



Longreach Energy Holdings LLC

FIRM INFORMATION

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1. Market and Macro Industry Commentary

General Market Commentary

On 24 February 2022, Russia began an open military invasion of the Ukraine. This invasion and resulting widespread international trade and financial embargoes against Russia have seen the sharpest change to global commodities markets since the 1973 oil embargo. However, unlike the 1970s, this energy and commodities crisis is likely to be Euro-centric, not US-centric, and is likely to involve every commodity: energy, metals and food. For many countries, the breadth and aggressiveness of the price moves make this a shock to their terms of trade, not just energy imports, as Russia is the second-largest commodities producer in the world – energy, metals and grains – behind the US and ahead of China at number three. Europe's reliance on Russian supply is likely to concentrate potential demand destruction there.

Across the commodities complex, but led by energy in Europe, such a large supply shock coming after two years of steadily depleting inventories means we are likely to now enter a phase of clear and sustained demand destruction. With minimal inventory buffers left prices will have to keep rising until the shock is resolved or demand re-aligns itself with supply. You simply cannot consume what you don't have, and prices must rise to the point where the market finds the last consumer that has access to supply and is willing to pay.

Europe is now the world's marginal energy consumer, facing the largest disruption to its supply. Accordingly, it will be the centre of the re-balancing, making Euro denominated crude a key indicator to watch for levels of demand destruction. On Friday 4 March, oil in euros closed at €108/bbl versus its €90/bbl price during oil's prior \$147/bbl high in 2008. On Monday 7 March, gas in euros traded to €300/MWh (\$106/mmbtu).

US oil and gas production insulates the US from this shock and WTI and Henry Hub should be protected from these extreme moves although the Biden administration is responding to inflationary pressures by encouraging the US oil and gas industry to increase drilling and production. On 7 March Jennifer Granholm, the US energy secretary, told the CERAWeek energy conference in Houston that "We are on a war footing. We are in an emergency. That means releases from strategic reserves from around the world, as we have done. That means producing more right now, where and if you can. In this moment of crisis, we need more oil supply."

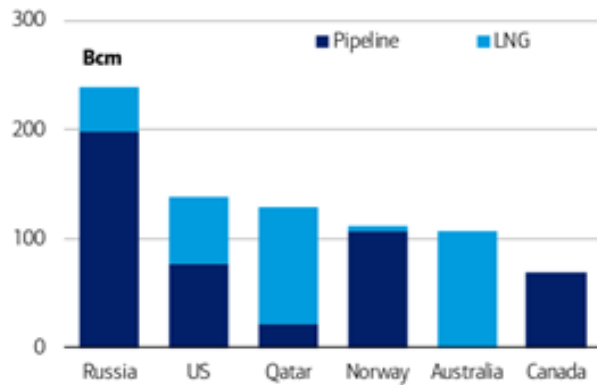
Russia is (or rather, was) the world's largest exporter of natural gas, with most of these volumes delivered to both Europe and Asia via pipeline (LHS, Figure 1). Russia is also the world's second largest exporter of crude oil and petroleum products, right after Saudi Arabia and slightly ahead of the US (RHS, Figure 1).



Figure 1: Russian Gas and Oil Exports (Source: BP via GS)

Exhibit 9: Total gas exports by country, 2020

Russia is the world's largest exporter of natural gas, with most of these volumes delivered to both Europe and Asia via pipeline

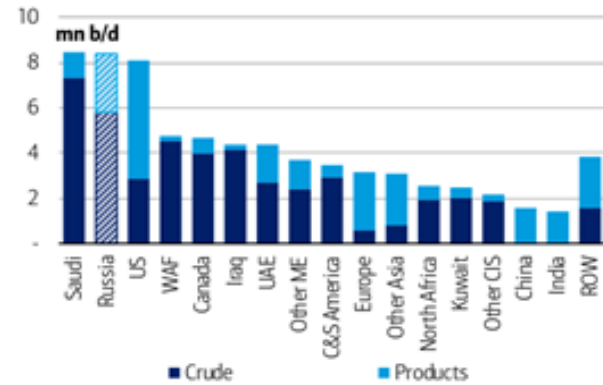


Source: BP Statistical Review

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Exhibit 10: Crude oil and product exports by country / region (2019)

Also, Russia is the second largest exporter of crude oil and petroleum products in the world right after Saudi Arabia and slightly ahead of the United States



Source: BP Statistical Review

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In January 2022 Russia exported 7.3mmbbld of crude and products, of which 4.3mmbbld and 0.4mmbbld went to Europe and the US respectively (LHS, Figure 2). Following the invasion, intraday oil price volatility has exploded (RHS, Figure 2).

Figure 2: Russian Oil Exports and Intraday Oil Volatility (Source: various via GS)

Exhibit 14: Russia is a net exporter of 7.3 mb/d crude and products, of which 4.3mb/d and 0.4 mb/d goes to Europe and the US respectively

Russia oil balance breakdown (mb/d)

Crude	mb/d	Notes
Production	11.0	Jan-22 crude and condensate ex NGLs
Exports	5.0	Production less Runs
Europe	2.7	Average last 3m
Of which pipe	0.8	News flow
US	0.2	Average last 3m
China	1.4	Average last 3m
Of which pipe	0.5	News flow
Others	0.6	Notable: Japan, Korea
Runs	6.0	Jan-22

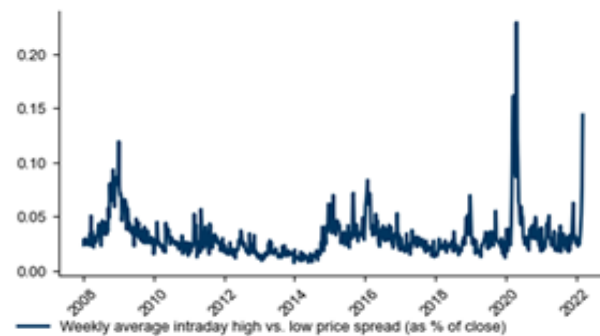
Products	mb/d	Notes
Demand	3.7	1Q22 Gse
Product exports	2.3	Runs minus demand*
Europe	1.6	Average last 3m
US	0.2	Average last 3m
China	0.2	Average last 3m
Others	0.3	Notable: Korea, Saudi, UAE

* c. 1mb/d fuel oils/VGO/interm., c. 1mb/d distillates, c. 0.5 mb/d light ends

Source: Kpler, IEA, GTT, Goldman Sachs Global Investment Research

Exhibit 15: Intraday day price volatility has exploded

Weekly average intraday high vs. low price spread (as % of close)



Source: ICE, Goldman Sachs Global Investment Research

Global GDP growth and inflation will both be adversely impacted by the war in Ukraine. Figure 3 shows the changes in Goldman Sachs' GDP and inflation forecasts from early Feb to early March.



Figure 3: GS GDP and Inflation Forecasts (Source: GS)

Exhibit 14: GS GDP forecasts vs. one month ago

Market/region	GS Real GDP growth forecast (%yoy)			
	Previous*		Current	
	2022E	2023E	2022E	2023E
China	4.5	5.0	4.5	5.0
Hong Kong	2.6	3.8	1.5	3.2
Taiwan	3.7	3.2	3.4	3.2
Korea	3.2	2.7	2.8	2.7
India	9.0	6.4	8.3	5.9
ASEAN	5.9	5.2	5.9	5.5
Asia ex Japan	5.6	5.2	5.4	5.1
Australia	4.0	2.8	3.6	3.0
Japan	2.4	1.6	1.5	1.8
US	3.2	2.2	2.9	2.2
Europe (EU27)	4.3	2.7	2.7	2.4
Russia	3.0	2.8	-7.0	2.4
Ukraine	3.3	2.7	-30.0	3.0
World	4.3	3.6	3.4	3.5

*Note: Previous as of Feb 4, 2022. Green/red highlighted cells refer to upward/downward revisions.

Source: Goldman Sachs Global Investment Research

Exhibit 15: GS inflation forecasts vs one month ago

Market/region	GS CPI inflation forecast (avg. %yoy)			
	Previous*		Current	
	2022E	2023E	2022E	2023E
China	2.5	2.1	2.5	2.1
Hong Kong	2.1	2.7	2.8	2.7
Taiwan	2.0	1.4	2.5	1.4
Korea	3.0	2.1	3.6	2.2
India	5.7	5.0	6.6	5.2
ASEAN	2.4	3.0	3.8	2.9
Asia ex Japan	3.1	2.8	3.6	2.9
Australia	3.7	2.5	4.8	1.9
Japan	1.3	1.3	1.5	1.6
US	6.1	3.0	7.1	3.2
Europe (EU27)	4.8	1.5	7.1	3.1
Russia	6.2	3.2	16.0	12.0
Ukraine	7.1	5.1	15.0	10.0
World	5.4	3.0	7.5	4.1

*Note: Previous as of Feb 4, 2022. Green/red highlighted cells refer to upward/downward revisions.

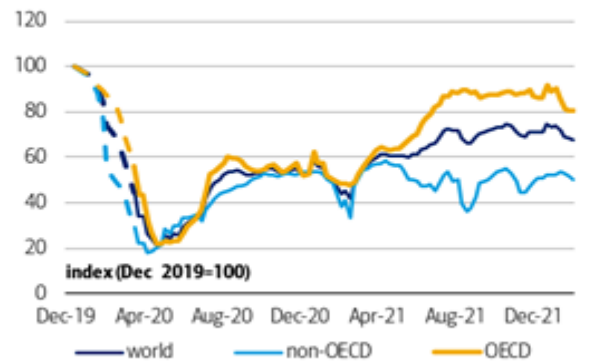
Source: Goldman Sachs Global Investment Research

Away from Ukraine, the recovery from Covid continues with global air traffic rising (Figure 4) and continued trade growth (LHS, Figure 5), led by China (RHS, Figure 5).

Figure 4: Global Air Traffic and Air Freight (Source: CEIC and IATA via BofA)

Exhibit 69: Global air traffic, number of flights, rebased

Flights globally remain at just 70% of normal, with international and domestic flights sitting at roughly 60% and 80% of 2019 levels respectively

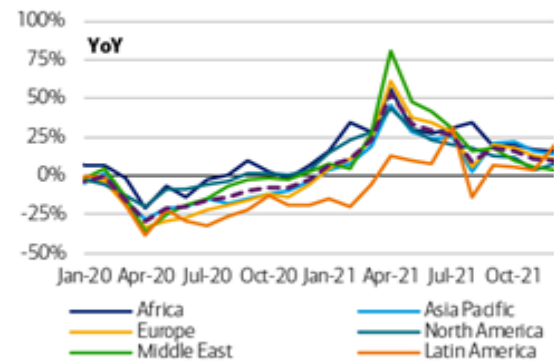


Source: CEIC

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Exhibit 70: International FTK: Air freight in tonne kilometres

Air freight activity soared in the absence of passenger travel and with the help of surging consumption, backlogged ports, and soaring container rates



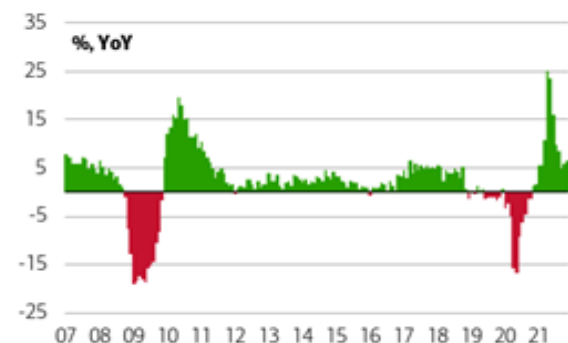
Source: IATA

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Figure 5: Global Trade (Source: Bloomberg via BofA)

Exhibit 71: Global trade growth

Global trade growth reached record highs in 2021 as stimulus measures kicked in, consumers started to spend more



Source: Bloomberg

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Exhibit 72: China export trade

Voracious consumer demand helped push China's exports higher by nearly \$800bn YoY, or 30% in 2021



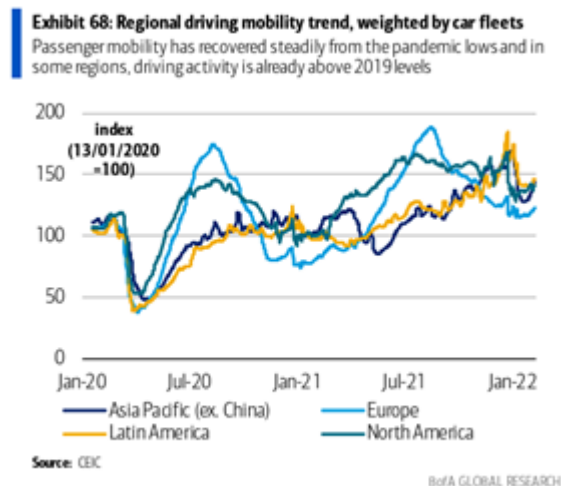
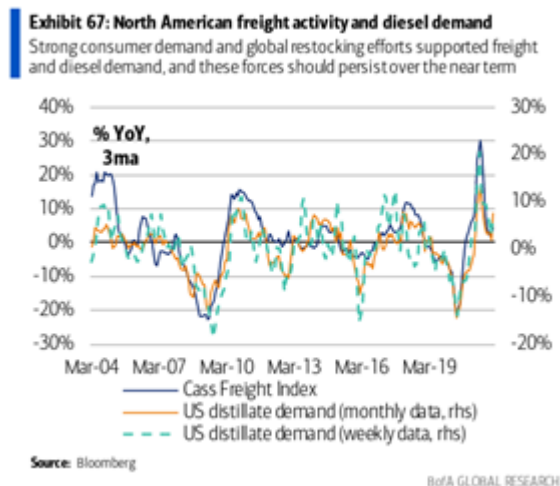
Source: Bloomberg

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North American freight activity and diesel demand are growing (LHS, Figure 6), as is regional driving mobility (RHS, Figure 6).

Figure 6: North American Freight Activity and Regional Driving Mobility (Source: Bloomberg and CEIC via BofA)



The latest Baker Hughes rig count data follows. In February US total rigs increased by 50 from 613 to 663. Oil rigs increased by 30 from 497 to 527 while gas rigs increased by 19 from 116 to 135.

Baker Hughes rig count



Rotary Rig Count 3/11/22

Location	Week	+/-	Week Ago	+/-	Year Ago
Land	649	14	635	260	389
Inland Waters	3	0	3	3	0
Offshore	11	-1	12	-2	13
United States Total	663	13	650	261	402
Gulf Of Mexico	11	-1	12	-2	13
Canada	206	-11	217	90	116
North America	869	2	867	351	518
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago
Oil	527	8	519	218	309
Gas	135	5	130	43	92
Miscellaneous	1	0	1	0	1
Directional	33	3	30	18	15
Horizontal	607	12	595	245	362
Vertical	23	-2	25	-2	25



Gas Market

Henry Hub gas futures spiked to over \$6/mmbtu as news of the invasion broke then fell to close February at \$4.40/mmbtu, 21c/mmbtu below the January close (Figure 7).

Figure 7: Near Month Henry Hub Futures (Source: EIA)

Near-month natural gas futures prices (NYMEX)

dollars per million British thermal units



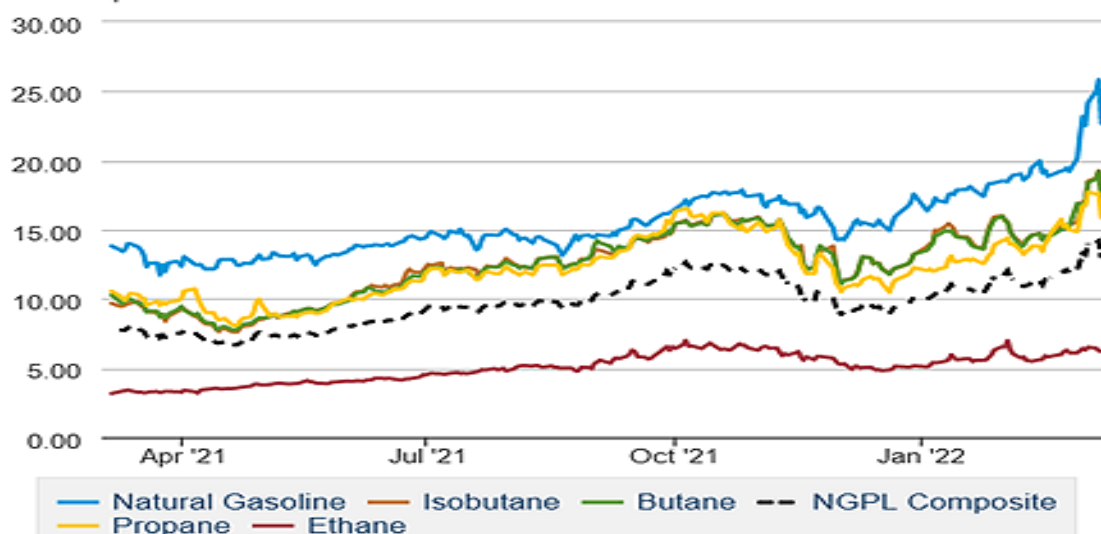
Source: Graph by the U.S. Energy Information Administration (EIA), based on data from CME Group as compiled by Bloomberg, L.P.

NGL prices held onto more of their post-invasion gains reflecting their higher correlation to oil prices (Figure 8).

Figure 8: NGL Spot Prices (Source: EIA)

Natural gas liquids spot prices

dollars per million British thermal units



Source: Graph by the U.S. Energy Information Administration (EIA), based on data from EIA's *Petroleum Supply Monthly* and on Mont Belvieu, Texas, spot prices reported by Bloomberg, L.P.

More cold weather (Figure 9) has driven higher demand (Figure 10) with working gas in storage at the bottom of the five-year range (Figure 11). The average rate of withdrawals from storage is 10% higher than the five-year average so far this withdrawal season (November to March).

Figure 9: US Temperature Deviation from Normal (Source NOAA via EIA)

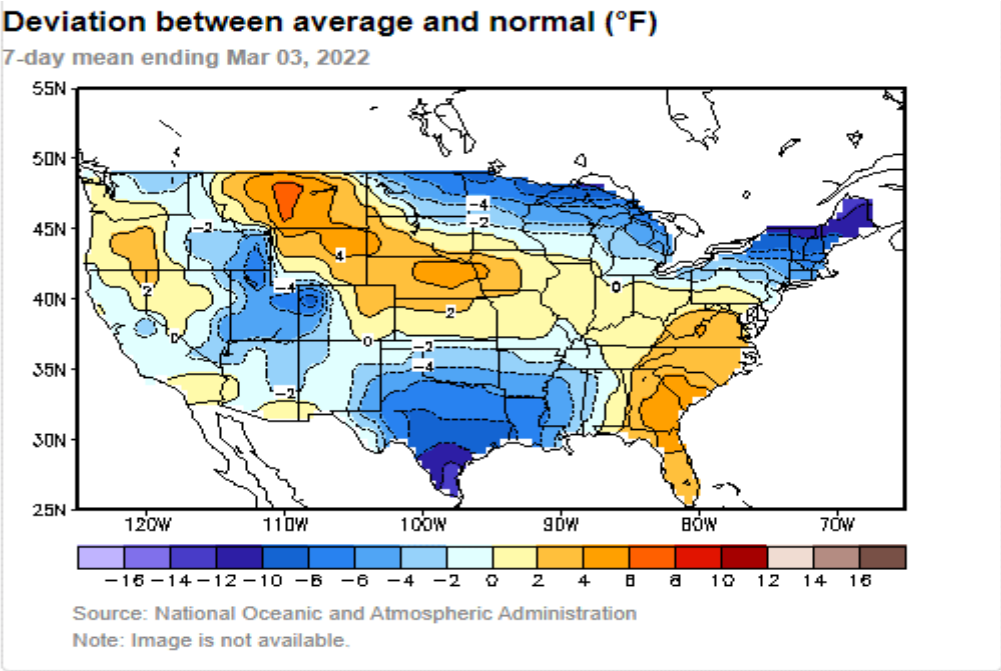
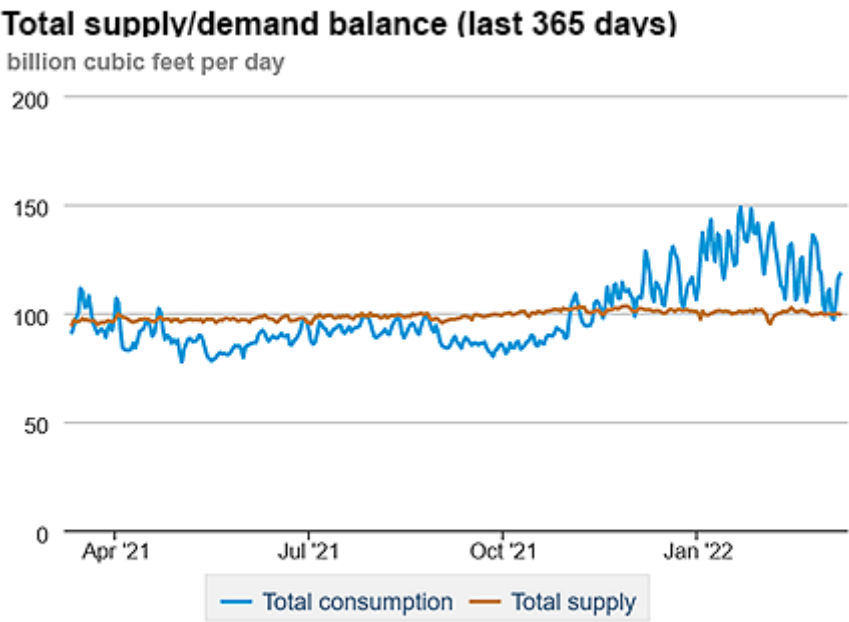
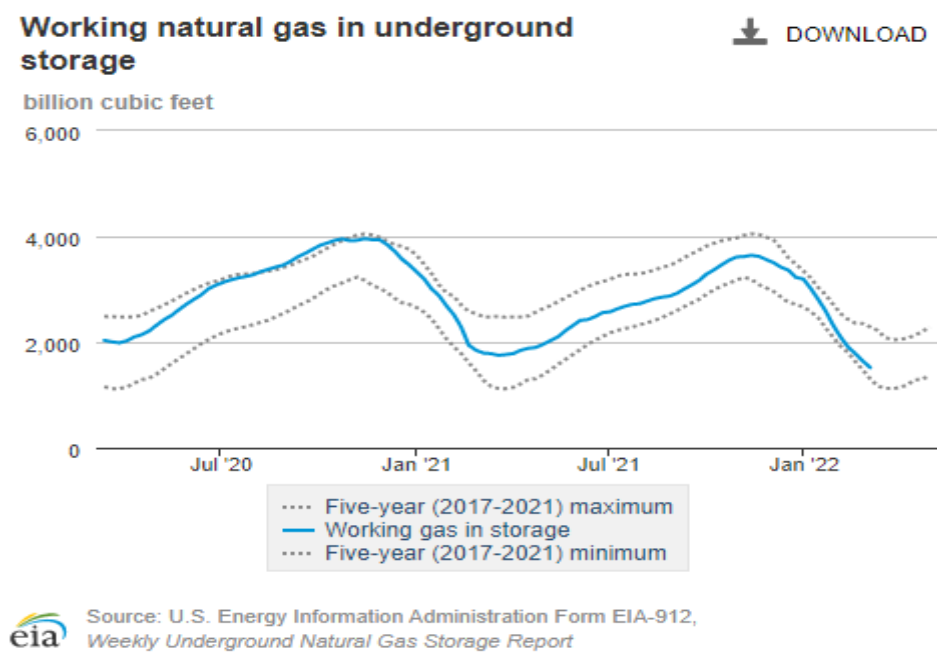


Figure 10: Supply and Demand Balance (Source: EIA)



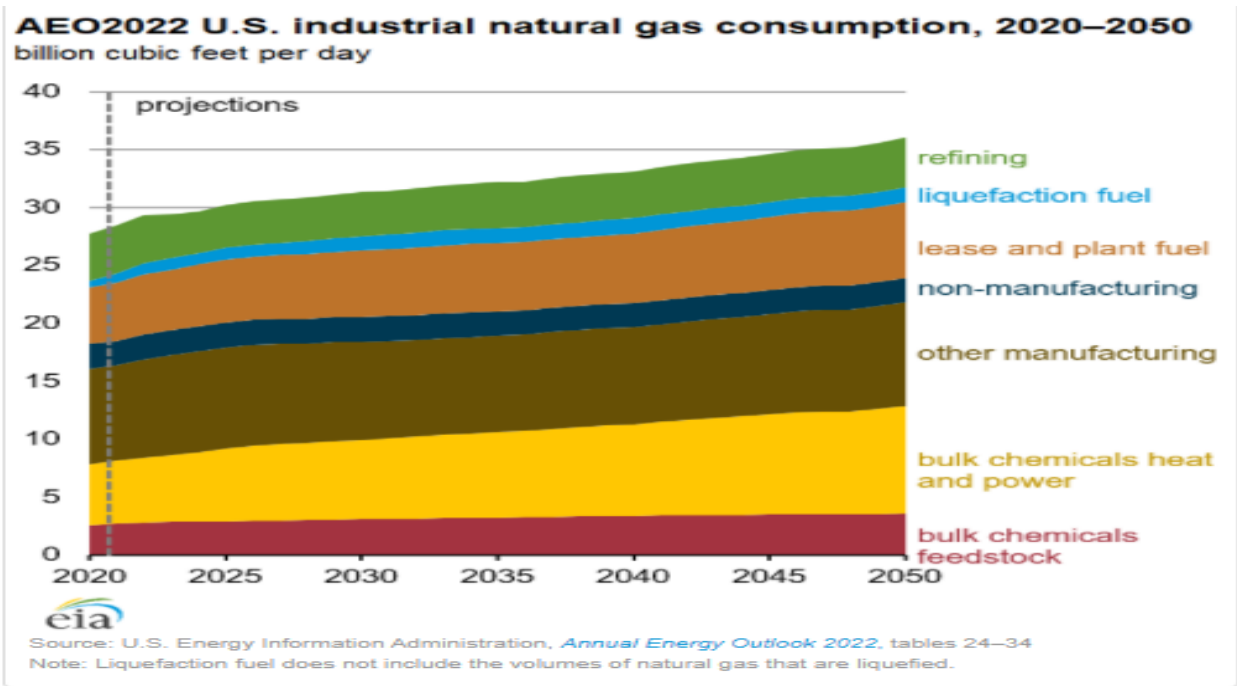
Source: Graph by the U.S. Energy Information Administration (EIA), based on data from PointLogic

Figure 11: Working Gas in Underground Storage (Source EIA)



The latest forecasts from the EIA predict that the US industrial sector will have the largest share of total gas consumption, surpassing the electric power sector, in the early 2020s (Figure 12). US industrial sector consumption of natural gas is forecast to grow from 28.5 bcfd in 2021 to 36.0 bcfd in 2050.

Figure 12: US Industrial Natural Gas Consumption 2020 - 2050 (Source: EIA Annual Energy Outlook 2022)





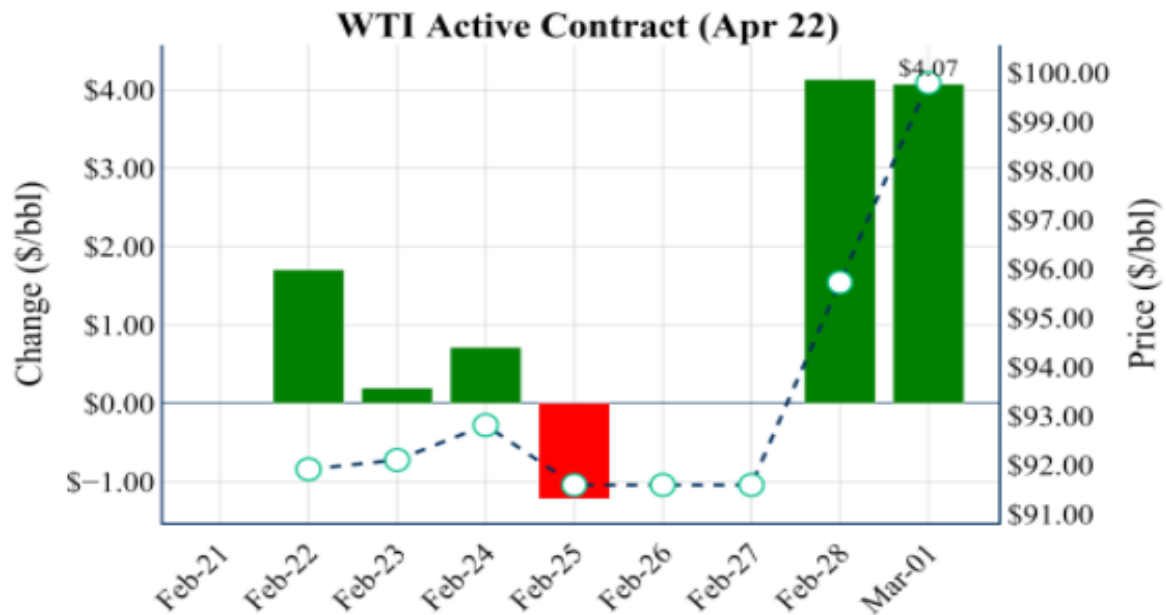
The industrial sector includes manufacturing activities such as the production of bulk chemicals, steel, and cement as well as the non-manufacturing industries of agriculture, construction and mining. In addition, the natural gas used as a fuel in LNG production and natural gas consumption from energy-related activities, such as oil and natural gas extraction and natural gas processing, fall into the industrial category.



Oil Market

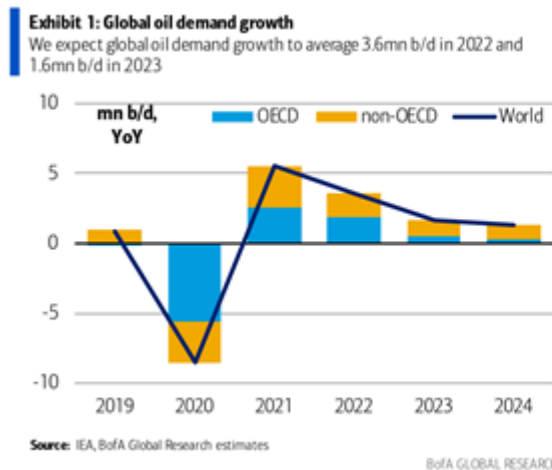
The Henry Hub prompt contract closed February at \$95.75/bbl, \$14.66/bbl above the price at end of January. Figure 13 shows the price moves after US markets re-opened following Russia's invasion of the Ukraine on 24 Feb.

Figure 13: WTI Prompt and Daily Change 21 Feb to 1 March (Source: Aegis)



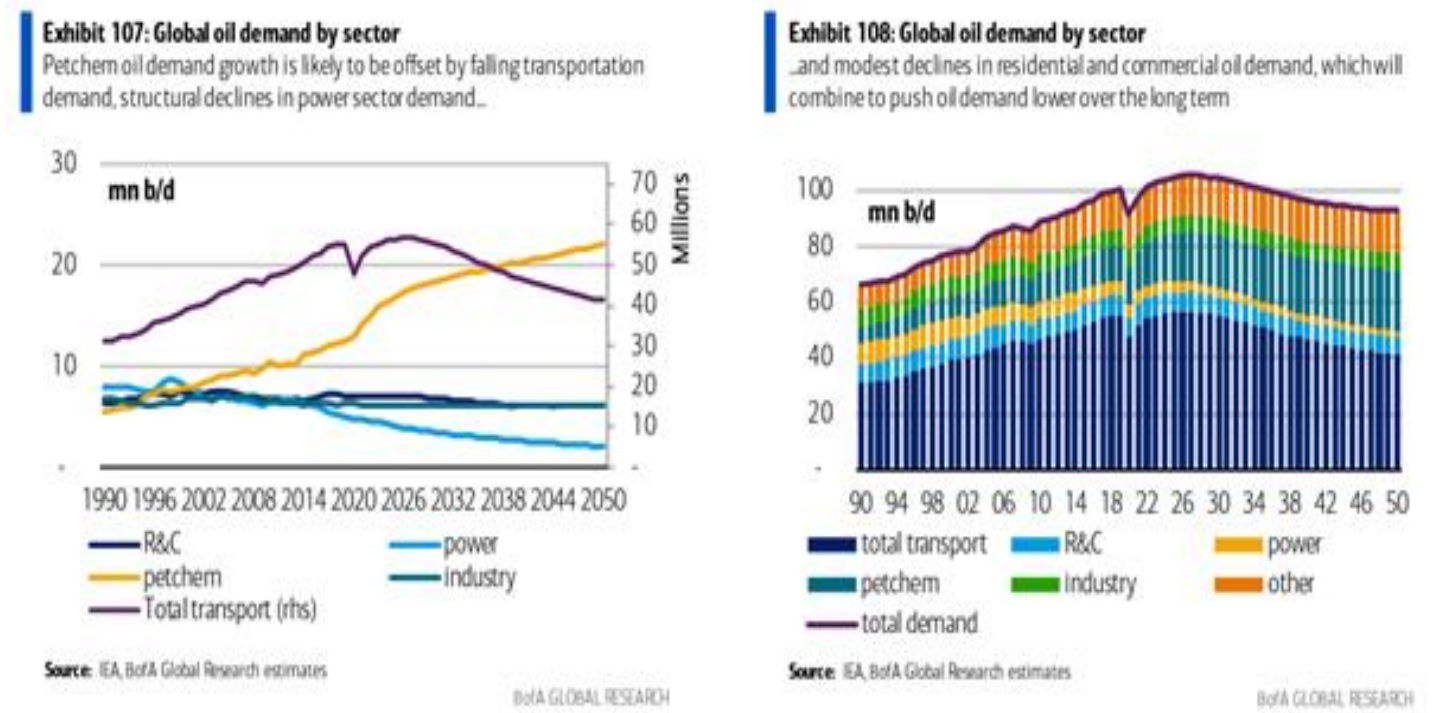
Underlying the severe geopolitical risk to global oil supply is near term growth in oil demand as the world continues its recovery from the Covid pandemic. Before the war, BofA expected global oil demand growth to average 3.6mmb/d in 2022 and 1.6mmb/d in 2023 (LHS, Figure 14). Emerging markets are expected to be responsible for 60% of demand gains between 4Q21 and 4Q22 (RHS, Figure 15).

Figure 15: Global Oil Demand Growth (Source: IEA, BofA)



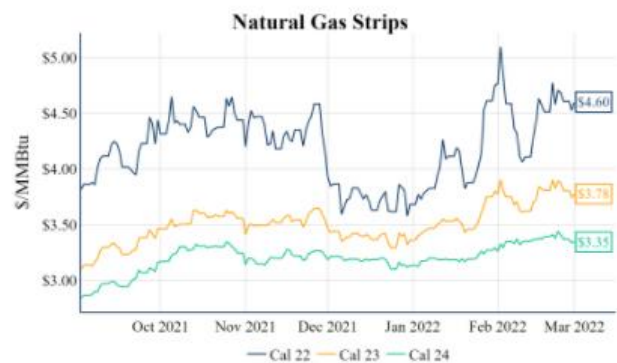
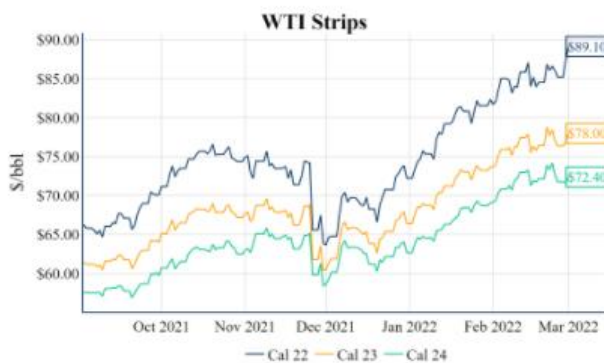
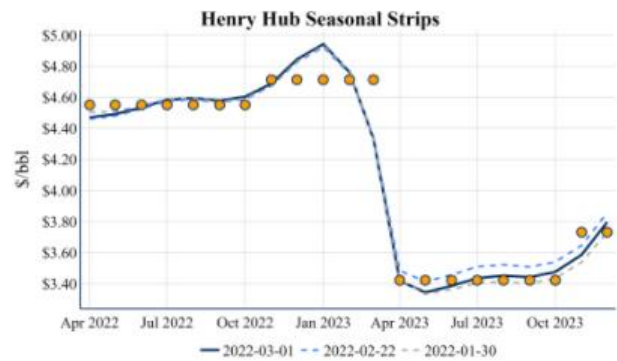
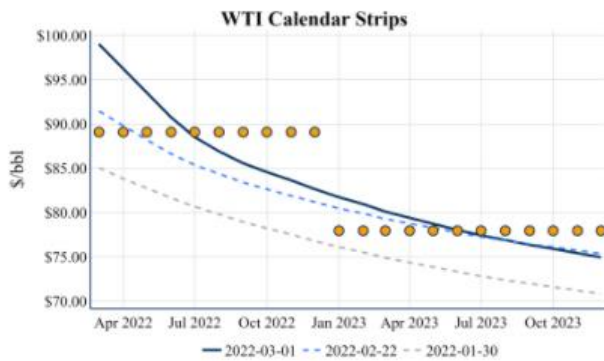
In aggregate BofA sees global oil demand peaking at around 105mmbbld in the late 2020's before declining transport usage (driven by strong growth in Electric Vehicles) delivers long term gradual decline. Total demand in 2050 is still expected to exceed 90mmbbld, a level that was only exceeded in 2015, with enduring strong growth in petrochemical demand offsetting declines in other sectors (Figure 16).

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





Gas and Oil Prices 1 March 2022

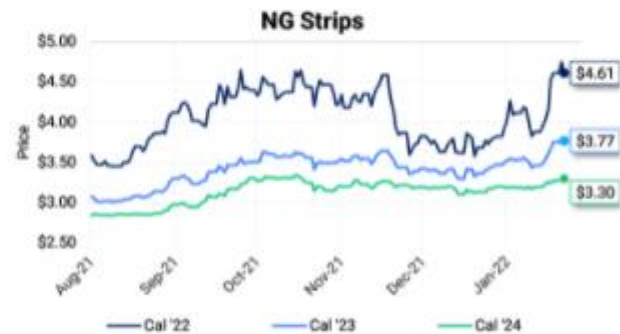
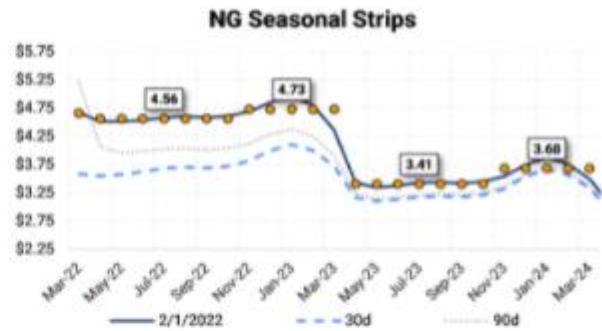


Swap Pricing	Bal 22	Cal 23	Cal 24	Cal 25
NYMEX WTI	\$89.08	\$77.95	\$72.36	\$68.90
ICE Brent	\$92.59	\$82.46	\$77.21	\$74.21
LLS	\$91.11	\$79.45	\$72.05	\$66.24
Mars	\$87.56	\$76.24	\$70.64	\$67.19
Western Canadian Crude (WCC)	\$77.56	\$64.43	\$56.57	\$52.93
West TX Sour (WTS)	\$88.69	\$77.55	\$71.96	\$68.51

Swap Pricing	Month 1	Summer 22	Winter 22/23	Summer 23	Winter 23/24
Henry Hub Fixed	\$4.472	\$4.553	\$4.711	\$3.423	\$3.730
Eastern Gas South	-\$0.721	-\$1.157	-\$0.871	-\$1.021	-\$0.733
Waha	-\$0.689	-\$0.870	-\$0.970	-\$1.996	-\$1.298
TETCO M3	-\$0.610	-\$0.981	\$1.863	-\$0.728	\$1.531
Houston Ship Channel	-\$0.183	-\$0.173	-\$0.033	-\$0.177	-\$0.031
Columbia Gulf Mainline	-\$0.340	-\$0.451	-\$0.275	-\$0.292	-\$0.247
Panhandle East	-\$0.472	-\$0.544	-\$0.039	-\$0.679	-\$0.127
NGPL MidCon	-\$0.438	-\$0.496	-\$0.078	-\$0.645	-\$0.181
SoCal	-\$0.382	\$0.108	\$0.789	-\$0.069	\$0.638
AECO	-\$0.975	-\$1.136	-\$0.997	-\$0.977	-\$0.873
Chicago City-Gates	-\$0.154	-\$0.272	\$0.219	-\$0.282	\$0.203



Gas and Oil Prices 1 Feb 2022



Swap Pricing

	Month 1	Cal '22	Cal '23	Cal '24	Cal '25
NYMEX WTI Crude	\$ 85.28	\$ 81.09	\$ 73.12	\$ 68.65	\$ 65.87
ICE Brent Crude	\$ 86.98	\$ 83.40	\$ 76.66	\$ 72.85	\$ 70.59
Light Louisiana Sweet	\$ 87.24	\$ 83.06	\$ 75.15	\$ 70.55	\$ 67.68
TM Midland Differential	\$ 11.11	\$ 0.78	\$ 0.67		
WCS Differential	\$ (12.06)	\$ (12.61)	\$ (14.20)		
NYMEX Natural Gas	\$ 4.66	\$ 4.61	\$ 3.77	\$ 3.30	\$ 3.16

Source: Bloomberg LP
Indicative only

Natural Gas Basis

Location	Spot	Winter '21/'22	Summer '22	Winter '22/'23	Summer '23
Henry Hub Fixed	5.56	4.66	4.71	4.84	4.84
TETCO M3	\$ 0.83	\$ 0.27	\$ (0.92)	\$ 1.71	\$ (0.84)
Opal	\$ (0.44)	\$ (0.26)	\$ (0.34)	\$ 0.63	\$ (0.36)
Sumas	\$ (0.45)	\$ (0.44)	\$ (0.44)	\$ 0.96	\$ (0.44)
Chicago CG	\$ (0.51)	\$ (0.07)	\$ (0.26)	\$ (0.22)	\$ (0.25)
Dominion S	\$ (0.60)	\$ (0.63)	\$ (1.09)	\$ (0.76)	\$ (0.96)
PEPL	\$ (0.69)	\$ (0.29)	\$ (0.45)	\$ 0.04	\$ (0.45)
Waha	\$ (0.88)	\$ (0.58)	\$ (0.81)	\$ (0.99)	\$ (1.42)
Malin	\$ (0.89)	\$ (0.38)	\$ (0.22)	\$ 0.50	\$ (0.26)
AECO	\$ (1.46)	\$ (0.97)	\$ (1.24)	\$ (1.07)	\$ (1.04)

All prices as previous trading day close
Source: Bloomberg



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