



Longreach Energy Holdings LLC

FIRM INFORMATION

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1. Market and Macro Industry Commentary

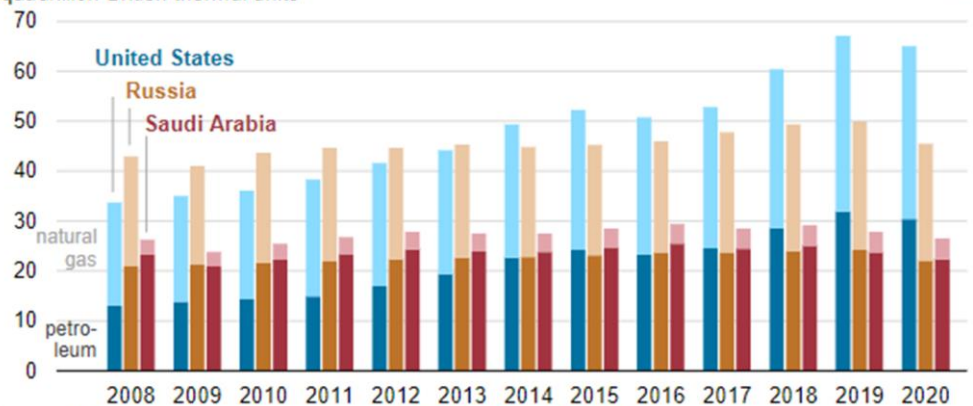
General Market Commentary

After strengthening to a six-year high of \$77/bbl in early July, WTI then drifted lower to trade \$69.59/bbl at the start of August. The decline was predominantly due to concerns surrounding the fast-spreading Delta variant of Covid-19. Cooling demand from hot weather in the US combined with very low wind and hydro power generation, saw continued strengthening of Henry Hub gas prices with the spot contract now trading above \$4/mcf.

The surge in US hydrocarbon production over the last decade is evident in new data released from the EIA showing that more petroleum and natural gas was produced in the United States than in any other country during 2020 (Figure 1). This is a trend that began in 2014.

Figure 1: Estimated hydrocarbon production in selected countries 2008-2020 (Source: EIA)

Estimated petroleum and natural gas production in selected countries (2008–2020)
quadrillion British thermal units



Source: U.S. Energy Information Administration, *International Energy Statistics*
Note: Petroleum includes crude oil, condensate, and natural gas plant liquids.

US petroleum and natural gas output in 2020 totalled 66.9 quadrillion British thermal units (quads), which was more than both Russia's 45.5 quads and Saudi Arabia's 26.5 quads of petroleum and natural gas production.

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The return of inflation continues to be a focus of financial market attention (Figure 2).

Figure 2: US Consumer Price Index (Source: US Bureau of Labor Statistics, via FT)



A big driver of US CPI changes has been a marked rise in second-hand vehicle prices (Figure 3). There appears to be two main drivers for this increase: reduced supply of new vehicles because of issues with computer chip supply; and increased demand for private vehicle transportation as Covid concerns turns people away from public mass-transit. While these concerns remain oil consumption will stay further elevated.

Figure 3: Used vehicle prices (Source: US Bureau of Labor Statistics, via FT)



The increased use of natural gas in the US has facilitated a large drop in US per capita CO2 emissions. Our World in Data's tabulation shows that US per capita CO2 emissions in 2017 had dropped to levels not seen since 1963 (Figure 4).

Figure 4: US per capita CO2 emissions (Source: Our World in Data)



The latest Baker Hughes rig count data follows. In July US total rigs increased by 13 from 475 to 488 and land rigs increased by 14 from 459 to 473. These are similar increases to those in June, though remain notably smaller than those seen in the 2016 energy price rebound as discussed in the June report. Oil rigs increased by 9 from 376 to 385 and there were 4 new gas rigs deployed, increasing from 99 to 103.

Baker Hughes rig count



Rotary Rig Count

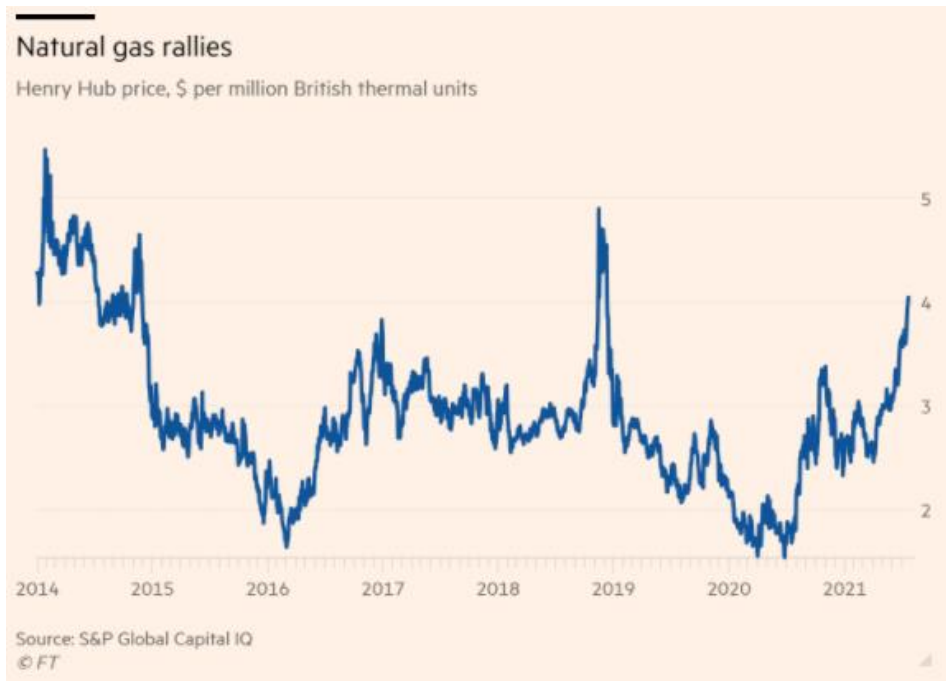
7/30/21

Location	Week	+/-	Week Ago	+/-	Year Ago
Land	473	0	473	234	239
Inland Waters	1	0	1	1	0
Offshore	14	-3	17	2	12
United States Total	488	-3	491	237	251
Gulf Of Mexico	14	-3	17	2	12
Canada	153	4	149	108	45
North America	641	1	640	345	296
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago
Oil	385	-2	387	205	180
Gas	103	-1	104	34	69
Miscellaneous	0	0	0	-2	2
Directional	29	-4	33	7	22
Horizontal	442	3	439	226	216
Vertical	17	-2	19	4	13

Gas Market

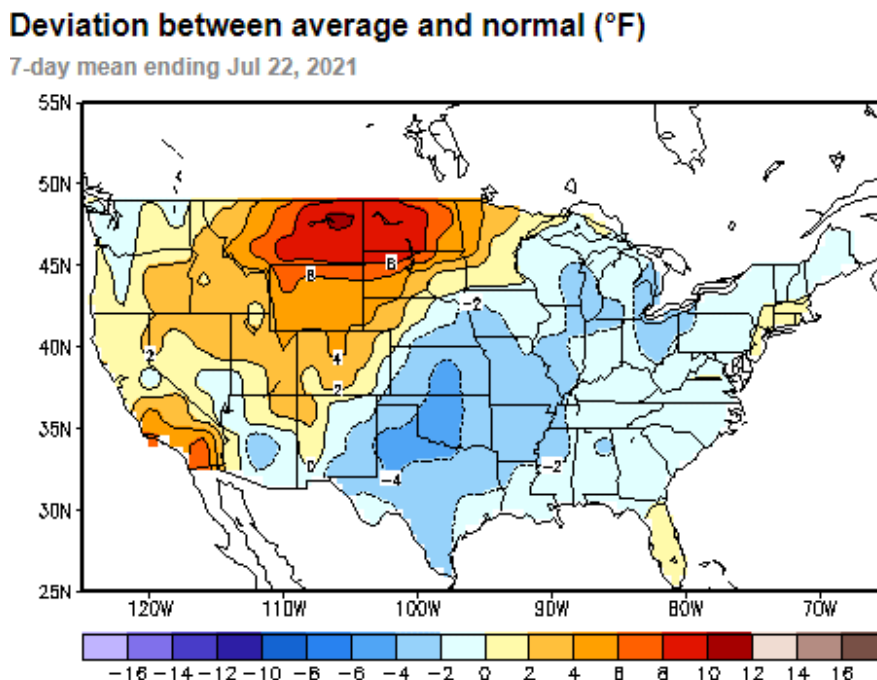
Strong exports and elevated power burns have driven US natural gas prices to multi-year highs. The prompt contract closed July at \$4.03, an increase of \$0.38 or 10% on end June (Figure 5).

Figure 5: Natural Gas Spot Prices (Source: S&P via FT)



Temperatures in the North-West remain very high (Figure 6). Gas demand in California drive the price at SoCal Citygate in Southern California to \$8.31/mmbtu on 28 July, over double the Henry Hub price.

Figure 6: Temperature deviation between average and normal week ending 22 July (Source: NOAA)

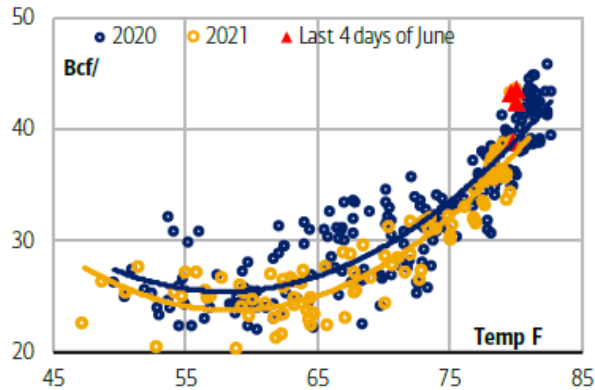


Temperatures in June were higher than normal, registering it the third hottest June since 2010. Gas weighted cooling degree days (CDDs), a measure of demand, totalled 379 for the month, 22 CDDs hotter than the 10-year normal (LHS Figure 7). As wind output plummeted and temperatures rose, gas burns jumped in the last four days of June (RHS Figure 7). This trend continued in July.

Figure 7: Gas power burn vs temp and CDDs (Source: Bloomberg, BofA)

Exhibit 8: US gas fired power generation and US temperature

As temperatures jumped at the end of June and wind output fell, gas fired power generation levels surged

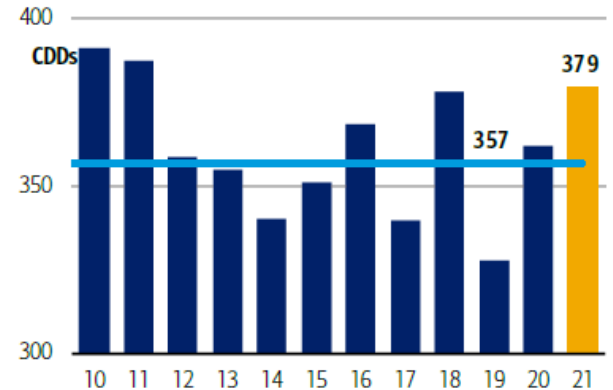


Source: Bloomberg, BofA Global Research estimates

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Exhibit 9: US gas weighted CDDs

Temperatures in June actualized warmer than forecast translating to 379 gas weighted CDDs, 22 CDDs hotter than the 10 year normal



Source: Bloomberg, BofA Global Research estimates

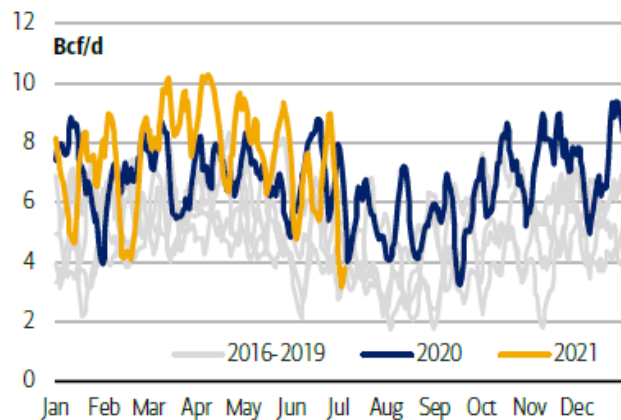
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The extremely bullish jump in gas burns was partly driven by a drop in wind generation to near multi-year lows. This is remarkable given the growth in overall wind capacity over the last several years (LHS Figure 8). While wind generation typically decreases as temperatures rise, the drop in June was extreme. The decline in total US wind generation measured from the 30-day average was over 50%, a record at national temperatures around 80 degrees F (RHS Figure 8). Putting the drop into gas equivalent terms, the 30-day average for wind generation was equivalent to 6.8bcf/d of gas generation (compared to ~40bcf/d of actual gas generation). On 29 June, gas equivalent wind generation only totalled 2.1 bcf.

Figure 8: US Wind Generation (Source: Bloomberg, BofA)

Exhibit 10: Gas equivalent US wind generation, 7 day moving average

Wind generation dropped to near record lows at the end of June, fueling gas generation, which was needed to cover the shortfall

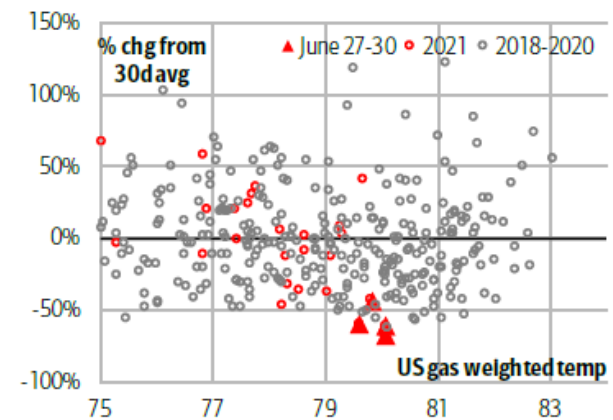


Source: Bloomberg, BofA Global Research estimates

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Exhibit 11: Percentage change in US wind generation from 30 day avg

The final four days of June saw wind generation drop over 50% from its 30 day moving average, a record drop for temperatures near 80 F nationally



Source: Bloomberg, BofA Global Research estimates

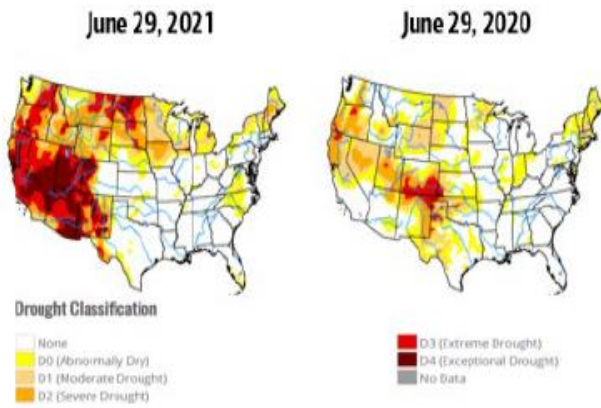
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A historic drought in the west has also added to gas demand as hydro generation levels have dropped across the country. The drought in the western half of the US is classified extreme and exceptional (the highest level) through most western states (LHS Figure 9). The drought has destroyed hydro generation whose levels have fallen over 25% from last year (RHS Figure 9). Assuming this lost generation was fully replaced by natural gas, in June it would have translated to an additional 1-1.5bcf/d of gas demand.

Figure 9: US Drought and Hydro Generation (Source: various via BofA)

Exhibit 12: US Drought Monitor

The Western part of the US is in a severe drought that has helped support record breaking temperatures in June...

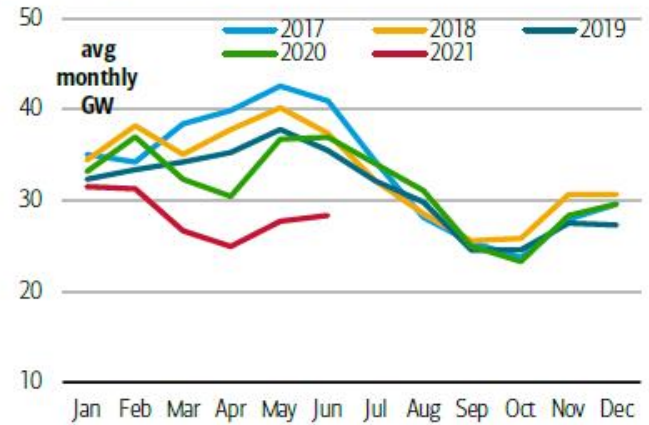


Source: National Drought Mitigation Center

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Exhibit 13: US hydro generation

...and has reduced hydro generation by over 25% vs last year's levels further supporting gas fired generation demand



Source: Platts

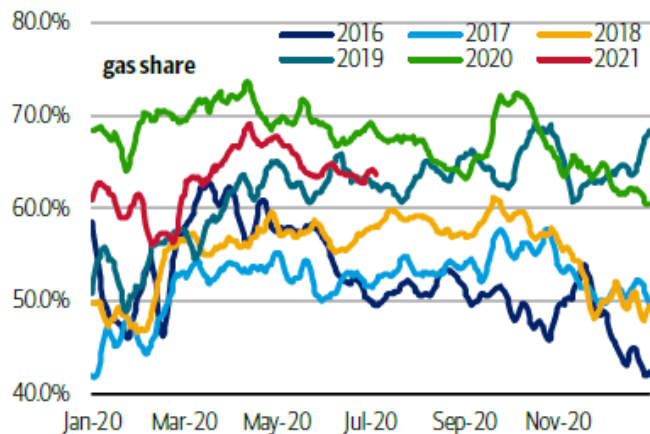
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Surprising support for gas demand has also been provided by reduced price-induced switching from gas to coal power generation. LHS Figure 10 shows gas's share of thermal generation over the last six-years. The RHS of Figure 10 shows that June 2021 gas-power burn is materially higher than the 2018-2020 coal/gas price relationship had implied. This has been caused by a wave of coal retirements over the last several years and the reduced elasticity of demand can be expected to soften the upper limits of potential future gas price moves.

Figure 10: Gas share of thermal generation (Source: Bloomberg, BofA)

Exhibit 16: Gas share of thermal generation

Last summer's gas share of thermal generation averaged 69.6% from April to June 2020, but dropped to 65.5% this year as prices averaged over \$1 higher

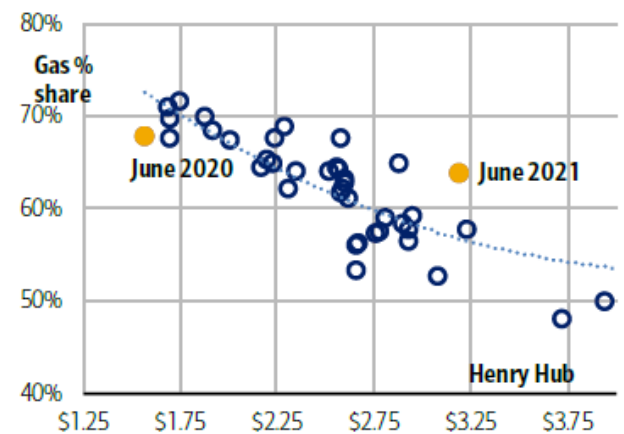


Source: Bloomberg, BofA Global Research estimates

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Exhibit 17: Gas share of thermal generation and Henry Hub spot prices

Gas' share of thermal generation in June highlights the changes in the historical gas to coal relationship due to growing coal retirements

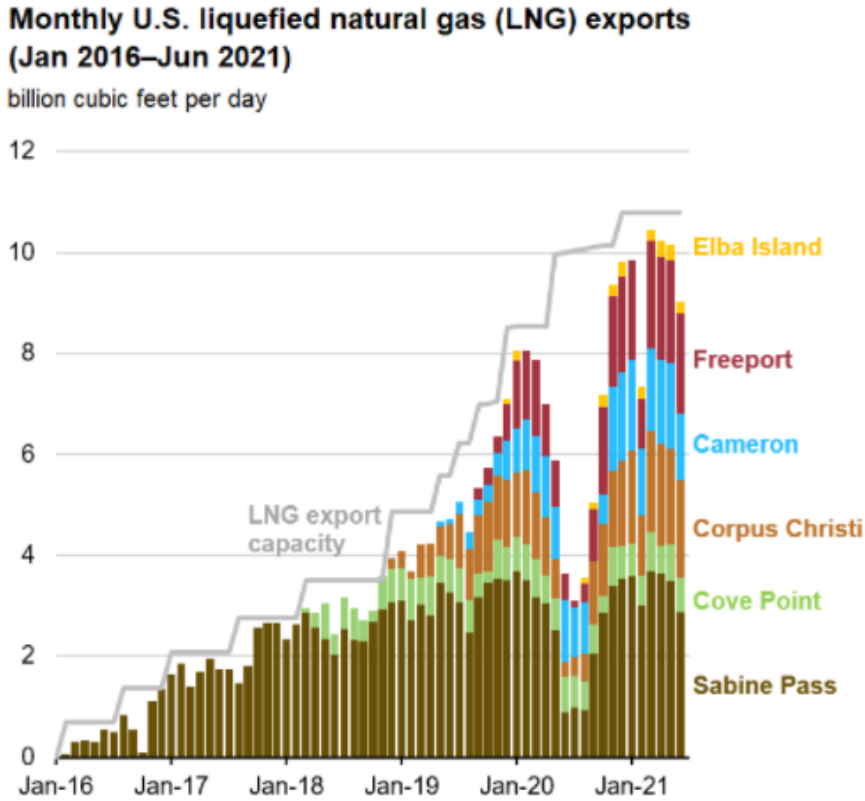


Source: Bloomberg, BofA Global Research estimates

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US gas export demand continues to be strong through both LNG and pipeline exports to Mexico. US LNG exports hit record highs during 1H2021 as new capacity ramped to match growing demand (Figure 11).

Figure 11: Natural Gas Liquids Spot Prices (Source: EIA)



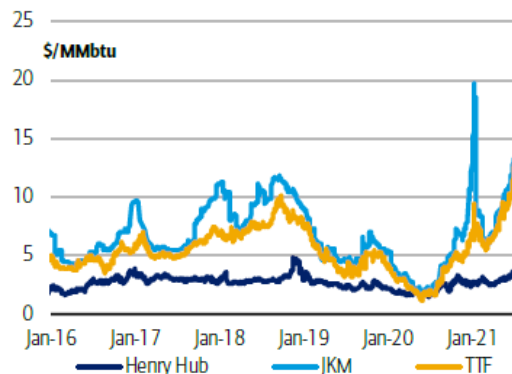
Source: Graph by the U.S. Energy Information Administration (EIA), based on data from the U.S. Department of Energy's LNG Monthly, EIA's estimates for June 2021, and EIA's Liquefaction Capacity Table

LNG exports averaged 9.6bcf/d for the first six months of the year, a 42% year-over-year increase. Net flows to US LNG facilities are around 10.6bcf/d as the global arbs remain wide open, inducing exporters to operate at maximum capacity (Figure 12).

Figure 12: Global Natural Gas Prices and LNG arb (Source: Bloomberg, BofA)

Exhibit 20: Global natural gas prices

Global gas prices have surged higher on low inventories in Europe, which is on pace to enter the winter with the lowest inventory level since 2013.

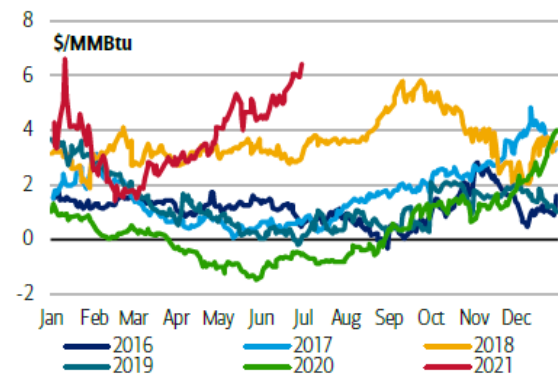


Source: Bloomberg

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Exhibit 21: US Gulf Coast to Europe LNG arb

propelling USGC export arbs to record wide levels and incentivizing over 10 BCF/d of US LNG exports so far this summer



Source: Bloomberg, BofA Global Research estimates

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European prompt-month TTF price is around \$13.735 while the Asian JKM is trading \$15.085. Both benchmarks have approached multi-year highs, as warm weather and strained inventory levels have caused a supply crunch.

In the UK, prices have risen above 100p a therm (£10/mmbtu), the highest level since 2005 and a record for summer (Figure 13).

Figure 13: UK Gas Price (Source: Reuters via FT)

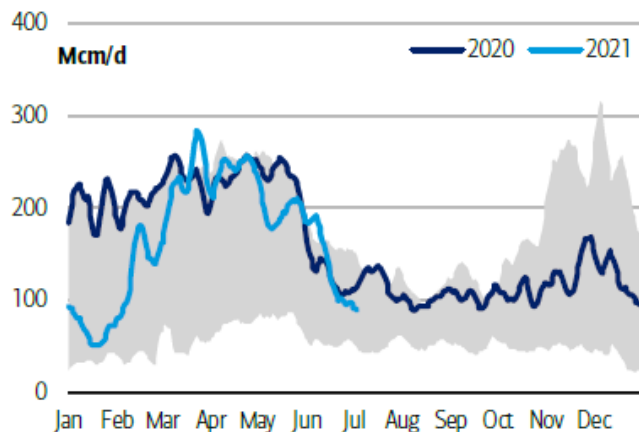


High prices in Europe have not been able to increase LNG imports above last year's levels with record Chinese demand still dominating (Figure 14).

Figure 14: European and Chinese LNG Imports (Source: EIA)

Exhibit 22: European LNG imports

Despite higher gas prices, European LNG imports have tracked in line with last year's levels...

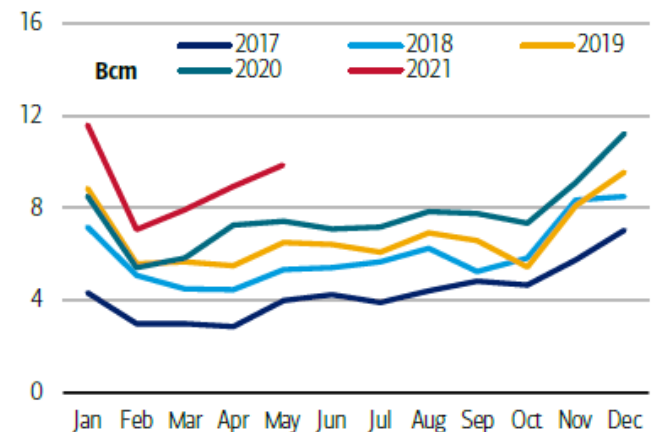


Source: Bloomberg, BofA Global Research estimates

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Exhibit 23: Chinese LNG imports

...as cargoes sail for higher priced Asian markets supported by record Chinese LNG imports that have jumped 30% year over year through May



Source: Platts

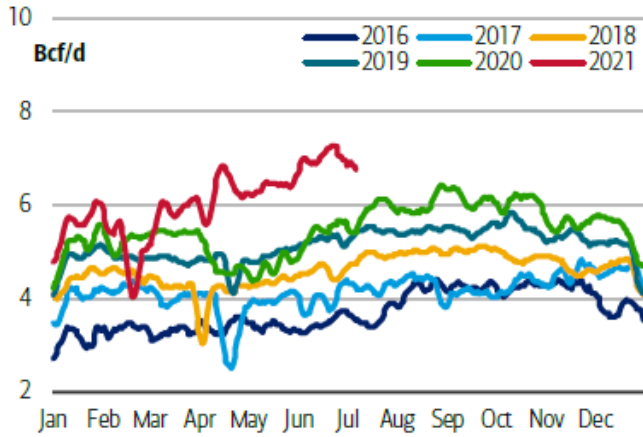
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Pipeline exports to Mexico have averaged 6.5bcf/d this US summer, up ~1.5bcf/d from summer 2020. The absence of cost-effective power generation alternatives suggests Mexican demand will not fall appreciably with higher gas prices (Figure 15).

Figure 15: Mexican imports and power generation (Source: various via BofA)

Exhibit 24: US natural gas pipeline exports to Mexico

Through June, Mexican exports have averaged 6.5 Bcf/d this summer, up ~1.5 Bcf/d over the same time period in 2020

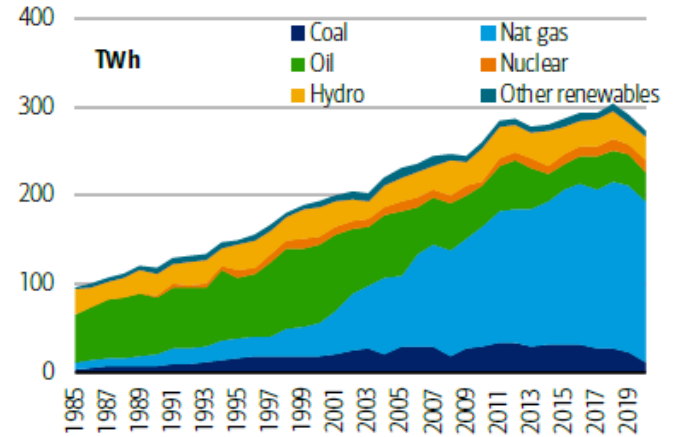


Source: Genscape

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Exhibit 25: Sources of power generation in Mexico

We do not expect a significant demand response to higher US natural gas prices as Mexico lacks cost effective alternatives



Source: Our World in Data

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In response to higher prices production is steadily creeping higher. June production averaged 92bcf/d, up 300mmcf/d from May (LHS Figure 16). While careful majors have maintained rig levels at under 40% of January 2020 levels, smaller producers, both public and private, have increased activity levels significantly since last northern hemisphere autumn. With gas (and oil) prices at current levels the incentive to bring back production only increases.

Figure 16: US Gas Production and Rig Counts (Source: Genscape, Platts via BofA)

Exhibit 28: US L48 dry gas production

US nat gas production continues to silently edge higher as June production averaged 92 Bcf/d, the highest since April 2020

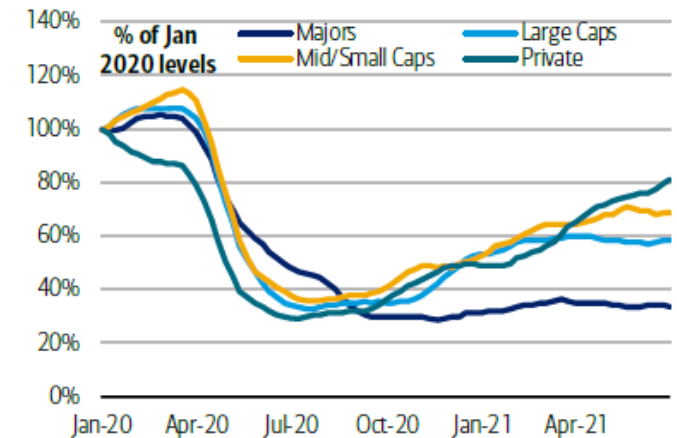


Source: Genscape

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Exhibit 29: Rig counts as a percentage of Jan 2020 levels

The definition of "discipline" differs greatly between the size of producer as private producers have led the recovery, while majors remain sidelined



Source: Platts

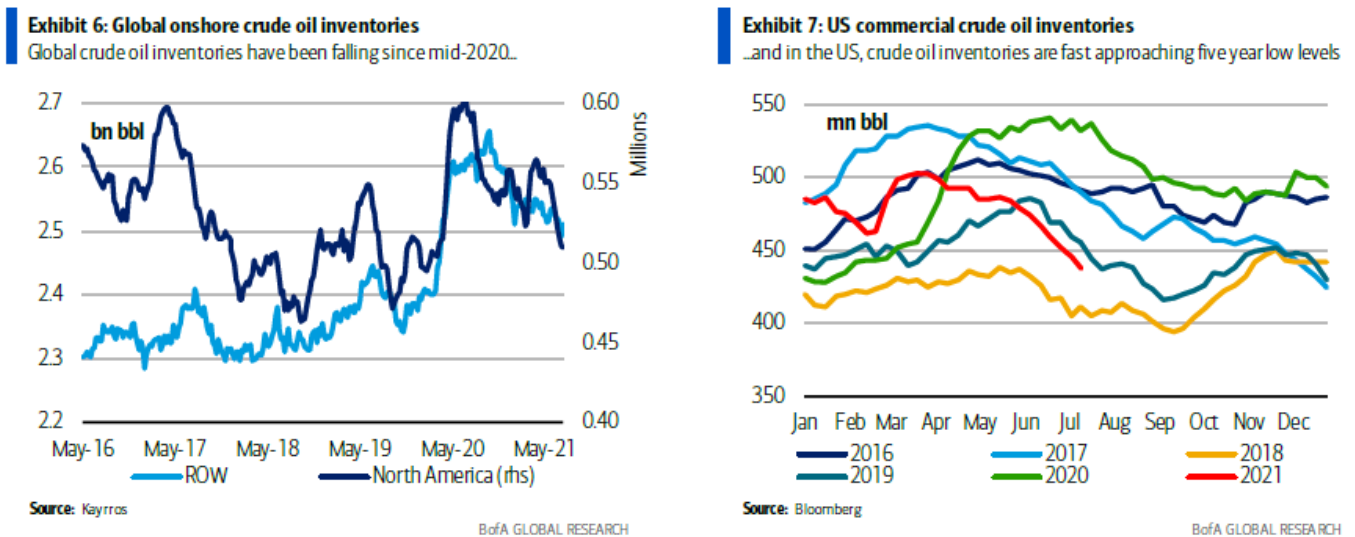
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Oil Market

Oil prices started July trading at \$73.47/bbl and on 6 July WTI reached a six-year high of \$76.97/bbl, after a dispute between Saudi Arabia and the UAE blocked OPEC agreement to a supply increase. Resolution of this dispute and increased concerns over the fast-spreading Delta variant of Covid-19 saw WTI then decline. By month end the prompt WTI contract was trading \$68.59/bbl, below highs but still a very healthy (and profitable) price for most US production.

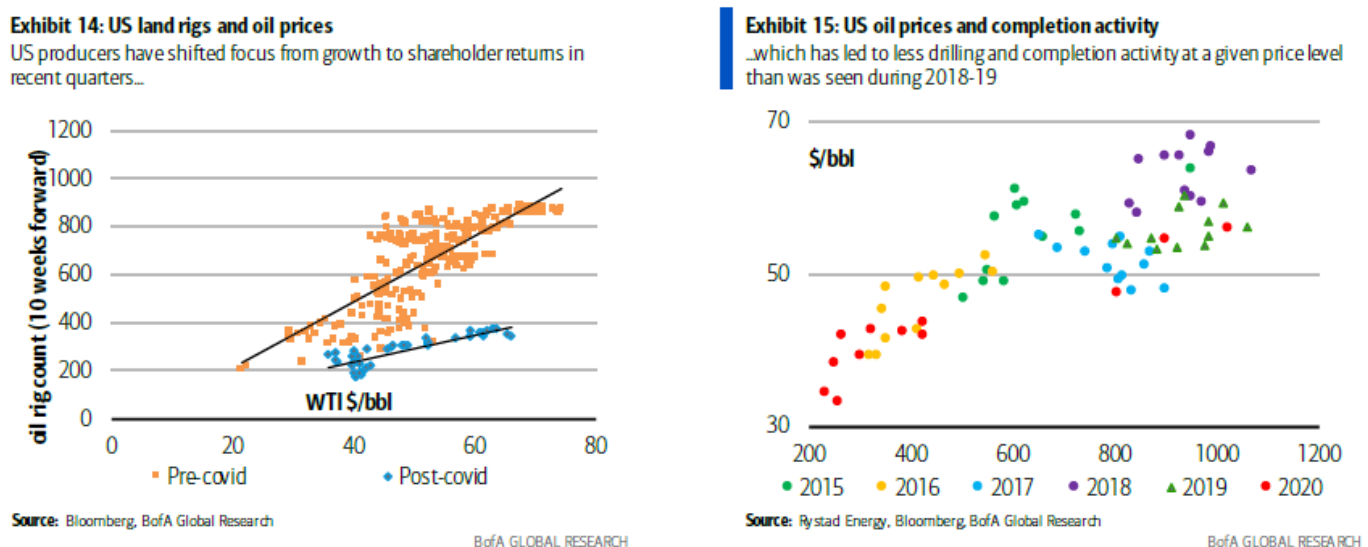
Global oil consumption remains stronger than seen in 2020 with global oil inventories dropping nearly 200 million bbl since mid-2020 (LHS Figure 17). Declines in the US have been steep. Inventories which started 2021 at five-year highs, quickly dropped towards the five-year average by late February and then spiked higher after the severe winter storm disrupted refining capacity. From March, robust end-use demand and a recovery in refinery runs have caused inventories to resume their downward trajectory and have now fallen below five-year average levels (RHS Figure 17)

Figure 17: Global and US crude oil inventories (Source: Kayrros, Bloomberg via BofA)



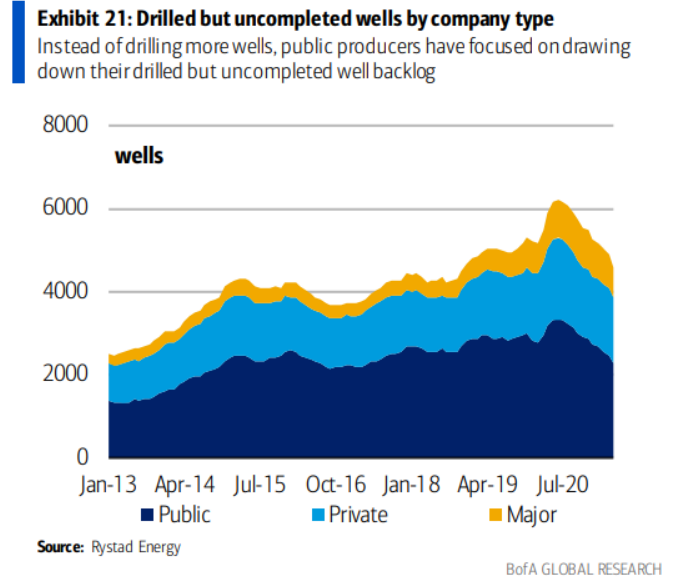
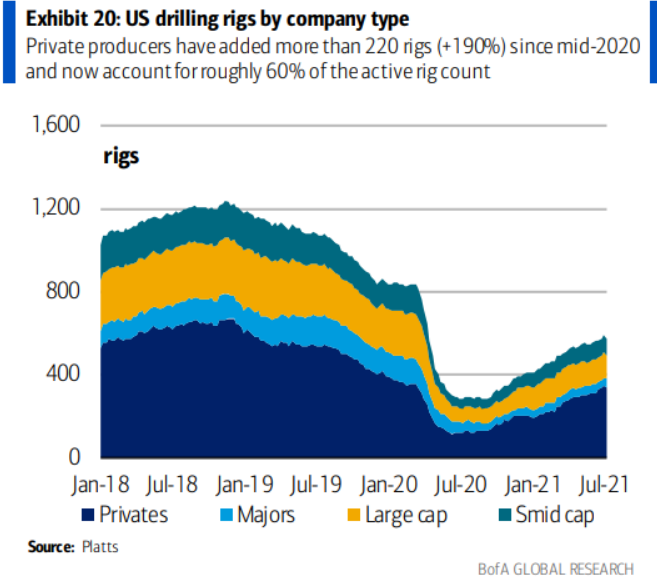
US producers are retraining their drilling activity despite higher prices. The drive to deliver shareholder returns has seen less drilling and completion activity than these prices would have delivered pre-covid (Figure 18).

Figure 18: US oil prices, rigs and completion activity (Source: various via BoA)



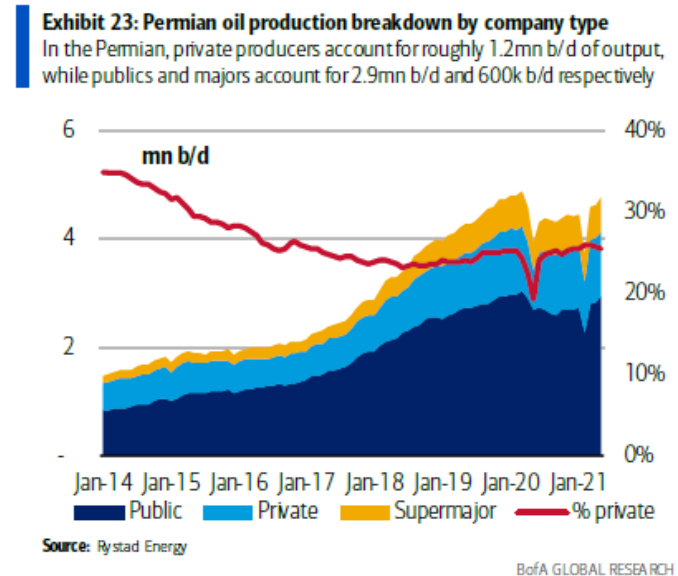
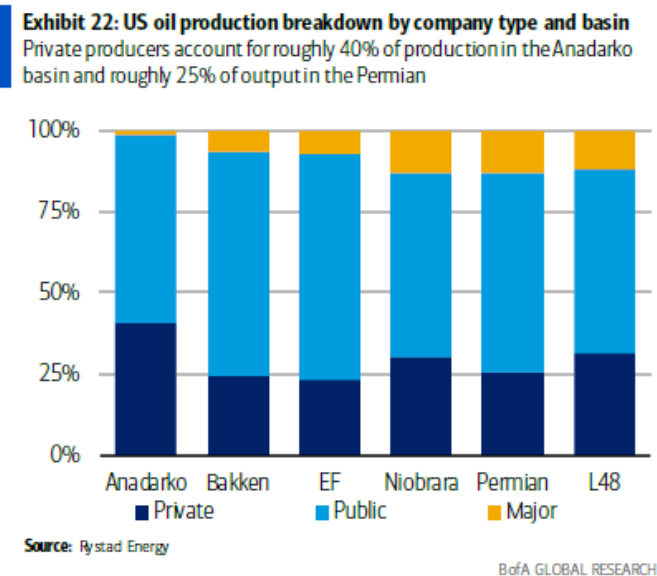
Public E&Ps have been more restrained than private companies who have boosted drilling activity by 190% since mid-2020 (LHS Figure 19). Public companies have focused their spending on completion activity which has delivered a decline in their drilled-but-uncompleted (DUC) well inventory (RHS Figure 19).

Figure 19: Rigs and DUCs by company type (Source: Platts, Rystad via BoA)



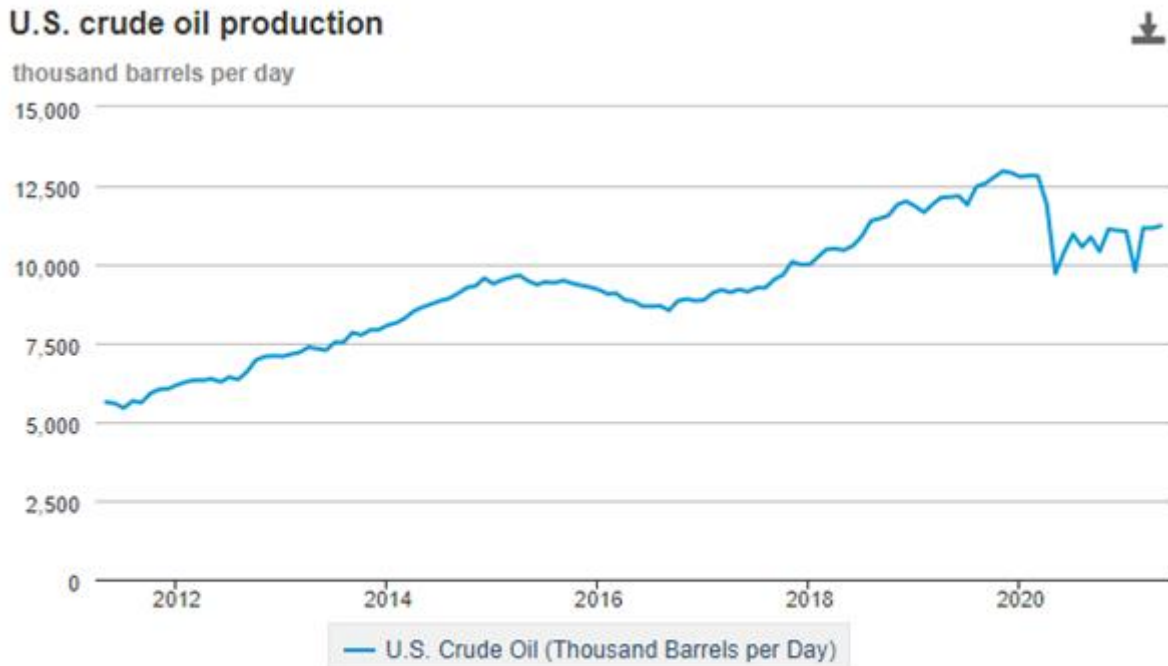
Note that while the ramp up in drilling and completion activity among private producers is impressive, private producers account for just one-third of total US onshore oil production, roughly 25% in the largest production area of the Permian, so the behaviour of the listed E&P sector is more important to national supply (Figure 20).

Figure 20: US and Permian oil production by company type (Source: Rystad via BoA)

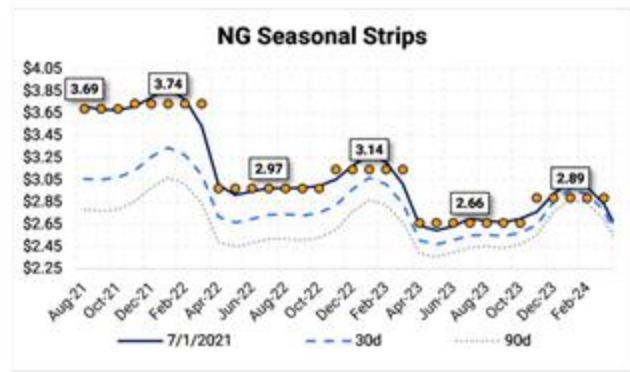
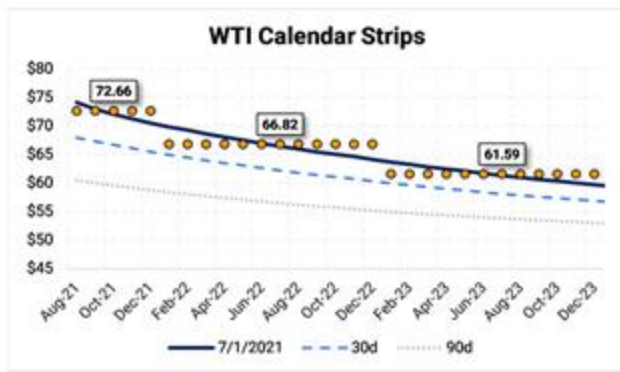
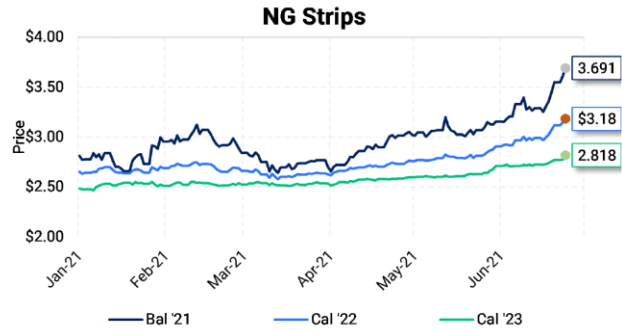
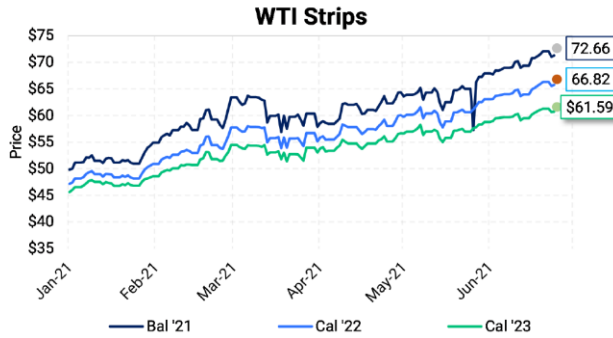


US production will increase with the prices but overall production during 2021 has been flat (Figure 21).

Figure 21: US crude oil production (Source: EIA)



 Source: U.S. Energy Information Administration

Gas and Oil Prices 1 July 2021


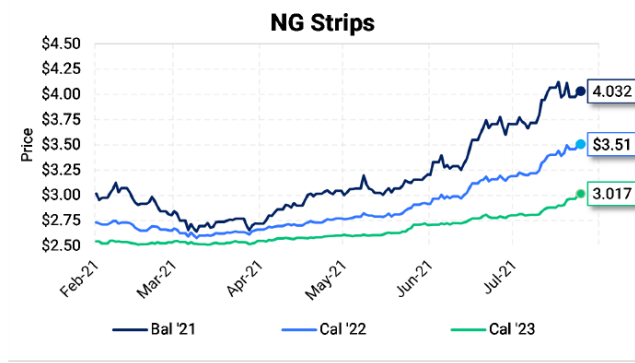
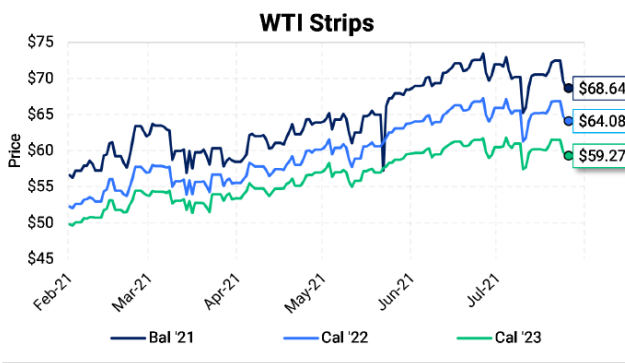
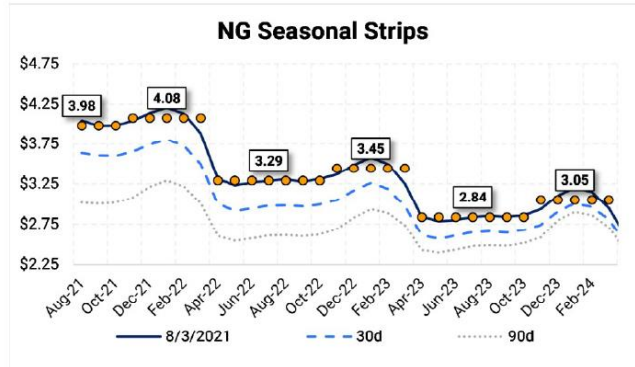
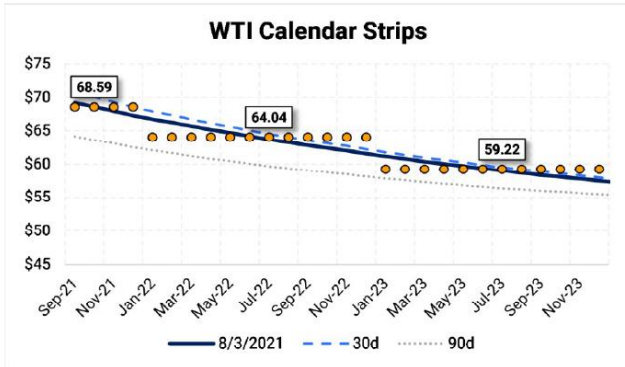
Swap Pricing					
	Bal 21	Cal 22	Cal 23	Cal 24	Cal 25
NYMEX WTI Crude	\$ 72.66	\$ 66.82	\$ 61.59	\$ 58.02	\$ 55.84
ICE Brent Crude	\$ 74.18	\$ 69.62	\$ 65.47	\$ 62.49	\$ 60.62
Light Louisiana Sweet	\$ 73.99	\$ 68.47	\$ 63.49	\$ 62.13	\$ 60.10
TM Midland Differential	\$ (0.05)	\$ 0.04	\$ 0.28		
WCS Differential	\$ (13.75)	\$ (12.92)	\$ (13.87)	\$ (16.55)	\$ (20.08)
NYMEX Natural Gas	\$ 3.72	\$ 3.18	\$ 2.81	\$ 2.71	\$ 2.72

Source: Bloomberg LP
Indicative only

Natural Gas Basis					
Location	Spot	Summer '21	Winter '21/'22	Summer '22	Winter '22/'23
Henry Hub Fixed	3.72	3.69	3.68	2.97	3.14
Opal	\$ (0.13)	\$ 0.13	\$ 0.38	\$ (0.21)	\$ 0.20
Waha	\$ (0.19)	\$ (0.11)	\$ (0.05)	\$ (0.47)	\$ (0.41)
Malin	\$ (0.20)	\$ 0.30	\$ 0.51	\$ (0.06)	\$ 0.28
Chicago CG	\$ (0.20)	\$ (0.17)	\$ (0.18)	\$ (0.21)	\$ (0.16)
PEPL	\$ (0.23)	\$ (0.18)	\$ (0.01)	\$ (0.28)	\$ (0.16)
Sumas	\$ (0.26)	\$ 0.35	\$ 0.78	\$ (0.28)	\$ 0.57
AECO	\$ (0.27)	\$ (0.66)	\$ (0.40)	\$ (0.72)	\$ (0.73)
TETCO M3	\$ (0.79)	\$ (0.93)	\$ 1.23	\$ (0.67)	\$ 0.94
Dominion S	\$ (0.89)	\$ (1.23)	\$ (0.80)	\$ (0.93)	\$ (0.71)

All prices as previous trading day close
Source: Bloomberg

Gas and Oil Prices 3 August 2021



Swap Pricing					
	Bal 21	Cal 22	Cal 23	Cal 24	Cal 25
NYMEX WTI Crude	\$ 68.59	\$ 64.04	\$ 59.22	\$ 55.85	\$ 53.61
ICE Brent Crude	\$ 70.50	\$ 66.83	\$ 63.20	\$ 60.48	\$ 58.63
Light Louisiana Sweet	\$ 69.75	\$ 65.61	\$ 61.19	\$ 57.75	\$ 55.50
TM Midland Differential	\$ (0.07)	\$ 0.10	\$ 0.18		
WCS Differential	\$ (13.88)				
NYMEX Natural Gas	\$ 4.03	\$ 3.51	\$ 3.02	\$ 2.78	\$ 2.74

Source: Bloomberg LP
Indicative only

Natural Gas Basis					
Location	Spot	Summer '21	Winter '21/'22	Summer '22	Winter '22/'23
Henry Hub Fixed	3.97	3.98	4.04	3.28	3.44
Malin	\$ 0.11	\$ 0.10	\$ 0.48	\$ (0.06)	\$ 0.35
Sumas	\$ (0.12)	\$ 0.13	\$ 0.79	\$ (0.32)	\$ 0.60
Chicago CG	\$ (0.21)	\$ (0.24)	\$ (0.18)	\$ (0.21)	\$ (0.16)
Waha	\$ (0.22)	\$ (0.27)	\$ (0.09)	\$ (0.44)	\$ (0.41)
PEPL	\$ (0.24)	\$ (0.29)	\$ (0.03)	\$ (0.31)	\$ (0.19)
Opal	\$ (0.27)	\$ (0.12)	\$ 0.35	\$ (0.22)	\$ 0.25
TETCO M3	\$ (0.78)	\$ (1.17)	\$ 1.14	\$ (0.73)	\$ 0.97
Dominion S	\$ (0.83)	\$ (1.22)	\$ (0.64)	\$ (0.90)	\$ (0.69)
AECO	\$ (1.04)	\$ (0.78)	\$ (0.64)	\$ (0.78)	\$ (0.71)

All prices as previous trading day close
Source: Bloomberg