LONGREACH ENERGY

Monthly Report

April 2021

# Longreach Energy Holdings LLC


FIRM INFORMATION

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## 1. Market and Macro Industry Commentary

### General Market Commentary

While the Covid situation in parts of Asia (principally India) and much of South America remains dire (see Figure 1), a broad and powerful rally in commodities markets has gathered steam in recent weeks. There is growing speculation among some journalists, traders and analysts that a "supercycle" has kicked off as big global economies rev up in tandem. While Longreach Energy is sceptical of the supercycle, it is certainly true that strong demand from China, vaccine induced Covid recovery and a boom in government spending on post-pandemic recovery programmes have lifted the price of many important raw materials, including gas, natural gas liquids and oil (Figure 2). As the FT noted on 3 May:

*The sector has also drawn support from fund managers seeking assets that will benefit as the global economy picks up speed after the pandemic, and that can also act as a hedge against rising inflation.*

Figure 1: Daily Confirmed Covid-19 Cases (Source: CEIC via BofA)

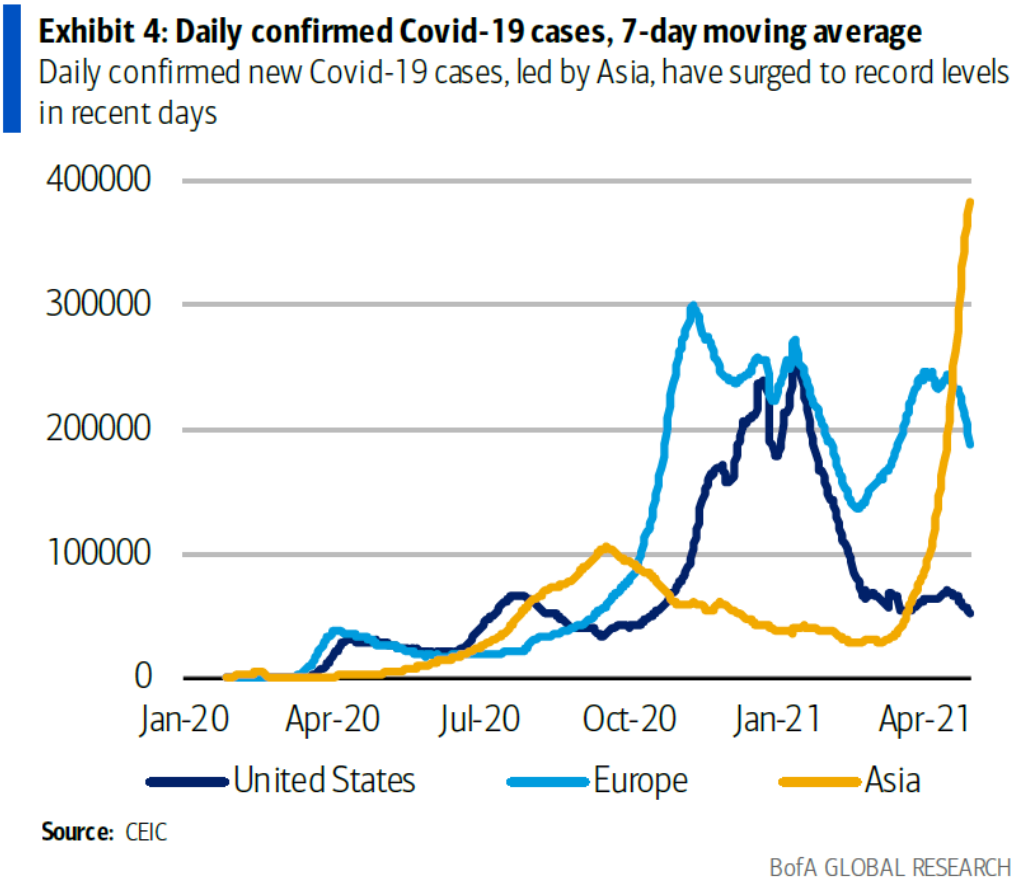
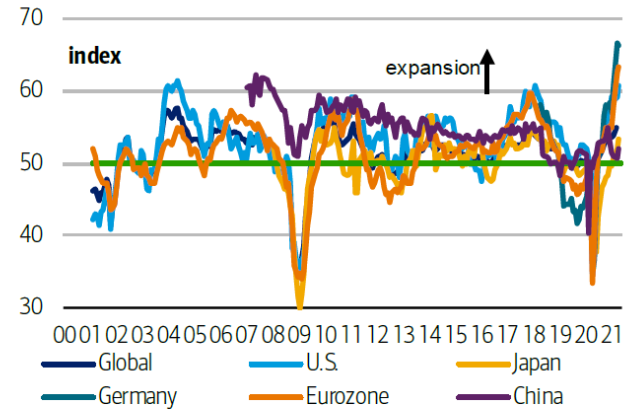


Figure 2: % Change of GSCI Spot Prices in 2021 (Source: Bloomberg via FT)


The strength in energy prices, particularly oil, have been supported by two demand side trends. Manufacturing Purchasing Managers Indices (PMIs, a measure of near-term business growth, see Figure 3) and economic activity recovered in OECD economies as well as China, even if other Emerging Markets (especially India) have lagged. Second, vaccination numbers first in the US and then in most of Western Europe (see also Figure 3) have picked up very quickly since the start of the year. The reported effectiveness of these vaccines has led to major reopening plans across several major economies.

Figure 3: Manufacturing PMIs and Covid Vaccination (Source: Bloomberg and CEIC, via BofA)

**Exhibit 6: Manufacturing PMIs**
Manufacturing PMIs and economic activity have recovered in OECD economies as well as in China...




**Source:** Bloomberg

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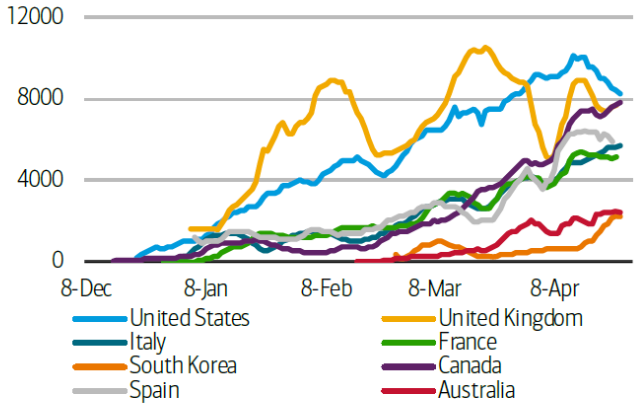
**Exhibit 7: Daily vaccinations per million people, 7-day moving average**
...while vaccination numbers in the US and Western Europe have picked up very quickly since the start of the year




**Source:** OWID

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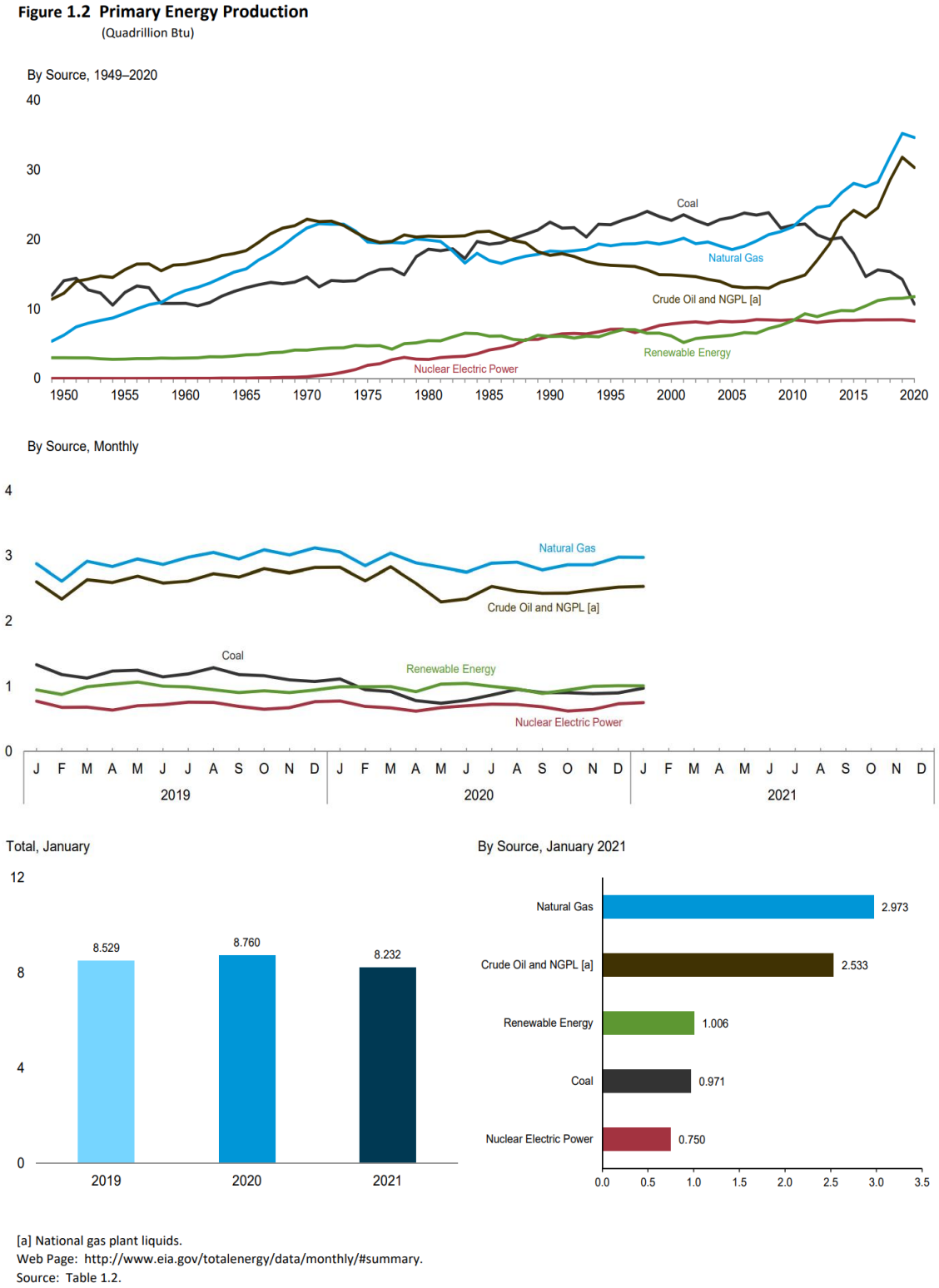
The EIA's Monthly Energy Review for April 2021 contains updated data on US primary energy production and consumption.

Primary energy production (Figure 4) highlights the very strong recent rise in both gas and liquids petroleum production since about 2006, with a Covid relatively modest induced reduction in 2020. Renewables have now overtaken once dominant coal although remain a long way behind gas and oil.

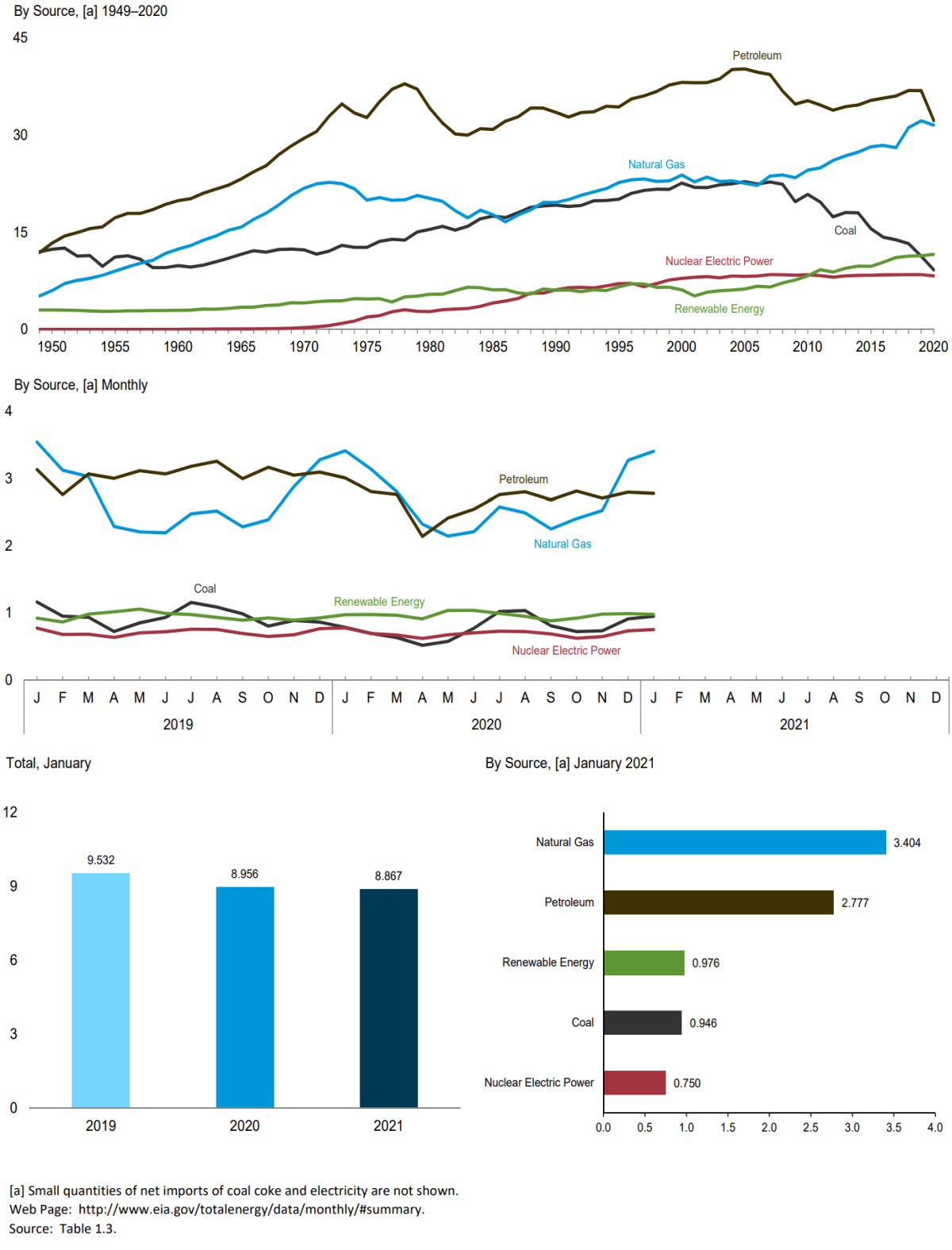
Figure 4: US Primary Energy Production (Source: EIA)



Primary energy consumption data (Figure 5) highlight the recent Covid induced fall in petroleum consumption, medium term decline in coal and steady rise of gas and renewables.

Figure 5: US Primary Energy Consumption (Source: EIA)

**Figure 1.3 Primary Energy Consumption**
(Quadrillion Btu)




[a] Small quantities of net imports of coal coke and electricity are not shown.
Web Page: http://www.eia.gov/totalenergy/data/monthly/#summary.
Source: Table 1.3.

The latest Baker Hughes rig count data follows. In the last month US total rigs have increased by eight from 432 to 440 and land rigs increased by 5 from 421 to 426. These are small increases relative to the sharp recovery in activity seen in recent months. Oil rigs increased by 5 from 337 to 342 and there were 3 new gas rigs deployed, increasing from 93 to 96. Note that despite the very healthy gas and oil prices, total US rig count at 408 remains approximately 200 down from the number of rigs deployed at the start of April 2020. While drilling productivity continues to improve (i.e. more production can be delivered from wells drilled by a single rig), the reduced rig count, if sustained, will reduce supply and therefore support higher prices absent any demand or non-US related supply changes.

Baker Hughes rig count

Baker Hughes

## Rotary Rig Count

4/30/21

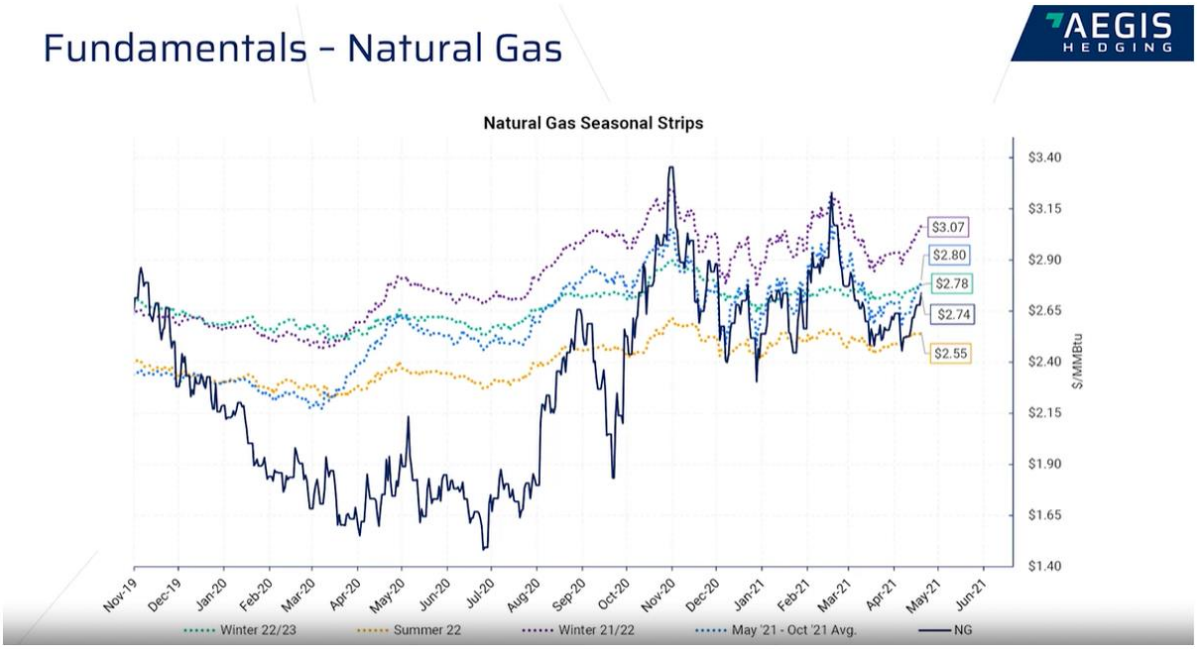
| Location | Week | +/- | Week Ago | +/- | Year Ago |
|---|---|---|---|---|---|
| Land | 426 | 0 | 426 | 34 | 392 |
| Inland Waters | 1 | 0 | 1 | 1 | 0 |
| Offshore | 13 | 2 | 11 | -3 | 16 |
| United States Total | 440 | 2 | 438 | 32 | 408 |
| Gulf Of Mexico | 13 | 2 | 11 | -3 | 16 |
| Canada | 51 | -4 | 55 | 24 | 27 |
| North America | 491 | -2 | 493 | 56 | 435 |
| **U.S. Breakout Information** | **This Week** | **+/-** | **Last Week** | **+/-** | **Year Ago** |
| Oil | 342 | -1 | 343 | 17 | 325 |
| Gas | 96 | 2 | 94 | 15 | 81 |
| Miscellaneous | 2 | 1 | 1 | 0 | 2 |
| Directional | 23 | 4 | 19 | 0 | 23 |
| Horizontal | 398 | 1 | 397 | 24 | 374 |
| Vertical | 19 | -3 | 22 | 8 | 11 |

Gas Market

The prompt June gas contract finished April at $2.938/mmbtu, a $0.355/mmbtu increase over the course of the month and $0.17/mmbtu up from the prompt on 1 March.

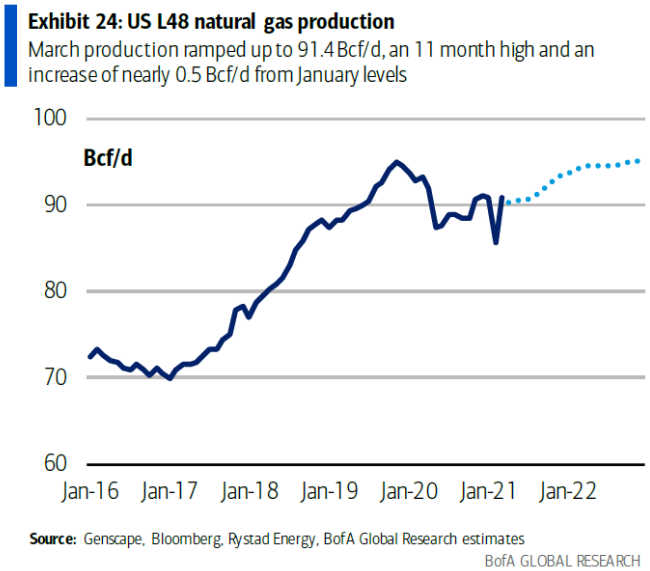
Gas prompt and forward prices (Figure 6) are significantly higher than the levels of mid-last year except for Summer 22, which has stayed around the $2.50/mcf level since 3Q20. The reason for this is a likely combination of general producer selling, as higher prices are locked in, together with lack of buying interest in what is historically a part of the year that sees lower prices.

Figure 6: US Natural Gas Prompt and Seasonal Strips (Source: Aegis)




The June futures contract had sold off in early April amid weaker space-heating demand and strong recovery in production after disruption from the February winter storms (Figure 7). While mild temperatures remained in April to deliver lower residential and commercial sector demand, power generation demand (Figure 8) and exports to Mexico and international markets via LNG (Figure 9) combined to increase prices.

Figure 7: US Natural Gas Production (Source: Genscape, Bloomberg, Rystad, BofA)



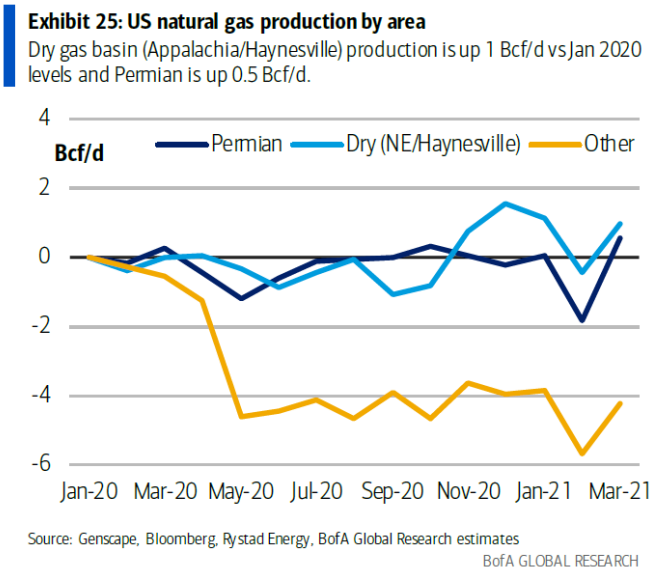
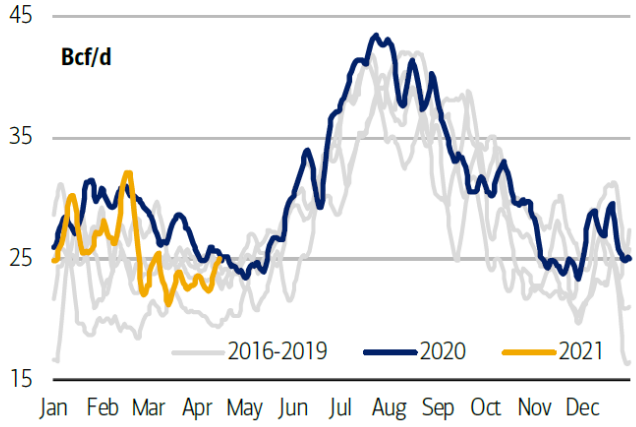



Figure 8: US Natural Gas for Power Generation (Source: Bloomberg, BofA)

**Exhibit 12: US natural gas for power generation**
Gas fired power burns were significantly weaker year over year in March as Henry Hub spot prices were 80 cents higher...




Source: Bloomberg, BofA Global Research estimates

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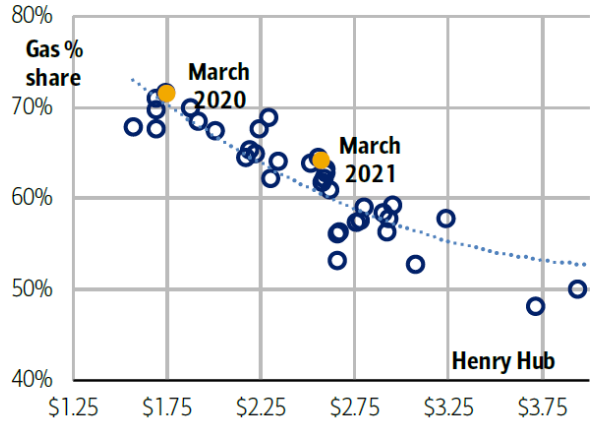
**Exhibit 13: Henry Hub cash vs gas share of thermal generation**
... reducing gas' share of thermal generation allowing coal to regain some market share in the power stack




**Source:** Bloomberg, BofA Global Research estimates

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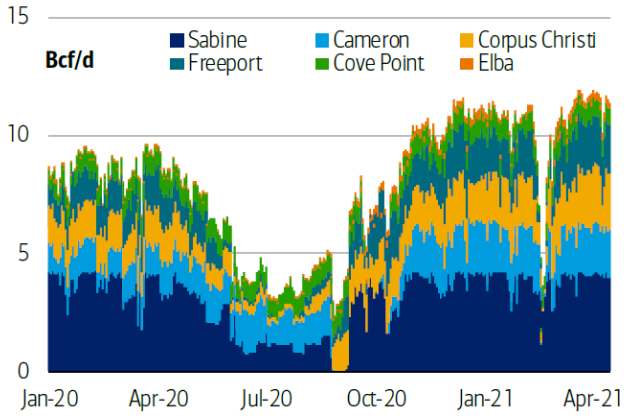
Figure 9: US LNG Exports and JKM/TIF Export Arb (Source: Bloomberg via BofA)

**Exhibit 18: US LNG export facility feed gas**
US LNG exports set a new daily record of 11.5 Bcf/d in April as facilities run at maximum levels...




**Source:** Bloomberg

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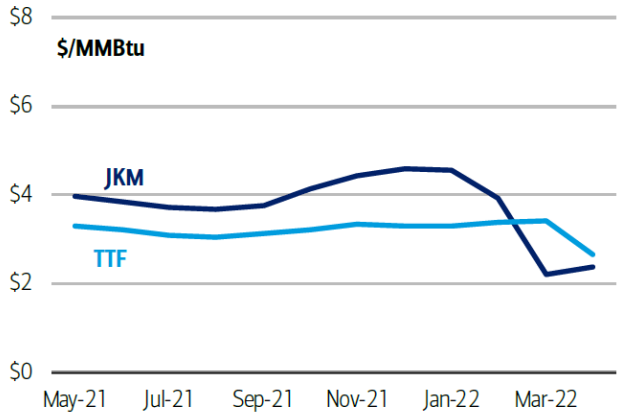
**Exhibit 19: USGC LNG export arbs (long term charter)**
... as export arbs from the USGC to Europe and Asia have widened to $3-$4/MMbtu




Source: Bloomberg

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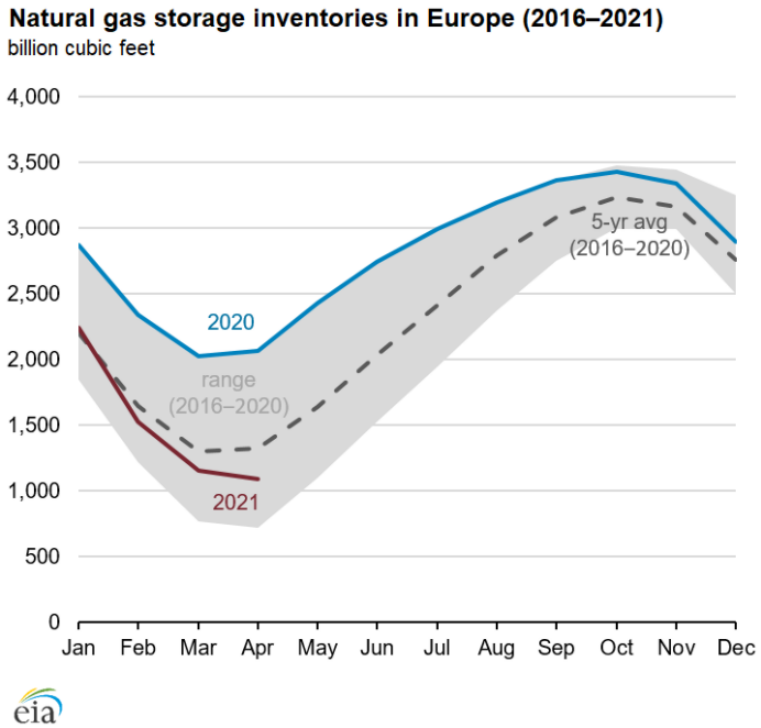
Figure 8 also shows the correlation between Henry Hub natural gas price and gas's share of thermal generation, showing that as price increases gas use declines. We expect higher gas prices to drive some switching from power generators to coal from gas this year.

LNG exports volumes are both an important source of demand growth and an impetus for Henry Hub, historically a purely domestic US gas price fully independent of other international gas markets, to become a global benchmark for natural gas.

The high export arbitrage for US LNG exporters to send cargos to both North Asia (the JKM price) and Europe (TTF) encouraged maximum production which saw US liquefaction facilities set a new high of 11.5bcf/d through April.

Demand in both Asia and Europe was driven by cold winters. Natural gas inventories in Europe (Figure 10) began the winter heating season in November 2020 95% full though declined rapidly in January and February 2021 due to extended periods of cold weather, particularly in Northwest Europe. By 31 March 2021 – the traditional end of the winter heating season – working gas inventories in Europe had declined to just 31% of capacity. These end-of-season inventories were 11% lower than the 2016-2020 average and 44% lower than last year's record-high inventories (Figure 11).

Figure 10: European Gas Storage (Source: EIA)

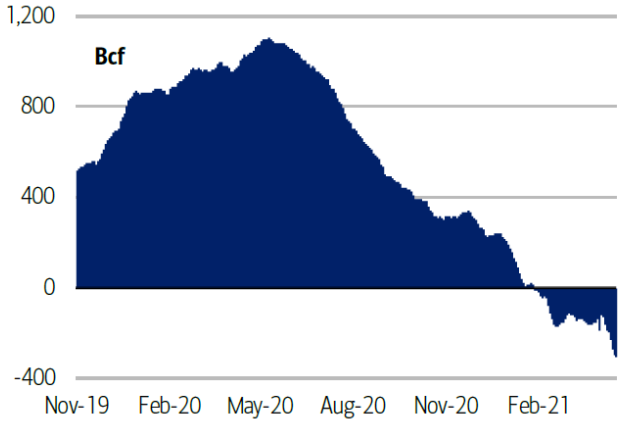



Source: Gas Infrastructure Europe, Aggregated Gas Storage Inventory (AGSI+)
Note: Storage inventory levels are converted from terawatthours to billion cubic feet using a conversion factor of 3,602 kilowatthours per cubic foot.

The second chart on Figure 11 shows the forward spreads between Asian LNG (JKM) and European LNG (TTF) on 22 March and 19 April. In Asia there is peak demand in summer for cooling and in March we saw JKM prices high relative to TTF, as storage is built ahead of summer demand. The wider JKM spread encouraged US LNG, the world's largest supplier of flexible LNG volumes that can ship on a spot basis anywhere in the world, to be sent to Asia. This left Europe short the cargoes it needs to refill depleted storage. As a result, TTF and JKM prices keep rising in the battle to attract needed LNG cargoes to the benefit of US exporters and the producers who supply them (of whom we are one).

Figure 11: European Gas Storage Surplus to 5 Yr. Average and JKM/TTF Spreads (Source: Bloomberg, BofA)

**Exhibit 20: EU storage surplus to the five year average**
The European storage surplus has turned in to a deficit of nearly 300 Bcf on lower than expected LNG imports that has pushed TTF prices higher...




**Source:** Bloomberg, BofA Global Research estimates

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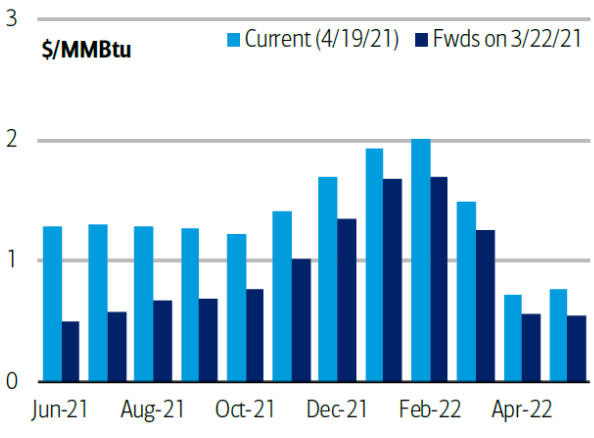
**Exhibit 21: JKM/TTF forward curve spreads**
... as swing cargoes head back to the Pacific basin on wider JKM/TTF spreads ahead of peak summer demand in Asia




**Source:** Bloomberg

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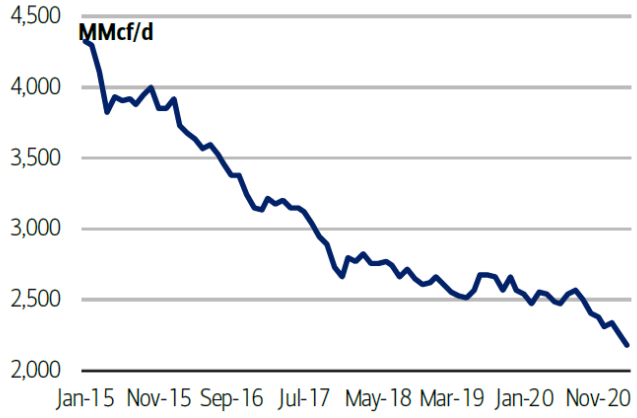
Pipelines to Mexico are another important and growing source of gas demand. Mexican domestic gas production continues to decline while US export capacity and volumes are steadily increasing (Figure 12). Total export capacity is now approximately 18bcf/d, a material 20% of current US supply.

Figure 12: Mexican Gas Production and US Pipeline Gas Exports (Source: Genscape, EIA, BofA)

**Exhibit 16: Mexico natural gas production**
Mexican production continues to decline requiring more imported gas from the US to meet rising domestic consumption




**Source:** Genscape

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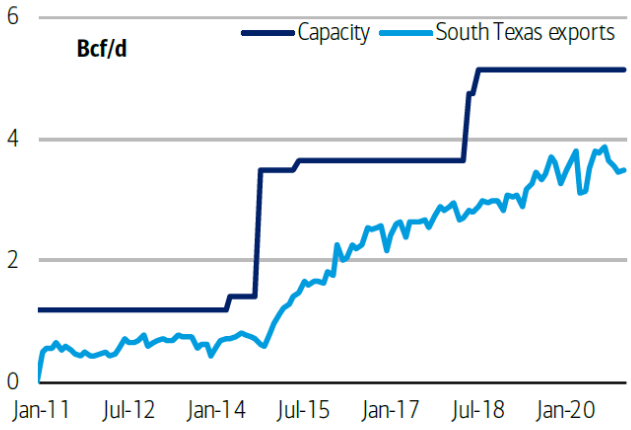
**Exhibit 17: South Texas natural gas exports to Mexico**
While there is over 14 Bcf/d of cross border pipes, the large majority of exports come from South Texas, which has more limited capacity.




**Source:** EIA, BofA Global Research

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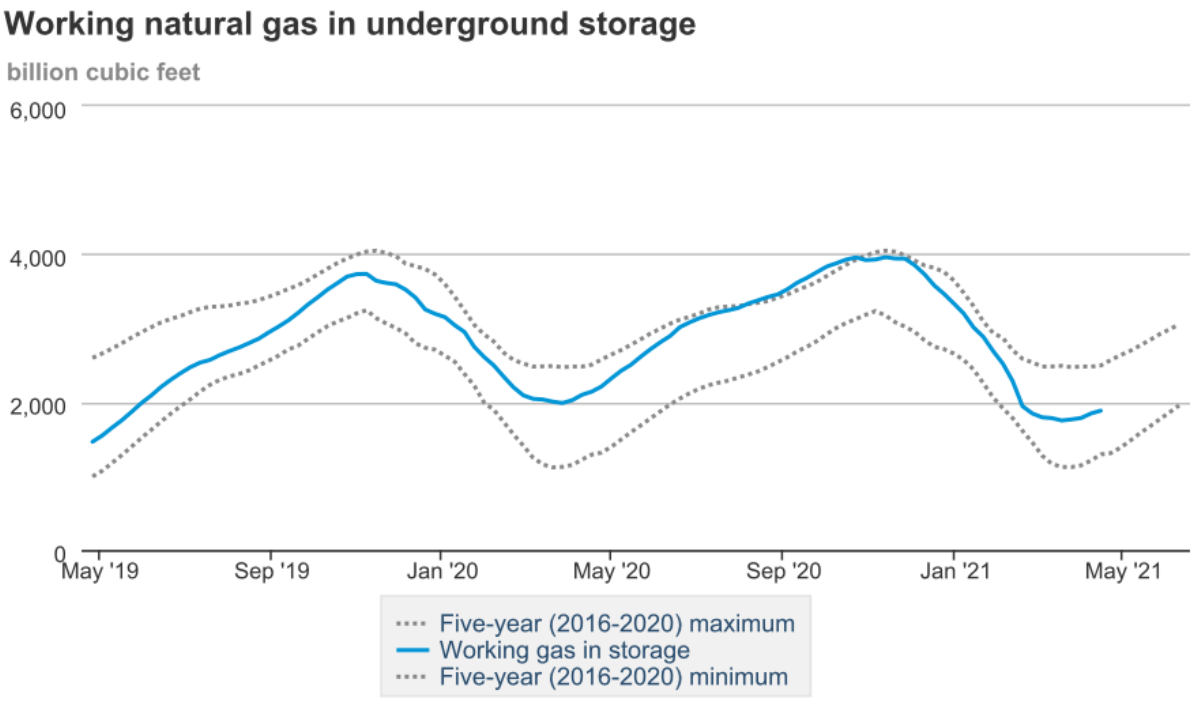
US net storage injections have been lower than average through April and working natural gas stocks are currently 40 bcf lower than the five-year average and 302 bcf lower than this time last year (Figure 13).

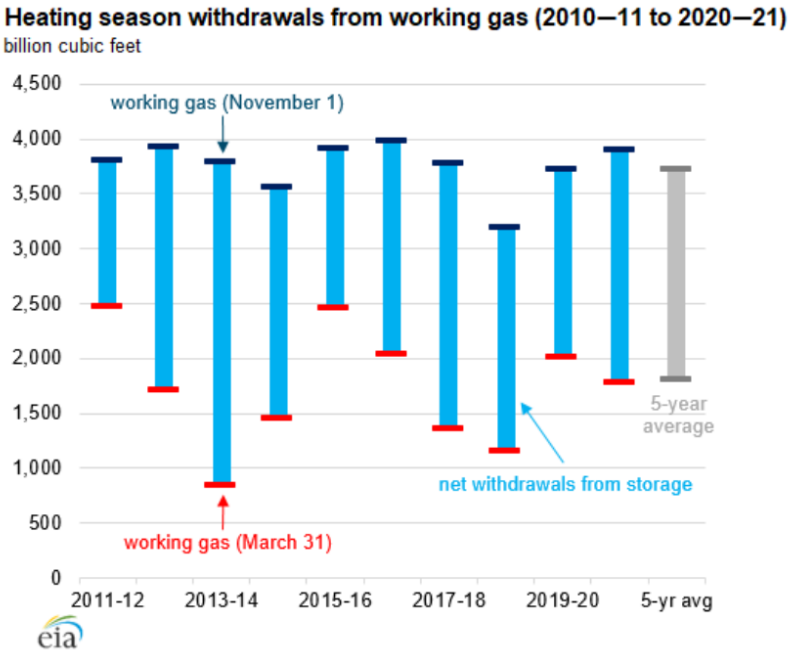
Figure 13: US Natural Gas Stocks (Source: EIA)




eia Source: Form EIA-912, *Weekly Underground Natural Gas Storage Report*

Looking back on the US winter, the season overall saw net withdrawals slightly ahead of the five-year average (Figure 14).

Figure 14: US Heating Season Gas Withdrawals (Source: EIA)

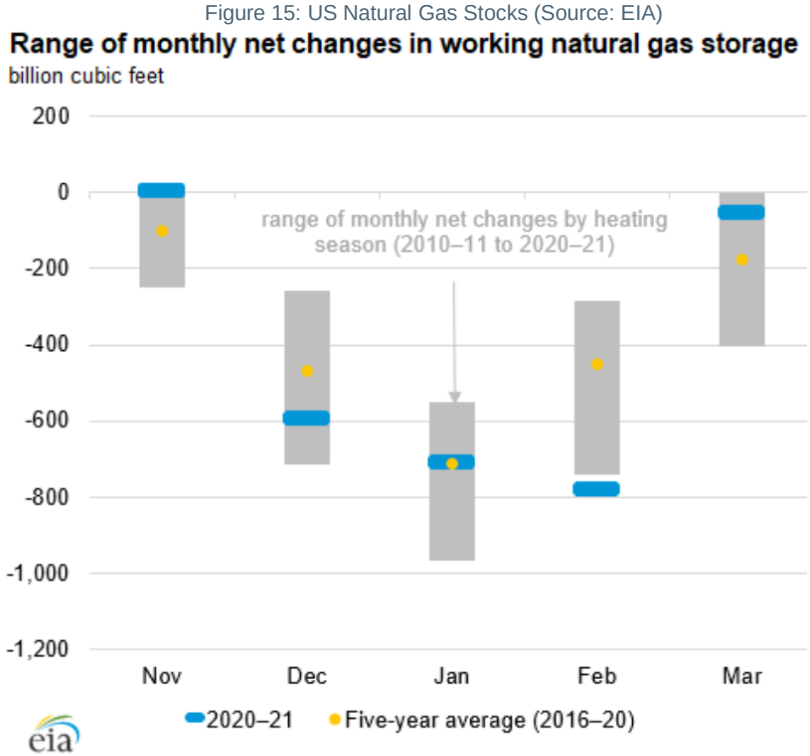



Source: U.S. Energy Information Administration, *Natural Gas Monthly* and *Weekly Natural Gas Storage Report*

Note: Datapoint for March 31, 2021, is an interpolated value, based on the *Weekly Natural Gas Storage Report*. Data are for the Lower 48 states.

The month-to-month numbers however show wide variance in gas demand (Figure 15). November and March were both warm, January was average, December was cold and February was very cold. Gas is a fuel well suited to responding to energy needs associated with volatile temperatures and this is expected to support demand in the future.

Figure 15: US Natural Gas Stocks (Source: EIA)




Source: U.S. Energy Information Administration, *Natural Gas Monthly* and *Weekly Natural Gas Storage Report*

Note: Data for February 28, 2021, and March 31, 2021, are interpolated values, based on the *Weekly Natural Gas Storage Report*.

Oil Market

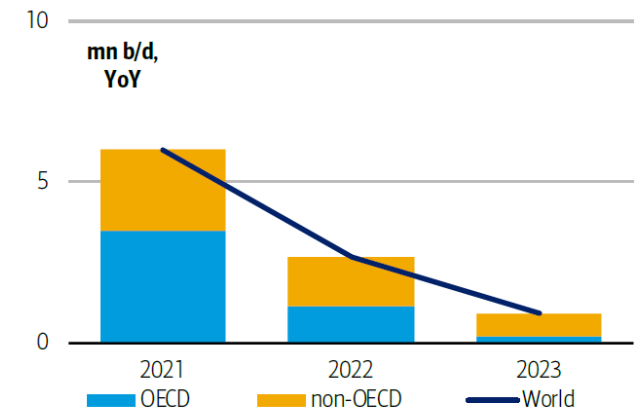
Oil prices closed the month of April with the June prompt WTI contract trading at $63.58/bbl, an increase of almost $4/bbl since 1 April. Market participants appear to remain upbeat on the global recovery in demand despite Covid hotspots like India. A report from Goldman Sachs in the last week of April likely helped buoy oil prices as the investment bank reiterated its bullish outlook for oil throughout the year. Goldman forecasts Brent will reach $80/bbl in the second half of the year, warning that there could be a large supply deficit this summer as vaccine rollouts accelerate and people drive to their holidays, boosting demand by more than 5% globally.

The pace of vaccinations and the reopening of economies are both positive for oil demand and oil markets participants clearly now expect a meaningful pick-up in OECD oil demand heating into the northern hemisphere summer. The principal risks to the oil price are the pace of production increases from OPEC+, who have currently withdrawn from the market about 7% of the world's supply and Covid induced demand destruction in emerging markets, notably India.

Bank of America's oil demand growth forecasts are provided in Figure 16. Next year BofA expects about 58% of demand recovery to come from OECD countries, with future emerging market demand growth being driven by China and India.

Figure 16: Global Oil Demand Growth (Source: EIA, BofA)

**Exhibit 10: Global oil demand growth**
We expect about 42% of this year's oil demand recovery to come from non-OECD economies...




**Source:** IEA, BofA Global Research estimates

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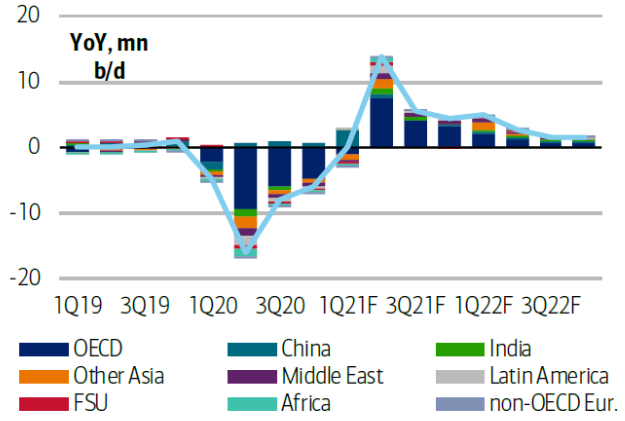
**Exhibit 11: Global oil demand growth**
...with India, China, and other parts of Asia accounting for most of the incremental oil demand from EMs going forward




**Source:** IEA, BofA Global Research estimates

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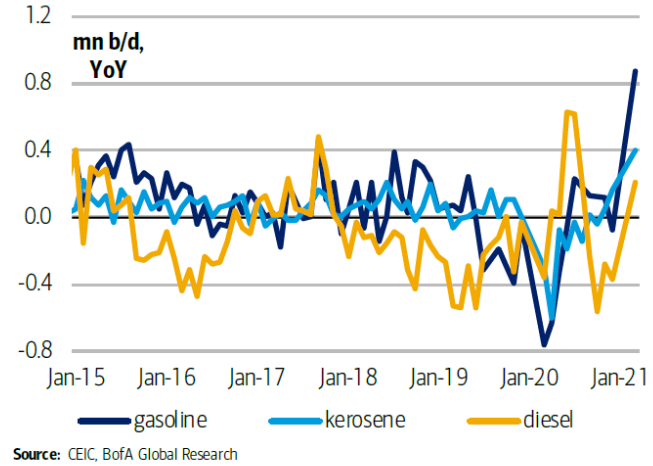
Figure 17 contains data for China where imports in February and March average 11.7mmbld, a seasonal record.

Figure 17: China Oil Demand (Source: EIA, BofA)

**Exhibit 18: Chinese apparent demand growth by product**
Demand for gasoline, jet/kero, and diesel in China is all expanding at a very healthy rate




**Source:** CEIC, BofA Global Research

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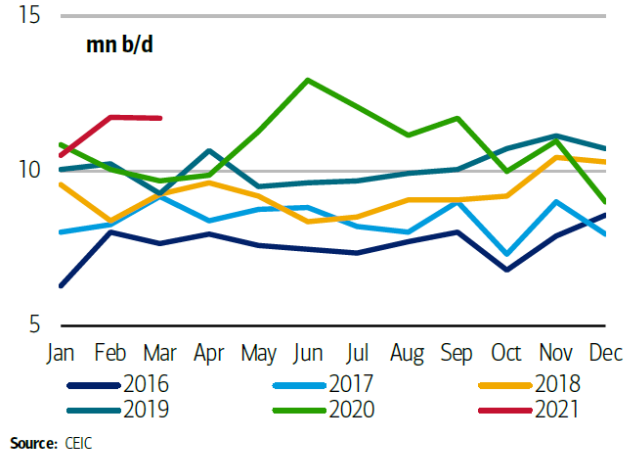
**Exhibit 19: China: crude oil imports**
As a result, Chinese crude imports averaged 11.7mn b/d in February and March, a seasonal record




**Source:** CEIC

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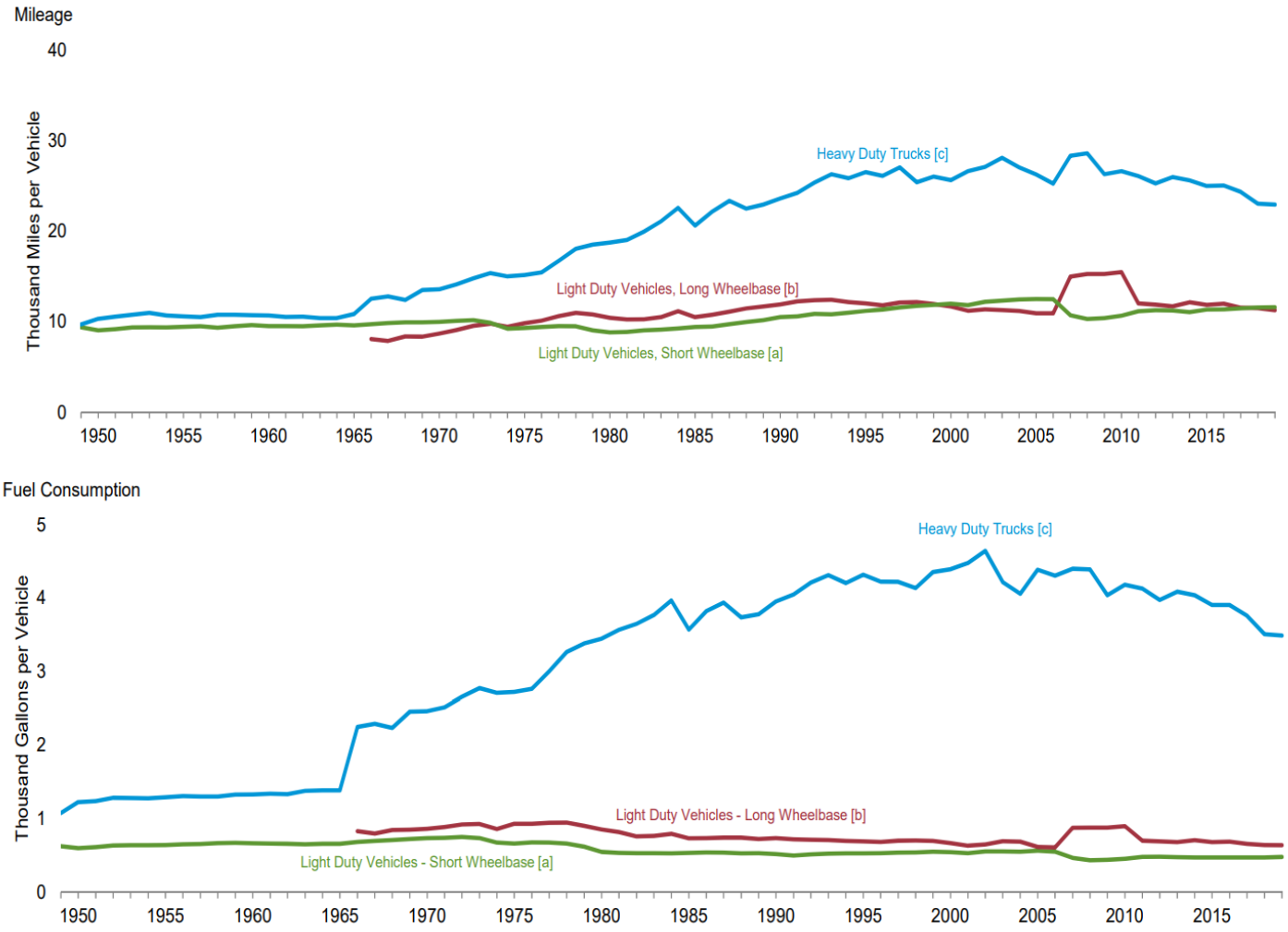
US motor vehicle mileage, fuel consumption and fuel economy data from the EIA (Figure 18) shows the size of heavy-duty truck petroleum consumption relative to light vehicles. It is heavy duty transport that is most difficult to run with electric vehicles because the weight of batteries makes it inefficient to carry heavy freight loads. Energy density will ensure that oil will be needed as transport fuel well into the future.

Figure 18: World Liquids Fuels Supply and Demand Balance (Source: EIA)

**Figure 1.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy, 1949-2019**



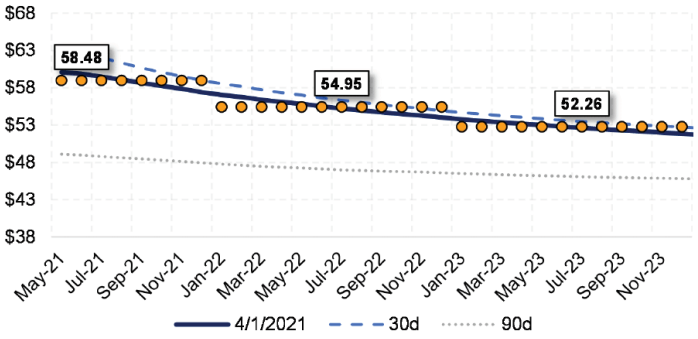
# Longreach Energy Holdings LLC

LONGREACH ENERGY

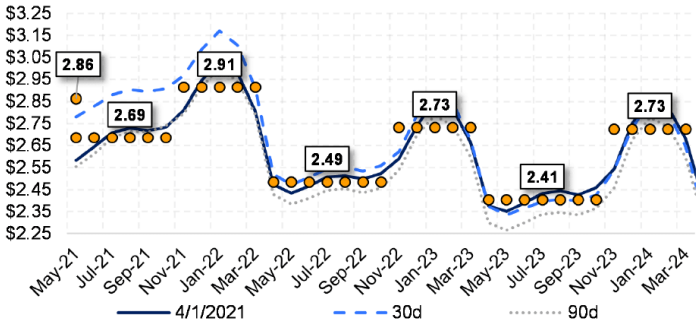
Monthly Report

Gas and Oil Prices 1 April 2021

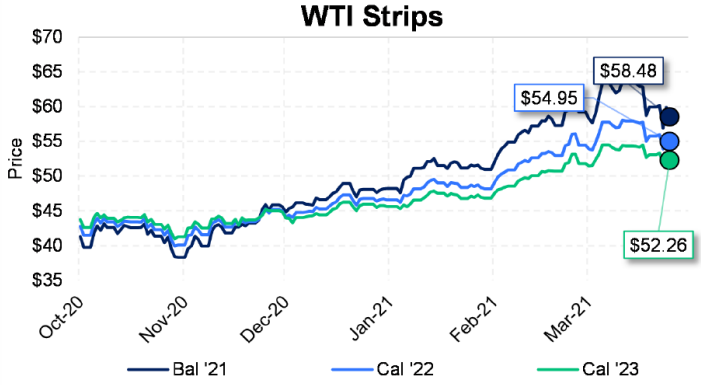
### WTI Calendar Strips



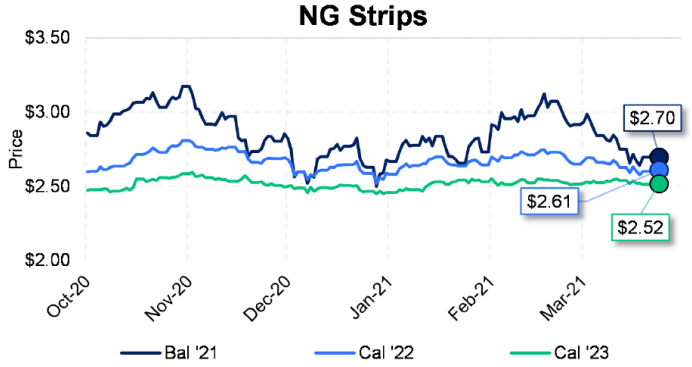

### NG Seasonal Strips




### WTI Strips




### NG Strips




***Swap Pricing***

| | Bal 21 | Cal 22 | Cal 23 | Cal 24 | Cal 25 |
|---|---|---|---|---|---|
| NYMEX WTI Crude | $ 58.48 | $ 54.95 | $ 52.26 | $ 50.52 | $ 49.48 |
| ICE Brent Crude | $ 61.61 | $ 58.60 | $ 56.60 | $ 55.23 | $ 54.33 |
| Light Louisiana Sweet | $ 60.68 | $ 57.15 | $ 54.49 | $ 52.90 | $ 51.89 |
| TM Midland Differential | $ 0.73 | $ 0.84 | $ 0.85 | | |
| NYMEX Natural Gas | $ 2.74 | $ 2.63 | $ 2.54 | $ 2.56 | $ 2.58 |

*Source: Bloomberg LP*

*Indicative only*

***Natural Gas Basis***

| Location | Spot | Winter '20/'21 | Summer '21 | Winter '21/'22 | Summer '22 |
|---|---|---|---|---|---|
| Henry Hub Fixed | 2.49 | 2.86 | 2.71 | 2.93 | 2.49 |
| Chicago CG | $ 0.03 | $ (0.11) | $ (0.24) | $ (0.20) | $ (0.18) |
| PEPL | $ (0.09) | $ 0.00 | $ (0.26) | $ (0.10) | $ (0.28) |
| Opal | $ (0.09) | $ 0.21 | $ (0.06) | $ 0.41 | $ (0.16) |
| TETCO M3 | $ (0.10) | $ (0.34) | $ (0.65) | $ 0.82 | $ (0.60) |
| Waha | $ (0.22) | $ 0.03 | $ (0.13) | $ (0.03) | $ (0.32) |
| Dominion S | $ (0.40) | $ (0.58) | $ (0.81) | $ (0.66) | $ (0.75) |

*All prices as previous trading day close*

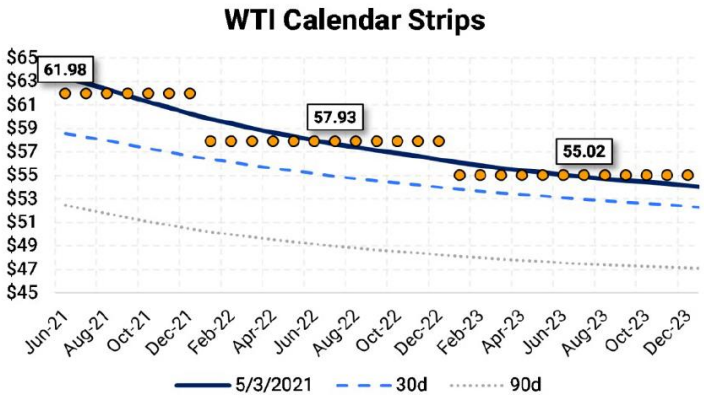
*Source: Bloomberg*

# Longreach Energy Holdings LLC

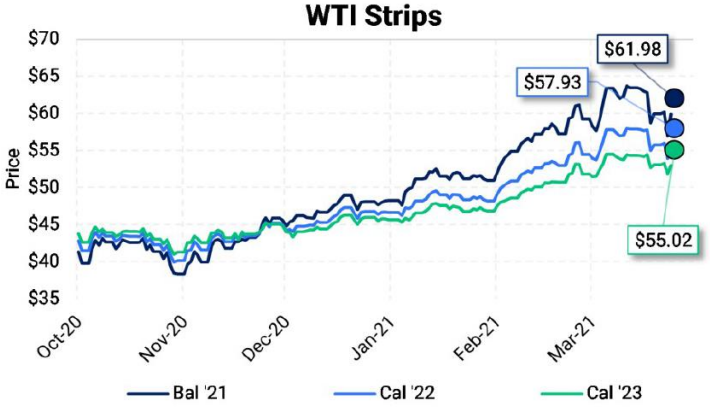
LONGREACH ENERGY

Monthly Report

Gas and Oil Prices 3 May 2021









***Swap Pricing***

| | Bal 21 | Cal 22 | Cal 23 | Cal 24 | Cal 25 |
|---|---|---|---|---|---|
| NYMEX WTI Crude | $ 61.98 | $ 57.93 | $ 55.02 | $ 53.38 | $ 52.61 |
| ICE Brent Crude | $ 64.89 | $ 61.65 | $ 59.43 | $ 58.08 | $ 57.31 |
| Light Louisiana Sweet | $ 64.10 | $ 60.32 | $ 57.56 | $ 56.05 | $ 55.28 |
| TM Midland Differential | $ 0.61 | $ 0.80 | $ 0.80 | | |
| NYMEX Natural Gas | $ 3.00 | $ 2.73 | $ 2.59 | $ 2.62 | $ 2.61 |

*Source: Bloomberg LP*
*Indicative only*

***Natural Gas Basis***

| Location | Spot | Summer '21 | Winter '21/'22 | Summer '22 | Winter '22/'23 |
|---|---|---|---|---|---|
| Henry Hub Fixed | 2.87 | 2.95 | 3.13 | 2.57 | 2.80 |
| Chicago CG | $ (0.19) | $ (0.24) | $ (0.19) | $ (0.17) | $ (0.13) |
| Opal | $ (0.20) | $ 0.14 | $ 0.51 | $ (0.11) | $ 0.33 |
| PEPL | $ (0.29) | $ (0.19) | $ (0.03) | $ (0.21) | $ (0.06) |
| Waha | $ (0.31) | $ (0.03) | $ 0.02 | $ (0.34) | $ (0.18) |
| Dominion S | $ (0.98) | $ (0.96) | $ (0.70) | $ (0.79) | $ (0.70) |
| TETCO M3 | $ (1.00) | $ (0.77) | $ 0.90 | $ (0.63) | $ 0.79 |

*All prices as previous trading day close*
*Source: Bloomberg*