Energy Tidbits

June 23, 2024

Produced by: Dan Tsubouchi

Continued Holdback to Oil: Iran Expects to Add 0.4 mmb/d to Reach 4.0 mmb/d by March 2025

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. My priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is the review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector. My target is to write on 50 weekends per year and to post by noon MT on Sunday. The Sunday noon timing was because PMs said they didn't have research to read on Sundays and Sundays are a day when they start to think about the investing week ahead.

This week's memo highlights:

1. Iran's oil minister says Iran expects to add 0.4 mmb/d to reach 4 mmb/d by March 2025. [click here]
2. China's new and home prices continue weaker MoM [click here]
3. Vortexa estimates oil floating storage has exceeded 90 mmb in 4 of last 5 weeks and there haven't been any >90-mmb weeks since early Aug 2023. [click here]
4. Baker Hughes CEO still expects Lower 48 E&P spend to be down small YoY in 2024. [click here]
5. Look for Cdn oil and gas company websites to have significantly less ESG disclosure in response to Liberals Bill C-59 [click here]
6. Please follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK].

Dan Tsubouchi	Ryan Dunfield	Aaron Bunting	Ian Charles	Ryan Haughn
Chief Market Strategist	CEO	COO, CFO	Managing Director	Managing Director
dtsubouchi@safgroup.ca	rdunfield@safgroup.ca	abunting@safgroup.ca	icharles@safgroup.ca	rhaughn@safgroup.ca

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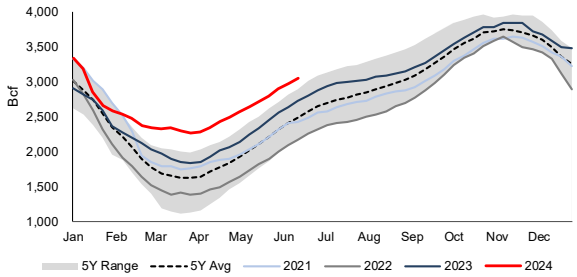
Natural Gas: Warning for risk US natural gas storage gets filled early

US natural gas storage to be filled early?

It's now halfway thru June and US gas storage is still up YoY. Plus we continue to see forecasts for Europe gas storage to be full well ahead of winter. Our concern is that we still see the risk for US gas storage to also be full before winter. And our concern is that if there is the visibility to US storage being full early, then there will be a hit to HH prices in Sept/Oct ahead of the winter. There may very well be items such as hurricane interruptions, a big spike up in natural gas for data centers, etc. that will change this outlook but when we see natural gas storage this much higher YoY and forecasts for Europe storge full by Sept 30, we still see the risk for an early fill to US natural gas storage. As noted below, US natural gas storage is now +343 bcf YoY, which is down WoW from +364 bcf YoY last week.

Figure 1: US Natural Gas Storage



Source: EIA

Natural Gas: +71 bcf build in US gas storage; now +343 bcf YoY

+71 bcf build in US gas storage

For the week ending June 14, the EIA reported a +71 bcf build. Total storage is now 3.045 tcf, representing a surplus of +343 bcf YoY compared to a surplus of +364 bcf last week. Since February, total storage has remained well above the top end of the 5-yr range. Total storage is +561 bcf above the 5-year average, below last week's +573 bcf surplus. Below is the EIA's storage table from its Weekly Natural Gas Storage report [LINK].

Figure 2: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (06/14/23)		5-year average (2019-23)	
Region	06/14/24	06/07/24	net change	implied flow	Bcf	% change	Bcf	% change
East	631	603	28	28	592	6.6	510	23.7
Midwest	736	712	24	24	651	13.1	585	25.8
Mountain	230	224	6	6	154	49.4	145	58.6
Pacific	279	276	3	3	187	49.2	235	18.7
South Central	1,168	1,159	9	9	1,119	4.4	1,008	15.9
Salt	337	336	1	1	328	2.7	300	12.3
Nonsalt	831	823	8	8	790	5.2	708	17.4
Total	3,045	2,974	71	71	2,702	12.7	2,484	22.6

Totals may not equal sum of components because of independent rounding.

Source: EIA

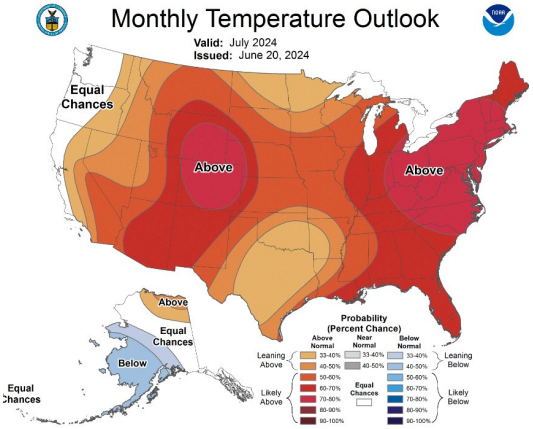
Natural Gas: NOAA forecasts hot weather in July for all of the Lower 48

NOAA monthly temp outlook

It looks like the hot weather in the US is going to continue for at least another month. On Thursday, NOAA posted its 30-day outlook, which is its Monthly Temperature Outlook for July

[LINK]. NOAA's temperature forecast shows above average probability for much warmer than normal temperatures for all of the Lower 48. Below is NOAA's monthly temperature outlook for July.

Figure 3: NOAA Monthly Temperature Outlook for July



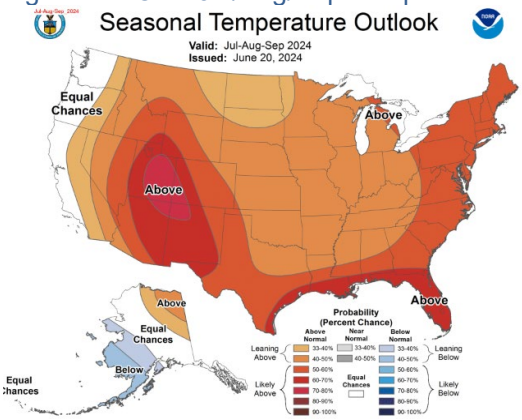
Source: NOAA

NOAA's updated summer forecast is still for warmer than normal Jul/Aug/Sep

We recognize that weather forecasts, even near term, are far from 100%, but, on Thursday, NOAA released its monthly update to its seasonal temperature forecast for summer – July, Aug and Sept. On Thursday, we tweeted [LINK]: *"Good news/Bad news. @NOAA updated seasonal temperature outlook. Hot Jul/Aug/Sep to support near term HH #NatGas price. It's still early BUT a warm Nov/Dec/Jan start to winter would be negative to HH #NatGas carrying thru Q1 as seen this year. #OOTT"* NOAA's updated temperature outlook for the summer JAS [LINK] still calls for warmer than normal temperatures across almost all of the US, predominantly in the south west and in the south east. There is no bigger variable for natural gas price than winter temperatures but a hot summer, as seen last summer, normally provides support for natural gas prices. Below is NOAA's June 20 temperature probability map for JAS.

NOAA forecasts hot summer in the US

Figure 4: NOAA Jul/Aug/Sep Temperature Probability Forecast

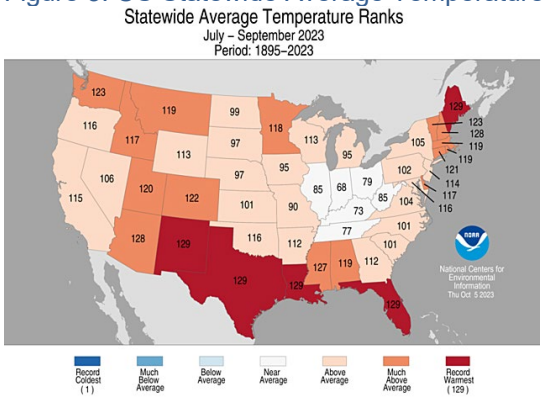


Source: NOAA

Last year's But July/Aug/Sept 2023 was 3rd hottest in the last 129 years

If NOAA's updated temperature outlook for JAS 2024 is right, it will be well above normal but cooler than last summer's JAS 2023. Our Oct 15, 2023 Energy Tidbits wrote "*September [[LINK]. September was the 7th hottest in the last 129 yerars. It was record heat in Texas and New Mexico, and really hot in Plains, Midwest, Great Lakes NE and south. NOAA also posted its recap of summer July/Aug/Sept [LINK] and it was near record heat as the 3rd hottest in the last 129 years. It was record heat in a number of states and near record in many others. Below is NOAA's by state ranking for September and July/Aug/Sept temperatures*."

Figure 5: US Statewide Average Temperature Ranks July/Aug/Sept 2023



Source: NOAA

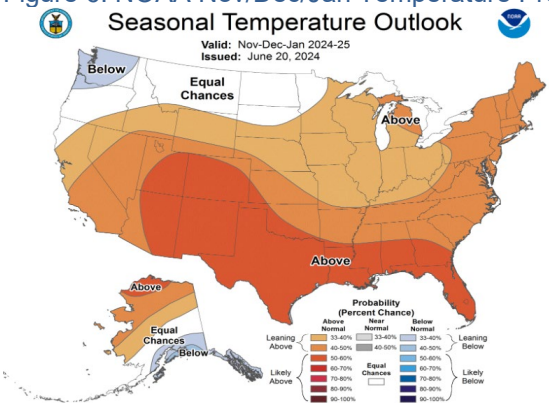
Natural Gas: NOAA forecasts warmer than normal start to winter 2024/25

It's still early but we highlighted NOAA's updated temperature outlook for Nov/Dec/Jan because it calls for a warmer than normal Nov/Dec/Jan and, as we saw for winter 2023/24, a warm start to winter normally puts pressure on natural gas prices for months. As noted above, on Thursday, we tweeted On Thursday, we tweeted [LINK]: *"Good news/Bad news.*

NOAA Nov, Dec, Jan temp outlook

@NOAA updated seasonal temperature outlook. Hot Jul/Aug/Sep to support near term HH #NatGas price. It's still early BUT a warm Nov/Dec/Jan start to winter would be negative to HH #NatGas carrying thru Q1 as seen this year. #OOTT" On Thursday, NOAA posted its seasonal temperature outlook for November, December, and January [LINK]. NOAA's temperature forecast for shows above average probability for above-normal monthly average temperatures for the majority of the USA, with a higher probability for above average temperatures in the southern and central unites states. Below is NOAA's temperature forecast for Nov, Dec, and Jan.

Figure 6: NOAA Nov/Dec/Jan Temperature Probability Forecast

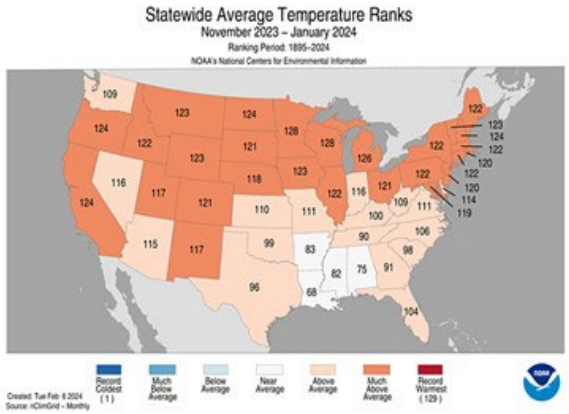


Source: NOAA

Nov/Dec/Jan 2023/24 was the 5th warmest in last 129 years

If NOAA's early look at NDJ 2024/25 is right, it will be above normal temperatures to start winter, but not as hot as NDJ 2023/24. Here is what we wrote in our Feb 18, 2024 Energy Tidbits memo. "*The winter up until this point has been very warm overall, and now with the January data the NOAA says that the period from Nov/Dec/Jan was the 5th warmest the US has seen in 129 years. We have highlighted how higher YoY US natural gas production has been a negative to HH prices, but the more significant factor is the hot winter. Below is a map of statewide average temperature ranks for Nov/Dec/Jan since 1895.*"

Figure 7: US Statewide Average Temperature Ranks Nov 1, 2023 – Jan 31, 2024



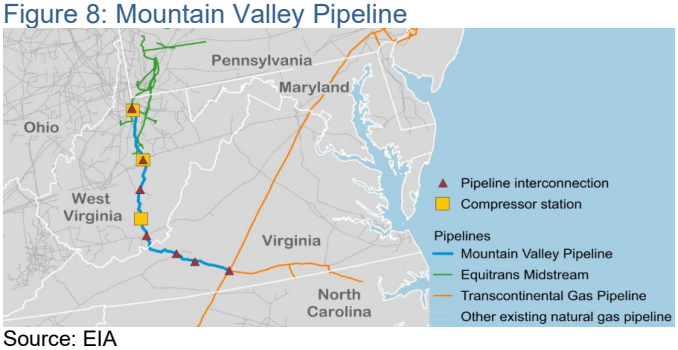
Source: NOAA

Natural Gas: EIA, Mountain Valley Pipeline to begin operations

EIA, Mountain Valley Pipeline

On Friday, June 14, the EIA posted a blog reminding tha the long awaited Mountain Valley Pipeline has stared operations. [LINK]. On June 11, the FERC authorized the Mountain Valley Pipeline to begin operations. The pipeline runs for 303 miles (488 km) from Wetzel County, West Virginia, to Pittsylvania County, Virginia, moving 2.0 bcf/d of natural gas. The pipeline has signed multiple long-term agreements with shippers for the full capacity of the pipeline for at least the next 20 years. Below is a map of the pipeline's operations.

Figure 8: Mountain Valley Pipeline



Source: EIA

Natural Gas: Baker Hughes CEO keeps bullish LNG demand outlook

Baker Hughes on LNG demand

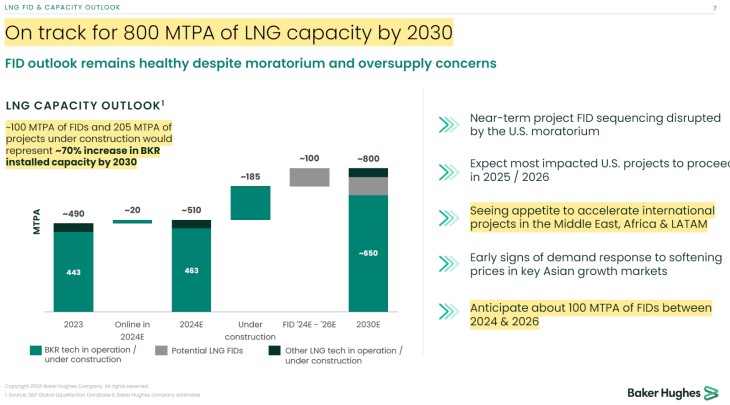
On Tuesday, Baker Hughes CEO Lorenzo Simonelli spoke at a US sellside investor conference, which was one of those Q&A presentations where the sellside analyst asks a series of questions. One of the questions was if Baker Hughes still has confidence that natural gas and LNG is a destination fuel and not just a transition fuel. Simonelli reinforced that they believe that and still see the need for big LNG capacity additions to 2030 and then beyond. Simonelli has reiterated their LNG capacity additions forecasts in each of the quarterly earnings calls for the last four years. This week Simonelli said "*I think there's a realization that energy demand is growing, and gas is the solution for us. This is the age of gas. I've said it before. Let's just take LNG. And since 2019, we've been saying there needs*

to be an installed capacity by 2030 of 800 million tons per annum. We are well on track to do that. And in fact, I think people were suspicious at the outset when we said it in 2019. Now you look at the demand curves, you also look at the uptake that's happening now. As we get into the 2030s, there'll be more LNG that comes online as well, but we need an installed capacity of 800 MTPA by 2030. LNG allows natural gas to be flowing and it allows the energy to be provided at source. Also, as you look at the energy transition plans, yes, the developing world is still utilizing coal, but their energy demand is increasing at such a rate that they've already got their plans to utilize more natural gas. When you look at China, you look at India, their consumption of natural gas is increasing. Renewables will play a part. Hydrogen will play a part. But if you look at the urgency with regards to power coming on, energy being available, today, natural gas is both the transition and destination fuel. And the good thing is that it's abundant, and it's lower emissive than coal. And so, we're strong proponents of natural gas and really see it as a growth opportunity going forward as well as then continuing to evolve in the energy mix with the energy transition. Now though is the time for gas."

04/24/24: Baker Hughes sees less LNG FIDs in 24-26 but same capacity in 2030

Here is what we wrote in our April 28, 2024 Energy Tidbits memo on Baker Hughes Q1 and its forecast for LNG capacity additions to 2030. "*Baker Hughes is the dominant services company for LNG supply projects and we expect is either involved with or aware of every LNG export project. We compared their Q1 call comments on their LNG outlook to their comments on the Q4 call and they lowered their estimates for LNG FIDs in 2024-2026 but did not change their forecast for LNG capacity in 2030. On Wednesday, we tweeted [LINK] "Less #LNG FIDs 24-26 in today's Baker Hughes Q1 call. Q1: 120 MTPA FIDs 24-26. Q4: ~160 MTPA FIDs 24-26. No change to ~800 MTPA installed capacity by 2030. #NatGas #OOTT." The Q1 expects 120 MTPA of new LNG FIDs in 2024-2026 and they don't say a potential higher level. The below Q1 slide shows 20 MTPA online in 2024E and then "anticipate about 100 MTPA of FIDS between 2024 & 2026". So its 120 MTPA and not an indication that could be more. Q4 says "For 2024 specifically, we expect LNG FIDs of around 65 MTPA. However, it is important to note this includes a couple of major LNG orders that were booked during 2023. As we look out to 2025 and 2026, we could see between 30 to 60 MTPA of FIDs annually, bringing total potential LNG FIDs to 125 MTPA and 185 MTPA through 2026". There was no change to expectation for installed LNG capacity of 800 MTPA by 2030. The Q1 also includes a look to 2040 "Looking out to 2040, we expect LNG demand growth to continue, requiring further capacity additions beyond 800 MTPA."*

Figure 9: On track for 800 MTPA of LNG capacity by 2030



Source: Baker Hughes

Natural Gas: India May natural gas production up MoM and up YoY

India natural gas production up MoM, up YoY

India domestic natural gas production peaked in 2010 at 4.6 bcf/d, and then ultimately declined to average 2.8 bcf/d in 2020-2021. India returned to modest growth in 2021/2022, which was followed by several months of basically flat production but modest production growth returned in 2023. On Friday, June 14th, India's Petroleum Planning and Analysis Cell released their monthly report for May's natural gas and oil statistics [LINK]. India's domestic natural gas production for May was 3.54 bcf/d, which was up +1.58% MoM from 3.48 bcf/d in April. On a YoY basis, natural gas production was up +6.74% from 3.31 bcf/d in May 2023. Our Supplemental Documents package includes excerpts from the PPAC monthly.

Natural Gas: India LNG imports down MoM to 3.02 bcf/d in May, up +18.94% YoY

India LNG imports up YoY

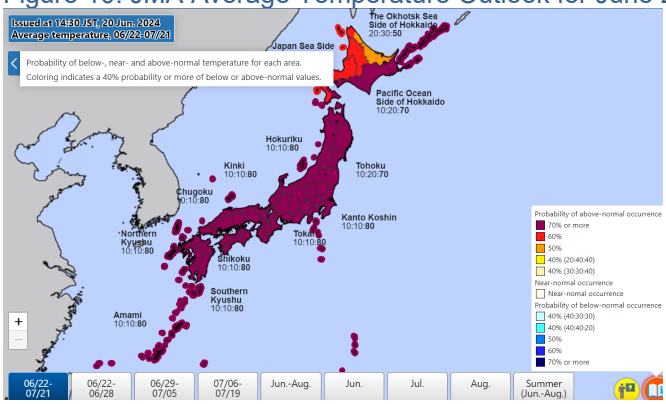
For the past several years, India has increased LNG imports whenever domestic natural gas production was flat or decreased. But the overriding factor for India tends to be price. If price is high, India pulls back on LNG imports and will normally turn to coal. If prices are low, like was seen this winter, then India tends to pick up spot cargoes. India is an opportunistic LNG spot buyer. On Friday, June 14th, India's Petroleum Planning and Analysis Cell released their monthly report for May's natural gas and oil statistics [LINK]. Over the past 3 years, India's LNG imports have declined from a 2020-2021 peak of 3.84 bcf/d in Oct 2020 to just 2.85 bcf/d in Jan 2021 and lower in 2022. Additionally, May's 2024's LNG imports were 3.02 bcf/d, which is down -1.67% MoM from 3.07 bcf/d in April. LNG imports are now up +18.94% YoY from 2.54 bcf/d in May 2023.

Natural Gas: Japan expects warmer than normal temperature thru mid-July

JMA temperature forecast for the next 30 days

On Thursday, the Japan Meteorological Agency updated its forecast for the next 30 days in Japan [LINK]. There is no JMA commentary on the forecast. JMA is calling for above normal temperatures for the rest of June and thru the first three weeks of July across all of Japan, with a +70% probability of above normal temperature occurrence. We checked AccuWeather and they are forecasting daily highs in of 28-30C for the next 30 days. Anyone who has been to Tokyo in June knows that it is humid so we should see temperature driven demand for electricity incl natural gas. Below is the JMA temperature forecast for the next 30 days.

Figure 10: JMA Average Temperature Outlook for June 22 – July 21

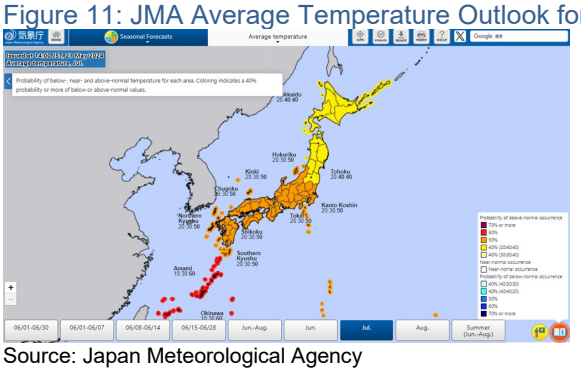


Source: Japan Meteorological Agency

Natural Gas: Japan expects much warmer than normal July and Aug

The JMA's updated 30-day temperature forecast looks to be little warmer than what the JMA originally forecast for the summer. Here is what we wrote in June 2, 2024 Energy Tidbits memo: *Last week, the Japan Meteorological Agency updated its forecast for July in Japan [LINK] and for August in Japan [LINK]. There is no JMA commentary on the forecast. JMA is calling for much warmer than normal temperatures for both July and August. This updated for July and August is in line with the JMA's first temperature forecast for July and Aug that was posed on Feb 20. Although the new JMA temperature forecast is for much warmer than normal whereas the JMA Feb 20 forecast was for very hot Jun/Jul/Aug. High temperatures in July tend to be over 30c and that should increase weather driven demand. Below is the JMA temperature forecast for July and August.*

Figure 11: JMA Average Temperature Outlook for July



Source: Japan Meteorological Agency

Figure 12: JMA Average Temperature Outlook for August

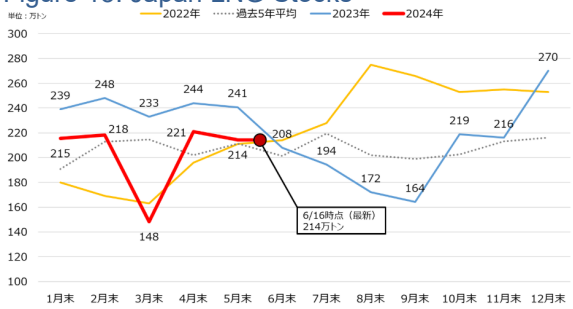
Source: Japan Meteorological Agency

Natural Gas: Japan LNG stocks up WoW, up small YoY

Japan LNG stocks up WoW

Japan's LNG stocks are up small WoW, are up YoY, and are above the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on June 16 were 102.8 bcf, up +1.9% WoW from June 9 of 100.9 bcf, and up vs 99.9 bcf a year ago. Stocks are up +6.5% above the 5-year average of 96.5 bcf. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 13: Japan LNG Stocks



Source: METI

Natural Gas: China natural gas production 23.13 bcf/d in May, up +6.8% YoY

China natural gas production

Well before Covid, our concern in 2019 was that China's LNG imports were going to change from strong YoY growth in LNG imports to a period of zero to very low growth at best in China LNG imports. The reason was primarily the startup of the big Power of Siberia natural gas pipeline from Russia but also a return in the 2020s to modest growth in China domestic natural gas production. Increasing China domestic natural gas production means And since LNG is the most expensive natural gas, it would be and is the marginal natural gas/LNG supply. That concern has played out over the past few years and increasing domestic natural gas production and increasing cheaper natural gas pipeline imports from Russia squeezed out LNG imports in 2022 and 2023. On Wednesday, Bloomberg's CHENNGAS Index showed (using data from the National Bureau of Statistics) that China natural gas production in May was 23.13 bcf/d, down -0.8% MoM from 23.31 bcf/d in April but +6.8% YoY from 21.64 bcf/d in May 2023. Recall the Chinese government website [LINK] also noted that over 2023,

China's average natural gas production was 22.3 bcf/d, up +1.0 bcf/d from 2022, which is the 7th annual YoY increase.

China natural gas and LNG imports

Natural Gas: China April LNG imports up MoM, nat gas pipeline imports up MoM

China's import data for May reinforces it favors imports of natural gas form pipelines over LNG imports. On Tuesday, China's General Administration of Customs (GACC) provided the split of natural gas imports via LNG vs pipeline for May [LINK]. i) LNG imports. GACC reported that over May, China imported 10.18 bcf/d of LNG, up +2.2% MoM from 9.96 bcf/d in April and +0.5% YoY from 10.13 bcf/d in May 2023. ii) Natural Gas imports. GACC reported that over May, China imported 7.39 bcf/d of natural gas via pipeline, which is up +13.4% MoM from 6.52 bcf/d in April and +2.7% YoY from 7.19 bcf/d in May 2023. China has been benefitting from cheap natural gas exports from Russia but have also been opportunistic in their buying of LNG given weak spot prices in recent months.

China prioritizes Russian pipeline gas imports as it is cheap

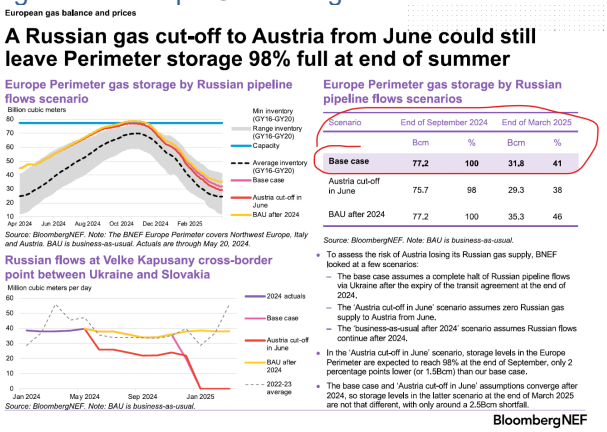
Here is what we wrote in our June 9, 2024 Energy Tidbits memo. "*For years, we have warned that how Chinese natural gas pipeline imports from Russia would be prioritized over LNG imports due to the cheap cost of Russian pipeline gas. On Monday, we tweeted [LINK] "It's way cheaper! And why China prioritizes imports of RUS #NatGas via pipeline vs #LNG imports. 2019-21: China only paid $4.40/mmbtu for RUS pipeline gas vs RUS charged Europe ~$10/mmbtu. See 👇 @maxseddon @NastyaStognei @HenryJFoy @leahyjoseph report. #OOTT." The FT report "Russia-China gas pipeline deal stalls over Beijing's price demands" was focused on China wanting too low a natural gas price for the next expansion of Russian pipeline natural gas to China. But what jumped out at us was the reminder that China is currently getting cheap natural gas from Russia. FT wrote "China already pays Russia less for gas than to its other suppliers, with an average price of $4.4 per million British thermal units, compared with $10 for Myanmar and $5 for Uzbekistan, the CGEP researchers calculated from 2019-21 customs data. During the same years Russia exported gas to Europe at about $10 per million Btu, according to data published by the Russian central bank." Our Supplemental Documents package includes the FT report."*

EU industrial natural gas demand

Natural Gas: BloombergNEF forecast Europe gas storage full by end of Sept

Here is what we wrote in our June 2, 2024 Energy Tidbits on the then new BloombergNEF forecast for Europe gas storage to be full by the end of Sept. "*On Friday, we tweeted [LINK] "ICYMI. @BloombergNEF base case forecasts Europe #NatGas storage full by Sept 30! If so, it won't just hurt Europe TTF prices but also push back on US #HH prices. #OOTT." BloombergNEF's European Gas Monthly also had its base case forecsat for Europe natural gas storage and they call for storage to be full by Sept 30. BloombergNEF also highlights that Eruope natural gas storage would still be 98% by Sept 30 if there is a cut off of any Russian natural gas to Austria in June. IF Europe natural ags storage is full by Sept 30, there should be some strong downward price pressure on Europe natural gas prices in Sept and Oct. And if so, there should also be some push back on US HH natural gas prices.* "

Figure 14: Europe Gas storage forecast



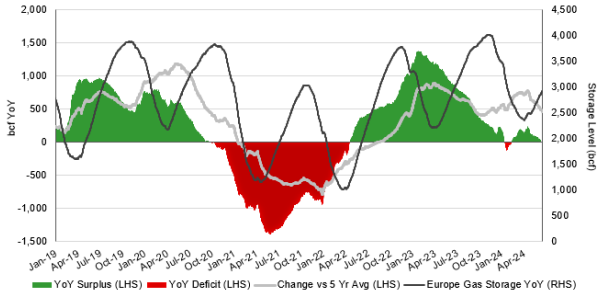
Source: BloombergNEF

Natural Gas: Europe storage builds WoW to 74.6%, down -0.4% YoY

Europe gas storage

This week, Europe storage increased by +1.9% Wow to 74.6% vs 74.9% on June 13. Storage is now -0.4% lower than last year's levels of 74.9% on June 20, 2023, and up huge vs the 5-year average of 64.33%. As noted above, BloombergNEF's recenty May 31 forecast is for Europe gas storage to be full by Sept 30. This would be early and would bring low Europe gas prices in Sept/Oct. Below is our graph of European Gas Storage Level.

Figure 15: European Gas Storage Level



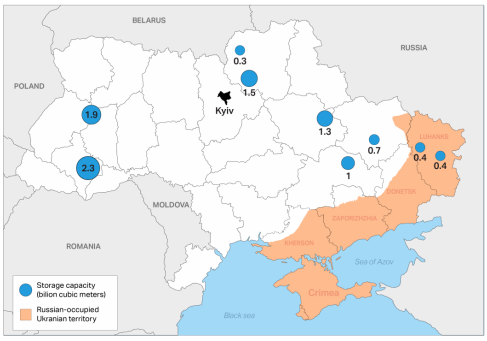
Source: Bloomberg, SAF

Ukraine storage is currently ~6% of total Europe gas storage volume

We have been breaking out Ukraine gas storage levels since the Mar/Apr Russian bombing of the Ukraine natural gas storage, which only impacted some above ground natural gas infrastructure. But it also reminded that of the risk to Europe gas storage from Russia attacks. We broke out the Ukraine storage data from the above Europe data we monitor weekly from the GIE AGSI website [LINK], and, on June 20th natural gas in Ukraine storage was at 16.64% of its total capacity, up from 16.14% of its total capacity on June 13th. Last year, Ukraine storage started the winter on Nov 1, 2023 at 39.38%. Right now, Ukraine makes up ~6% of Europe's natural gas in

storage and, at the beginning of winter 2023/24, it was ~10% of Europe's natural gas in storage. Below is a map of Ukraine's major gas storage facilities.

Figure 16: Ukraine Gas Storage Facilities as of July 2023



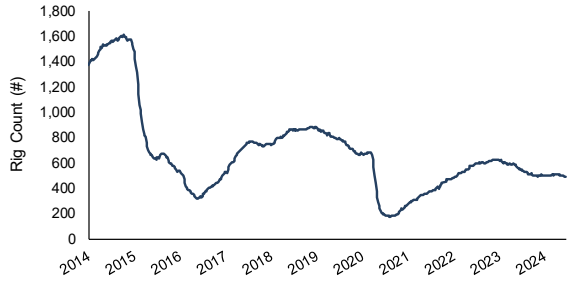
Source: Bruegel

Oil: US oil rigs down -3 rigs WoW at 485 rigs, US gas rigs flat WoW at 98 rigs

US oil rigs down WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Note, after we sent them an email earlier this year, Baker Hughes confirmed they wouldn't be returning to the old format which previously allowed us to break out the basin changes by oil vs gas rig type. (ii) Total US oil rigs were down -3 rigs WoW to 485 oil rigs as of June 21. US oil rigs went below 520 rigs on Aug 25 and has been around 490-510 rigs for the past several months, however, this week's 485 rigs marks the lowest oil rig count since September 2021. (iii) Note we aren't able to see the basin changes but not by type of rig. The major changes were Cana Woodford +1 rig WoW to 17 rigs, Haynesville +1 rig WoW to 36 rigs, Eagle Ford -1 rig WoW to 50 rigs, Williston +1 rig WoW to 35 rigs, and Permian -1 rig WoW to 308 rigs. It looks like we may be seeing a pull back with the WTI back down in the $70s. (iv) The overlooked US rig theme is the YoY declines. Total US rigs are -93 YoY to 583 rigs including US oil rigs -61 oil rigs YoY to 485 oil rigs. And for the key basins, the Permian is -33 rigs YoY, Haynesville is -14 rigs YoY and Marcellus -10 rigs YoY. (v) US gas rigs were flat rigs this week at 98 gas rigs.

Figure 17: Baker Hughes Total US Oil Rigs



Source: Baker Hughes, SAF

Baker Hughes on 2024 Lower 48

Oil: Baker Hughes CEO sees Lower 48 E&P spend is slightly down in 2024

In his Wednesday sellside Q&A, Baker Hughes CEO Lorenzo Simonelli also confirmed his same outlook for Lower 48 E&P spend in 2024 to be slightly down in 2024 but then to pick up as they go into 2025. On Wednesday, Simonelli said "*I think the important aspect is let's stay focused on the macro and what's taking place. And we continue to see that there is a strong international growth. We see high-single-digit. We said that from the beginning of the year. May not have been as robust as some others thought, but we stayed true to what we said at the beginning of the year. We still see that high-single-digit. We think that, again, as we look at going forward, North America will pick up as we go into 2025. As you look at the rig count and you look at activity, clearly, 2024 is slightly depressed. We said that at the beginning of the year. And we continue to be really on pace for what we said at the beginning of the year of the market outlook as we go forward. And I think the fundamentals from a demand perspective, especially with international activity, continue to be robust as we look at also 2025".*

01/24/24: Baker Hughes sees E&P spend down mid single digits in US land

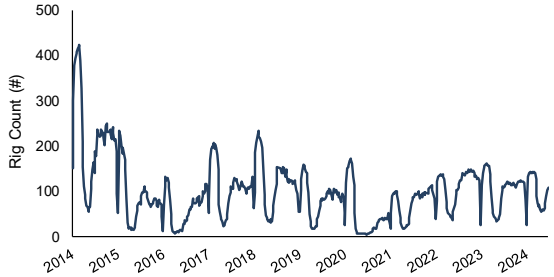
Here is what we wrote in our Jan 28, 2024 Energy Tidbits memo. "*On Wednesday, we tweeted [LINK] "Is $BKR CEO pointing to down YoY, or flat at best YoY, US #Oil production over 2024? CEO "In NA, activity continues to lag, and we are now anticipating no meaningful recovery in activity during the first half of the year. On our last quarterly call, we expected 2024 North American DNC spend to be flattish, but now expect spending down in low to mid single-digits, driven by mid single-digit declines in U.S. land. #OOTT." Baker Hughes CEO Simonelli didn't give an estimate for US oil production growth in 2024 but surprised most by forecasting US E&P spend on land would be down mid single digits in 2024. So Baker Hughes sees lower E&P spend onshore US in 2024. When we see, we have to assume Baker Hughes isn't calling for US oil growth in 2024. They see lower E&P spend. Plus they should know that the strong YoY growth to the 2023 exit would also increase the oil decline in 2024. So increased number of barrels lost thru decline in the face of lower E&P spend would seem to be the formula for much lower oil growth, if any, in 2024.*

Oil: Total Cdn rigs up +7 rigs WoW, ramping up post spring breakup

Cdn total rigs up WoW

As happens every year in Canada, the rig count drops dramatically from early March thru the end of April/beginning of May as winter drilling season ends and the industry moves into spring break up. Spring break up is the period when it warms up and the melting snow leads to road access being limited/restricted in many parts of Alberta and BC. Total Cdn rigs declined from 231 at the beginning of March to 114 one month ago. This week's increase in rigs looks to continue the ramp up we saw beginning last month that follows every spring break up. Cdn oil rigs were up +5 rigs WoW this week to 109 rigs and are down -1 rig YoY. Gas rigs are up +2 rigs WoW this week to 57 rigs and are down -2 rigs YoY, and miscellaneous rigs are up -1 rig WoW, and flat YoY. Baker Hughes did not update their old format report, so we weren't able to see the provincial breakouts.

Figure 18: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes, SAF

Oil: US weekly oil production flat WoW at 13.200 mmb/d

US oil production flat WoW

It's worth noting that historically, the EIA weekly estimates have been off of the Form 914 actuals, which sometimes require re-benchmarking. Here's what the EIA wrote on their website back in April with the April STEO: "*When we release the Short-Term Energy Outlook (STEO) each month, the weekly estimates of domestic crude oil production are reviewed to identify any differences between recent trends in survey-based domestic production reported in the Petroleum Supply Monthly (PSM) and other current data. If we find a large difference between the two series, we may re-benchmark the weekly production estimate on weeks when we release STEO. This week's domestic crude oil production estimate incorporates a re-benchmarking that decreased estimated volumes by 177,000 barrels per day, which is about 1.3% of this week's estimated production total".* Last Tuesday, the EIA released its June STEO. There was an immaterial downward revision to Q1/24 production estimates to 12.94 mmb/d from 12.96 mmb/d in May's STEO. The latest Form 914 (with March actuals) was +0.062 mmb/d higher than the weekly estimates of 13.120 mmb/d. This week, the EIA's production estimates were flat WoW at 13.200 mmb/d for the week ended June 14. Alaska was down -0.011 mmb/d WoW to 0.414 mmb/d from 0.425 mmb/d last week. Below is a table of the EIA's weekly oil production estimates.

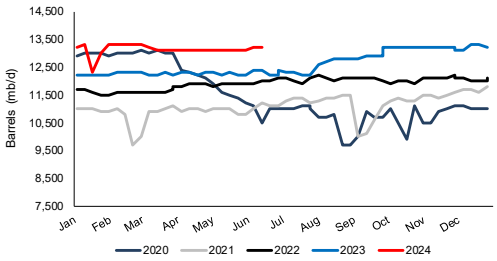
Figure 19: EIA's Estimated Weekly US Field Oil Production (mb/d)

Weekly U.S. Field Production of Crude Oil (Thousand Barrels per Day)

	Week 1		Week 2		Week 3		Week 4		Week 5	
Year-Month	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
2023-Jan	01/06	12,200	01/13	12,200	01/20	12,200	01/27	12,200		
2023-Feb	02/03	12,300	02/10	12,300	02/17	12,300	02/24	12,300		
2023-Mar	03/03	12,200	03/10	12,200	03/17	12,300	03/24	12,200	03/31	12,200
2023-Apr	04/07	12,300	04/14	12,300	04/21	12,200	04/28	12,300		
2023-May	05/05	12,300	05/12	12,200	05/19	12,300	05/26	12,200		
2023-Jun	06/02	12,400	06/09	12,400	06/16	12,200	06/23	12,200	06/30	12,400
2023-Jul	07/07	12,300	07/14	12,300	07/21	12,200	07/28	12,200		
2023-Aug	08/04	12,600	08/11	12,700	08/18	12,800	08/25	12,800		
2023-Sep	09/01	12,800	09/08	12,900	09/15	12,900	09/22	12,900	09/29	12,900
2023-Oct	10/06	13,200	10/13	13,200	10/20	13,200	10/27	13,200		
2023-Nov	11/03	13,200	11/10	13,200	11/17	13,200	11/24	13,200		
2023-Dec	12/01	13,100	12/08	13,100	12/15	13,300	12/22	13,300	12/29	13,200
2024-Jan	01/05	13,200	01/12	13,300	01/19	12,300	01/26	13,000		
2024-Feb	02/02	13,300	02/09	13,300	02/16	13,300	02/23	13,300		
2024-Mar	03/01	13,200	03/08	13,100	03/15	13,100	03/22	13,100	03/29	13,100
2024-Apr	04/05	13,100	04/12	13,100	04/19	13,100	04/26	13,100		
2024-May	05/03	13,100	05/10	13,100	05/17	13,100	05/24	13,100	05/31	13,100
2024-Jun	06/07	13,200	06/14	13,200						

Source: EIA

Figure 20: EIA's Estimated Weekly US Oil Production



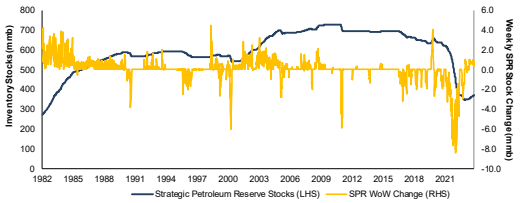
Source: EIA, SAF

Oil: US SPR less commercial reserve deficit narrows, now -86.193 mmb

US SPR reserves

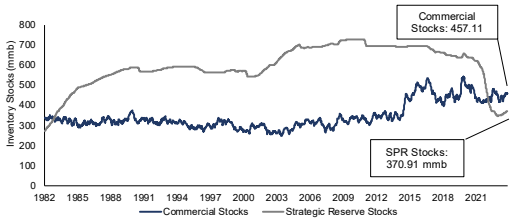
The US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sep 16, 2022 week. This week, we saw a build on the SPR side and a draw on the commercial side. The EIA's weekly oil data for June 14 [LINK] saw the SPR reserves increase +0.386 mmb WoW to 370.912 mmb, while commercial crude oil reserves decreased -2.547 mmb to 457.105 mmb. There is now a -86.193 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles, along with the weekly changes to SPR stockpiles.

Figure 21: Strategic Petroleum Reserve Stocks and SPR WoW Change



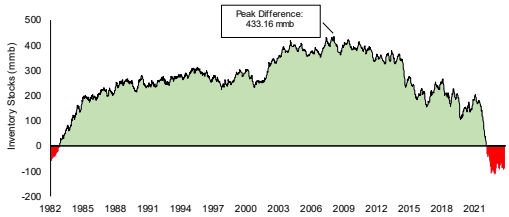
Source: EIA

Figure 22: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 23: US Oil Inventories: SPR Less Commercial



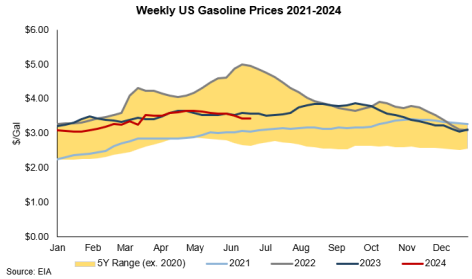
Source: EIA

US gasoline prices

Oil: US national average gasoline prices flat WoW at $3.45

Yesterday, we tweeted [LINK] "*US gasoline prices continue down MoM. AAA National average prices flat WoW at $3,45 on June 22, down $0.16 MoM and down $0.13 YoY. California at $4.81 on June 22 down $0.04 WoW, down $0.36 MoM & down $0.05 YoY. Thx @AAAnews #OOTT."* Yesterday, AAA reported that US national average prices were $3.45 on June 22, which was flat WoW, -$0.16 MoM and -$0.13 YoY. Yesterday, AAA reported California average gasoline prices were $4.81 on June 22, which was -$0.04 WoW, -$0.36 MoM and -$0.05 YoY. Below is our graph of Bloomberg's National Average Gasoline prices.

Figure 24: Bloomberg's National Average Gasoline Prices



Source: Bloomberg

GasBuddyGuy forecasted US gasoline prices to decline thru Labor Day

The well-followed GasBuddyGuy had an early call for declining US gasoline prices over the summer. Here is what we wrote in our May 26, 2024 Energy Tidbits memo. "*On Friday, we tweeted [LINK] "Biden hopes this forecast turns out true! US #Gasoline prices +$0.06 YoY BUT well followed @GasBuddyGuy expects*

"progressive decreases between Memorial Day, July 4 and Labor Day" subject to typical caveats ie. hurricanes. refinery issues. #OOTT @andrewrsorkin @SquawkCNBC". GasBuddy is Patrick De Haan and is well followed for his ground up market following and reap of US gasoline prices. This forecast, if it turns out accurate, will be a big plus for Biden's re-election hopes if US asoline prices are going lower and closer to $3 than $4. Our tweet included a clip of De Haan's comments. Here is a transcript we created of his reply on CNBC Squawk Box on Friday. "Prices [are] up modestly, just 6 cents from last year. It is interesting to watch the trends though, TSA predicting and already seeing some record number of travelers via air. Our week-to-date gasoline demand data showing that week to date through Thursday compared to last year, gasoline demand down about 7.7% so it looks like 2024 might be skewing towards air travel. Not necessarily on the road, but certainly there will still be millions of Americans out there, they will be paying about $3.61 a gallon as down from $3.69. The good news for anyone hitting the road this summer is we expect progressive decreases between Memorial Day, July 4, and then Labor Day. Of course there are the typical caveats, mother nature, hurricane season is a big wild card, and we have seen a rash of minor refinery issues in the great lakes. That is going to be something that could bother motorists this summer. If there are refinery outages, that could temporarily drive prices up locally."

Oil: Crack spreads +$0.91 WoW to $24.36

Crack spreads closed at $24.36

On Friday, we tweeted [LINK] "*321 crack +$0.91 WoW to $24.36 on Jun 21. WTI was +$2.28 WoW to $80.73 but that was driven more by factors like EIA oil inventory data, drone hits on RUS refineries, etc. 321 cracks at $24.36 alone shouldn't drive up oil. Thx @business #OOTT".* Crack spreads were +$0.91 WoW to $24.36. We have always said crack spreads around $30 are a big incentive for refiners to buy as much crude as possible. But crack spreads in the low $20s generally aren't high enough to point to higher WTI ahead. However, WTI was +$2.28 WoW to $80.73 but that was driven more by factors such as the EIA weekly oil inventory changes, Ukraine hitting Russian refineries, etc. Crack spreads were +$0.91 WoW to close at $24.36 on Friday and WTI was +2.28 WoW to $80.73.
Crack spreads at $24.36 on June 21 followed $23.45 on June 14, $24.31 on June 7, $24.04 on May 31, $25.65 on May 24, $27.04 on May 17, $25.89 on May 10, $27.59 on May 3, $28.96 on Apr 26, $28.30 on Apr 19, and $30.39 on Apr 12. Crack spreads at $24.36 are still above the high end of the more normal pre-Covid that was more like $15-$20 but, by themself, shouldn't be a driver up of WTI.

Crack spreads point to near term oil price moves, explaining 321 crack spread

We have focused on crack spreads for since the 90s as they are an unchanged fundamental of refineries – big crack spreads provide incentives for refineries to buy more crude because there are big profit margins to be made. People often just say "cracks", which refers to the 321 crack spread. This is the spread or margin that refiners make from buying crude at a certain price and then selling the finished petroleum products at their respective prices. The 321 crack spread is meant to represent what a typical US refinery produces. It assumes that for every three barrels of crude oil, the refinery will produce two barrels of gasoline and one barrel of distillates. So the crack spread is based on that formula and worked back to a crack spread per barrel. Below is the current 321 crack spread vs WTI that we put in our

tweet where we marked the gaps where the crack spread normally drags up oil prices. The crack spread was $24.36 as of the Friday June 21, 2024 close.

Figure 25: Cushing Oil 321 Crack Spread & WTI June 21, 2014 to June 21, 2024

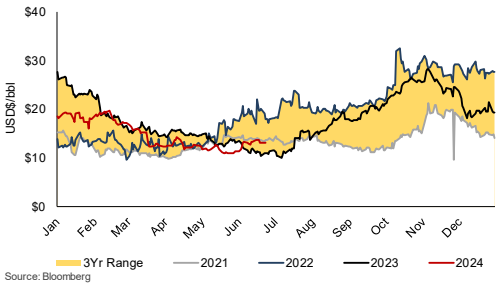
Source: Bloomberg

Oil: Cdn heavy oil differentials narrow -$1.00 WoW to close at $13.25 on June 21

WCS differential narrows

The positive for WCS less WTI differentials continues to be the May startup of the TMX 590,000 b/d expansion. As noted in last week's (June 16, 2024) Energy Tidbits memo, Trans Mountain's has increased loadings by 407,000 b/d so far with the TMX startup. We believe that if TMX had not happened, WCS less WTI differentials would be wider. And that the key test for TMX is times like now and coming up in July/Aug /Sept to see if there will be less of the normal seasonal widening in WCS less WTI differentials. Right now, we are in the normal late Q1 and Q2 period that normally sees WCS less WTI differentials in the low double digits as US refiners maximize production of asphalt for annual paving season and to maximize production of summer grade fuels as well as asphalt ahead of the annual summer driving and paving season. So it's hard to determine how much of an impact TMX has had on WCS less WTI differentials although with the last two weeks have been below the bottom end of the 3-yr range. Below is graph showing WCS-WTI differentials that shows this normal seasonal trend of narrowing WCS-WTI differentials in late Q1 and Q2. The WCS less WTI differential closed on June 21 at $13.25, which was a narrowing of -$1.00/bbl WoW vs $14.25/bbl on June 14.

Figure 26: WCS less WTI oil differentials to June 21 close



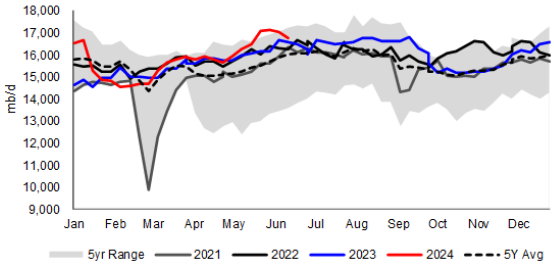
Source: Bloomberg

Oil: Refinery Inputs down -0.281 mmb/d WoW to 16.765 mmb/d

Refinery inputs -0.281 mmb/d WoW

There are always unplanned refinery items that impact crude oil inputs into refineries. And there are always different timing for refinery turnarounds. But, as a general rule, this is the normal seasonal ramp up in refinery runs for the summer that normally peaks in August. On Thursday, the EIA released its estimated crude oil input to refinery data for the week ended June 14 [LINK]. The EIA reported crude inputs to refineries were down -0.281 mmb/d this week to 16.765 mmb/d and are up +0.296 mmb/d YoY. Refinery utilization was down -1.5% WoW to 93.5%, which is up +0.2% YoY.

Figure 27: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil: BP Whiting Advances Work on CDU to July from September

Whiting Advances work on CDU to July

Last week's (June 16, 2024) Energy Tidbits memo highlighted the advancement of the turnaro0und at BP Whiting refinery, which runs on Cdn crude oil. Here is what we wrote last week "*On Thursday, Bloomberg reported that BP's Whiting refinery has advanced their planned turnaround from September up to early July, so it will be down sooner than originally expected. As noted earlier, the 435,000 b/d Whiting refinery impacts Cdn crude oil because it runs almost all on Cdn crude oil from the Enbridge main line so the turnaround is a negative to WCS less WTI differentials. . Bloomberg wrote, "The work on the largest of three crude units and its 95k b/d companion coker is scheduled to extend into early September with additional days needed to restore operations to normal…..The shutdown of the biggest crude unit, coming in the middle of the summer gasoline season, could tighten Midwest fuel supplies, sending regional gasoline prices higher at the pump and margins higher……Whiting, the largest US inland refinery, has a total crude processing capacity of 435k b/d" BP has not given a reason for advancing the work. Our Supplemental Documents Package contains the report from Bloomberg."*

Oil: US refinery capacity +324,000 b/d YoY to 18.384 mmb/d

Refinery inputs -0.098 mmb/d WoW

Last week, the EIA released its annual refinery capacity report. Here is what we wrote in our June 16, 2024 Energy Tidbits memo. "*On Friday, we tweeted [LINK] "US #Oil refinery capacity +324 kb/d YoY to 18.384 mmb/d as of Jan 1/24. 2nd consecutive YoY increase off post Covid decline. Jan 1/19: 18.802 mmb/d. Jan 1/20: 18.976. Jan 1/21: 18.127. Jan 1/22: 17.944. Jan 1/23: 18.060. Jan 1/24: 18.384. Thx @EIA [LINK] #OOTT." On Friday, the EIA posted its annual Refinery Capacity Report June 2024 with data as of January 1, 2024. This is a good report to add to reference libraries. The EIA estimates US refinery capacity was +324,000 b/d YoY to 18.384 mmb/d at Jan 1, 2024 vs 18.060 mmb/d at Jan 1, 2023. These*

were the first two increases after refinery capacity declines post Covid. Prior to Covid, US refinery capacity was 18.976 mmb/d on Jan 1, 2020. The report lists all refineries by owner by location by refining capacity. So the data can be rolled up by state, operator, PADD district, etc. For example, PADD III Gulf Coast has refining capacity of 9.987 mmb/d, which is 5% of total US refinery capacity and PADD II Midwest is 4.246 mmb/d, which is 23% of total US refining capacity. Our Supplemental Documents package includes excerpts from the EIA Refinery Capacity report."

US net oil imports

Oil: US net oil imports down -2.480 mmb/d WoW as oil exports up +1.230 mmb/d WoW

The EIA reported US "NET" imports were down -2.480 mmb/d to 2.636 mmb/d for the June 14 week. US imports were down -1.250 mmb/d to 7.054 mmb/d, while exports were up +1.230 mmb/d to 4.418 mmb/d. Top 10 was down -0.092 mmb/d. (i) Venezuela weekly imports. We know why the EIA doesn't have any data in the row for Venezuela weekly oil imports but we still don't know if the weekly oil imports are off or if Venezuela is included in the weekly oil imports in the Others number. But we do know the EIA monthly data shows Padd 3 imports from Venezuela around 150,000 b/d. Give the EIA credit for putting out weekly oil import estimates, but it's a reminder that we have to be careful about using the weekly oil import estimates. Rather we need to make sure we go to the monthly data for oil imports. (i) Canada was up +0.163 mmb/d to 4.137 mmb/d. We expect that this was due to increased oil imports coming off the new TMX and going to US West Coast. (ii) Saudi Arabia was up +0.094 mmb/d to 0.372 mmb/d. (iii) Mexico was down -0.424 mmb/d to 0.563 mmb/d. (iv) Colombia was up +0.231 mmb/d to 0.306 mmb/d. (v) Iraq was down -0.064 mmb/d to 0.164 mmb/d. (vi) Ecuador was up +0.050 mmb/d to 0.199 mmb/d. (vii) Nigeria was down -0.122 mmb/d to 0.086 mmb/d.

Figure 28: US Weekly Preliminary Imports by Major Country

	Apr 19/24	Apr 26/24	May 3/24	May 10/24	May 17/24	May 24/24	May 31/24	Jun 7/24	Jun 14/24	WoW
Canada	3,423	3,847	3,659	3,812	3,495	3,666	3,768	3,974	4,137	163
Saudi Arabia	398	402	355	196	486	422	375	278	372	94
Venezuela	0	0	0	0	0	0	0	0	0	0
Mexico	351	459	805	507	184	551	538	987	563	-424
Colombia	215	363	183	211	215	32	496	75	306	231
Iraq	309	307	326	123	239	233	126	228	164	-64
Ecuador	124	0	129	207	163	103	200	149	199	50
Nigeria	136	89	322	212	144	71	0	208	86	-122
Brazil	492	0	217	293	315	127	254	134	201	67
Libya	100	98	1	86	0	262	0	87	0	-87
Top 10	5,548	5,565	5,997	5,647	5,241	5,467	5,757	6,120	6,028	-92
Others	949	1,207	972	1,097	1,422	1,302	1,301	2,184	1,026	-1,158
Total US	**6,497**	**6,772**	**6,969**	**6,744**	**6,663**	**6,769**	**7,058**	**8,304**	**7,054**	**-1,250**

Source: EIA, SAF

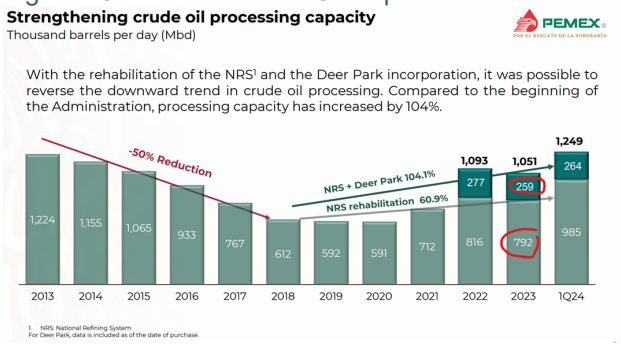
Olmeca finally increasing processing

Oil: Mexico oil exports decreasing with Olmeca finally ramping up oil processing

Finally, it looks like Pemex's new 340,000 b/d Olmeca oil refinery is ramping up its oil processing. The reminder is that as Mexico's oil refineries refine more Mexico crude oil, it means there is less Mexico oil available for export. (i) Pemex has been vague about how much oil is being processed at its new 340,000 b/d Olmeca (also known as Dos Bocas) refinery. Olmeca has been late and the recent reports were that it was only processing 16,300 b/d a month or two ago. But, on Thursday, Pemex CEO Oropeza addressed the opening of the XVIII Mexican Petroleum Congress and included an update on Olmeca. Also Mexican media reported on comments from unnamed Pemex officials on Olmeca. (i) On Thursday, we tweeted [LINK] "*Here's why Biden is letting Venezuela ramp up oil production & imports into the US Gulf Coast. Pemex expects to refine 1.439 mmb/d by yr-end with 340,000*

b/d Olmeca refinery finally ramping up. This means less oil for export by 0.2 mmb/d vs Q1/24, and by 0.4 mmb/d vs 2023. #OOTT." (ii) Pemex reported on Orepeza's speech but did not provide a transcript. Pemex did not note what Olmeca was refining right now, but that he said total Mexico refining, including its Deer Park (Texas) refinery would be 1.439 mmb/d by year-end 2024. Our tweet included Pemex's below May 2024 investor presentation graphs that noted how they refined 1.249 mmb/d in Q1/24 and 1.051 mmb/d in 2023. Using those as base levels, Oropeza's 1.439 mmb/d by year end, that would be refining 0.2 mmb/d more than in Q1/24 and 0.4 mmb/d more than in 2023. Ie. this would be how much Mexico oil exports would be down relative to those periods. (iv) Separately, on Thursday, El Economista confirmed Olmeca had ramped up volumes, when they reported [LINK] "*The new Olmeca refinery will reach a process volume of 73,000 barrels per day of ultra-low sulfur diesel this week, equivalent to almost 60% of the national production of this type of fuel in April*." In other words, Olmeca is producing refined products. (v) Then on Friday, El Economista reported [LINK] ") "*again delayed the full start of operations of its new Olmeca refinery located in Paraíso, Tabasco, which will now produce fuel until the second half of this year, to close at an average annual volume of 163,000 barrels per day processed of crude oil, which is 8% lower than the government's latest estimate. This was explained by the general director of the company, Octavio Romero Oropeza, who appeared at the Mexican Petroleum Congress in Tampico, Tamaulipas*." Ie. Olmeca is refining products, is further behind schedule but expected now at 163,000 b/d by year end vs total capacity of 340,000 b/d. Our Supplemental Documents package includes the Pemex report of Orepeza's speech and the El Economista June 21 report.

Figure 29: Pemex Mexico Oil Exports



Source: Pemex May investor slide presentation

Mexico exports were down to 0.681 mmb/d of oil in April, -0.9% MoM

As noted above, it looks like the increased refining volumes should reduced oil exports by ~0.2 mmb/d vs Q1/24 or by ~0.4 mmb/d vs 2023. Here is what we wrote in our May 26, 2024 Energy Tidbits memo on the last posted Pemex Mexico oil exports for April data. "*We are seeing what we have said for months – the startup, albeit slow of the new 340,000 b/d Olmeca (also known as Dos Bocas) and some improvements in existing refinery processing was going to hit Mexican oil exports, especially those barrels normally bound for USGC refiners. As noted in the following item, Olmeca startup is not happening anywhere as fast as expected and that means the increased refinery volumes is due to improved processing at the existing*

refineries. On Friday, Pemex posted its oil exports for April [LINK]. Pemex does not provide any commentary on the data but reported April oil exports were 0.681 mmb/d, which is -0.9% MoM and -31.1% YoY vs 0.989 mmb/d in April 2023. We don't know exactly when Mexico oil exports were this low, but we expect it was back in the 1970s, which was the start of Mexico's golden age of oil production. Don't forget prior to the start of decline at the super giant Cantarell oil field, Mexico oil production was 3.8 mmb/d in 2004. The simple reminder is more oil processed at refineries = less oil available for export. In theory, this should help narrow the WTI-WCS differential as now the US refiners will need to replace this Mexican oil with other medium sour such as Cdn crude. Below is our table of the Pemex oil export data."

Figure 30: Pemex Mexico Oil Exports

Oil Exports (thousand b/d)	2016	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	1,119	1,085	1,107	1,071	1,260	979	832	980	951	-3.0%
Feb	1,241	1,217	1,451	1,475	1,093	1,006	925	949	940	-0.9%
Mar	1,062	1,001	1,176	1,150	1,144	925	905	971	687	-29.2%
Apr	1,081	1,017	1,266	1,023	1,179	923	1,024	989	681	-31.1%
May	1,204	958	1,222	1,205	1,062	1,031	965	1,087		
June	1,098	1,157	1,110	995	1,114	1,106	1,029	1,203		
July	1,146	1,255	1,156	1,079	1,051	1,173	1,062	1,052		
Aug	1,261	1,114	1,181	1,082	1,190	1,099	915	1,076		
Sept	1,425	1,159	1,206	995	1,023	983	1,022	1,119		
Oct	1,312	1,342	1,027	963	908	935	971	1,053		
Nov	1,273	1,388	1,135	1,114	1,171	1,025	893	883		
Dec	1,115	1,401	1,198	1,115	1,243	1,037	900	1,027		

Source: Pemex, SAF

Oil: Mexico decreasing oil exports is also why Venezuela oil exports are increasing

We have been highlighting this simple theme – if Mexico oil exports decline, Biden will want Venezuela oil exports to the US to increase. And we believe this has been happening. The big winner when Mexico oil exports go down is Venezuela because Biden knows he will want more Venezuela oil to Gulf Coast refineries to help keep gasoline prices down. Our above Thursday tweet on the Pemex CEO speech also said "*Here's why Biden is letting Venezuela ramp up oil production & imports into the US Gulf Coast. Pemex expects to refine 1.439 mmb/d by yr-end with 340,000 b/d Olmeca refinery finally ramping up. This means less oil for export by 0.2 mmb/d vs Q1/24, and by 0.4 mmb/d vs 2023. #OOTT.*"

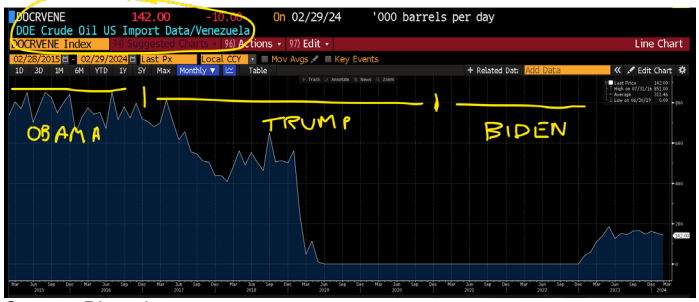
205,000 b/d of Venezuela oil shipped to US

Venezuela oil loadings to US reach >200,000 b/d for 1st time since 2019

Here is what we wrote in our June 9, 2024 Energy Tidbits memo. "*We have been of the view that Biden is going to do all he can to keep Venezuela oil flowing to global markets and, in particular, to the US Gulf Coast refineries to do what he can to help keep gasoline prices as low as possible in the run up to the election There is less than five months to the Nov 5 election and it's clear that Biden is pushing any levers he has to keep gasoline and groceries prices from rising. And one of his key levers is allowing as much Venezuela oil to hit global markets in the shortest time. And it's working as Venezuela oil exports/loadings to the US are hitting new highs since 2019. Reuters reports shipments to the US reached 205,000 b/d in April, which is the first time above 200,000 b/d since 2019. On Monday, we tweeted [LINK] "Venezuela #Oil exports up to 708,900 b/d in May. Note, 205,000 b/d of VEN oil imported by Chevron to Gulf Coast PADD 3, 1st time over 200,000 b/d since 2019. Good timing for Biden, more VEN oil into PADD 3 ahead of Nov 5. Thx @mariannaparraga #OOTT." Reuters wrote "A total of 50 vessels departed Venezuelan waters last*

month carrying an average 708,900 barrels per day (bpd) of crude and fuel, and 614,000 tons of petrochemicals and oil byproducts, according to internal PDVSA documents and shipping data from financial firm LSEG." And "Over a third of total exports, or 250,000 bpd, were bound for Asia. The United States was the second largest recipient with an average of 205,000 bpd sent by U.S. oil major Chevron, opens new tab(CVX.N), opens new tab to its own refineries and others, followed by Europe with 129,000 bpd." Below is the Bloomberg data on US oil imports from Venezuela. Our Supplemental Documents package include the Reuters report."

Figure 31: US oil imports from Venezuela



Source: Bloomberg

Oil: Norway May oil production of 1.689 mmb/d is down MoM and down YoY

Norway May oil production

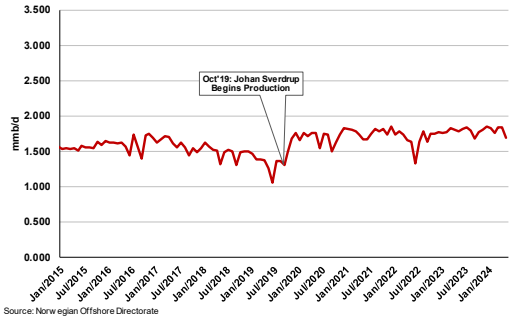
On Thursday, the Norwegian Offshore Directorate released its May production figures [LINK]. It reported oil production of 1.689 mmb/d, down -8.2% from revised April figures of 1.839 mmb/d and down -5.3% YoY from 1.783 mmb/d in May 2023. May's production actuals came in +2.9% (+0.0480 mmb/d) over the forecast volumes of 1.641 mmb/d. The NOD does not provide any explanation for any MoM changes so we don't know if the MoM declines ae temporary. But, as we have been highlighting, there will be an increasing watch on Norway oil production will intensify as Norway expects Norway oil production to reach peak oil production in 2025. Note that, prior to 2024, the Norwegian Offshore Directorate was called the Norwegian Petroleum Directorate.

Figure 32: Norway May 2024 Production

		Oil mill bbl/day	Sum liquid mill bbl/day	Gas MSm³/day	Total MSm³ o.e/day
Production	**May 2024**	**1.689**	**1.932**	**322.6**	**0.630**
Forecast for	May 2024	1.641	1.871	315.4	0.613
Deviation from forecast		0.048	0.061	7.2	0.017
Deviation from forecaset in %		2.9 %	3.3 %	2.3 %	2.8 %
Production	April 2024	1.839	2.091	346.8	0.679
Deviation from	April 2024	-0.150	-0.159	-24.3	-0.049
Deviation in % from	April 2024	-8.2 %	-7.6 %	-7 %	-7.2 %
Production	May 2023	1.783	2.002	276	0.594
Deviation from	May 2023	-0.094	-0.070	46.6	0.036
Deviation in % from	May 2023	-5.3 %	-3.5 %	16.9 %	6.1 %

Source: Norwegian Offshore Directorate

Figure 33: Norway Monthly Oil Production 2015-2024



Source: Norwegian Offshore Directorate

Norway forecasts Norway reaching peak oil production in 2025, then to decline

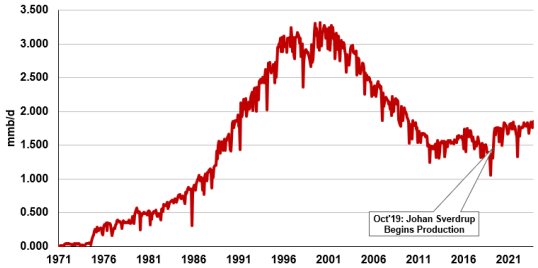
As noted above, the watch on Norway monthly oil production numbers should escalate moving into Q4/24 because that is when the giant oilfield, Johan Sverdrup is expected to start to decline. Here is what we wrote in our Mar 17, 2024 Energy Tidbits memo. "*No one should be surprised to see Norway forecast that Norway will hit peak oil production in 2025 and then begin to decline. That conclusion was obvious on Feb 8 when Aker BP, a partner in the giant Johan Sverdrup oilfield, told investors that Johan Sverdrup was going to reach peak production level around year-end 2024 and then begin to decline. Our thesis on Norway oil production has been that we expect Norway oil production to peak around end of 2024 or early 2025 based on the recent Aker BP comments that Norway's giant Johan Sverdrup oil field will start to decline in late 2024, which we believe would likely lead to Norway hitting peak oil production and then begin to decline. It looks like that these is supported by Norway's energy agency (the Norwegian Offshore Directorate) blog on Monday. On Tuesday we tweeted [LINK] "ICYMI. Norway forecasts it will hit peak #Oil production in 2025 & then decline therefrom. Jan 2024 was 1.8 mmb/d. See 👇Feb 8 tweet. Giant oil field Johan Sverdrup to hit peak & begin decline ~yr-end 2024. Start of decline in giant oilfield = decline in oil for Norway. #OOTT." On Monday, we tweeted [LINK] "Norway #Oil production peak in 2025 and in decline says @sokkeldir. Makes sense, see 👇Feb 8 tweet. massive Johan Sverdrup oil field led to a return to Norway oil growth. But it starts to decline in late 2024/early 2025. Positive for #Oil post 2024. #OOTT." Norway's Mar 11 blog was "High price to pay for halting exploration for oil and gas" [LINK] Their blog was a big picture warning that Norway shouldn't stop further exploration, production development activity as it will be a big hit to Norway. It's worth a read as it sounds like the Norway Climate committee is saying they want to stop all new exploration but also production, installation and operation. So that means an ever earlier end of life for oil and gas production and facilities. Ie. no more tie-in of smaller satellite fields to an existing platform. But included in the blog is a sente3nce that fits our Feb thesis – Norway oil production will peak in 2025 and then start to decline. They write "Production is declining on its own. The Committee presumes that activity in the oil and gas industry on the Norwegian shelf is too high leading up to 2050, which means that measures must be implemented to cut production. On the other hand, the Norwegian Offshore*

Directorate expects activity in the industry to naturally decline following a production peak in 2025. The production decline towards 2050 is within what the Intergovernmental Panel on Climate Change and the IEA have projected is in line with successfully following up the Paris Agreement." Norway is forecasting reaching peak oil production in 2025 and then beginning a decline therefrom. Our Supplemental Documents package includes the Norwegian Offshore Directorate blog."

Is Norway oil production peaking w/ Johan Sverdrup field moving to decline?

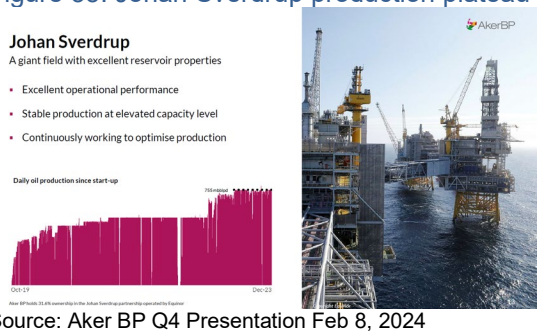
As noted above, Aker BP provided the key disclosure on Feb 8 as to why oil watchers should be expecting Norway to reach peak oil production in 2025 and then begin to decline. Here is what we wrote in our Feb 11, 2024 Energy Tidbits memo on why Norway would e hitting peak oil production. "*We have to believe Norway will be in a "show me" phase over the next 12 months. There was big news on Thursday, when Aker BP said Norway's biggest oil field, the 755,000 b/d Johan Sverdrup, is moving from plateau to decline in late 2024 or early 2025. There was no disclosure of how much it will decline in 2025 or if the decline can be offset, but it will raise the question what does it mean to Norway's oil production base. (i) On Thursday, we tweeted [LINK] "#Oil bulls will like this. Johan Sverdrup 0 to 0.75 mmbd led to Norway 1.31 mmbd in 09/19 to 1.85 mmbd today. BUT Aker BP says JS moving from plateau to decline in late 24/early 25. Water now hitting some wells. Can they arrest decline with H2O handling, more wells, etc? Are there other fields to offset? Or is Norway #Oil about to start to decline? #OOTT." (ii) Our tweet included the below graphs that reminded Johan Sverdrup started production in Oct 2019 and is now 755,000 b/d. And Norway oi production was 1.31 mmb/d in Sept 2019 and is now 1.85 mmb/d in Dec 2023. Johan Sverdrup is currently 40% of total Norway oil production. (iii) There was a great Q&A exchange on the Aker BP Q4 call on Thursday that led to the CEO noting a few key points. Aker BP has 31.6% in Johan Sverdrup but is not the operator. Equinor is the operator. CEO noted that water is hitting some undisclosed number of wells. And everyone knows water in conventional oil wells is a negative. And the more water, the more water handling capacity is required. The CEO said there is sufficient water handling capacity, didn't specify how much more longer that would be the case and that water handling capacity will impact some operations. The CEO noted that plateau is ending and declines should start in late 2024 or early 2025. This is earlier than expected. But he would not say what decline rate going forward and if their development options (adding more water handling, drilling more wells, etc) can offset or more than offset the start of declines. There is more in the Q&A and we recommend reading the excerpt. (iv) The key items to come out in 2024 is what will the declines look like at Johan Sverdrup in 2025, can they offset the declines at Johan Sverdrup and for how long, are there other Norway projects that can more than offset any declines at Johan Sverdrup. (v) Until these questions are answered, we have to take the Aker CEO comments at face value and that Johan Sverdrup plateau oil production is ending in late 2024/early 2025 and declines are about to start. Our Supplemental Documents package includes excerpts from Aker BP call transcript."*

Figure 34: Norway oil production



Source: Norwegian Offshore Directorate

Figure 35: Johan Sverdrup production plateau 755,000 b/d



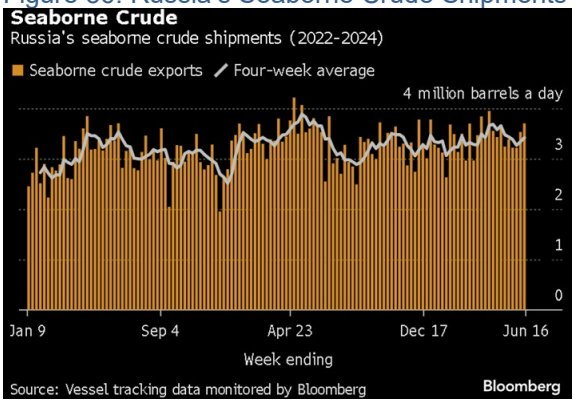
Source: Aker BP Q4 Presentation Feb 8, 2024

Oil: Russia's seaborne crude oil exports up WoW for a second week in a row

Russia's seaborne crude exports

Information on the impacts on Russian oil infrastructure and its impact on moving crude is still a black hole. So it's far from clear how drone strikes have affected refinery capacity in Russia would free up crude for export assuming the crude oil volumes can be moved to export terminals. And as noted previously, Russia has been moving more crude and products via rail, however, this week shows an increase in seaborne crude exports. On Tuesday, Bloomberg reported, *"Russia's four-week average crude exports rose for a second straight week in the period to June 16, even as Moscow said it would strictly comply with its OPEC+ output target this month. After hitting a year-to-date high in mid-April, shipments had been on a downward trend, dropping by 420,000 barrels a day, or 11%, by the start of June. Since then, though, the four-week average has clawed back one-third of the earlier drop. The gain of 80,000 barrels a day in the latest number was driven by a jump in weekly shipments to a two-month high."* In the week to June 16, Russia exported 3.70 mmb/d via tankers, up WoW from the week to June 9 which was 3.53 mmb/d, and the four-week average increased by ~ +80,000 b/d to 3.42 mmb/d, the second straight increase. Russia has pledged to compensate for overproduction against its April target, which was attributed to "technicalities of making significant output cuts". Russia made significant output cuts in May, however they were still above their promised target. Our Supplemental Documents package includes the Bloomberg report.

Figure 36: Russia's Seaborne Crude Shipments



Source: Bloomberg

Russia oil exports to China still down vs two months ago with lesser discounts

Russia oil shipments to China averaged 1.36 mmb/d for the first half of April. But they have been down since then with the reports that Russia had cut its discounts to China and that meant China was taking less Russian oil. Bloomberg's above report this week highlighted Russia oil shipments to China were up to 1.23 mmb/d for the June 16 week, which brings the last six weeks average to 1.22 mmb/d. We were warned that China oil imports from Russia were being hit on April 22 by one of our favorites commentators on the Gulf Intelligence Daily Energy Podcasts is Victor Yang, Senior Analyst JLC Network Technology. He is based in China so we like hear his on-the-ground views on oil, natural gas and markets in China. Here is what we wrote in our April 28, 2024 Energy Tidbits memo referencing Yang's comments from our April 22, 2024 tweet [LINK] that included a transcript we made of Yang's comments. "*And for the second quarter, we see a lot of refinery maintenance, is imports will actually come down. And for now, the premium for Russian cargoes have strengthened this year, from -0.5 barrels to -0.3 barrels. And now it's flat to Brent, meaning 0 now. So this has dampened refiners, particularly independents, interest in Russian crude. Their margins for imported crude, including Russian crude, actually turned negative late last month and the beginning of this month. So it's now kind of [inaudible] slightly above the breakeven point. So the interest in this has been dampened too. So we are not expecting imports to grow much in the second quarter, yes.*" Below is the table from Bloomberg's Russia oil exports report this week.

Figure 37: Russian Crude Exports to Asia

Crude Shipments to Asia
Shipments of Russian crude to Asian buyers in million barrels a day

4 weeks ending	China	India	Other	Unknown Asia	Other Unknown	Total
May 12, 2024	1.13	1.86	0.04	0.04	0.00	3.06
May 19, 2025	1.20	1.68	0.00	0.12	0.00	3.00
May 26, 2024	1.26	1.59	0.00	0.13	0.00	2.99
June 2, 2024	1.17	1.63	0.00	0.13	0.00	2.93
June 9, 2024	1.34	1.45	0.00	0.18	0.00	2.97
June 16, 2024	1.23	1.50	0.00	0.22	0.05	3.00

Source: Vessel tracking data compiled by Bloomberg — Bloomberg

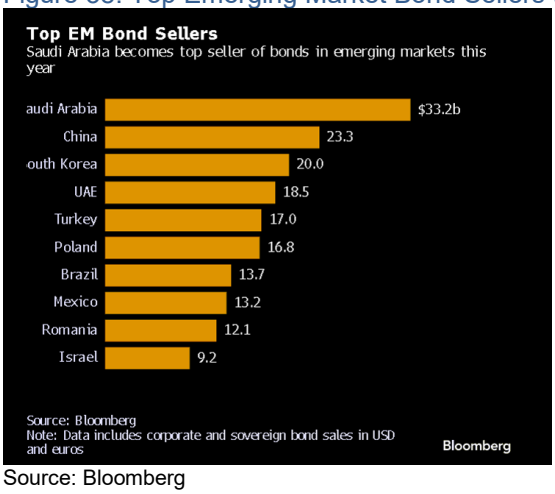
Source: Bloomberg

Saudi Arabia leads the way in issuing debt

Oil: Saudi Arabia leads the way in issuing debt

This week brings another reminder what we have called for years as Saudi Arabia's #1 financial theme – the increasing need for Other People's Money. On Wednesday, we tweeted [LINK]: "*Reinforces #1 financial theme for Saudi Arabia in the 2020s is accessing more Other People's Money for Vision 2030. Saudi #1 in EM bond sales by large margin! Also reminds why Saudi will do all it can to keep strong #Oil prices at Brent $80 or more. Thx @selcukgokoluk #OOTT.*" On Wednesday, Bloomberg released a report on Saudi Arabia's data for new bond sales for corporate and government bonds, reporting "*Saudi Arabia has displaced China as the most prolific issuer of international debt among emerging markets, breaking Beijing's 12-year run at the top.*" Saudi Arabia is borrowing at a record braking pace which aligns with Crown Prince's Mohammed bin Salman's Vision 2030 plan. "*The latest data suggest improving sentiment as Riyadh seeks funding for projects to diversify the economy from oil and position it as a link between Asia and Europe. Meanwhile, the rest of emerging markets are also witnessing a blockbuster year for bond issuance, amid falling borrowing costs and a hunt for juicy yields……. . It* [Saudi Arabia] *expects total funding activities for the year to reach about $37 billion, to help accelerate Vision 2030. In fact, the country has turned to the bond market on such a scale partly because foreign direct investment has fallen short of its targets, while oil revenue has been crimped by supply cuts."* Bond sales from Saudi Arabian entities have increased +8% so far this year, already exceeding $33b, with the government accounting for over half of this. Below is the Bloomberg chart of the top emerging market bond sellers. Our Supplemental Documetns package includes the Bloomberg report.

Figure 38: Top Emerging Market Bond Sellers (In USD)



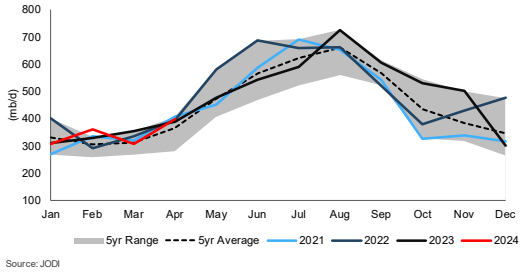
Source: Bloomberg

Oil: Saudi use of oil for electricity up MoM in Apr

Saudi oil use for electricity up in Apr

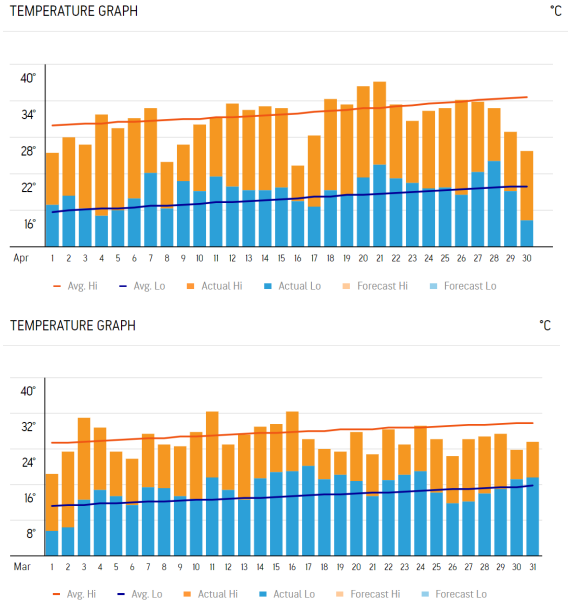
The JODI data for Saudi Arabia oil supply and demand for April [LINK] was updated on Monday. Saudi Arabia is moving into its normal season increasing use of oil for electricity for air conditioning. Oil used for electricity generation (direct use) in April was 400,000 b/d (vs April 2023 of 389,000 b/d) and March was 307,000 b/d (vs March 2023 of 354,000 b/d). The AccuWeather temperature recap was that it was warm in April where there were daytime highs mostly in the 27-34 degree range, reaching a maximum high of 37 degrees, while the nighttime lows were mild in the high teens-low twenties. Direct use in April 2024 is slightly above the 5-year average. The normal trough-to-peak swing is approx 400,000 b/d. Saudi peak oil used for electricity in 2023 was 726,000 b/d in Aug 2023. Below are the AccuWeather Temp maps for Riyadh for April and March.

Figure 39: Saudi Arabia Direct Use of Crude Oil for Electricity Generation



Source: JODI, SAF

Figure 40: Riyadh Temperature Recaps for April (top) and March (bottom)



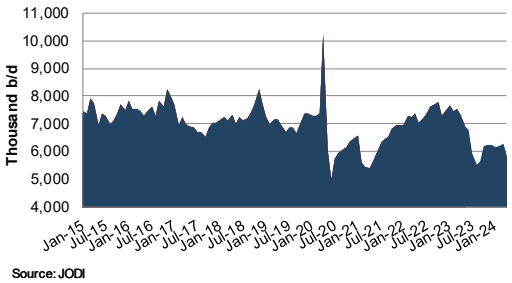
Source: AccuWeather

Oil: Saudi net oil exports down -474,000 b/d to 5.819 mmb/d in April

Saudi net oil exports down -474,000 b/d MoM

Note, until recently, JODI did not have access to Saudi import data. But the oil import data is available so we calculate net oil exports. In April, the JODI data showed Saudi net oil exports were down -474,000 b/d MoM to 5.819 mmb/d. This comes as imports were up +29,000 b/d and exports are down -445,000 b/d. Below is our graph of Saudi Arabia monthly net oil exports.

Figure 41: Saudi Arabia Net Oil Exports (mb/d)



Source: JODI, SAF

11/10/23 Saudi reminds oil exports are seasonal, less in summer/more in winter

Here is what we wrote in the Nov 12, 2023 Energy Tidbits memo. "*We probably should have called it Saudi Oil 101, but we were a little surprised that Saudi Energy*

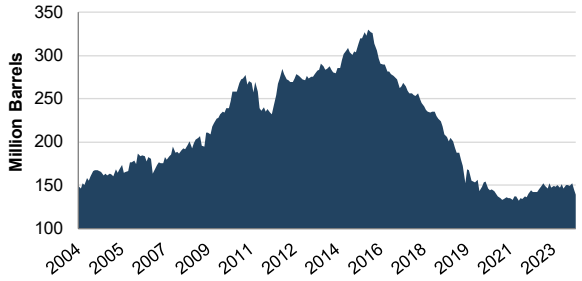
Minister felt the need to explain how there is seasonality to Saudi's oil exports because Saudi domestic consumption of oil has a seasonal pattern. So seasonally, there is more Saudi oil available for export in the fall than in the summer. On Friday, we tweeted [LINK] "Agreed, he is explaining Saudi Oil 101. Summer heat = more #Oil used to generate electricity for A/C ie. less for export. Aug 2023 was 726,000 b/d, +414,000 b/d vs Jan 2023. See 👇SAF 10/22/23 Energy Tidbits graph. Thx @SVakhshouri for flagging. #OOTT." Well known oil strategist Dr. Sara Vakhshouri tweeted "Saudi Energy Minister on #oil price drop: demand is healthy & speculators are to blame for the recent drop. OPEC exports don't indicate increased production. Shipments are seasonal, dipping in summer & rebounding in Sep & Oct; not a sign of output changes." This is the theme we highlight every month when we report on the monthly Saudi oil data for oil to refineries, production, exports, oil for electricity and oil into inventories. Our tweet showed our Oct 22, 2023 Energy Tidbits graph on how Saudi used 414,000 b/d more oil for electricity in Aug than it did in Jan because of the weather. The hot summers always drive up Saudi use of oil for electricity."

Saudi oil inventory data

Oil: Did Saudi make revisions to its oil inventory data the last two month?

We have to wonder if Saudi Arabia made revisions to its oil inventory data the last two months – a downward revision to the March data and an upward revision to the April data ie. a reversal of March revision. (i) For the March data, we couldn't reconcile the components to investor and wondered if the Saudi's made a downward revision. Here is what we wrote in May 26, 2024's Energy Tidbits: "*We didn't see anyone ask the question if the JODI data suggest Saudi Arabia made a downward revision to its oil inventories in March? or is it a day timing difference in loading tankers that didn't show up in the March loadings and were loaded on Apr 1? or it could be that everyone else knows there is another factor other than the normal MoM changes that is the reason why the JODI reported oil stocks for Saudi Arabia is so much lower than the implied math."* (ii) But this month, we couldn't reconcile in the opposite direction for the April data. The JODI data for Saudi oil stocks is 145.948 mmb on April 30, which is up 6.663 mmb MoM from 139.285 mmb on March 31. But when we look at the components of the MoM changes for production, oil used for electricity, oil intakes into refineries and net oil exports, we would have expected to see a build in oil stocks of 12.270 mmb in April ie. a difference of 5.607 mmb. There is always a difference between the MoM oil inventory changes and the math of the major components but not to a variance of 5.607 mmb. For the math components. Saudi production in April was 8.986 mmb/d, up +13,000 b/d MoM vs 8.973 mmb/d in March ie. this would have led to a +13,000 b/d or 0.390 mmb MoM build in inventories. MoM increase in oil inventories. Saudi direct use of oil for electricity was 400,000 b/d in April, up +93,000 b/d MoM vs 307,000 b/d in March ie. this would lead to a -93,000 b/d or -2.790 mmb MoM draw in oil inventories. Refinery intake of oil was 2.545 mmb/d in April or -15,000 b/d MoM vs 2.560 mmb/d in March ie. this would have led to a 15,000 b/d or 0.450 mmb MoM increase in oil inventories. Net oil exports were 5.819 mmb/d in April, down -474,000 b/d MoM vs 6.293 mmb/d in March ie. would lead to a +474,000 b/d or +14.220 mmb MoM build in oil inventories. The net impact of the key components would have been a MoM build of 12.270 mmb in oil inventories in April vs the reported MoM build of 6.663 mmb. It's why we wonder if Saudi made a downward revision last month and reversed it this month to an upward revision in the April data.

Figure 42: Saudi Arabia Oil Inventories (million barrels)



Source: JODI, SAF

Oil: Iran expects to add 0.4 mmb/d to reach 4.0 mmb/d in March 2025

Iran expects to add 0.4 mmb/d by March 2025

One of the big holdbacks to oil price in the last year has been Iran's growth in oil production. It looks like that will continue for another year. Earlier this morning, we tweeted [LINK] "*One continued hold back on #Oil. Yesterday, Iran said expects to increase #Oil production by 0.4 mmb/d to 4.0 mmb/d by end of March 2025 reports IRNA. Given their recent track record of oil production growth, no reason to doubt for now that they can do it. #OOTT."* Our tweet included the IRNA (Iran state media) report that wrote "*Owji said that the Raisi administration has already managed to increase oil production from 2.2 to 3.6 million bpd and is now planning to increase the daily output to 4 million barrels by the end of the current Iranian year, which falls on March 20, 2025."* Our Supplemental Documents package includes the IRNA report.

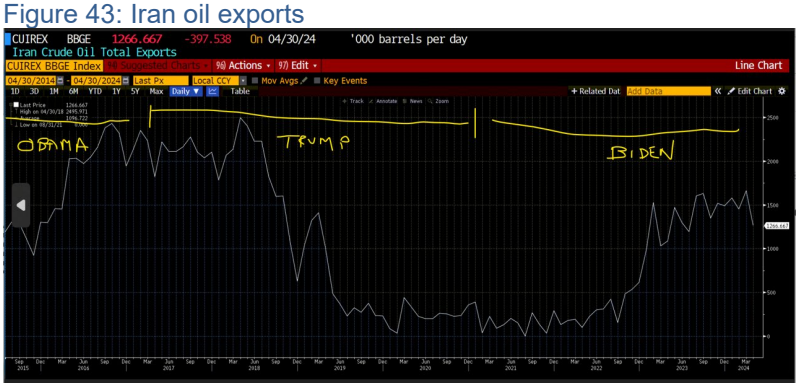
Oil: Iran says no US administration can hinder Iran's oil production and exports

Iran says US can't hinder its oil exports

We suspect Trump has much bigger items to focus on than Iran's oil minister boasting that no US administration will stop them from growing their production and exports. On Wednesday, we tweeted [LINK] "*Expect Trump to remind Iran that its oil exports were almost zero pre Biden. Iran Oil minister "I must announce that any administration assuming office in the United States cannot hinder the Islamic Republic of Iran's oil export and production" #OOTT."* Our tweet included the PressTV (Iran state media) report of comments by Iran Oil Minister Javad Owji to Iran's parliament. Owji boasted that no US administration will be able to hurt Iran's oil production and exports. PressTV wrote *"Iranian Oil Minister Javad Owji says no administration in the United States can curb the Islamic Republic's oil exports and that the oil sales has "jumped" over the past three years despite US sanctions. Owji made the statement while presenting a report on the country's latest status of oil and gasoline output during a plenary session at the Iranian Parliament (Majlis) on Wednesday. He said Iran's crude oil production increased by more than 1.4 million barrels through round-the-clock work and relentless efforts in the past three years, adding, "Despite more than 600 new sanctions on the export of oil and petrochemical products, today, we are witnessing a jump in the export of oil and collection of the country's arrears." Owji asserted that the amount of Iran's oil exports has tripled compared to the beginning of the sitting administration in 2020 and the foreign exchange revenue has also increased. "With the measures taken by the government in the field of oil industry and the preparations made in the field of exporting oil and agricultural products, I must announce that any administration assuming office in the United States cannot hinder the Islamic Republic of Iran's oil export and production," he added."* Our tweet included the below graph of Iran's oil exports under Obama, Trump and Biden and

highlighted how Iran's oil exports went to effectively zero under Trump. Our Supplemental Documents package includes the PressTV report.

Figure 43: Iran oil exports



Source: Bloomberg

Oil: US Eisenhower aircraft carrier strike group leaves Red Sea to return to US

Eisenhower returning to US

We didn't expect the Eisenhower Carrier Strike Group leave the Red Sea to return to the US for another two weeks but, yesterday, CENTCOM tweeted [LINK] "*Fair winds and following seas to the Dwight D. Eisenhower Carrier Strike Group (IKE CSG) as they return home to their families…… protected freedom of navigation throughout the Red Sea and Gulf of Aden. The IKE CSG also upheld their commitment to safety of all seafarers, rescuing mariners in distress on several occasions following unprovoked attacks on innocent mariners by Iranian-backed Houthis. Following completion of a scheduled exercise in the Indo-Pacific, the USS Theodore Roosevelt (CVN 71) Carrier Strike Group will enter the CENTCOM Area of Responsibility bringing with it capabilities that enhance CENTCOM's ability to deter aggression, safeguard regional stability, and protect freedom of navigation in the region."* It isn't clear how much, if any, of a gap there is in the changeover of the Eisenhower to the Roosevelt. We hadn't expected the Eisenhower to leave for a couple weeks given the June 4 Defense Secretary Austin extending the Eisenhower deployment for at least another month.

Oil: Have Houthis hit any US navy ships?

Did Houthis hit a US navy ship?

We always wonder if there is anything hidden in writing when we see slightly different and general language used in sensitive disclosures. It may well be that there isn't but we can't help wonder. A good example is CENTCOM's tweets on Houthis attacks on merchant ships and US navy ships. The US has never acknowledged any drone or anything has actually hit a US navy ship. Rather, when there is damage, CENTCOM refers to damage to the collective fleet of US Navy, coalition or merchant ships. So it is normally not clear which type of ship had damage. It is a good way for CENTCOM to not have to be specific. (i) No "significant damage". Yesterday CENTCOM tweeted [LINK] "*In the past 24 hours, U.S. Central Command (USCENTCOM) forces successfully destroyed three Iranian-backed Houthi uncrewed surface vessels (USV) in the Red Sea. It was determined these systems presented an imminent threat to U.S., coalition forces, and merchant vessels in the region. This action was taken to protect freedom of navigation and make international waters safer and more secure for U.S., coalition, and merchant vessels. Separately, Iranian-backed Houthis launched three anti-ship ballistic missiles (ASBM) from a Houthi controlled area of*

Yemen into the Gulf of Aden. There were no injuries or significant damage reported by U.S., coalition, or merchant vessels." CENTCOM saying no significant damage points to some damage on some type of ship. We will keep watching but, at least so far, we have not seen any western confirmation that any US navy ship has been hit by the Houthis.

Oil: Houthis keep attacking and hitting merchant ships and US navy

Houthis keep attacking ships

We are not seeing any change to the market responding to Houthis drone/missile attacks against merchant and US navy ships with a no real market impact response. It doesn't matter if the Houthis hit multiple merchant ships or sink merchant ships as they did last week or launch missiles at US and/or UK navy ships. But we have to wonder how the market would feel if the Houthis did hit a US navy ship as we wonder/speculate above. This was another week of multiple Houthis aerial drones and drone ship attacks against merchant vessels and the US navy had multiple attacks on Houthis missile infrastructure.

Oil: Progress towards an Iraq deal for a return of Kurdistan oil exports

Kurdistan oil exports

This is probably the first time we have noted there was some progress being made towards a restart of Kurdistan oil exports via Turkey. We say progress towards as there are still some big issues to be resolved. We have believed Iraq has the leverage and that it will be up to Kurdistan and the international oil companies operating in Kurdistan to make the big moves/concessions if they want to get their oil flowing. On Friday, we saw one such concession. APIKUR is the industry association for the Kurdistan oil companies and they tweeted [LINK] "*APIKUR member companies agree with the statement made by KRG in their recent Council of Ministers meeting that direct sales agreements between Int'l Oil Companies and SOMO offer the best option for resolving the current situation – those agreements should provide the IOCs with surety for payment through upfront payment, escrow arrangements, or payments in-kind at Ceyhan. #oil #iraq #opec."* This has been one fo the key issues – the Kurdistan govt and oil companies did not want to give SOMO (Iraq's State Organization for Marketing of Oil) the full control over oil sales. But they are now saying they will do so. There are still other big issues, in particular the structure of contracts and the govt take, but the SOMO give is a step towards a deal. Our Supplemental Documents package includes the Rudaw (Kurdistan news) reporting on this development.

Oil: Libya oil production continues stable, now at 1.246 mmb/d

Libya oil production 1.246 mmb/d

Last week's (June 16, 2024) Energy Tidbits memo highlighted how, on June 9, the Libya National Oil Corporation resumed posting Libya oil production updates on their Twitter/X and Facebook. Since then, they posted updates a few times each week. As of our 7am MT news cut off, the latest production was on Wednesday. And it was that Libya oil producoitcn was 1.246 mmb/d, which is basically unchanged over the past several months other than when there were brief interruptons at the Sharara oilfield.

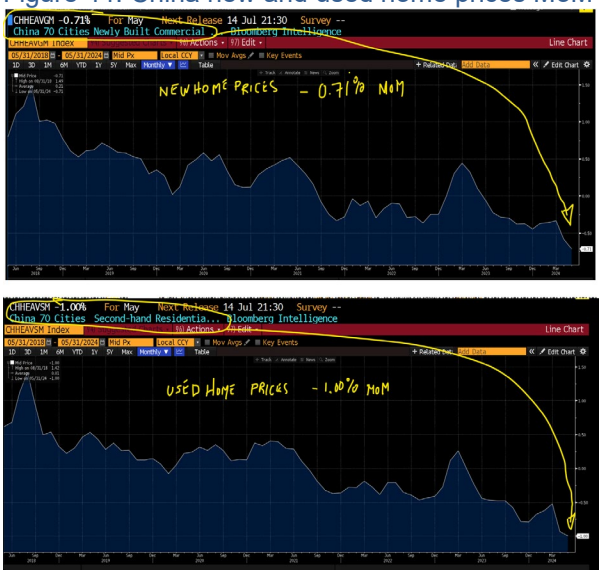
Oil: China new and used home prices losing value, worst MoM decline in 10 yrs

China houses keep losing value

The big negative to the Chinese consumer is that they keep losing value in their homes. It was bad in April and the May prices are even worse. Last Sunday night we were watching Bloomberg The China Show when the breaking data came out on China new and used home prices for May. We tweeted [LINK] "*Continued big negative to getting Chinese back to spending - their home values keep going down. May was worst month for China home owners for ~10 yrs. May New homes -0.71% MoM (Apr -0.58% MoM). May Used homes -*

1.00% MoM (Apr -0.94% MoM). Thx @business @DavidInglesTV @YvonneManTV #OOTT." China new home prices were down 0.71% MoM in May, even worse than down 0.58% MoM in April. China used home prices were down 1.00% MoM in May, even worse than down 0.94% MoM in April. Below are the Bloomberg graphs with the May data.

Figure 44: China new and used home prices MoM % change incl May 2024



Source: Bloomberg, National Bureau of Statistics

Oil: Chinese household savings essentially flat MoM in May at $20.0T after dip in April

Chinese household savings

One of the biggest reasons for the weak China recovery is that consumers have been on the sidelines and therefore keep adding to savings instead of spending. The increasing savings fits with the commentary that Chinese consumers are not yet confident in the recovery to start to spend more. China's household savings at the end of May were US $20.0T, flat MoM from $20.0T at the end of April. We expected the dip down in savings in April, which is consistent with what has been seen every year. Our May 12, 2024 Energy Tidbits memo noted that Chinese savings dip down every April/May. Here is what we wrote in that memo "*On Monday, we tweeted [LINK] "Chinese consumer still sitting on the sideline and not convinced to start spending. Household savings continue at high rates compared to pre-Covid. Should see normal seasonal dip into savings in Apr/May linked to May Day holidays. Thx @business #OOTT*". Keep in mind that every dollar that stays in savings is dollar not being spent in the economy and not contributing to company earnings, which fuels wages, taxes, etc. So while household savings are at record highs, Chinese consumers are holding back, which would add to the recovery once they come off the sidelines. Now with May 2024's data out, we can see that the April and May actual supports the normal seasonal dip into savings. Our Monday tweet included the below graph that notes every April/May normally sees a seasonal dip in savings.

Figure 45: China Household Savings

Source: Bloomberg

Oil: China visitors to Hong Kong up YoY in May, but still nowhere near pre-covid levels

Chinese visitors to Hong Kong

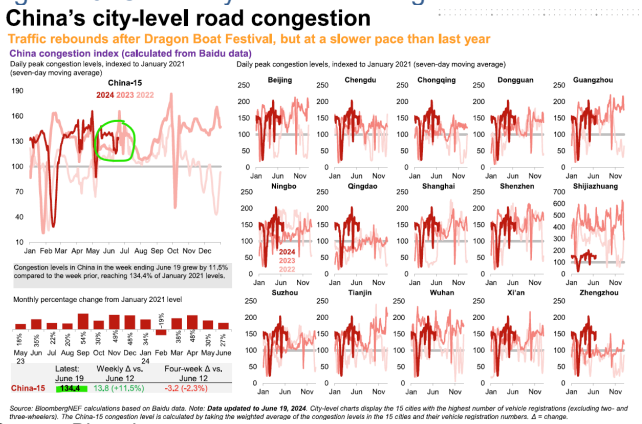
On June 17, the Hong Kong Tourism Board released their May statistics for total arrivals and visitors from mainland China. We are looking specifically at visitors from mainland China to gauge how much appetite there is to travel and spend money from the Chinese consumer (and businessman). In May, there were 2.627 million mainland Chinese visitors to Hong Kong, which is up +5.8% MoM. There were 2.483 million visitors from mainland China in April, and 2.462 million visitors from mainland China in March. On a YoY basis, May's figures are +14.8% higher than May 2023. This is still nowhere near pre-Covid April 2019 of 5.577 million visitors. Our Supplemental Documents package contains the press release from the Hong Kong Tourism Board.

Oil: Baidu China city-level road congestion MTD Jun 19 is 1st down YoY month

China city-level traffic congestion

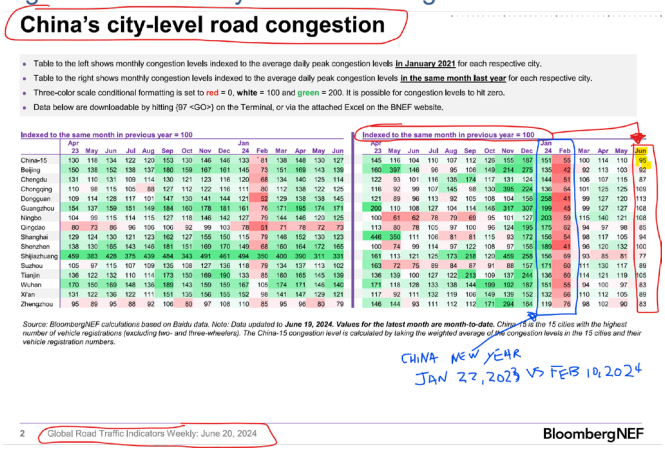
On Friday, we tweeted [LINK] "*Negative indicator, less traffic in China. Only MTD to Jun 19, but Baidu city-level road congestion for top 15 cities is first down YoY month and 9 of 15 top cities are down YoY. Feb was down big but that was timing of Chinese New Year in 2024 vs 2023. Thx @BloombergNEF #OOTT."* On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly June 20 report, which includes the Baidu city-level road congestion for the week ended June 19. BloombergNEF's report was titled "*Traffic rebounds after Dragon Boat Festival, but at a slower pace than last year".* What jumped out at us was that month-to-date June 19 was the first month that was down YoY other than Feb 2024. But Feb 2024 being down big YoY was due to the different time of Chinese New Year that was Jan 22, 2023 vs Feb 10, 2024. Feb 2024 saw people leaving cities over Chinese New Year on Feb 10 whereas people were back to work in Feb 2023 as Chinese New Year was Jan 22, 2023. BloombergNEF reported Baidu city-level road congestion was up by +11.5% WoW to 134.4% of Jan 2021 levels. Compared to June 2023, so far June's average daily peak congestion levels are down -5% YoY. And BloombergNEF noted that month-to-date June 19 2024 for the top 15 cities were at 95% of June 2023 traffic levels. And that 9 o the top 15 cities are down YoY. Below are the BloombergNEF key graphs.

Figure 46: China city-level road congestion for the week ended June 19



Source: Bloomberg

Figure 47: China city-level road congestion for the week ended June 19



Source: Bloomberg

Oil: China oil production +0.4% YoY in May to 4.29 mmb/d

China Oil Production

Asd noted earlier, China's increasing domestic natural gas production and increasing natural gas pipeline imports has hit higher priced LNG imports. China's oil production increased by ~0.2 mm from 2021 to 2023 and that has helped reduce some of its oil import needs. What is often overlooked is the fact that China is the 7th largest oil producer just behind Iraq. The IEA's latest Oil Market Report June 2024 estimates China oil production at 4.4 mmb/d in 2024 and that should increase to 4.5 mmb/d in 2025. On Wednesday, Bloomberg's CHENCOIL index (data pulled from National Bureau of Statistics) that China crude oil production was +0.4% YoY in May to 4.29 mmb/d, up from 4.27 mmb/d in May 2023.

Oil: China oil imports 11.11 mmb/d in May, up +2.1% MoM but down -0.2% YoY

China oil imports May

On Tuesday, China's General Administration for Customs (GACC) reported on the summary data of China's oil and natural gas imports for May [LINK]. China's imports of crude oil May

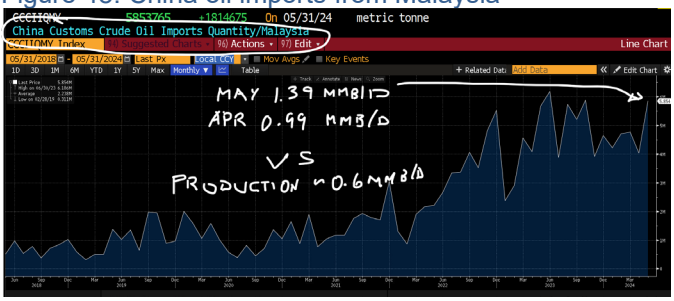
were 46.97 million tons, or 11.11 mmb/d, a +2.1% increase from 10.88 mmb/d in April, but down -0.2% YoY from 11.13 mmb/d in May 2023.

China oil imports from Malaysia

Oil: Is China importing more Iran oil that is rebranded as Malaysia oil

One of the items that jumps out at us from the monthly China oil import data continues to be the question if Iran oil being rebranded as Malaysia oil. On Thursday, we tweeted [LINK] "*Iran #Oil keeps getting rebranded as Malaysia oil. China imported 1.39 mmb/d Malaysia oil in May, 0.99 mmb/d in Apr, 1.13 mmb/d in March. Malaysia total oil production ~0.6 mmb/d. Recall Malaysia says only recognizes UN sanctions, not individual country sanctions. #OOTT Thx @business."* In May, China says it imported 1.39 mmb/d of oil from Malaysia following 0.99 mmb/d in April but Malaysis only produces 0.6 mmb/d. We expect this difference is likely Iran oil. Below is Bloomberg's graph of China oil imports from Malaysia.,

Figure 48: China oil imports from Malaysia



Source: Bloomberg

05/09/24: Malaysia recognizes UN, not individual country sanctions

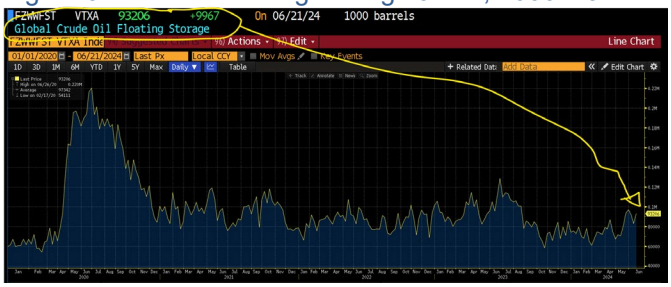
Here is what we wrote in our May 12, 2024 Energy Tidbits memo. "*One of the oil trade themes in the past year is how we see Iran oil rebranded as Malaysia oil and then shipped to China and likely other markets. That will be continuing as Malaysia has said they don't follow individual country sanctions like US on Iran but follow all UN sanctions. The Straits Times reported [LINK] "Malaysia rebuffs US on Iran oil sales, says it recognises only UN sanctions. Malaysia will recognise sanctions imposed by the United Nations only and not by individual countries, said Home Minister Saifuddin Nasution Ismail on May 9, following claims by a top US official that Iran has relied on Malaysian service providers to sell US-sanctioned oil in the region. "I emphasised that we will only recognise sanctions if they are imposed by the United Nations Security Council. "The delegation from the US respected our stance," Datuk Seri Saifuddin told reporters following a meeting with the US Treasury Department's top sanctions official Brian Nelson, who was visiting Kuala Lumpur." We hadn't realized the trade level between Malaysia and the US. The Straits Times closed their report "Still, the "US would also not want to lose the support of Malaysia, which is one of its key Asean partners, as the country will assume the role of Asean chair next year", he said. Malaysia is among the US' top 20 trading partners, with bilateral trade between the two nations amounting to US$78.3 billion (S$106 billion) in 2022." Our Supplemental Documents package includes the Straits Times report.*'

Oil: Vortexa crude oil floating storage est 93.21 mmb at June 21, +9.97 mmb WoW

Vortexa floating storage

We are referencing the Vortexa crude oil floating storage data posted on the Bloomberg terminal as of 9am MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments on the new estimates are compared to the prior week's Vortexa estimates posted on Bloomberg on June 15 at 9am MT. (i) Yesterday, we tweeted [LINK] "*Vortexa oil floating storage est +9.97 mmb WoW to 93.21 mmb at Jun 21. Negative. 4 of last 5 wks are >90 mmb and haven't been any >90 mmb wks since early Aug 2023. And then Saudi extra voluntary cuts on July 2023 started to kick in. Thx @vortexa @business #OOTT."* (ii) Our tweet highlighted four of the last five weeks have floating storage over 90 mmb whereas there haven't been any other above 90 mmb weeks since earl Aug 2023. And then the Saudi extra voluntary 1 mmb/d cuts from July 1, 2023 had started to kick in and knock floating storage down. (iii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for June 21 at 93.21 mmb, which is +9.97 mmb WoW vs revised up June 14 of 83.24 mmb. Note June 14 was revised +7.10 mmb to 83.24 mmb vs 76.14 mmb originally posted at 9am MT on June 15. (iv) Revisions. The prior two weeks were revised up big but the rest of the last seven weeks revisions were small. Here are the revisions for the past seven weeks compared to the estimates originally posted on Bloomberg at 9am MT on June 15. June 14 revised +7.10 mmb. June 7 revised +8.24 mmb. May 31 revised +1.83 mmb. May 24 revised -0.81 mmb. May 17 revised -0.30 mmb. May 10 revised +1.42 mmb. May 3 revised +1.22 mmb. (v) There is a wide range of floating storage estimates for the past seven weeks, but a simple average for the prior seven weeks is 87.03 mmb vs last week's then prior seven-week average of 81.28 mmb. The big increase is due the upward revisions and dropping May 3 of 71.75 mmb from the average and replacing with June 21 of 93.21 mmb. (vi) Also remember Vortexa revises these weekly storage estimates on a regular basis. For example, when most report on the Vortexa data on Monday morning, they will be reporting on different estimates. We do not track the revisions through the week. Rather we try to compare the first posted storage estimates on a consistent week over week timing comparison. Normally we download the Vortexa data as of Saturday mornings around 9am MT. (vii) Note the below graph goes back to Jan 1, 2020 to show the run up to Covid and then how Covid started to impact Covid in March/April 2020. (viii) June 21 estimate of 93.21 mmb is -35.50 mmb YoY vs June 23, 2023 of 128.71 mmb, which was also the last year peak that led to Saudi Arabia stepping in on July 1, 2023 for additional cuts. (ix) Below are the last several weeks of estimates posted on Bloomberg as of 9am MT June 22, June 15, and June 8.

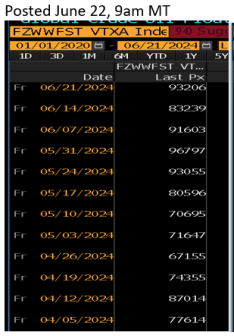
Figur 49: Vortexa Floating Storage Jan 1, 2000 – June 21, 2024, posted June 22 at 9am MT



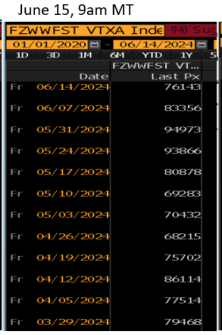
Source: Bloomberg, Vortexa

Figure 50: Vortexa Estimates Posted 9am MT on June 22, June 15, and June 15.

Posted June 22, 9am MT



June 15, 9am MT



June 8, 9am MT

Source: Bloomberg, Vortexa

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

Vortexa floating storage by region

Bloomberg also posts the Vortexa crude oil floating storage in key regions, but not all regions of the world. The regions covered are Asia, North Sea, Europe, Middle East, West Africa and US Gulf Coast. We then back into the "Other" or rest of world. (i) As noted above, last week's June 14, in total, was revised +7.10 mmb with the key revisions being Other revised +4.40 mmb.(ii) Total floating storage was +9.97 mmb WoW vs the revised up June 14. The major WoW changes were Asia +7.71 mmb WoW, Europe +4.,14 mmb WoW and US Gulf Coast -2.25 mmb WoW. (iii) June 21 estimate of 93.21 mmb is -35.50 mmb vs the last year June 23, 2023 high of 128.71 mmb. Recall Saudi Arabia started its voluntary 1 mmb/d production cuts on July 1, 2023. The major changes by region vs the last year June 23, 2023 peak are Asia -32.17 mmb, Other -21.56 mmb and Europe +10.05 mmb. (v) Below is the table we created of the WoW changes by region posted on Bloomberg at of 9am MT yesterday. Our table also includes the "Original Posted" regional data for June 14 that was posted on Bloomberg at 9am MT on June 15.

Figure 51: Vortexa crude oil floating by region

				Original Posted	Recent Peak	
Region	Jun 21/24	Jun 14/24	WoW	Jun 14/24	Jun 23/23	Jun 21 vs Jun 23
Asia	40.59	32.88	7.71	32.21	72.76	-32.17
North Sea	6.69	5.76	0.93	5.73	5.42	1.27
Europe	16.24	12.10	4.14	11.32	6.19	10.05
Middle East	12.17	12.14	0.03	11.11	6.76	5.41
West Africa	7.24	9.20	-1.96	9.30	7.62	-0.38
US Gulf Coast	2.88	5.13	-2.25	4.84	1.00	1.88
Other	7.40	6.03	1.37	1.63	28.96	-21.56
Global Total	93.21	83.24	9.97	76.14	128.71	-35.50
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Jun 22						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

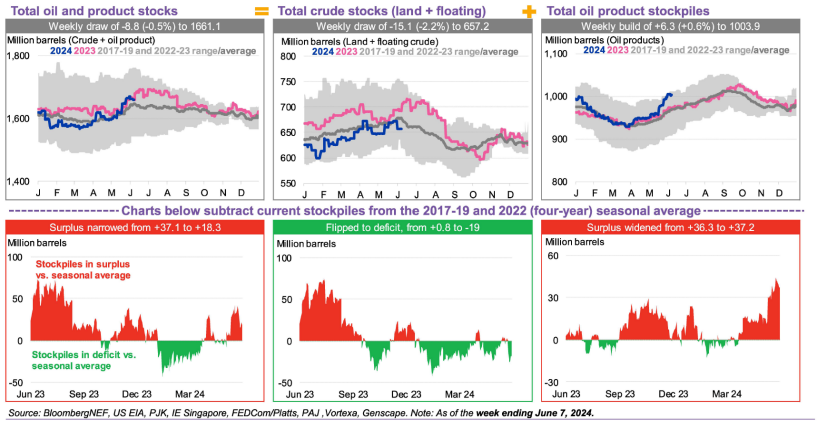
Oil: BNEF, global oil & product stocks surplus narrows to +18.3 mmb from +37.1 mmb

Global oil and products stocks

On Monday, BloombergNEF posted its "*Oil Price Indicators*" weekly, which provides good charts depicting near-term global oil demand and supply indicators. (i) Note BloombergNEF uses different periods to determine the surplus/deficit, sometimes using a four-year average for 2017-2019 + 2022-2023, and other times using a five-year average 2017-2019 + 2022-2023. In both cases they do not include 2020 and 2021 in the averages. (ii) The global

stockpile for crude oil and products narrows from a surplus of +37.1 mmb for the week ending May 31 to a surplus of +18.3 mmb for the week ended June 7. (iii) Total crude inventories (incl. floating) decreased -2.2% WoW to 657.2 mmb, while the stockpiles flipped from a surplus of +0.8 mmb to a deficit of -19 mmb. (iv) Land crude oil inventories fell -0.1% WoW to 578.1 mmb, widening their deficit from -20.7 mmb to -23.5 mmb against the five-year average (2017-2019 + 2022-23). (v) The gas, oil, and middle distillate stocks dropped -0.7% WoW to 162.8 mmb, with the surplus against the four-year average narrowing from 2.8 mmb to 1 mmb. Jet fuel consumption by international departures in the week to June 24 is set to increase by +30,200 b/d WoW, while consumption by domestic passenger departures is forecast to increase by +35,500 b/d WoW. Below is a snapshot of aggregate global stockpiles.

Figure 52: Aggregate Global Oil and Product Stockpiles



Source: BloombergNEF

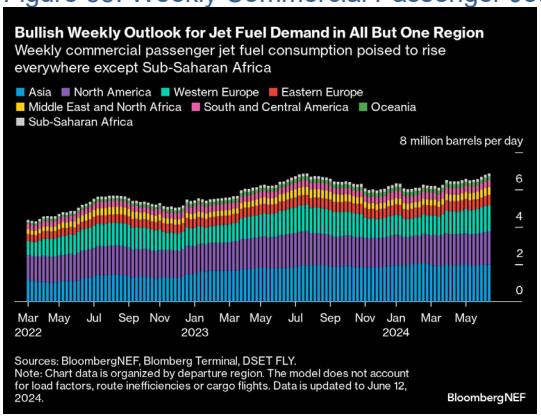
Bloomberg oil demand monitor

Oil: Bloomberg Oil Demand Monitor "China Casts a Pall Even as Skies Get Busy"

The Bloomberg Oil Demand Monitor is a good recap of key oil demand indicators around the world. This month's report discusses the decrease in oil demand in Asia, and the opposing views from the main oil forecasting agencies on demand forecasts for the remainder of 2024. Refining in China is expected to be flat or fall this year for the first time since 2004 (other than during the pandemic). Reductions were seen in oil prices in Saudi Arabia, and gasoline sales declined in India this month. However, Bloomberg highlights bullish signals as well, reporting "*In futures markets, key timespreads have ballooned, suggesting stronger near-term demand. Gauges of US gasoline consumption look solid if not spectacular, with demand hovering around nine million barrels a day. Asian oil refiners are bringing back idled capacity. And a hot start to the summer in the Middle East may drive up power generator's need for fuel. Goldman Sachs Group Inc. analysts including Yulia Zhestkova Grigsby, see a summer deficit starting to show "more vividly" in stockpiles."* As a reminder, the IEA and OPEC are apart on their forecast for 2024 YoY oil demand growth. Since their January MOMR, OPEC has forecasted +2.25 mmb/d oil demand growth for 2024, while the IEA is forecasting demand of just 0.96 mmb/d. As we have noted, the IEA has been successful in getting others to emphasize their lowering of the YoY demand growth rate despite no change to 2024 oil demand. Looking at consumption indicators, the demand monitor showed that global flights tracked above both 2023 and 2022 levels during the week up to June 7, up +9.9% and +12%

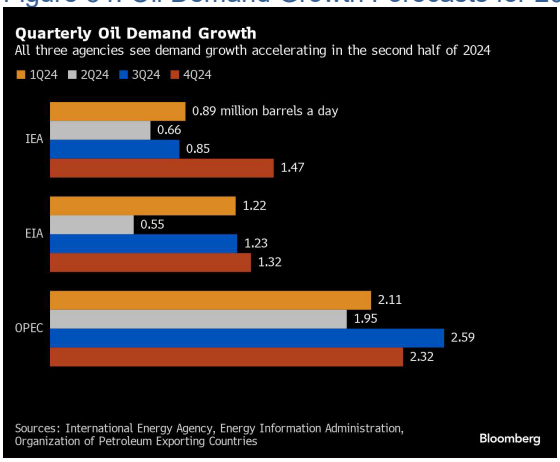
respectively, and up +3.7% on a MoM basis. Diesel and gasoline sales in India were down -3.9% and up +0.9% YoY, respectively, and, compared to the first two weeks of June, were up +0.1% and down -3.6% MoM, respectively. Refinery utilization in the US for the week leading up to June 7 was at 95%, which is down -0.4% WoW and up 1.3% YoY. Keep in mind the 250,000 b/d Joliet refinery is still down for turnaround. Below is a chart summarizing the commercial passenger jet fuel demand by region and a chart summarizing growth forecasts for 2024 by agency. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 53: Weekly Commercial Passenger Jet Fuel Demand by Region



Source: Bloomberg

Figure 54: Oil Demand Growth Forecasts for 2024



Source: Bloomberg

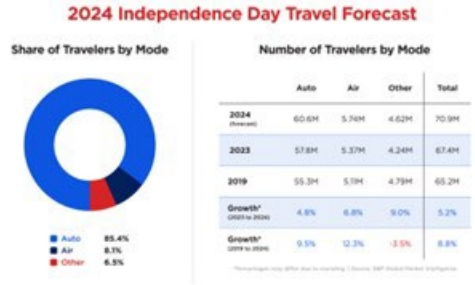
Oil: July 4th travel expected to be up 5.2% YoY, exceeding pre-covid levels

July 4th Travel Week

The AAA released their 2024 Memorial Day Holiday Travel Forecast [LINK] on Thursday. The AAA expects 70.9 mm Americans in total will travel 50+ miles from home over the Independence Day travel period, which is a YoY increase of 5.2%, bringing volumes +8.8% higher than pre-pandemic levels of 65.2mm travellers in 2019 and signalling a busy travel

season ahead. AAA projects 60.6 mm people to travel by car over the holiday weekend, the highest number of road travel since the AAA began tracking in 2000. The number of drivers is up +4.8% YoY and up +9.5% from 2019. The AAA is expecting 5.74mm air travelers over the holiday week, reflecting an increase of +6.8% YoY and a +12.3% increase from 2019. The AAA is projecting 4.62mm people to travel by other modes of transportation over the holiday weekend including buses, cruises, and trains, which is an increase of +9.0% compared to last year. Our Supplemental Documents package includes the AAA release.

Figure 55: AAA Holiday Travel Mode Forecast



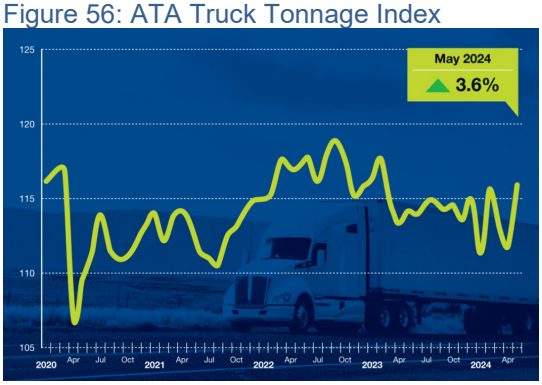
Source: AAA

Oil: ATA Truck tonnage index in May up +3.6% MoM, +1.5% YoY

May Truck Tonnage +3.6% MoM

We look to items like truck tonnage for indicators on the US economy, and the May truck tonnage is indicative of a slowing US economy. The American Trucking Association released its seasonally adjusted Truck Tonnage Index for May on Tuesday [LINK]. Truck tonnage increased +3.6% MoM and increased +1.5% YoY from May 2023. Chief Economist Bob Costello noted *"May was the first month since February 2023 that tonnage increased both sequentially and from a year earlier. While there was clearly an increase in freight before the Memorial Day holiday, it is still too early to say whether this is the start of a long-awaited recovery in the truck freight market."* The index in April was revised upwards to reflect a -1% MoM decrease and -1.3% YoY decrease. Trucking serves as a barometer of the U.S. economy, representing 72.6% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 11.46 billion tons of freight in 2022. Motor carriers collected $940.8 billion, or 80.7% of total revenue earned by all transport modes. Our Supplemental Documents package includes the ATA truck tonnage index report.

Figure 56: ATA Truck Tonnage Index



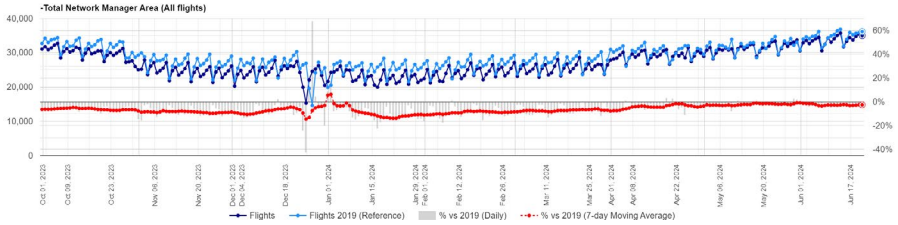
Source: ATA

Oil: Europe airports daily traffic 7-day moving average is -2.5% below pre-Covid levels

Europe airports daily traffic

Yesterday, we tweeted [LINK] *"Daily Europe air traffic -2.5% below pre-Covid. 7-day moving average as of: Jun 20: -2.5% below pre-Covid. Jun 13: -2.6%. Jun 6: -3.2%. May 30: -0.8%. May 23: -1.9%. May 16: -1.2%. May 9: -3.2%. May 2: -2.9%. Apr 25: -3.2%. Apr 22: -1.5%. Apr 18: -3.2%. Apr 11: -3.7%. Apr 4: -6.2%. Thx @eurocontrol #OOTT.* Other than over Christmas, European daily traffic at airports has been below pre-Covid. The 7-day average has got close a few times including two weeks ago at only 0.8% below pre-Covid as of May 30, but the 7-day moving average being 2.5% below pre-Cvid as of June 20, which followed 2.6% below pre-Covid as of June 13. Eurocontrol updates this data daily and it is found at [LINK].

Figure 57: Europe Air Traffic: Daily Traffic Variation to end of June 20



Source: Eurocontrol

Oil & Natural Gas: A hurricane/tropical storm watch vs warning

Hurricane watch vs warning

In the run up to Tropical Storm Alberto hitting the Gulf Coast land on Thursday, we kept hearing people not knowing the difference between a tropical storm *"watch"* vs a tropical storm "*warning*". On Tuesday, we tweeted [LINK] *"Tropical Storm "watch" means TS possible vs Tropical Storm "warning" means TS expected. Even though @NHC_Atlantic cone is hitting Mexico, they still see Tropical Strom warning for south Texas. #OOTT #NatGas."* Our tweet included an excerpt from the National Hurricane Center glossary of NHC terms, which said "*Tropical Storm Warning. An announcement that sustained winds of 34 to 63 knots (39 to 73 mph or 63 to 118 km/hr) are expected somewhere within the specified area within 36 hours in association with a tropical, subtropical, or post-tropical cyclone." "Tropical Storm Watch. An announcement that sustained winds of 34 to 63 knots (39 to 73 mph or 63 to 118 km/hr) are*

possible within the specified area within 48 hours in association with a tropical, subtropical, or post-tropical cyclone." Our Supplemental Documents package includes the NHC glossary of terms.

Oil & Natural Gas: The bigger risk from storms/hurricanes tends to be from flooding

Flooding is the big risk from storms

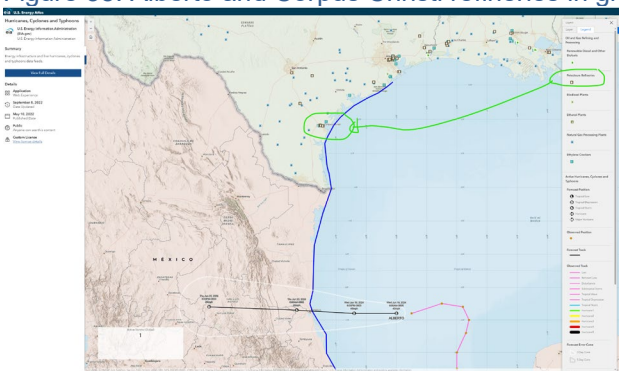
There is no question that hurricane or tropical storm wind strength causes major damage but more damage and loss tends to come from flooding. That is why the speed at which the tropical storm or hurricane is traversing is a key factor. If the tropical storm or hurricane is moving laterally fast then it doesn't stay over an area for a long time so ite can't dump as much rain as a slow traversing storm or hurricane. On our Wed tweet on Alberta, we reminded "*Alberto still expected to be Tropical Storm strength when it hits south Texas coast incl Corpus Christi refineries & oil terminals. But moving at 9 mph so hopefully doesn't dump too much rain."* Alberta was moving at 9 mph, which is relatively fast.

Oil & Natural Gas: EIA interactive map shows oil/gas infra in paths of hurricane/storm

EIA interactive mapping for hurricanes

On Wednesday, we tweeted [LINK] ". *@EIAgov has a great live tropical storm/hurricane tracking map that can layer on oil/gas wells, refineries, infra etc. Alberto still expected to be Tropical Storm strength when it hits south Texas coast incl Corpus Christi refineries & oil terminals. But moving at 9 mph so hopefully doesn't dump too much rain. #OOTT."* Our tweet included the EIA's then live interactive map of Tropical Storm Alberto and the oil and gas infrastructure in its path. We recommend bookmarking the [LINK] for the next Tropical Storm or Hurricane. Below is the EIA map for Alberto that we attached to our tweet. You hav eto enlarge the map to show more detail of the refineries at Corpus Christi circled in green.

Figure 58: Alberto and Corpus Christi refineries in green



Source: EIA

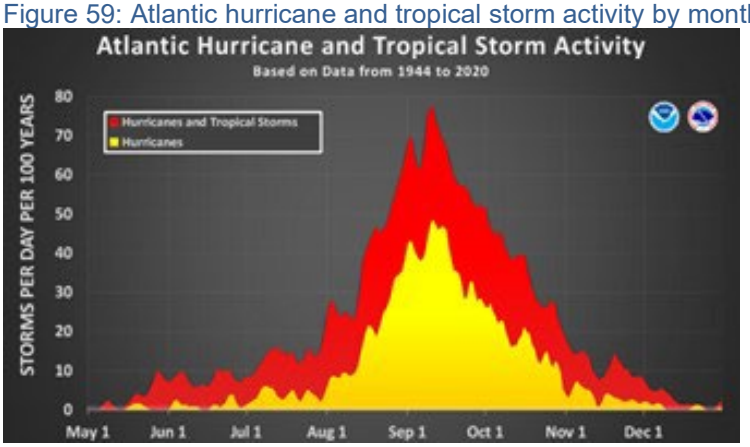
Oil & Natural Gas: 90% of Atlantic hurricanes come after Aug 1, peak is normally mid-Sept

90% of hurricanes are after Aug 1

Tropical Storm Alberto was the first named storm of the 2024 Atlantic hurricane season. It is important to remember that 90% of Atlantic hurricanes typically come after Aug 1. Here is what we wrote in our Aug 6, 2023 Energy Tidbits memo. "*90% of Atlantic hurricanes come after Aug 1, peak is normally mid-Sept It may already be the hottest time of the year, but we always remind that 90% of Atlantic hurricanes typically come after Aug 1. And August normally marks the start of the ramp up of hurricane season with high hurricane activity typically from mid-Aug thru mid-Oct with a normal peak in mid-Sept. Below is NOAA's graph*

showing the distribution of Atlantic hurricanes and tropical storms based on data from 1944 to 2020. [LINK]."

Figure 59: Atlantic hurricane and tropical storm activity by month



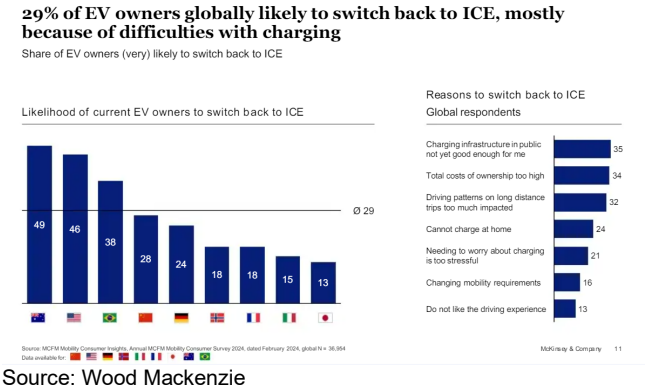
Source: NOAA

Energy Transition: McKinsey 46% of US EV owners likely to switch back to ICE

46% of US EV owners likely to go back to ICE

One of the key question marks that we don't see addressed in EV sales forecasts is how many EV owners switch back to ICE vehicles. It must be that they assume no EV owners switch back to ICE. At a minimum, we hope forecast for EVs sales at least note that as a qualifier to its EV forecast. It didn't get much media attention given it is a negative to EVs outlook but McKinsey's "*McKinsey Mobility Consumer Pulse: Media Presentation June 2024*" included a slide "*29% of EV owners globally likely to switch back to ICE, mostly because of difficulties with charging*". That is a global number but, for the US, it's 46% o fEV owners likely to switch back to ICE. Note that McKinsey says it's mostly because of difficulties with charging. But the reality of their numbers is that there are three major reasons. Difficulties with charging at 35%, total costs of ownership too high at 34%, and driving patterns on long distance trips too much impacted at 32%.

Figure 60: % of Ev owners likely to switch back to ICE



Source: Wood Mackenzie

IEA's peak oil demand by 2030 can easily flip to demand growth post 2030

When we saw the reports of McKinsey's 46% of US EV owners likely to switch back to ICE, it reminded us of our comments on the IEA's forecast for peak oil demand by 2030 and how it was based on govt stated policies and objectives and not on what was happening in the EV market. So we tweeted [LINK] "*Hmmm! Doesn't take much to flip IEA's peak oil demand by 2030 to growth thru 2030. From pg 16 of IEA Oil 2024 "..a 15% slowdown in the pace of global EV adoption would be sufficient for oil consumption to cross the narrow dividing line back from shrinkage to growth at the end of the decade."" More than 40% of U.S. EV buyers want to go back to combustion engine cars, McKinsey study says" [LINK] See 👇SAF Group June 16, 2023 Energy Tidbits memo for more on questionable IEA EVs assumption to displace 6 mmb/d by 2030. #OOTT."* Last week's (June 16, 2024) Energy Tidbits memo noted how the IEA's new peak oil demand by 2030 call was based on stated govt policies and objectives and not what was happening in the EV market, and how a 15% delay in EVs pace means oil demand doesn't peak before 2030 but oil demand will keep growing past 2030. Below are two of the items from last week's (July 16, 2024) Energy Tidbits memo on this specific issue.

IEA GEVO2024 scenario is based on govt policies AND objectives not markets

Here is what we wrote in last week's (June 16, 2024) Energy Tiudbits memo. on IEA"s Global Electric Vehicles Outlook 2024 that formed the EVs sales assumption in the IEA's peak oil demand by 2030 forecast. "*So GEVO2024's EVs displacing 6 mmb/d of road fuels is NOT a forecast. The other issue with their scenario is that the scenario is based on government policies AND objectives. So whenever the government says here is their objective or ambition is for EVs, that gets rolled into the scenario. "The Stated Policies Scenario (STEPS) reflects existing policies and measures, as well as firm policy ambitions and objectives that have been legislated by governments around the world." Note in the GEVO2024, the IEA said this includes objectives ie. something a government has said in is their ambition and put it in on paper. It would likely include any ambitions stated in the State of the Union address or throne speeches. The advantage of the IEA not having a prediction or forecast is that they have a scenario of EV sales based on government ambitions and objectives. The IEA is clear that it's the stated policies AND objectives is what determines their EV sales growth. And that means it didn't use the big change in EV markets over the past year."*

IEA Oil 2024 warns a 15% delay in EVs pace means oil demand grows thru 2030

Here is what we wrote in last week's June 16, 2024) Energy Tidbits memo. *"We thought the IEA's comments in Oil2024 was a set up comments for when the IEA pushes back its peak oil demand ie. where they can say they warned in Oil2024. As noted above, the EVs sales and displacement of 6 mmb/d by 2030 is from GEVO2024 as noted above. Oil2024 says that if the pace of global EV adoption is 15% less than in their STEPS scenario from April 2024, that would put oil demand back into growth in 2030. This looks like the set-up comment for when the IEA pushes back peak oil demand ie. where they can say they warned readers in Oil 2024. The pace of global EVs is based on government policies AND objectives.*

And think about what has been happening in the EVs sales market. Surely people have knocked down their EV adoption pace by at least 15%. Whenever the IEA make a modest cut to their EV adoption pace (that was based on govt stated policies and objectives) , then it means peak oil demand is sometime in the 2030s and also that oi demand growth thru 2030 will be greater than in the Oil 2024 forecast. In Oil 2024, the EIA wrote "Moreover, oil's flattish, plateauing demand profile post-2027 means that it would only take relatively minor changes in its underlying drivers to directionally shift oil's demand trajectory. For example, either a 0.3% quickening in global GDP growth, a USD 5/bbl annual decline in real oil prices or a 15% slowdown in the pace of global EV adoption would be sufficient for oil consumption to cross the narrow dividing line back from shrinkage to growth at the end of the decade. Conversely, opposite shifts of the same magnitude would accelerate oil demand's slide into contraction."

Energy Transition: Toyota Canada, need to align EV sales targets with reality

Toyota Canada on EV targets

It didn't get much media attention but there were some blunt comments by Toyota Canada president Frank Voss on the need for Canada to get real on its EV sales targets. Voss sees the Liberals targets as unrealistic, they need to be revisited to be aligned with reality and the reality that consumers choose what they need even if the Liberals try to entice them to buy EVs. Bloomberg wrote "*Automakers in Canada say it's doubtful there will be enough consumer demand for electric vehicles to reach the government's target of phasing out new gasoline-powered vehicles by 2035. Executives at Toyota Motor Corp. and Honda Motor Co. expect that consumers will switch to EVs if they are more affordable, can meet their range needs and if there is sufficient charging infrastructure. But those conditions haven't been met. "We need to make sure that we're revisiting targets to align targets with reality," Frank Voss, president of Toyota Motor Manufacturing Canada, said in an interview with Bloomberg. "The government can only do so much to entice consumers to purchase vehicles that they would like to see implemented. Consumers will choose what they need."* Our Supplemental Documents package includes the Bloomberg report.

Energy Transition: Will UK Supreme Court Scope 3 ruling stop oil & gas development?

We are still surprised that there hasn't been more concern from the oil and gas followers on what looked to us like a massive UK Supreme Court ruling that looks to have the potential to put a major slowdown or even halt to future oil and development. If this ruling (i) Early Thursday morning, we tweeted [LINK] "*WOW! Must read 👇UK Supreme Court ruling. If this gets applied/challenged to all #Oil #NatGas development and exploration drilling, in the UK incl North Sea, how can any drilling get approved? No development = declining oil production. If UK declines, positive for oil. #OOTT."* (ii) Our tweet included the just issued UK Supreme Court Press Summary for the case "R (on the application of Finch on behalf of the Weald Action Group) (Appellant) v Surrey County Council and others (Respondents)." The Supreme Court ruled "*By a three-to-two majority, the Supreme Court allows the appeal and holds that the council's decision was unlawful because the emissions that will occur when the oil produced is burnt as fuel are within the scope of the EIA required by law."* The environmental assessment for an small oil development drilling project (expanding a 2-well oil development to 6-wells) did not include the impact of Scope 3 emissions ie. those emissions associated with the ultimate end user of the refined petroleum products ie. the gasoline, after the crude oil was produced and refined into petroleum products. (iii) It doesn't mean that the

small oil development project can't be approved, it just means that any revised environmental assessment must take into account the emissions of the finished petroleum product such as gasoline that would be associated with the small development project's oil production that is ultimately refined into petroleum products. (iv) Our concern is that this creates a legal precedent. This is not a regulatory change. And it's easy to see environmental group press to have this interpretation for any oil and gas development project that has an environmental assessment requirement to have to include Scope 3 emissions. And then the issue is that will any revised environmental assessment let a project get approved knowing that adding Scope 3 emissions will add to emissions for a project. We don't know that answer yet but adding emissions, whether it be Scope 3 or other, will make any project increasingly difficult to be approved. (v) We don't know if every oi land gas project, development or exploration, requires an environmental assessment. (vi) The above points is looking at how this precedent might impact the approval process for any oil and gas project. The below point reminds this ruling will also impact if oil and gas companies want to invest the capital in oil and gas projects. Our Supplemental Documents package includes the UK Supreme Court press summary.

We expect oil and gas co's to drop some potential oil and gas projects

Governments don't appreciate that oil and gas companies look at full cycle capital investment vs capital return before they approve a project for its first dollars of investment. So if the oil and gas company adds risk to the back-end life of a project, it can impact if the oil and gas company approves any initial capex investment. Oil and gas companies will have to look at this ruling and believe its add risk to their ability for future development of their oil and gas assets. For almost every oil and gas project, there is always ongoing development drilling and production enhancement projects to maximize value of reserves over decades. So oil and gas companies look at the full cycle development costs, timing and resulting return. And if they don't see future development on a project to maximize the returns, that becomes part of their economic assessment for whether they commit to spend the initial upfront collars. Maybe it won't be an issue for local oil and gas companies if its oil and as projects are in the UK. They will have to accept the added cost, impact on timing, impact on returns and risk of approval if they want to have any oil and gas development. It's not just the added cost of doing Scope 3 emissions analysis, there will inevitably be an increased risk to how quickly a project can/will get approved. And also the risk for how straightforward the environmental assessment will be for Scope 3 emissions. And for any oil and gas companies that have non-UK oi land gas opportunities, we would expect this will lead to a reallocation of some capital away from the UK. It is also important to remember that the UK ruling was on a small oil development project but should also impact how oi land gas companies look at natural gas projects.

New Zealand found out stopping exploration also stopped development

Three is an excellent very recent example on how governments found out the hard way that oil and gas companies look at a big picture when deciding to invest capital. In New Zealand's case, they stopped oil and gas exploration but then found out that mean oil and agas companies also cut back on development drilling. As a result, New Zealand had to backtrack, re-allow oil and gas exploration drilling and highlight how they need more oil and gas investment. Here is what we wrote in our June 9,

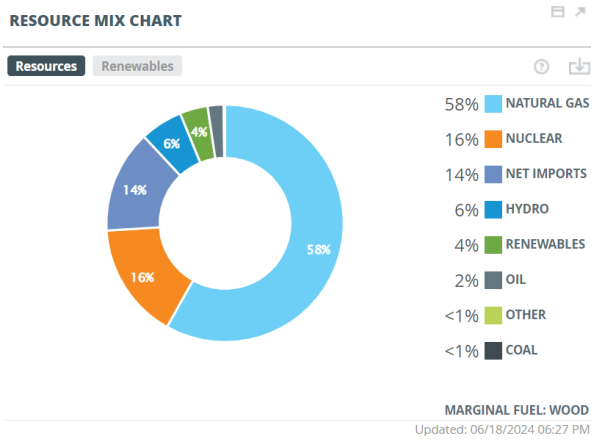
2024 Energy Tidbits memo. "*New Zealand, natural gas is needed to keep the lights on/ New Zealand continues under its Feb 8, 2023 major shift to prioritize energy security and cost of living and not the energy transition away from oil and natural gas. (i) Earlier this morning, we tweeted [LINK] "Big Reality Check! "Natural gas is critical to keeping our lights on and our economy running, especially during peak electricity demand and when generation dips because of more intermittent sources like wind, solar and hydro" NZ @mangonui08. NZ reverses ban on #Oil #NatGas exploration to try halt production decline. Big admission that banning exploration "also shrank investment in further development of know gas fields which sustain our current levels of use" Note NZ recognizes need to do more than removing ban, need "further changes" to "attract investment in exploration AND production". #NatGas was ~15% of energy use mix in 2022. #OOTT." (ii) Earlier this morning New Zealand issued the release announcing the removal of the ban on oil and gas exploration. Our tweet included the key quotes on how natural gas is critical to keep the lights. (iii) There was an important admission from New Zealand when they realize that banning exploration also meant that oil and gas companies would cut back on development and other oi and gas investment. It really shows the reality of politicians who thought in New Zealand, and think elsewhere, that if they only ban new exploration, it won't impact any other oil and gas spending on near field development and other oil and gas investment. Reality is that if oil and gas companies don't see potential to explore and add new fields, they are going to look carefully at all other capex. New Zealand admitted this. (iv) The other significant admission from New Zealand is that they recognize they need to do more than reverse the ban is they are convince oil and gas companies they are serious about setting up an investment environment for oil and gas companies. (v) What is also significant is that New Zealand has cut natural gas consumption from 0.48 bcf/d in 2017 (the ban went on in 2018) to ~0.35 bcf/d and natural gas is only ~15% of the energy fuel supply mix. But they can't get rid of natural gas, and actually need more. This is a big reality check on the need for natural gas. (vi) This is under Prime Minister Christopher Luxon (The National Party), who won the most seats but not a majority in the Oct 14, 2023 election and assumed office on Nov 27, 2023. Our Supplemental Documents package includes the New Zealand release."*

Energy Transition: Natural gas saves the day for New England power in the heat wave

US needs natural gas power

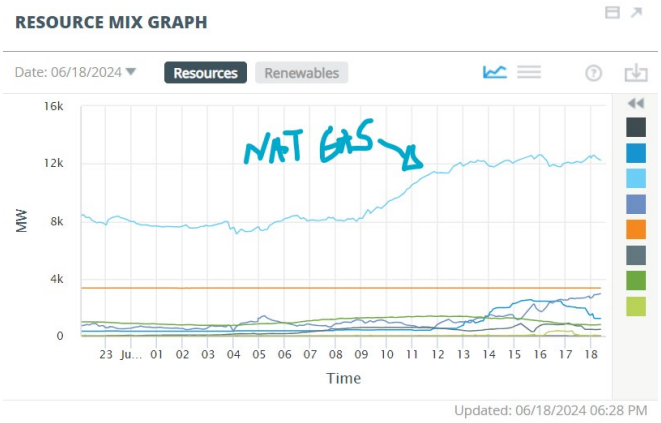
It was a massive heat wave in the NE US this week. ISO New England declared a Level 1 power emergency on Tuesday, so we tracked the power sources for it on Tuesday. We tweeted [LINK] "*Good thing New England has access to #NatGas power generation. @isonewengland declares Level 1 power emergency. Note how #NatGas is the only energy source that can significantly ramp up to meet peak demand. #OOTT."* Our tweet included the below ISO New England charts [LINK] that noted how natural gas was the only power source that could significantly jump up to fill the need for power. Natural gas saved the day for New England.

Figure 61: Resource mix chart



Source: ISO New England

Figure 62: Resource mix graph



Source: ISO New Egland

Energy Transition: KKR also highlights need for 24/7 power for AI data centers

KKR on power for AI

On Tuesday morning, we were watching CNBC Squawk Box when Henry H. McVey (KKR CIO) was discussing KKR's "*Mid-Year Outlook for 2024"* and he was talking about how to play the AI push. McVey highlighted the growing realization for investors – the massive and quickly growing need for electricity to support AI. And that means the focus should be on playing the back-end infrastructure needs for AI and that means providing 24/7 power. We tweeted [LINK] "*Another endorsement for #NatGas for 24/7 power for 2020s. Just now w/ @BeckyQuick, @KKR_Co Henry McVey on its mid-yr outlook 👇a key theme is back-end of AI growth - accelerated growth in US electricity consumption. That includes @NatGas! #OOTT [LINK].*" At 3:18 min mark, McVey "I *think what's happening though is there is a mismatch between energy demand and energy supply. Right. A lot of the headlines today are on Nvidia, the chips. We're spending all of our time on the back end, which is electricity demand has gone from zero growth for a decade to up to almost 3%. And if you think about*

that, in the US, what it's doing to the grid. It's putting huge strain on it. So if we're right about our estimates for AI and that demand for energy, that's the equivalent of adding 24 million homes to the US grid set. Think about that. That's a massive number. So what it means is if you have the infrastructure around the energy. If you can actually connect the energy to where the AI demand is, there's a huge benefit. So data centers, data, fibre, towers all of those things are going to continue to benefit. And at the same time, there's just a lot of creaky infrastructure." In their report, KKR wrote "*All told, our best estimate is that power demand in the U.S. will increase at a CAGR of 2.0-2.5% over the next five years, compared to zero for the past five years. As this growth accelerates, data centers alone are expected to account for 7-10% of total energy demand by 2029, compared to two to three percent today. If we are right, then billions of dollars will be required across natural gas, renewables, transmission, and other forms of infrastructure*." Our Supplemental Documents package includes excerpts from the KKR report.

Energy Transition: Citi sees AI power consumption doubling every 100 days

Citi: AI power demand doubling every 100 days

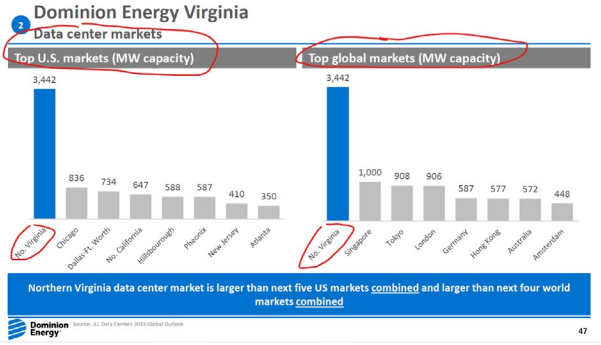
The big headlines from Citi's "*AI in Finance: Bot, Bank & Beyond*" were on how 54% of bank jobs have a high potential to be automated. But, what immediately jumped out to us was they were another to have a very bullish view on how much and how fast AI data centers will need more and more electricity. On Thursday, we tweeted [LINK] "*What but #NatGas is 1st choice for 24/7 electricity to meet exponential growth rate in AI demand ? "computational power required for AI is doubling every 100 days and projected to increase exponentially in the next 5 years" Citi AI in Finance report. #OOTT [LINK]."* Citi didn't get into a forecast of what form of energy will supply the big increase in AI electricity consumption. But it's the rate of growth in the near-term that puts sources like small scale nuclear reactors or big wind or big solar as not the likely to be the primary answer for the rapid increase in electricity consumption. We believe that all AI data centers will be highlighting how they will get as much wind and solar as possible for their clean image. However, the reality remains that they are interruptible and need reliable, available 24/7 power to fill in for the wind and solar shortfalls. And with the rapid increase in the near term, it really only points to natural gas as the key electricity source for AI data centers. Our tweet included an excerpt from the Citi report on pg 86 that said "*The computational power required for sustaining AI's rise is doubling roughly every 100 days and is projected to increase exponentially in the next five years.76 Japan envisages electricity output needs to increase 35-50% by 2050 to 1.35-1.50 trillion kWh to meet the increasing demand for data centers, chip manufacturing and other energy consuming technology businesses."* Our Supplemental Documents package includes excerpts from the Citi report.

Dominion Energy: renewables 14% of capacity but only 5% of actual power

Dominion Energy is the #1 power provider for data centers in the world so provide a good reminder of why renewables can't be the key power provider for data centers. Renewables are 14% of Dominion's electricity capacity but only provide 5% of the actual power. Here is what we wrote in our Mar 10, 2024 Energy Tidbits memo. "*We were watching CNBC Squawk on the Street on Monday morning and the hosts opening banter highlighted how data centers were the hot discussion point among their contacts and how the huge ramp up in their electricity requirements would be driven by solar power. They highlighted how the data center owners were only going to go solar due to their environmental views. We were surprised that there was zero*

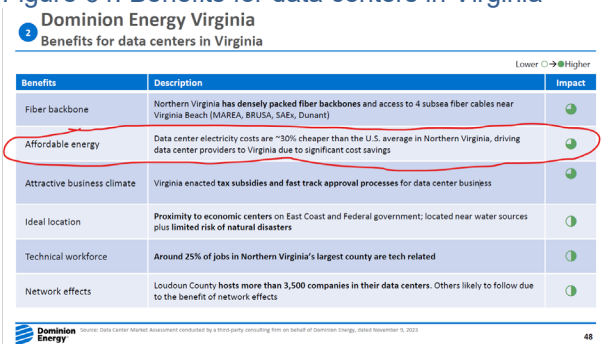
discussion on the fundamental need for 24/7 reliable, affordable power. We just don't see the solar power call. Yes solar will be used as much as possible but there is no solar power at night. So we tweeted [LINK] "Data Centers 101; Need 24/7 available, affordable power, not intermittent solar/wind. $D: Northern Virginia is #1 for data centers in US & the world. Why? Affordable energy from #NatGas, #Nuclear & #Coal. Vs Clean energy is 14% of capacity but 5% of actual energy. #OOTT." We have been highlighting the recent Dominion Energy investor day and how northern Virgina is the global leader in data centers. And how Dominion's Virgina power generation is basically driven by natural gas, nuclear and coal. Whereas renewable energy was 14% of capacity but only provided 5% of actual power. The Dominion Energy data on power for data centers is the Data Center 101 – they need 24/7 reliable affordable power. Below are the Dominion Energy slides/data from our tweet."

Figure 63: Northern Virginia is #1 global data center market



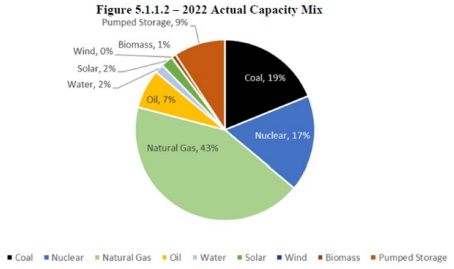
Source: Dominion Energy

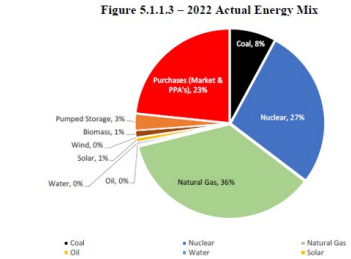
Figure 64: Benefits for data centers in Virginia



Source: Dominion Energy

Figure 65: Dominion Virginia 2022 actual energy capacity mix and actual energy mix





Source: Dominion Energy

Energy Transition: EU May car sale, HEVs up YoY EV, PHEV, Petro, Diesel down YoY

EU May new car sales

On Thursday, ACEA posted its Europe new car registrations for May [LINK]. The May EU new car sales reinforce that hybrids continue to win the day. Hybrids are taking market share from EVs and petrol cars. Battery-electric vehicles are now 12.5% of the total market share, hybrid-electric cars are up to 30% of total market share, and plug in hybrids are 6.5% of the total car market. Petrol and diesel cars fell to 48.5% of total Europe car sales and remain below 50%. Our Supplemental Documents package includes the ACEA press release.

Figure 66: EU New Car Registrations in May 2024

	BATTERY ELECTRIC			PLUG-IN HYBRID			HYBRID ELECTRIC[1]			OTHERS[2]			PETROL			DIESEL			TOTAL		
	May 2024	May 2023	% change 24/23	May 2024	May 2023	% change 24/23	May 2024	May 2023	% change 24/23	May 2024	May 2023	% change 24/23	May 2024	May 2023	% change 24/23	May 2024	May 2023	% change 24/23	May 2024	May 2023	% change 24/23
Austria	3,448	4,130	-16.5	1,263	1,276	-1.0	4,444	4,429	+0.3	1	2	-50.0	6,788	6,831	-0.6	3,876	3,955	-2.0	19,820	20,623	-3.9
Belgium	10,418	7,194	+44.8	5,624	8,875	-36.6	3,110	2,986	+4.2	239	402	-40.5	17,271	18,306	-5.7	2,245	3,596	-37.6	38,907	41,359	-5.9
Bulgaria	118	134	-11.9	46	23	+100.0	74	55	+34.5	0	0	#DIV/0!	2,241	2,276	-1.5	747	680	+9.9	3,226	3,168	+1.8
Croatia	265	131	+102.3	117	63	+85.7	1,788	1,561	+14.5	134	190	-29.5	4,134	3,713	+11.3	2,085	1,507	+38.4	8,523	7,165	+18.95
Cyprus	41	42	-2.4	47	37	+27.0	589	618	-4.7	0	0	#DIV/0!	587	959	-38.8	37	56	-33.9	1,301	1,712	-24.0
Czechia	747	575	+29.9	472	362	+30.4	4,432	3,370	+31.5	382	348	+9.8	8,807	10,480	-16.0	4,896	5,163	-5.2	19,736	20,298	-2.8
Denmark	7,239	4,442	+63.0	631	1,505	-58.1	2,557	2,970	-13.9	0	0	#DIV/0!	3,515	4,261	-17.5	627	828	-24.3	14,569	14,006	+4.0
Estonia	130	149	-12.8	64	54	+18.5	887	796	+11.4	10	5	+100.0	530	987	-46.3	284	298	-4.7	1,905	2,289	-16.8
Finland	2,223	3,275	-32.1	1,362	1,597	-14.7	2,727	2,417	+12.8	15	42	-64.3	1,077	1,586	-32.1	377	519	-27.4	7,781	9,436	-17.5
France	23,892	22,667	+5.4	10,202	12,657	-19.4	47,573	34,395	+38.3	4,946	6,382	-22.5	43,275	54,267	-20.3	11,410	15,168	-24.8	141,298	145,536	-2.9
Germany	29,708	42,780	-30.6	14,038	13,803	+1.7	57,413	57,842	-0.7	875	1,336	-34.5	89,498	87,700	+2.1	44,893	43,505	+3.2	236,425	246,966	-4.3
Greece	405	720	-43.8	646	725	-10.9	5,977	3,715	+60.9	157	277	-43.3	5,592	6,144	-9.0	983	1,376	-28.6	13,760	12,957	+6.2
Hungary	781	479	+63.0	468	432	+8.3	3,873	3,384	+14.5	18	37	-51.4	3,047	3,504	-13.0	1,344	1,185	+13.4	9,531	9,021	+5.7
Ireland	1,039	1,715	-39.4	678	670	+1.2	1,160	1,529	-24.1	0	0	#DIV/0!	2,386	2,063	+15.7	1,138	1,568	-27.4	6,401	7,545	-15.2
Italy	5,052	6,181	-18.3	4,579	6,592	-30.5	55,655	51,820	+7.4	9,265	12,751	-27.3	44,856	43,081	+4.1	20,102	28,911	-30.5	139,509	149,336	-6.6
Latvia	112	179	-37.4	30	37	-18.9	585	464	+26.1	25	39	-35.9	651	883	-26.3	283	268	+5.6	1,686	1,870	-9.8
Lithuania	167	225	-25.8	114	116	-1.7	1,427	974	+46.5	22	49	-55.1	785	986	-20.4	328	345	-4.9	2,843	2,695	+5.5
Luxembourg	990	911	+8.7	284	417	-31.9	790	802	-1.5	0	0	#DIV/0!	1,291	1,677	-23.0	492	595	-17.3	3,847	4,402	-12.6
Malta	181	102	+77.5	45	58	-22.4	130	200	-35.0	1	0	#DIV/0!	281	333	-15.6	70	73	-4.1	708	766	-7.6
Netherlands	9,681	10,962	-11.7	4,086	4,334	-5.7	8,291	7,413	+11.8	96	158	-39.2	5,745	9,718	-40.9	462	357	+29.4	28,361	32,942	-13.9
Poland	1,291	1,362	-5.2	1,073	1,193	-10.1	20,932	14,028	+49.2	944	958	-1.5	15,611	16,880	-7.5	3,803	4,155	-8.5	43,654	38,576	+13.2
Portugal	3,147	3,378	-6.8	2,601	2,309	+12.6	3,306	2,612	+26.6	1,275	1,054	+21.0	7,498	8,375	-10.5	2,023	2,088	-3.1	19,850	19,816	+0.2
Romania	754	1,402	-46.2	0	0	#DIV/0!	5,239	4,157	+26.0	1,716	1,559	+10.1	5,710	4,982	+14.6	2,224	1,541	+44.3	15,643	13,641	+14.7
Slovakia	189	284	-33.5	141	318	-55.7	2,222	2,078	+6.9	148	164	-9.8	3,214	3,699	-13.1	1,380	1,496	-7.8	7,294	8,039	-9.3
Slovenia	283	383	-26.1	111	102	+8.8	430	730	-41.1	42	32	+31.3	3,083	2,741	+12.5	918	865	+6.1	4,867	4,853	+0.29
Spain	4,393	4,409	-0.4	4,787	6,009	-20.3	34,079	27,184	+25.4	2,287	2,314	-1.2	39,820	40,534	-1.8	9,792	11,574	-15.4	95,158	92,024	+3.4
Sweden	7,614	11,657	-34.7	5,824	5,975	-2.5	2,878	2,034	+41.5	606	598	+1.3	6,258	5,829	+7.4	1,914	2,387	-19.8	25,094	28,480	-11.9
EUROPEAN UNION	**114,308**	**129,868**	**-12.0**	**59,333**	**69,539**	**-14.7**	**272,568**	**234,563**	**+16.2**	**23,204**	**28,697**	**-19.1**	**323,551**	**342,755**	**-5.6**	**118,733**	**134,059**	**-11.43**	**911,697**	**939,521**	**-3.0**
Iceland	168	942	-82.2	235	211	+11.4	623	648	-3.9	0	0	#DIV/0!	549	326	+68.4	433	450	-3.8	2,008	2,577	-22.1
Norway	7,893	10,773	-26.7	544	1,092	-50.2	1,250	1,042	+20.0	0	1	-100.0	129	157	-17.8	437	277	+57.8	10,253	13,342	-23.2
Switzerland	3,568	4,313	-17.3	1,779	1,683	+5.7	6,595	5,900	+11.8	2	9	-77.8	6,881	7,486	-8.1	2,440	2,179	+12.0	21,265	21,570	-1.4
EFTA	**11,629**	**16,028**	**-27.4**	**2,558**	**2,986**	**-14.3**	**8,468**	**7,590**	**+11.6**	**2**	**10**	**-80.0**	**7,559**	**7,969**	**-5.1**	**3,310**	**2,906**	**+13.9**	**33,526**	**37,489**	**-10.6**
United Kingdom	26,031	24,513	+6.2	11,866	9,025	+31.5	51,736	46,142	+12.1	0	0	#DIV/0!	53,643	59,766	-10.2	4,402	5,758	-23.5	147,678	145,204	+1.7
EU + EFTA + UK	**151,968**	**170,409**	**-10.8**	**73,757**	**81,550**	**-9.6**	**332,772**	**288,295**	**+15.4**	**23,206**	**28,707**	**-19.2**	**384,753**	**410,530**	**-6.3**	**126,445**	**142,723**	**-11.4**	**1,092,901**	**1,122,214**	**-2.6**

Source: ACEA

Energy Transition: US army doesn't want to rely on solar and wind + storage tweet

US Army doesn't want wind and solar

No one can deny that solar and wind provides electricity that can and should be a key part of the energy mix. But they don't generate electricity when the sun doesn't shine, and the wind doesn't blow. And even with battery storage, wind and solar can't meet the needs of 24/7 electricity users. We always highlight AI data centers but this week, we saw another electricity users who won't rely on wind and solar even if they include battery storage – it was the US Army. On Monday, we tweeted [LINK] "*US Army wants micro-nuclear power plants to avoid disruptions from extreme weather & cyber. Not intermittent wind + solar even if battery storage or other solutions to mitigate the intermittency. Looks like competing vs AI data centers for 24/7 power ie. maybe #NatGas until micro-nukes available? #OOTT."* The US Army put out a notice seeking "*prototype on-site micro-reactor nuclear power plant(s) to address its energy resilience needs through the Advanced Nuclear Power for Installations (ANPI) program to provide electricity generation and distribution."* His is for after 2030 and the US Army wants micro nuclear power plants for its electricity. What caught our attention in the notice was the US Army highlighting the mission risks if they use wind and solar even if with battery storage. US Army wrote "*This energy dependence creates mission risks due to disruptions from extreme weather and cybersecurity attacks. While current renewable energy solutions, such as wind and solar energy are carbon-free, they are intermittent, and require battery storage or other solutions to mitigate the intermittency."* The US Army did not specify what they plan for electricity source prior to be until the micro nuclear power plants are available but it would seem to be pointing to natural gas, coal, or hydro. Our Supplementl Documents package includes the US Army notice.

Energy Transition: India ramping up coal generation in 2024

India ramping up coal generation

On Wednesday, Bloomberg released a report on India's increase in coal power capacity, reporting, "*India will add more new coal power capacity than it has in almost a decade this year, as the country rushes to deploy generation to cope with surging electricity demand. The world's most populous nation expects to add 15.4 gigawatts in the year through March 2025, the most in nine years, said people familiar with the matter, asking not to be named as the information isn't yet public….. India said last year that it plans to add close to 90 gigawatts of coal-fired capacity by 2032, lifting a forecast from just months before by more than half. The country has 28.5 gigawatts of coal power currently being built and more than 50 gigawatts that are planned to be awarded for construction over the next three years, according to the people. Officials at the country's power ministry didn't immediately reply to a request for comment."* Below is the Bloomberg chart of the India's historical coal power capacity additions. Our Supplemental Documents includes the Bloomberg report.

Figure 67: India's historical coal power capacity additions

Source: Bloomberg

Capital Markets: Oil companies to reduce ESG public disclosures following Bill C-59 **Bill C-59**

Investors will notice that there is something missing from oil and gas website as there will be less ESG disclosure and we have to assume any other sector that the climate change side focuses on for their efforts. Arguably, it should impact every sector. There likely won't be every company announcing this removal but we understand some oil and gas companies are already doing so. This is in response to the new Liberals Bill C-59. On Thursday, CAPP, the Cdn oil and gas industry association, released *"CAPP Statement: Bill C-59 Competition Act Amendments Effectively Muzzles Canadian Businesses."* [LINK]. CAPP wrote "*Buried deep into an omnibus bill and added at a late stage of Committee review, these amendments have been put forward without consultation, clarity on guidelines, or the standards that must be met to achieve compliance. As a result, businesses across Canada are being put at significant risk for communicating their efforts to reduce their impact on the environment. The burden of proof provision included in the amendments means those making the complaint face no risk or accountability. Rather, the burden falls entirely on companies to justify how the comments they have made on public policy issues like climate and the environment accord with the newly introduced and nebulous "internationally recognized methodology". The amendments also empower private parties to compel companies to appear before the Competition Tribunal to defend themselves. This radical shift from current practice, where only the Competition Bureau enforces misleading advertising laws, opens the floodgates for frivolous, resource-draining complaints. The ambiguity of these amendments to the Competition Act coupled with very significant penalties for violating these provisions, effectively prevents not only CAPP, but any business that wants to communicate its environmental efforts, from having important discussions with Canadians. As a result, CAPP has chosen to reduce the amount of information it makes available on its website and other digital platforms until the Competition Bureau has released further guidance on how these amendments will be implemented."* The vagueness of what is an internationally recognized methodology is a big concern for oi land gas companies. And we can expect to see oil and gas companies being called in front of the Competition Tribunal for any and every ESG statement. BD&P (formerly known as Burnet, Duckworth & Palmer) wrote "*Environmental groups, who are already actively asking the Competition Bureau to investigate "greenwashing" claims against companies involved in the oil and gas sector, such as the Royal Bank of Canada, Shell Canada, the Pathways Alliance and the Canadian Gas Association, will be emboldened by these provisions. They may ask the Competition Bureau*

to investigate, or they may request leave of the Competition Tribunal (Tribunal) to take action against companies they consider to be engaged in "greenwashing". The latter remedy, which is a private right of action, will come into effect one year after the amendments come into force and effect. This itself will be a significant departure from the status quo. Prior to these amendments, the only remedy available to private parties was to launch a complaint to the Bureau, which the Bureau then determined whether they wanted to review." Our Supplemental Documents package includes the CAPP release and BD&P blog on Bill C-59.

Capital Markets: Ineos, EU is uncompetitive energy, carbon & social costs

Ineos founder on Europe being uncompetitive

We recognize that Ineos Head and Founder Jim Ratcliffe isn't everyone's cup of tea as he is blunt in his views. Ratcliffe was on Bloomberg TV on Tuesday and had a number of food of thought comments including on the fundamental reason why Europe economy is uncompetitive. Ratcliffe says the costs in Europe are multiples higher than in the US, in particular for energy. Europe energy costs are 5x the cost in the US and then add on carbon taxes and social costs. On Wednesday, we tweeted [LINK] "*EU's fundamental economy weakness. "Energy is really important for an economy at the end of the day" "EU "Energy costs are 5x US. Gas is 5x the cost of US. Electricity is 5x the price of US. It's not 5% 10% or 50% more, it's 500% more." Ineos Jim Ratcliffe to @flacqua. #OOTT."* Our tweet included the transcript we made of Ratcliffe's comments. SAF Group created transcript of comments by Jim Ratcliffe (Head and Founder of Ineos Group) with Bloomberg's Francine Lacqua on June 18, 2024. [LINK] Items in "*italics*" are SAF Group created transcript. At 1:28 min mark, Ratcliffe "*Places like America are a great place for manufacturing because they've got cheaper energy. They've got no carbon taxes. They've got a government which is very interested in it. They've got social costs which are very manageable. But then you look at Europe. Europe's a mess for petrochemicals today. Everybody's leaving petrochemicals in Europe. I've never seen in my working life before. But if you look at, I'm talking mainland Europe but sort of it applies to the UK as well really. Energy costs are five times America. Gas is five times the cost of America. Electricity is five times the price of America. It's not 5% 10% or 50% more, it's 500% more. Anything where, any sort of activity which involves using energy in some form or another is disadvantaged in Europe compared to America, or the Middle East. And then on top of that, you've got a carbon tax. So if you emit anything, which has got carbon in it, you pay a carbon tax. You don't pay carbon tax in America. And on top of that you've got social costs*." Lacqua "*Do you think that's changing? We had European elections*". Ratcliffe "*is it changing?".* Lacqua *"Yeah. Will policies in Europe change because of the European elections. There seems to have been a vote*". Ratcliffe "*Well I think they're listening because we met Ursula von der Leyen and Alexander de Croo three or four months ago and we had quite a long chat about sort of the state of industry in Europe. So I think they're listening. And they were quite sympathetic with the arguments but I haven't seen any changes. Energy is, energy is really important for an economy at the end of the day. Obviously labor costs and energy costs."*

Twitter: Thank you for getting me to 10,000 followers

@Energy_Tidbits on Twitter

Earlier this year, I went over 10,000 followers on Twitter/X. I really appreciate the support and, more importantly, some excellent insights and items to look at from Twitter followers. It helps me do a better job. For new followers to our Twitter, we are trying to tweet on breaking news or early views on energy items, most of which are followed up in detail in the Energy Tidbits memo or in separate blogs. Our Twitter handle is @Energy_Tidbits and can be

followed at [LINK]. We wanted to use Energy Tidbits in our name since I have been writing Energy Tidbits memos for over 20 consecutive years. Please take a look thru our tweets and you can see we aren't just retweeting other tweets. Rather we are trying to use Twitter for early views on energy items. Our Supplemental Documents package includes our tweets this week.

LinkedIn: Look for quick energy items from me on LinkedIn

I can also be reached on Linkedin and plan to use it as another forum to pass on energy items in addition to our weekly Energy Tidbits memo and our blogs that are posted on the SAF Energy website [LINK].

Look for energy items on LinkedIn

Misc Facts and Figures.

During our weekly review of items for Energy Tidbits, we come across a number of miscellaneous facts and figures that are more general in nature and often comment on sports.

Edmonton Oilers force game 7 in Florida on Monday

What a great week for the Edmonton Oilers who were down 0-3 games to the Florida Panthers a week ago and the Oilers came back to win three straight to force game 7 on Monday night in Florida. The Oilers won 5-1 at home on Friday night. And who would have thought that would happen when Connor McDavid had zero points and zero shots on goal, and Leon Draisaitl only had one assist. The last time a team was down 0-3 in the Stanley Cup Finals and came back to win the Stanley Cup was when the Toronto Maple Leafs won the 1942 Stanely Cup. The Oilers have already made some history but it won't be enough. Prior to this year, there has never been a team down 0-3 in the Stanley Cup finals, then win game 4 at home and then go on the road for game 5. Every time that has happened, they lost game 5 and the series was over.