbtu and $0.37/mmbtu respectively over the month.

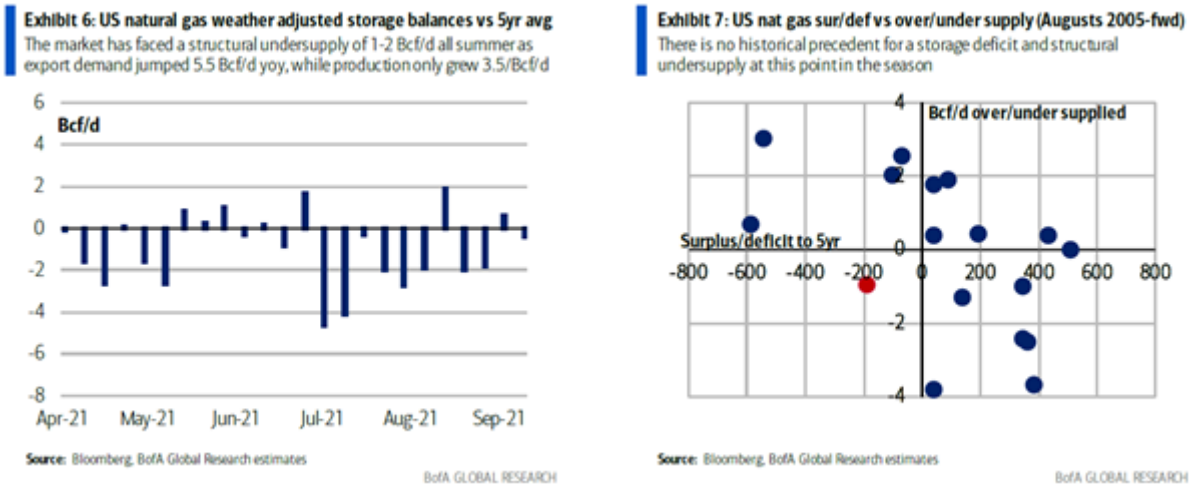
The primary driver, as with Europe, is low storage volumes. Current Lower 48 storage levels stand at 3 tcf (trillion cubic feet), 233 bcf below the 5-year average. While storage levels at the end of August were still 334bcf above 2018 levels and 165bcf above 2014 levels, the lack of supply and reduced demand elasticity to higher prices this summer has elevated bullish tail risk this winter.

Figure 9: US Natural Gas Prices and Storage (Source Bloomberg, BofA)



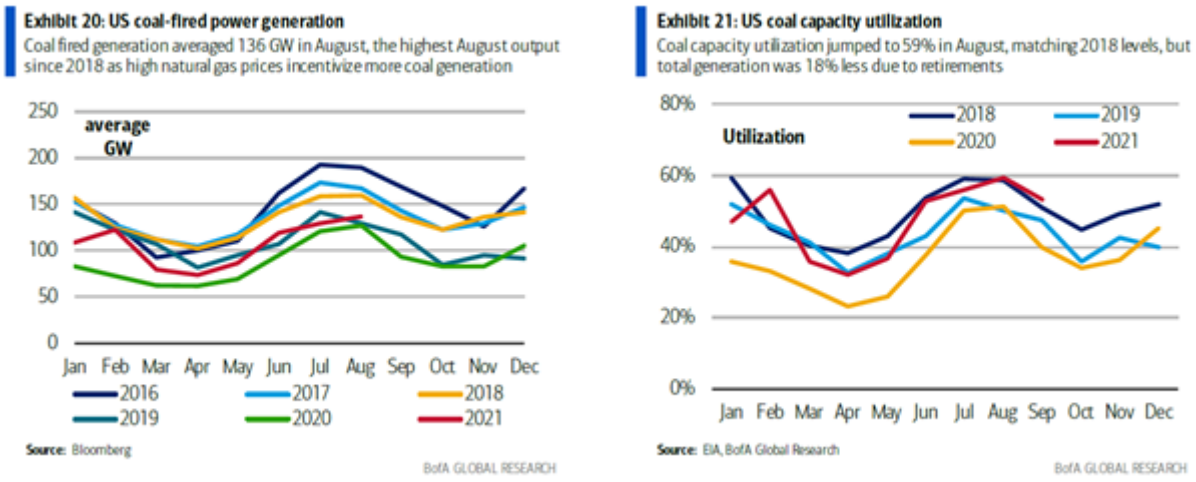
While the storage deficit is not severe by historic standard, it has continued to grow through the northern summer despite rising prices. While stretches of high heat during the summer boosted power generation demand and weighed on storage, the primary driver has been a tight weather adjusted supply/demand balance. As LNG and Mexican export demand jumped nearly 5.5bcf/d year-on-year this summer, production only recovered 3.5bcf/d from 2020 levels, creating consistent structural undersupply of 1-2bcf/d.

Figure 10: US Natural Gas Storage and Supply Balances (Source Bloomberg, BofA)



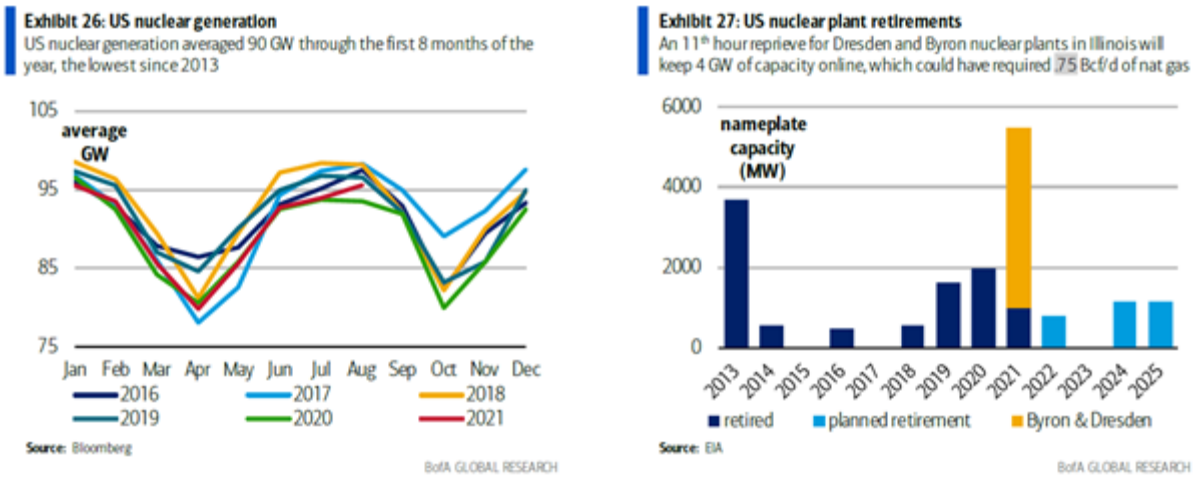
The market has tried to find a solution through higher prices, but the 44 GW of coal retirements since 2018 has created a less elastic gas-to-coal balancing lever.

Figure 11: US Coal Power Generation (Source Bloomberg, BofA)



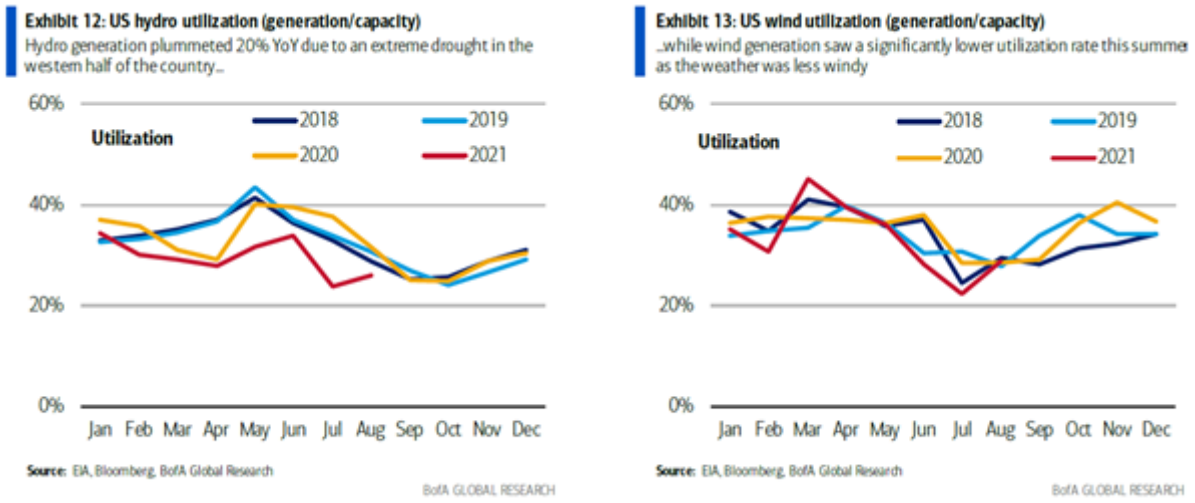
Nuclear retirements have also increased the supply burden for natural gas.

Figure 12: US Nuclear Power Generation (Source Bloomberg, BofA)



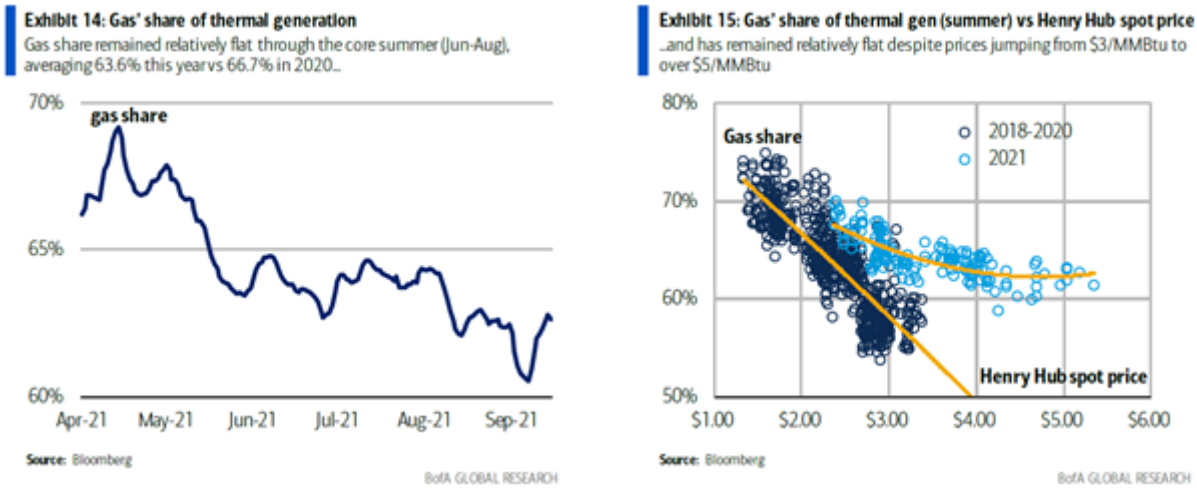
Drought impact on hydro and calm weather subdued generation from those two sources.

Figure 13: US Hydro and Wind Power Generation (Source EIA, Bloomberg, BofA)



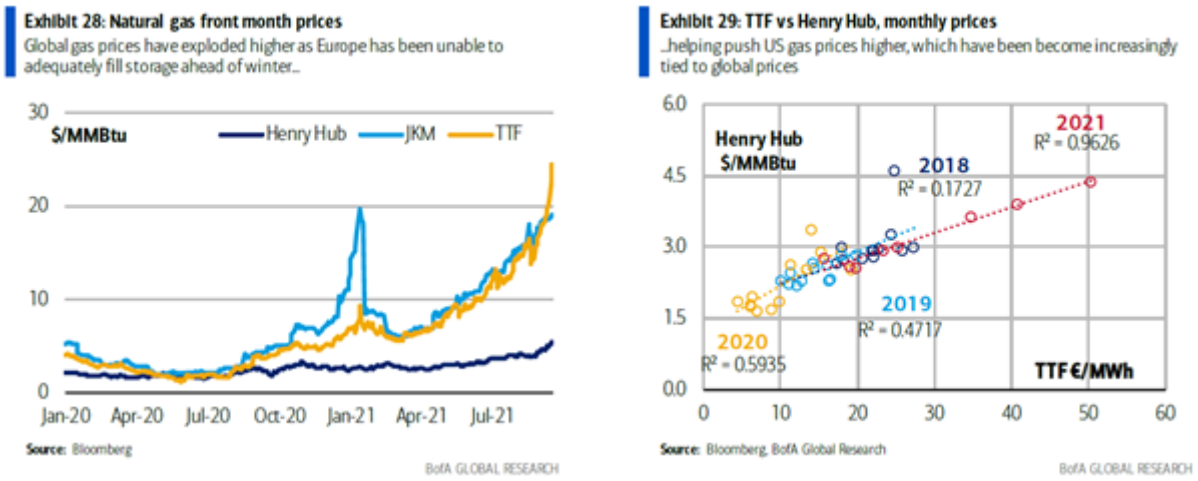
The above factors have resulted in steady demand for gas generation despite the higher prices (LHS Figure 14). This has reset the demand elasticity for gas from that experienced in recent years (RHS Figure 14).

Figure 14: Natural Gas Thermal Generation (Source: Bloomberg via BofA)



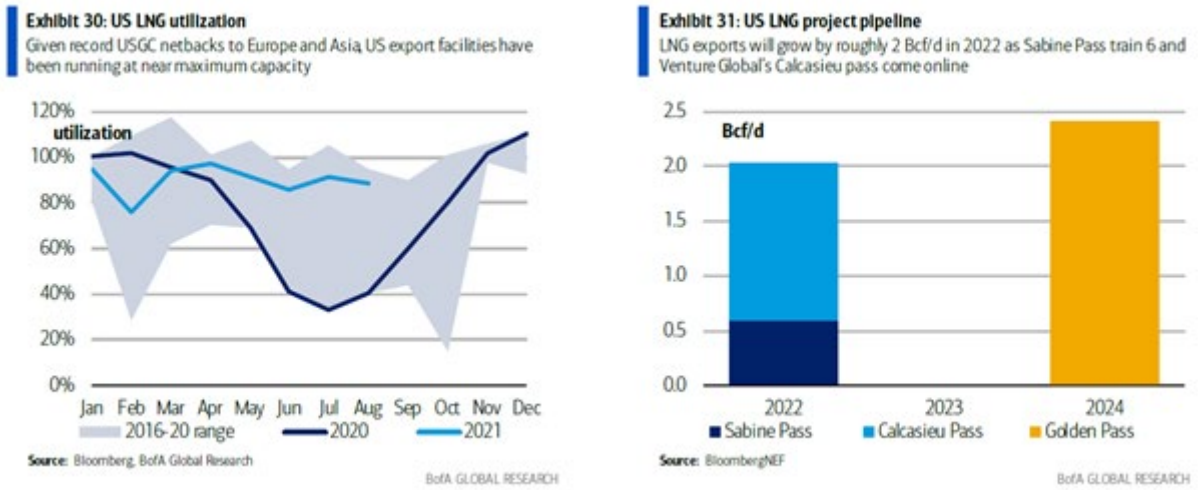
The surge in global gas prices has undoubtably added fuel to the US gas rally. As has been a central premise of the Longreach Energy investment thesis for several years, historically the US was a gas island with limited imports and exports, though this has now changed. With over 10bcf/d of LNG export capacity, the US is now the world's third largest exporter, just behind Qatar and Australia. As a result, US prices have become increasingly tied to global prices, particularly this year (RHS Figure 15).

Figure 15: Natural Gas Front Month Prices (Source: Bloomberg via BofA)



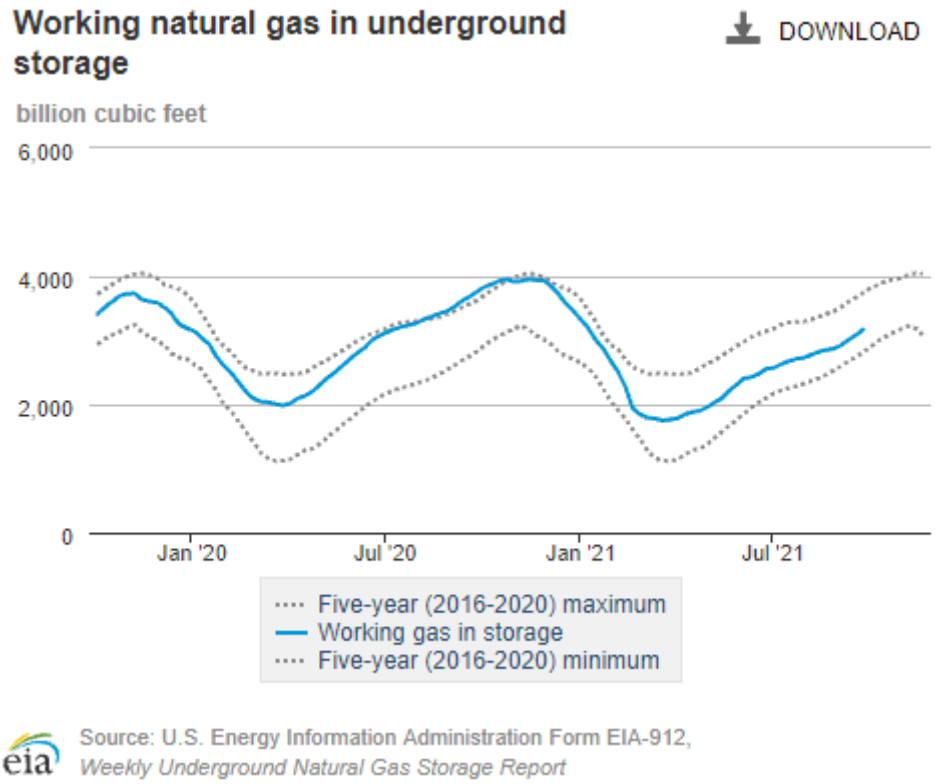
US LNG export facilities are running at maximum capacity and new gas liquifaction trains are coming on-line.

Figure 16: US LNG Utilisation and Projects (Source: Bloomberg via BofA



For the week ending 24 September working gas stocks were 15% less than year-ago levels and 6% down on the 5-year average (Figure 17).

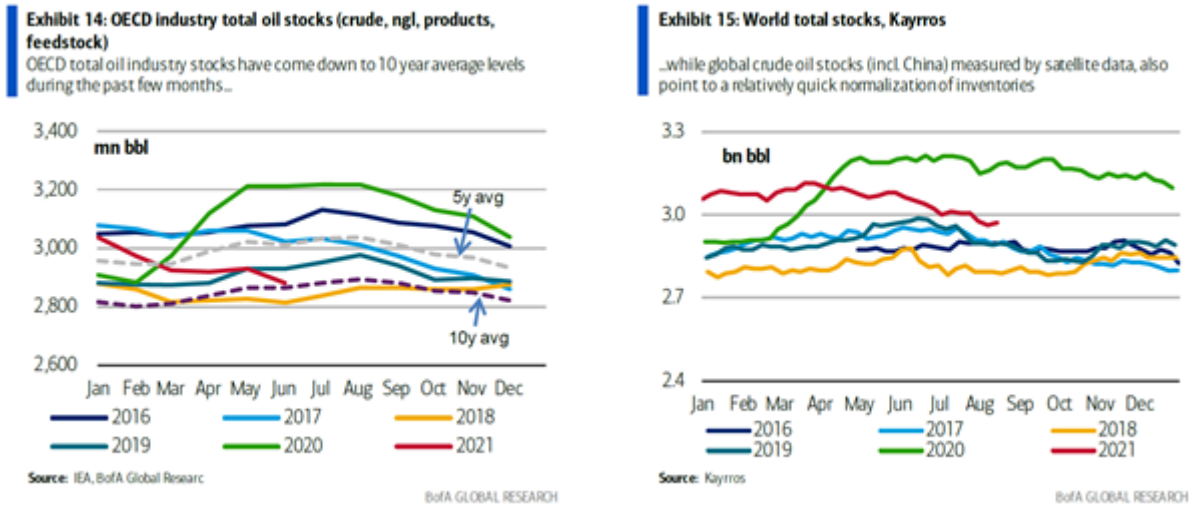
Figure 17: Natural Gas Storage (Source: EIA)



Oil Market

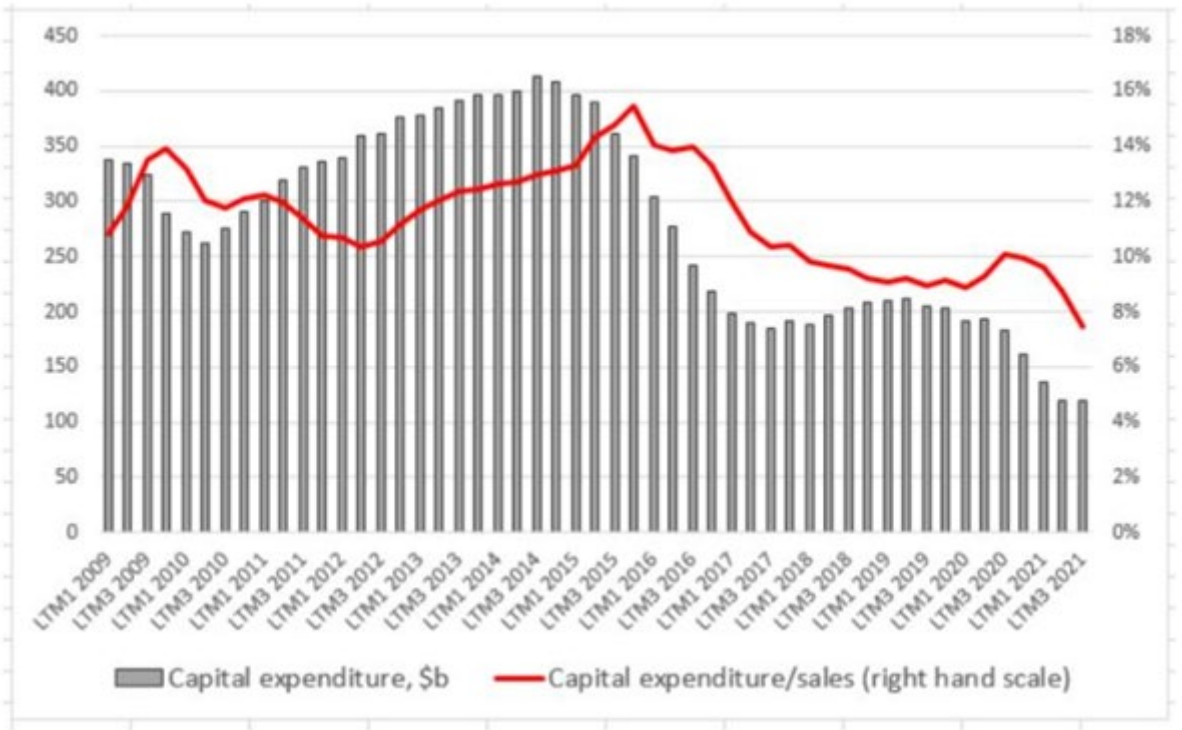
Oil prices followed the energy complex trend with the WTI prompt increasing to $74.02 by the end of September. The increase in the oil price has been driven by the reality of recovering demand running into constrained supply. Oil stocks are falling (Figure 18).

Figure 18: World Oil Storage (Source: IEA, Kayrros, BofA)



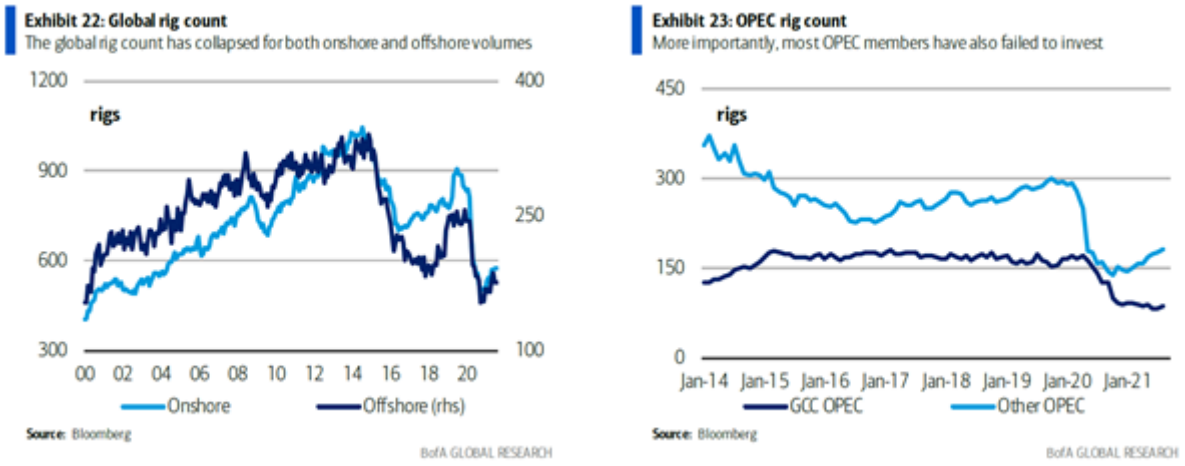
Upstream capex has declined substantially in recent years.

Figure 19: Capex for S&P Global 1200 Energy Index Companies (Source: Capital IQ, via FT)



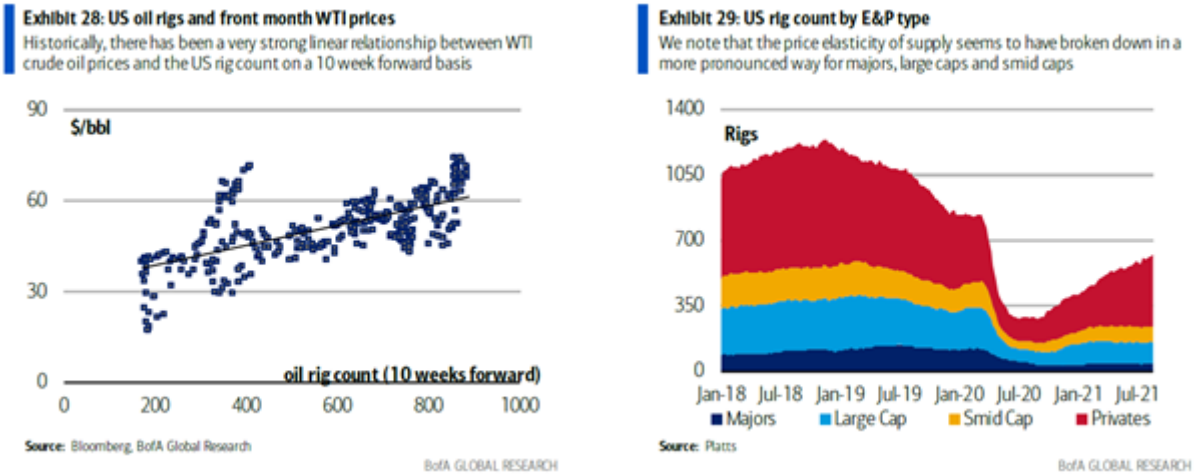
Rigs are climbing but remain well below highs.

Figure 21: Global Rig Count (Source: Bloomberg, via BofA)



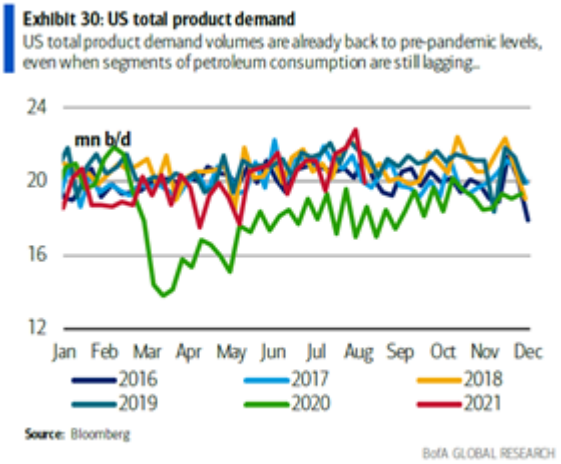
In the US, historically there has been a very strong linear relationship between WTI crude prices and the rig count on a 10-week forward basis (LHS Figure 22). This price elasticity of supply now looks to have broken for all but private companies (RHS Figure 22). Private companies have not been forced by the market to return cash to investors instead of making further investments and have the independence to pursue their investment agenda. As has often been true in the past sophisticated private investment in gas and oil is where the most money will be made through the coming cycle.

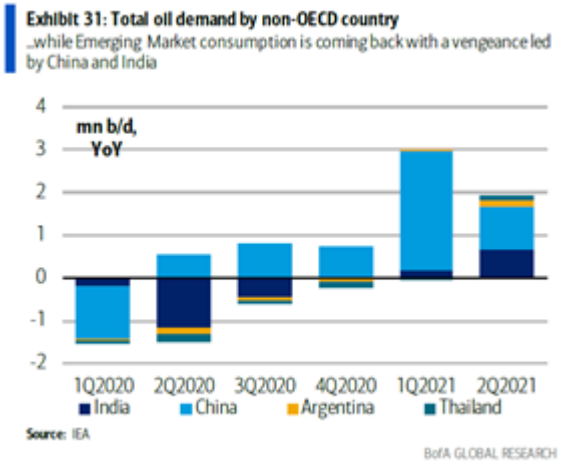
Figure 22: US Rig Counts and WTI (Source: Bloomberg, Platts via BofA)



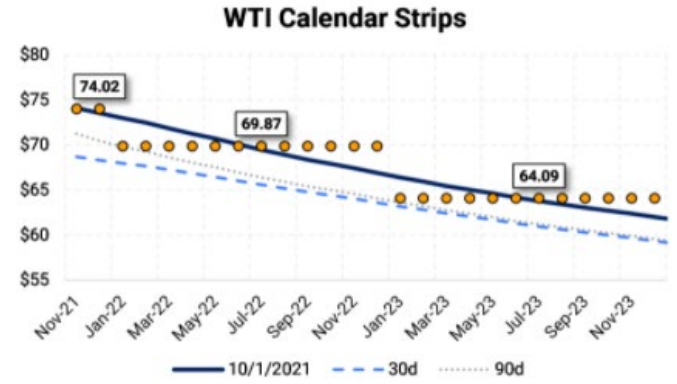
While supply has been limited, demand has recovered quickly (Figure 23). The added use of oil for power generation and heating this northern winter, to make up for the shortfall of natural gas in Europe and Asia, could add nearly 1 mmbbl/d of demand by the end of the year. This is on top of the already rising demand for transportation fuels recovering from the pandemic.

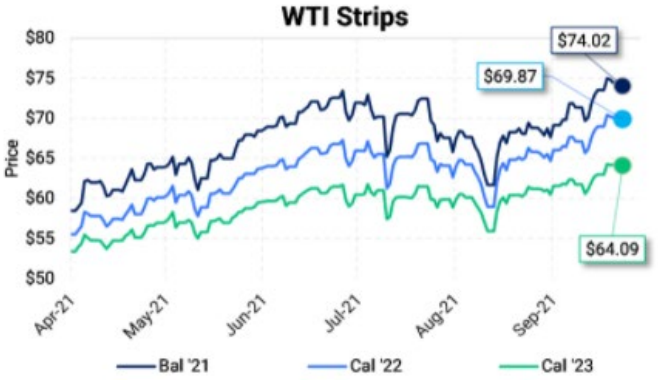
Figure 23: US and Global Product and Non-OECD Oil Demand (Source: Bloomberg, IEA, via BofA)





Gas and Oil Prices 1 October 2021





Swap Pricing

	Bal 21	Cal 22	Cal 23	Cal 24	Cal 25
NYMEX WTI Crude	$ 74.02	$ 69.87	$ 64.09	$ 60.02	$ 57.03
ICE Brent Crude	$ 77.12	$ 72.82	$ 68.06	$ 64.56	$ 62.00
Light Louisiana Sweet	$ 75.66	$ 71.85	$ 66.09	$ 61.71	$ 58.71
TM Midland Differential	$ 0.56	$ 0.35	$ 0.35		
WCS Differential	$ (11.96)				
NYMEX Natural Gas	$ 5.79	$ 4.35	$ 3.45	$ 3.15	$ 3.00

Source: Bloomberg LP
Indicative only

Natural Gas Basis

Location	Spot	Summer '21	Winter '21/'22	Summer '22	Winter '22/'23
Henry Hub Fixed	5.55	5.80	5.88	3.90	4.06
Malin	$ (0.03)	$ 0.01	$ 0.89	$ (0.09)	$ 0.38
Opal	$ (0.06)	$ (0.06)	$ 0.86	$ (0.17)	$ 0.37
Sumas	$ (0.13)	$ 0.59	$ 1.30	$ (0.24)	$ 0.77
Chicago CG	$ (0.28)	$ (0.36)	$ (0.24)	$ (0.21)	$ (0.19)
PEPL	$ (0.29)	$ (0.39)	$ 0.11	$ (0.29)	$ (0.06)
Waha	$ (0.45)	$ (0.87)	$ (0.05)	$ (0.44)	$ (0.25)
TETCO M3	$ (0.86)	$ (1.17)	$ 1.84	$ (0.72)	$ 1.46
Dominion S	$ (0.91)	$ (1.29)	$ (0.62)	$ (0.93)	$ (0.67)
AECO	$ (2.64)	$ (1.87)	$ (1.68)	$ (1.04)	$ (0.92)

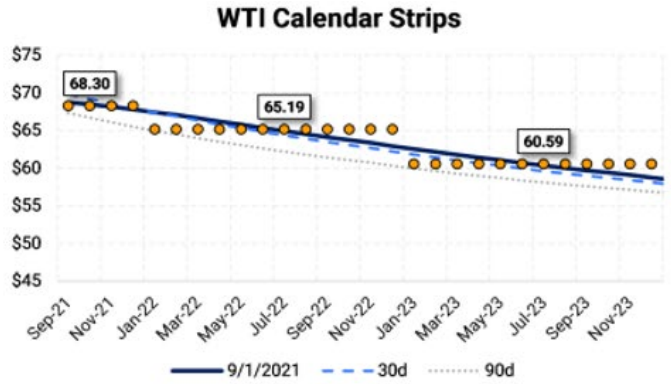
All prices as previous trading day close
Source: Bloomberg

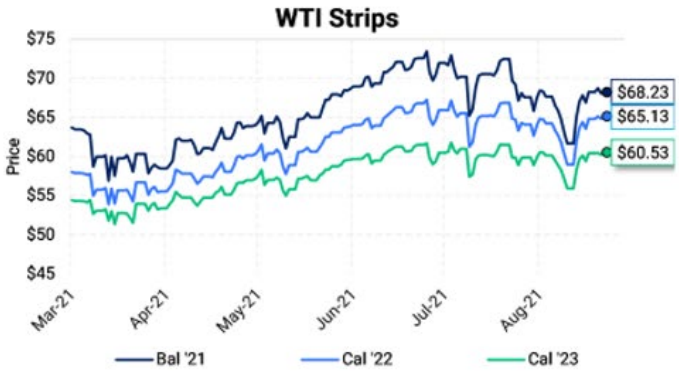
Longreach Energy Holdings LLC

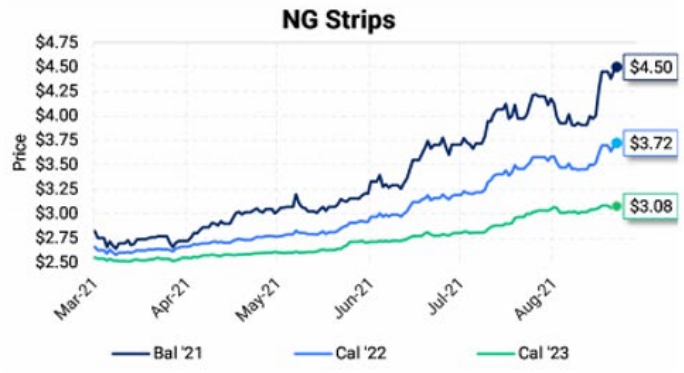
LONGREACH ENERGY

Monthly Report

Gas and Oil Prices 1 September 2021







Swap Pricing

	Bal 21	Cal 22	Cal 23	Cal 24	Cal 25
NYMEX WTI Crude	$ 68.30	$ 65.19	$ 60.59	$ 57.05	$ 54.69
ICE Brent Crude	$ 71.10	$ 67.95	$ 64.31	$ 61.36	$ 59.30
Light Louisiana Sweet	$ 68.86	$ 66.73	$ 62.35	$ 58.51	$ 56.15
TM Midland Differential	$ 0.30	$ 0.27	$ 0.28		
WCS Differential	$ (12.00)				
NYMEX Natural Gas	$ 4.50	$ 3.72	$ 3.08	$ 2.84	$ 2.84

Source: Bloomberg LP
Indicative only

Natural Gas Basis

Location	Spot	Summer '21	Winter '21/'22	Summer '22	Winter '22/'23
Henry Hub Fixed	4.25	4.43	4.42	3.43	3.58
Malin	$ 0.31	$ 0.16	$ 0.70	$ (0.06)	$ 0.37
Sumas	$ 0.08	$ 0.20	$ 0.97	$ (0.32)	$ 0.61
Opal	$ 0.03	$ (0.02)	$ 0.59	$ (0.18)	$ 0.27
Chicago CG	$ (0.09)	$ (0.16)	$ (0.14)	$ (0.18)	$ (0.15)
PEPL	$ (0.14)	$ (0.21)	$ 0.06	$ (0.25)	$ (0.04)
Waha	$ (0.15)	$ (0.29)	$ (0.01)	$ (0.38)	$ (0.26)
TETCO M3	$ (0.44)	$ (1.11)	$ 1.11	$ (0.68)	$ 1.06
Dominion S	$ (0.53)	$ (1.26)	$ (0.63)	$ (0.86)	$ (0.66)
AECO	$ (1.33)	$ (1.00)	$ (0.84)	$ (0.91)	$ (0.79)

All prices as previous trading day close
Source: Bloomberg