Energy Tidbits

May 26, 2024

Produced by: Dan Tsubouchi

Why Now Does India Want Refiners to Lock-in Long-Term Discounted Russian Oil?

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. India wants its refiners to lock-in long-term discounted Russian oil, do they see tighter oil markets in 2025 or is it insurance in case Trump wins? [click here]

2. Platts big contrary call that US power sector demand for natural gas to peak in 2024 as data center use of natural gas power is less than forecast by utilities. [click here]

3. Equinor to spend $1.12b at Troll natural gas to extend plateau production "*and reduce the production decline over the next 10-12 years*." [click here]

4. Iran says it can invest $3b to add 400,000 b/d, which is a crazy low cost to add oil production. [click here]

5. CNBC reminds of a key reason for slow EV adoption – increasing average age of reliable ICE vehicles is now 12.6 years. [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].

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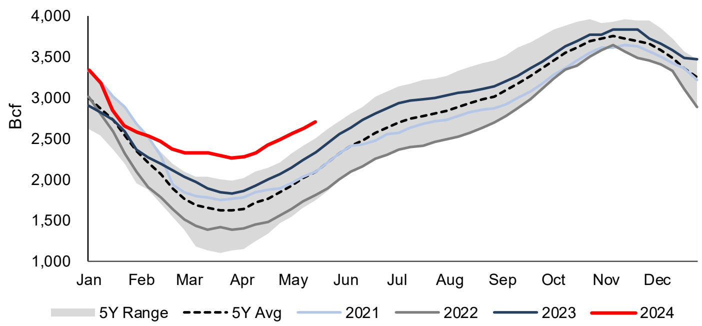
Table of Contents

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

It's been really hot in the US for the last week or so and that has driven HH prices higher but US gas storage is still way higher YoY, which keeps us concerned with the same warning from our Apr 28, 2024 Energy Tidbits memo. US storage is well above 5-yr highs and year ago levels and we warn it is pointing to full storage being hit early unless there are some big changes to the storage outlook. The latest EIA Form 914 is for February data and it shows Feb 2024 +4.6 bcf/d YoY. Europe gas storage is looking to be full early so may have some push back on US LNG cargoes in the fall. 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, we still see the risk for an early fill to US natural gas storage. As noted below, US natural gas storage is now +402 bcf YoY, which is down WoW from +421 bcf YoY last week.

US natural gas storage to be filled early?

Figure 1: US Natural Gas Storage



Source: EIA

Natural Gas: +78 bcf build in US gas storage; now +402 bcf YoY

For the week ending May 17, the EIA reported a +78 bcf build. Total storage is now 2.711 tcf, representing a surplus of +402 bcf YoY compared to a surplus of +421 bcf last week. For this week, and the past few, total storage is above the top end of the 5-yr range. Total storage is +606 bcf above the 5-year average, slightly below last week's +620 bcf surplus. Below is the EIA's storage table from its Weekly Natural Gas Storage report [LINK].

+78 bcf build in US gas storage

Figure 2: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons			
					Year ago (05/17/23)		5-year average (2019-23)	
Region	05/17/24	05/10/24	net change	implied flow	Bcf	% change	Bcf	% change
East	511	482	29	29	480	6.5	399	28.1
Midwest	628	606	22	22	539	16.5	470	33.6
Mountain	202	196	6	6	118	71.2	116	74.1
Pacific	259	252	7	7	136	90.4	204	27.0
South Central	1,112	1,097	15	15	1,037	7.2	917	21.3
Salt	319	313	6	6	293	8.9	285	11.9
Nonsalt	793	784	9	9	744	6.6	632	25.5
Total	**2,711**	**2,633**	**78**	**78**	**2,309**	**17.4**	**2,105**	**28.8**

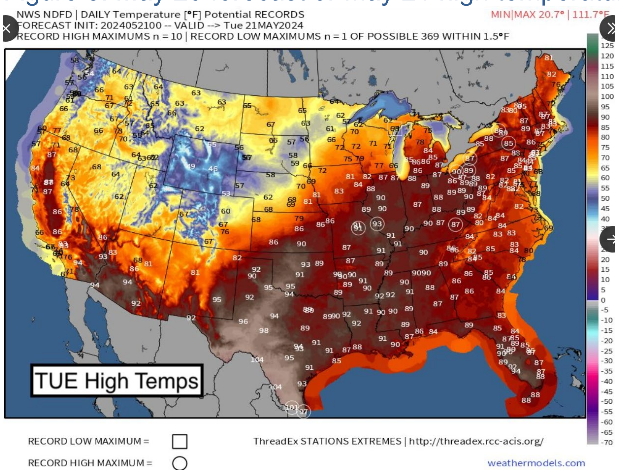
Source: EIA

Natural Gas: It was really hot in the US this week

Really hot this week

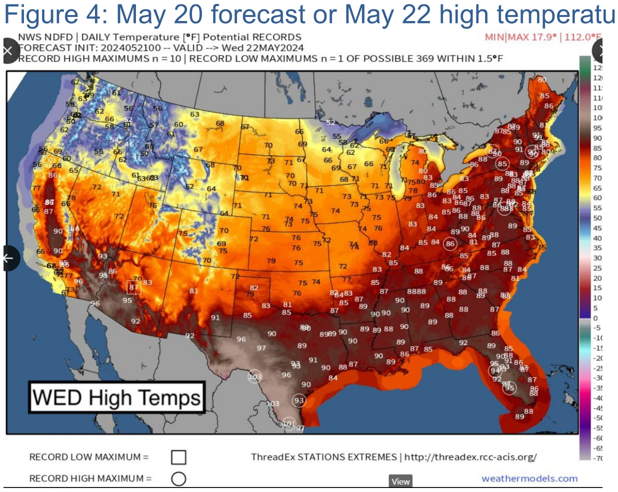
As noted above the YoY natural gas storage surplus narrowed from +421 bcf to +402 bcf for the week ended May 17. It was hot for that week but this week it was really hot. So this will be the test to see if there can be a much bigger dent in the YoY gas storage surplus. On Monday evening, we tweeted [LINK] "*Support for HH #NatGas this week. It's very very hot in most of US. Temperature maps courtesy of @bamwxcom. #OOTT.*" It was hard to ignore BAM Weather's forecast for Tues and Wed high temperatures and how many places were hitting record high temperatures. BAM wrote "*Going to be nice and hot scores the Midwest/ NE US the next couple of days 🔥 Highs in the Upper 80s F and Low 90s F will allow for RECORD HIGH TEMPS stretching from Missouri to Massachusetts 🥵* "

Figure 3: May 20 forecast or May 21 high temperatures



Source: BAM Weather

Figure 4: May 20 forecast or May 22 high temperatures



Source: BAM Weather

US March LNG exports

Natural Gas: US LNG exports down -3.6% MoM to 11.9 bcf/d in March; up +1.1% YoY

On Wednesday, the Department of Energy (DOE) posted its US LNG exports estimates for March 2024 [LINK]. The DOE normally posts the US LNG export data before the more commonly referenced US LNG exports from the EIA's Natural Gas Monthly. In this case, it is a week earlier. The EIA is a group within the DOE so the data for LNG exports is either identical or just a rounding issue. On Wednesday, we tweeted [LINK] *"US #LNG exports. DOE posts LNG export actuals 1 wk before EIA posts #NatGas Monthly. Mar 24: 11.93 bcfd. Feb 24: 12.38. Mar 23: 11.81. Freeport LNG was partially down in Q1/24. Top 5 export countries: Mar 24: FR, NLD, JP, ESP, KOR. Mar 23: UK, NLD, ESP, FR, DEU. #NatGas #OOTT."* The major issue for LNG exports in Feb and Mar 2024 is that Freeport LNG was partially down. US LNG exports were down MoM to 11.9 bcf/d in March from 12.4 bcf/d in February, but up +0.1 bcf/d YoY from March 2023. US LNG exports averaged 11.9 bcf/d per month over 2023, which is +1.3 bcf/d compared to 2022. The DOE did not comment on the MoM or YoY changes. Our Supplemental Documents package includes excerpts from the U.S. Natural Gas Imports and Exports Monthly.

Figure 5: US Monthly LNG Exports

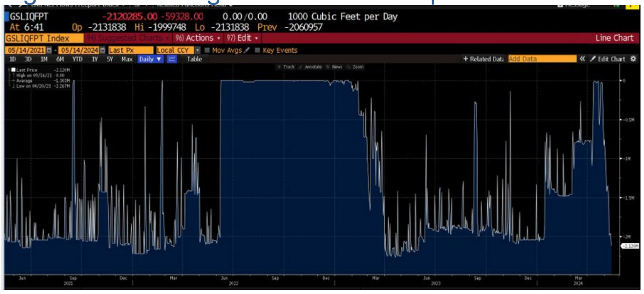
(bcf/d)	2016	2017	2018	2019	2020	2021	2022	2023	2024
January	0.0	1.7	2.3	4.1	8.1	9.8	11.4	10.9	12.8
February	0.1	0.9	2.6	3.7	8.1	7.4	11.3	11.7	12.4
March	0.3	1.4	3.0	4.2	7.9	10.4	11.7	11.8	11.9
April	0.3	1.7	2.9	4.2	7.0	10.2	11.0	12.5	
May	0.3	2.0	3.1	4.7	5.9	10.2	11.3	11.8	
June	0.5	1.7	2.5	4.7	3.6	9.0	10.0	10.9	
July	0.5	1.7	3.2	5.1	3.1	9.7	9.7	11.3	
August	0.9	1.5	3.0	4.5	3.6	9.6	9.7	11.4	
September	0.6	1.8	2.7	5.3	5.0	9.5	9.8	11.6	
October	0.1	2.6	2.9	5.7	7.2	9.7	10.0	12.4	
November	1.1	2.7	3.6	6.4	9.4	10.2	10.1	12.9	
December	1.3	2.7	4.0	7.1	9.8	11.1	11.0	13.6	
Full Year	0.5	1.9	3.0	5.0	6.6	9.7	10.6	11.9	

Source: EIA, DOE

Freeport LNG back to running at 2.1 bdf/d capacity

Here is what we wrote in last week's (May 19, 2024) Energy Tidbits memo on Freeport LNG. "*On Tuesday, we tweeted [LINK] "Freeport LNG is back! #NatGas supplying Freeport LNG is back to its capacity of ~2.1 bcf/d. Thx @ruthcoverslng #OOTT. Bloomberg reported that repairs and maintenance were completed and natural gas flows had returned to full capacity of 2.1 bcf/d. Our tweet included the below Bloomberg graph of natural as flows into Freeport LNG*. "

Figure 6: Natural gas inflows to Freeport LNG



Source: Bloomberg

Natural Gas: US natural gas pipeline exports to Mexico down -0.4% MoM, +0.6% YoY

US to Mexico March natural gas exports

Also included in the DOE's U.S. Natural Gas Imports and Exports Monthly was a breakout of exports by destination. Natural gas and LNG exports to Mexico were down -0.4% MoM to 5.9 bcf/d in March from 5.8 bcf/d in February and is up +0.6% YoY from 5.8 bcf/d in March 2023. The DOE doesn't provide a split but for pipeline vs LNG exports to Mexico but we believe essentially 100% of the exports are via pipeline, without any CNG/LNG in the mix. Please note that we will note if we ever believe there are any notable CNG/LNG exports to Mexico. Below is a summary of natural gas via pipeline exports to Mexico from the US.

Figure 7: US Natural Gas Pipeline Exports to Mexico

(bcf/d)	2016	2017	2018	2019	2020	2021	2022	2023	2024
January	0.9	4.3	4.7	5.3	5.4	5.6	5.7	5.5	6.0
February	3.4	4.6	5.0	5.1	5.3	5.4	5.5	5.5	5.8
March	3.4	4.5	5.2	5.1	5.6	5.9	5.5	5.8	5.9
April	3.5	4.2	4.7	5.0	4.6	6.1	5.9	5.6	
May	3.7	4.3	4.9	5.6	4.7	6.2	6.0	6.2	
June	3.8	5.3	5.5	5.8	5.4	6.6	6.2	6.8	
July	4.0	4.8	5.6	6.2	5.8	6.4	6.1	6.8	
August	4.4	4.6	5.6	5.9	6.1	6.3	5.9	6.9	
September	4.2	4.5	5.4	5.8	6.2	6.0	5.6	6.7	
October	4.2	4.5	5.1	5.7	6.2	6.0	5.5	6.5	
November	4.4	4.8	4.9	5.4	5.6	5.5	5.4	6.0	
December	3.8	4.5	4.9	5.2	5.3	5.4	5.1	5.6	
Average	3.6	4.6	5.1	5.5	5.5	5.9	5.7	6.2	

Source: DOE, SAF

Natural Gas: Mexico's natural gas production stuck below 5 bcf/d

Mexico natural gas stuck <5 bcf/d

On Friday, Pemex posted its natural gas production data for April. [LINK]. Pemex does not provide any commentary on the data but reported April 2024 natural gas production of 4.50 bcf/d which Is -11.7% YoY and -5.6% MoM. Pemex oil production was also down so we suspect the MoM declilne is due to some field shut-ins. The big picture story for Mexico natural gas is – for the past six years, Mexico natural gas production has been stuck at or below 5 bcf/d, and that means any increased domestic natural gas consumption has been met by US natural gas imports. Below is our ongoing table of Pemex reported monthly natural gas production.

Figure 8: Mexico Natural Gas Production

Natural Gas Production bcf/d	2017	2018	2019	2020	2021	2022	22/21	2023	2024	24/23
Jan	5.326	4.910	4.648	5.005	4.848	4.713	-2.8%	4.955	4.780	-3.5%
Feb	5.299	4.853	4.869	4.942	4.854	4.646	-4.3%	4.979	4.777	-4.1%
Mar	5.383	4.646	4.857	4.946	4.839	4.766	-1.5%	5.035	4.768	-5.3%
Apr	5.334	4.869	4.816	4.827	4.671	4.740	1.5%	5.095	4.500	-11.7%
May	5.299	4.827	4.841	4.460	4.730	4.702	-0.6%	5.034		
June	5.253	4.840	4.843	4.754	4.727	4.744	0.4%	5.035		
July	5.216	4.856	4.892	4.902	4.725	4.815	1.9%	4.936		
Aug	5.035	4.898	4.939	4.920	4.656	4.796	3.0%	4.947		
Sept	4.302	4.913	5.017	4.926	4.746	4.798	1.1%	4.969		
Oct	4.759	4.895	4.971	4.928	4.718	4.795	1.6%	4.950		
Nov	4.803	4.776	5.015	4.769	4.751	4.845	2.0%	4.888		
Dec	4.811	4.881	5.024	4.846	4.697	4.845	3.2%	4.786		

Source: Pemex, SAF

Natural Gas: Woodside CEO also points to LNG oversupply in late 2020s

Oversupply LNG in late 2020s?

Woodside Energy CEO Meg O'Neil wasn't as direct as the recent comments by Qatar Energy and TotalEnergies CEOs but also seemed to outline a similar view that there could some LNG oversupply in the late 2020s. She didn't say oversupply but did say the upcoming new LNG supply should make LNG more affordable for the price sensitive LNG countries. Having more affordable prices for price sensitive countries seems like she is suggesting price weakness from oversupply. On Wednesday, we tweeted [LINK] "*#LNG oversupply to end 2020s? Woodside CEO "More gas in the system will help give those buying [emerging Asian] nations confidence that they can get the product they need at an affordable price" Not as direct but similar to 05/18 Qatar Energy & TotalEnergies CEOs..Thx @PaulAllenLive #OOTT."* Our tweet included the transcript we made of O'Neill's comments. SAF Group created transcript of comments by Woodside Energy CEO Meg O'Neill with Bloomberg's Paul Allen in Perth, Australia on May 21, 2024 [LINK] Items in "*italics"* are SAF Group created transcript. At 2:10 min mark, Allen "… *Is there a risk of demand destruction because of this, particularly for emerging nations?"* O'Neill "*The biggest cure, of course, for high prices is more supply and the biggest cure for shortage of supply is high prices. So we are in a situation actually when we look at the international market where there's a number of new LNG developments that have been sanctioned. Largely in Qatar and the US. We have some projects here in Australia. Our Scarborough energy project is going to hit the market in 2026. So there is new supply coming to the market. And look I think that's going to be a great outcome for the nations that are buying it as they think about energy security and decarbonization*." Allen "*it that can't be achieved though and you look around emerging markets, particularly emerging Asia, do you feel there is a risk they could be backsliding towards dirtier, cheaper forms of fuel?"* O'Neill "*We've already seen examples of that. In 2022, when natural gas prices were at a high following Russia's invasion of Ukraine, we saw huge volumes of LNG go to Europe. And price sensitive buyers, places like Pakistan and Bangladesh either suffered with blackouts or reverted to coal. So again, that's a terrible outcome for the climate. More gas in the system will help give those buying nations confidence that they can get the product they need at an affordable price and don't have to go to those dirtier fuels."*

Qatar & TotalEnergies see oversupply in the late 2020s

Here is what we wrote in last week's (May 19, 2024) Energy Tidbits memo. "*Yesterday, we tweeted [LINK] "LNG oversupply to end 2020s? Qatar Energy & TotalEnergies CEOs sees strong & growing long-term demand but wave of supply projects point to #LNG oversupply to end 2020s before rebalancing post 2030. See 👇SAF Group created transcript. Great @flacqua interview. #NatGas #OOTT. Bloomberg's Francine Lacqua moderated a panel discussion with Darren Woods, Chairman and CEO of Exxon Mobil, Patrick Pouyanne, CEO of TotalEnergies, and Saad Sherida Al-Kaabi, Qatari Energy Minister & Qatar Energy CEO. One of the insights were from Al-Kaabi and Pouyanne on the LNG supply/demand outlook. Both were bullish and see growing long-term LNG demand but both also see the wave of LNG supply to come will see oversupply in the late 2020s. Our tweet included the transcript we made of Al-Kaabi and Pouyanne comments. Al-Kaabi said "And as mentioned by my colleagues, that is going to be need for gas in the future…… So we think there is a big demand in the future and we're going to expand to meet that demand…. And as I mentioned, there is going to be a glut, if you will, of a lot of projects coming mainly from Qatar and our project in Golden Pass and some from my colleagues here, Mozambique and other areas. And there is going to be additional demand. But I think if economic growth, everybody is trying to get the, you know, inflation down and so. If we have a reasonable economic growth going forward, I think you'll see that all the supply and demand will catch up and you'll need another phase of development of gas in the 2030 plus. I don't think gas is going away* *anytime soon." CEO Pouyanne said "So there's a market there for gas, for LNG. Of course it's a commodity, so you don't ever match supply and demand. So probably we will have by 27, 30 quite a lot of supply. But you know, when there is plenty of supply, when the price is going down so it attracts new customers."*

Natural Gas: Woodside warns natural gas declines to put pressure on LNG supply

Natural gas fields decline

For decades, we have highlighted the basic fundamental of oil and natural gas fields – they decline and need added development activities to keep production flat and minimize the rate of production decline. It happens in eery field, it's just a question of when do decline rates start to significantly impact supply. Woodside Energy CEO Meg O'Neill warned that decline rates in the natural gas supply for Australia LNG projects is going to put pressure on LNG supply. On Wednesday, we tweeted [LINK] *"#LNG 101. 10, 15, 20 yr LNG supply contracts need 10, 15, 20 yr #NatGas supply from fields that face natural decline rates. "the natural field decline that we're facing, is going to put pressure on the [NatGas] supply side" Woodside CEO. #OOTT Thx @PaulAllenLive."* Our tweet included the transcript we made of O'Neill's comments on her interview with Bloomberg on Tuesday. "At 1:40 min mark, Allen "*The market is tight at the moment, do you anticipate it being even more tight in 25, 26 when you consider some of these factors?" O'Neill "I expect so. So when you think about things, the natural field decline that we're facing, is going to put pressure on the supply side. Demand as I said is going to continue to grow. So the pressure is going to be more and more acute as we move out in time.*"

Natural Gas: Equinor $1.12b to reduce Troll production decline over next 10-12 yrs

Norway's giant Troll natural gas field declines

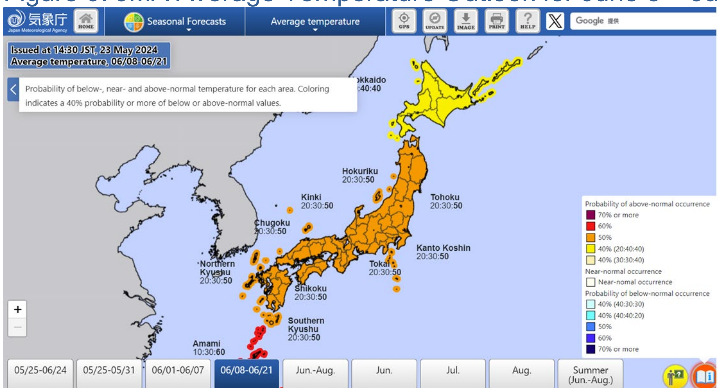
There was a great reminder from Equinor on Friday of the basic to all oil and natural gas production – production declines and there has to be ongoing capex invested to try to maintain production or minimizing production declines. On Friday, we tweeted [LINK] *"#NatGas 101. fields face natural decline & need capex every yr to keep production flat. #Equinor: invest $1.1b in Troll "will further extend plateau production by around 4 yrs and reduce the production decline over the next 10-12 yrs" Troll provides ~10% of EU's demand. EU better hope IEA is right and #NatGas demand peaks in 2020s. #OOTT."* Equinor announced [LINK] "*Investing to maintain high gas production at Troll".* Equinor reminded Troll provides ~10% of Europe's natural gas consumption. Equinor's release says maximum production at Troll was recently increased to 4.6 bcf/d. Troll is the largest natural gas field in Europe. The release says the new development phase will add ~0.7 bcf/d of new producoitn and that the $1.12b for this development is to "*further extend plateau production by around four years and reduce the production decline over the next 10-12 years*." The release says this new development will add ~0.7 bcf/d of new production. Plateau infers fairly flat natural gas production, and that this new development should extend that plateau but also that it will reduce the Troll natural gas production. Troll is a conventional natural gas field and therefore we would expect to see strong YoY declines once the declines start. But Equinor's release is a reminder that it needs to invest $1.12b to "reduce the production decline over the next 10-12 years. Decline rates are real! Our Supplemental Documents package includes the Equinor release.

Natural Gas: Japan expects warm start to June, ties to call for hot summer

JMA temperature forecast for June

On Thursday, the Japan Meteorological Agency updated its forecast for June in Japan [LINK]. There is no JMA commentary on the forecast. JMA is calling for warmer than normal temperatures for the first three weeks of June. We checked AccuWeather and they are forecasting daily highs in the 23-28C range thru June. In Japan, that isn't normally a temperature that drives a lot of electricity demand as Japanese offices and houses tend to have air conditioning turned way higher than in North America. But a warm June is fitting to the JMA's current call for a warmer than normal summer. A warm start to summer may not move natural gas/LNG prices up too much but it's better than seeing a cool start to summer to hit prices. Below is the JMA temperature forecast for June 8 – June 21.

Figure 9: JMA Average Temperature Outlook for June 8 – June 21



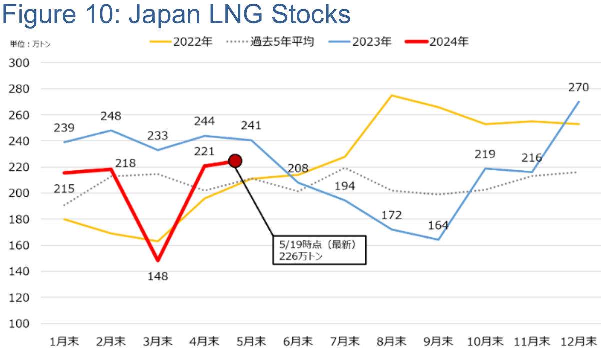
Source: Japan Meteorological Agency

Natural Gas: Japan LNG stocks up WoW, still down YoY

Japan LNG stocks up WoW

Japan's LNG stocks continue to be down YoY, but are above the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on May 19 were 108.5 bcf, up +6.6% WoW from May 12 of 101.8 bcf, and down -6.2% YoY from 115.7 bcf a year earlier. Stocks are +7.1% above the 5-year average for the end of May of 101.3 bcf. The recent build was helped by Japan shutting in some natural gas generation in March to conserve natural gas use and drain on LNG stocks, combined with significant weather driven demand. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 10: Japan LNG Stocks



Source: METI

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

China natural gas and LNG imports

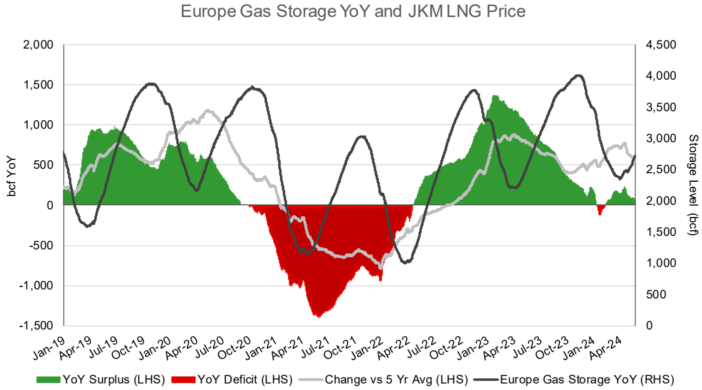
Last Saturday, China's General Administration of Customs (GACC) provided the split of natural gas imports via LNG vs pipeline for April [LINK]. i) LNG imports. GACC reported that over April, China imported 9.96 bcf/d of LNG, down -3.3% MoM from 10.30 bcf/d in March and +3.8% YoY from 9.60 bcf/d in April 2023. ii) Natural Gas imports. GACC reported that over April, China imported 6.52 bcf/d of natural gas via pipeline, which is up +2.3% MoM from 6.37 bcf/d in March and +4.5% YoY from 6.23 bcf/d in April 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.

Natural Gas: Europe storage builds WoW to 68.0%, now +1.4% higher YoY

Europe gas storage

This week, Europe storage increased by +1.7% Wow to 68.0% vs 66.3% on May 16. Storage is now +1.4% higher than last year's levels of 66.6% on May 23, 2023, and up huge vs the 5-year average of 54.6%. The expectation is still that Europe storage should be full by the start of the winter natural gas season. Even though the YoY surplus is modest, up until the recent Russia bombing of Ukraine natural gas storage facility, there weren't fears for natural gas and LNG supply over the summer months. The big wildcard for Europe natural gas markets over the coming months will be if Russia can damage or put out of operation any Ukraine natural gas storage. Below is our graph of Europe Gas Storage Level.

Figure 11: European Gas Storage Level

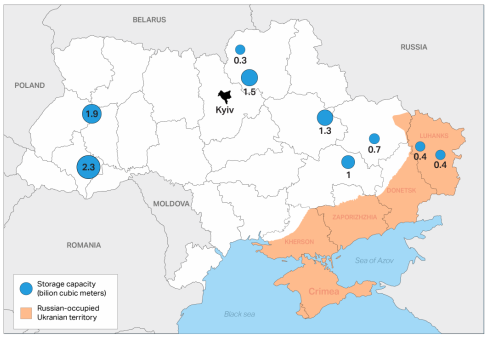


Source: Bloomberg, SAF

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

The reason why natural gas markets reacted to the Mar/Apr Russian bombing of the Ukraine natural gas storage was that Ukraine's natural gas storage is an important part of Europe natural gas storage. The good news was that the recent Russian bombing only affected above ground infrastructure. We broke out the Ukraine storage data from the above Europe data we monitor weekly from the GIE AGSI website [LINK], and we found that on May 23rd natural gas in Ukraine storage was at 14.34% of its total capacity, up from 13.87% of its total capacity as of May 16th.. 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 12: Ukraine Gas Storage Facilities as of July 2023



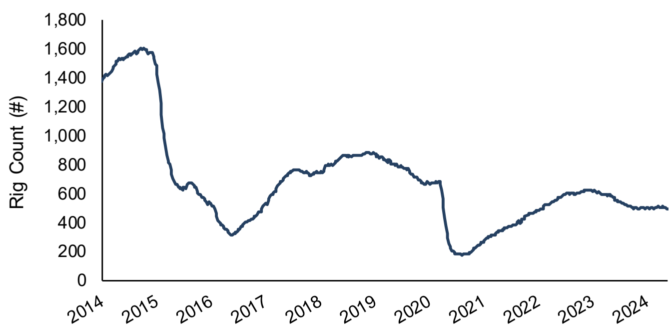
Source: Bruegel

Oil: US oil rigs flat WoW at 497 rigs, US gas rigs down -4 rigs WoW to 99 rigs

US oil rigs flat WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Note, after we recently sent them an email, 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 flat WoW at 497 oil rigs as of May 24. US oil rigs went below 520 rigs on Aug 25 and has been around 490-510 rigs for the past several months. (iii) Note we are able to see the basin changes but not by type of rig. The major changes were Cana Woodford -1 rig WoW to 21 rigs, Eagle Ford -1 rig WoW to 50 rigs, Marcellus -3 rigs WoW to 26 rigs, and Utica -1 rig WoW to 10 total rigs. (iv) US gas rigs were down -4 rigs this week to 99 gas rigs. Gas rigs are down in response to weak gas prices after the last two weeks have seen strength in gas prices.

Figure 13: Baker Hughes Total US Oil Rigs



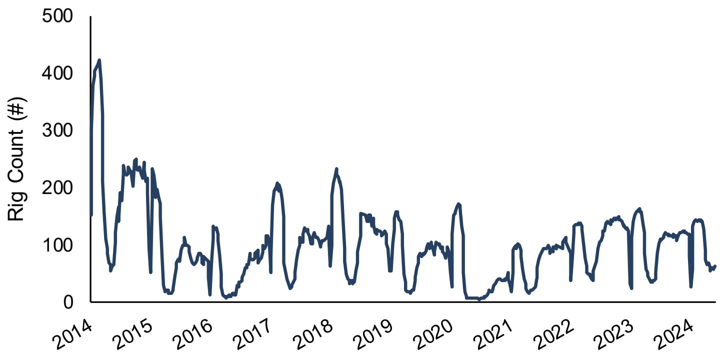
Source: Baker Hughes, SAF

Oil: Total Cdn rigs up +6 rigs WoW, showing signs of post spring breakup ramp up

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 road access becomes limited/restricted in many parts of Western Canada. Total Cdn rigs decline decllined from 231 at the beginning of March to 114 last week. This week's increase in rigs looks to signal the beginning of the big ramp up that follows every spring break up. Cdn oil rigs were up +7 rigs WoW this week to 64 rigs and are up +22 rigs YoY. Gas rigs are down -1 rig WoW this week to 56 rigs and are up +11 YoY. Baker Hughes did not update their old format report, so we weren't able to see the provincial breakouts.

Figure 14: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes, SAF

Oil: US weekly oil production flat WoW at 13.100 mmb/d

US oil production flat WoW

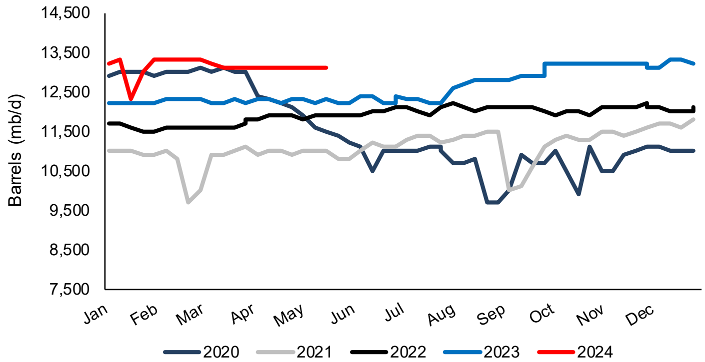
It's worth noting that historically, the EIA weekly estimates have been off of the Form 914 actuals, which sometimes require re-benchmarking. Here's what the EIA wrote on their website last month with the April STEO: "*When we release the Short-Term Energy Outlook (STEO) each month, the weekly estimates 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 week, the EIA released its May STEO and they'd revised up Q1/24 production estimates to 12.96 mmb/d from 12.84 mmb/d in April's STEO, so this message is consistent. The latest Form 914 (with February actuals) was -0.146 mmb/d lower than the weekly estimates of 13.300 mmb/d. This week, the EIA's production estimates were flat WoW at 13.100 mmb/d for the week ended May 17. Alaska was essentially flat WoW at 0.416 mmb/d. Below is a table of the EIA's weekly oil production estimates.

Figure 15: EIA's Estimated Weekly US Field Oil Production (mb/d)

	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				

Source: EIA

Figure 16: EIA's Estimated Weekly US Oil Production



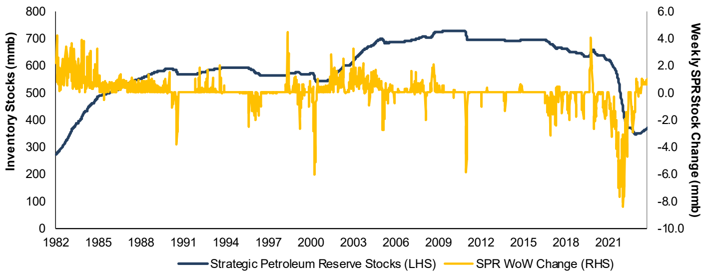
Source: EIA, SAF

Oil: US SPR less commercial reserve deficit narrows, now -89.209 mmb

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 on the commercial side. The EIA's weekly oil data for May 17 [LINK] saw the SPR reserves increase +0.993 mmb WoW to 368.804 mmb, while commercial crude oil reserves increased +1.825 mmb to 458.845 mmb. There is now a -90.041 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.

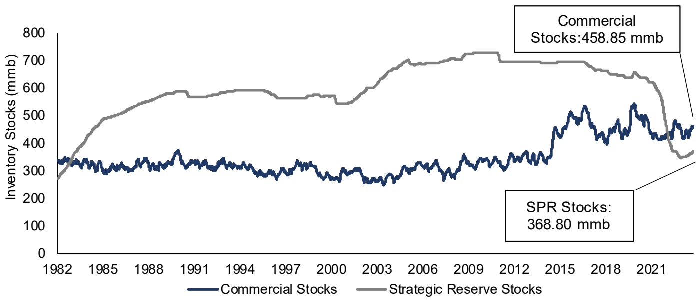
US SPR reserves

Figure 17: Strategic Petroleum Reserve Stocks and SPR WoW Change



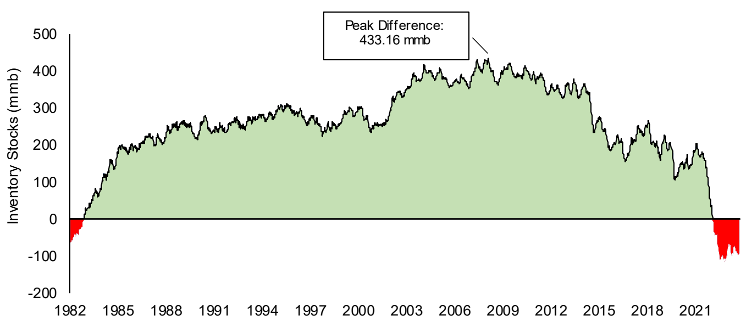
Source: EIA

Figure 18: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 19: US Oil Inventories: SPR Less Commercial



Source: EIA

Oil: US national average gasolines prices +$0.01 WoW to $3.60

US gasoline prices

Yesterday, we tweeted [LINK] "*US gasoline prices down small in May. At $3.60, +$0.01 WoW, $0.06 MoM and $0.03 YoY. California at $5.13 is -$0.08 WoW, -$0.28 MoM. See 👇05/24 @GusBuddy expects "progressive decreases between Memorial Day, July 7 & Labor Day" Good news for Biden. Thx @AAAnews #OOTT.*" Yesterday, AAA reported that US national average prices were $3.60 on May 25, which was +$0.01 WoW, -$0.06 MoM and

+$0.03 YoY. As of yesterday, the California average gasoline prices were down $0.08 WoW to $5.13, which is a $1.63 premium to the national average gasoline price of $3.60. California gas prices are -$0.28 MoM and +$0.32 YoY.

Oil: Biden selling 1 mmb of NE gasoline reserve to lower summer gasoline prices

Biden selling 1 mmb strategic gasoline reserves

If anyone has any doubt that keeping gasoline prices isn't a top priority for Biden in the run up to the election, they should look at the Dept of Energy announcement for its selling the 1 mmb of strategic NE gasoline reserves. The DOE makes it clear it is to help lower gasoline prices this summer. Give the Biden Administration credit for being direct on why they are selling the 1 mmb of gasoline NE strategic reserve – it's to lower gasoline prices for the summer. On Tuesday, the Dept of Energy announced [LINK] "*a solicitation for the sale and liquidation of 1 million barrels (42 million gallons) of gasoline in the Northeast Gasoline Supply Reserve (NGSR). This solicitation is strategically timed and structured to maximize its impact on gasoline prices, helping to lower prices at the pump as Americans hit the road this summer. "The Biden-Harris Administration is laser focused on lowering prices at the pump for American families, especially as drivers hit the road for summer driving season," said U.S. Secretary of Energy Jennifer M. Granholm. "By strategically releasing this reserve in between Memorial Day and July 4th, we are ensuring sufficient supply flows to the tri-state and northeast at a time hardworking Americans need it the most."* Our Supplemental Documents package includes the DOE announcement.

Figure 20: Northeast Gasoline Supply Reserve

Source: Dept of Energy

Oil: GasBuddy forecasts US gasoline prices to decline thru Labor Day

GasBuddy sees declining US gasoline prices

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 down $1.39 WoW to $25.65

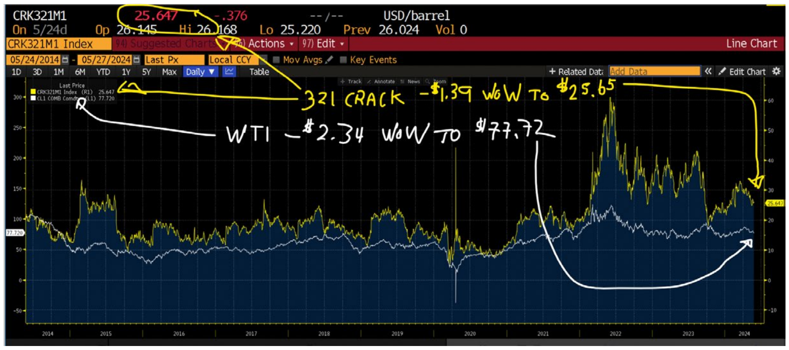
Crack spreads closed at $25.65

On Friday, we tweeted [LINK] "*321 crack spreads back down this week, -$1.39 WoW to $25.65 and WTI was -$2.34 WoW to $77.72 at close on May 24. $25.65 crack still provides decent margin for refineries but probably not high enough by itself to drive WTI higher. Thx @business #OOTT."* Crack spreads were back down again this week to $25.65. We have always said crack spreads around $30 are a big incentive for refiners to buy as much crude as possible. So crack spreads at $25.65 still provide a decent margin for refiners but probably aren't high enough to drive big refinery demand for crude and to drive WTI prices higher. Crack spreads were -$1.39 WoW to close at $25.65 on Friday and WTI was -$2.34 WoW to close at $77.72. Crack spreads followed $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, $30.39 on Apr 12, $29.45 on Apr 5, $29.73 on Mar 29, $32.20 on Mar 22, and $33.00 on Mar 15. Crack spreads at $25.65 are still solidly above the high end of the more normal pre-Covid that was more like $15-$20 ie. still decent margins for refiners. Our concern is that spreads are declining and that normally points to softer WTI to follow.

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 $25.65 as of the Friday May 24, 2024 close.

Figure 21: Cushing Oil 321 Crack Spread & WTI May 24, 2014 to May 24, 2024



Source: Bloomberg

Oil: Imperial Oil reducing emissions by 40% in its Grand Rapids SA-SAGD project

Reducing emissions in SAGD

It isn't what the climate change side did or wanted but we continue to be of the view that the challenge should have been put to industry to materially reduce emissions in a short period as we believe they would do so. It's like we say on car emissions. We never understood why Biden didn't immediately come out in Jan 2021 and say they were increasing the mpg for cars by 5 mph or some number. It puts the burden on the car manufacturers to bear the cost to do so and not required billions of subsidies to provide the EV alternative. The same challenge would have worked with the oil and gas sector. Oil and gas companies have made huge reductions in methane emissions is one visible example. Another good example was Wednesday, when Imperial Oil announced it will be able to reduce emissions by ~40% for its Grand Rapids SAGD. On Wednesday, we tweeted [LINK] "*Technology works to materially lower emissions in #Oil #NatGas sector. Imperial Oil/Exxon new recovery technology that uses less steam to lower emissions intensity by up to 40%. #OOTT.*" Imperial Oil (Exxon's partially owned Cdn oil and gas company) announced [LINK] *"its Grand Rapids oil sands project has started production at Cold Lake, marking the first commercial deployment of the recovery technology that uses less steam to lower emissions intensity. The project, located at Imperial's Cold Lake operating site, is expected to reduce greenhouse gas emissions intensity by up to 40 percent compared to existing processes in use. The technology, known as solvent-assisted, steam-assisted gravity drainage, or SA-SAGD, uses a lighter oil mixed with steam to recover the oil from underground deposits. Imperial developed and piloted the technology, which is the first deployment in industry."* Our Supplemental Documents package includes the Imperial Oil release.

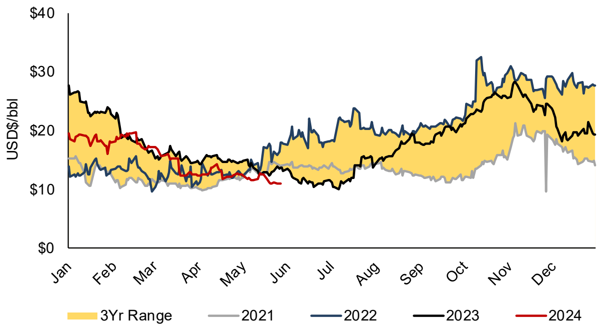
Oil: Cdn heavy oil differentials narrows -$0.10 WoW to close at $11.00 on May 24

WCS differential narrows

We believe the key test for how the startup of the 590,000 b/d TMX expansion will help Cdn WCS less WTI differentials is 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 Feb thru May period that normally sees a narrowing of WCS less WTI differentials 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 this week's dip to $11.00 would point to some sort of impact as differentials are 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 from Feb thru May. The seasonal narrowing is in motion. The WCS less WTI differential closed on May 24 at $11.00, which was a narrowing of -$0.10/bbl WoW vs $11.10/bbl on May 17. These are both well below the Feb peak of $19.75, and $11.00/bbl is a new 3 year low for this week.

Figure 22: WCS less WTI oil differentials to May 24 close



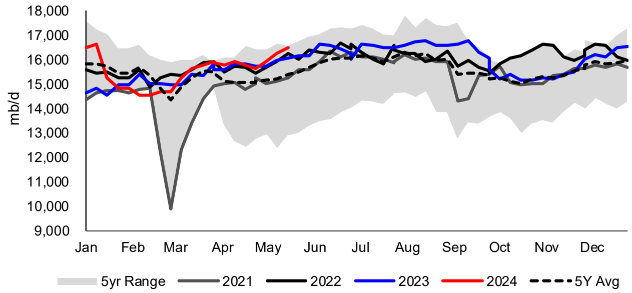
Source: Bloomberg

Oil: Refinery Inputs up +0.227 mmb/d WoW to 16.482 mmb/d

Refinery inputs +0.227 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 Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended May 17 [LINK]. The EIA reported crude inputs to refineries were up +0.227 mmb/d this week to 16.482 mmb/d and are up +0.413 mmb/d YoY. Refinery utilization was up +1.3% WoW to 91.7%, which is flat YoY.

Figure 23: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil: US net oil imports -0.676 mmb/d WoW as oil exports up +0.595 mmb/d WoW

US net oil imports

The EIA reported US "NET" imports were down -0.676 mmb/d to 1.933 mmb/d for the May 17 week. US imports were down -0.081 mmb/d to 6.663 mmb/d, while exports were up +0.595

mmb/d WoW to 4.730 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. Top 10 was down -0.406 mmb/d. Some items to note on the country data: (i) We have to wonder i we are seeing the impact of the start up o the 590,000 b/d TMX expansion on May 1 as imports from Canada were down -0.317 mmb/d to 3.495 mmb/d. (ii) Saudi Arabia was up +0.290 mmb/d to 0.486 mmb/d. (iii) Mexico was down -0.323 mmb/d to 0.184 mmb/d. This is extremely low level o imports from Mexico and is being mostly driven by the increasing refinery runs at the existing Pemex refineries. (iv) Colombia was up +0.004 mmb/d to 0.215 mmb/d. (v) Iraq was up +0.116 mmb/d to 0.239 mmb/d. (vi) Ecuador was down -0.044 mmb/d to 0.163 mmb/d. (vii) Nigeria was down -0.068 mmb/d to 0.144 mmb/d.

Figure 24: US Weekly Preliminary Imports by Major Country

	Mar 22/24	Mar 29/24	Apr 5/24	Apr 12/24	Apr 19/24	Apr 26/24	May 3/24	May 10/24	May 17/24	WoW
Canada	3,652	3,874	3,546	3,458	3,423	3,847	3,659	3,812	3,495	-317
Saudi Arabia	338	321	531	229	398	402	355	196	486	290
Venezuela	0	0	0	0	0	0	0	0	0	0
Mexico	525	263	209	208	351	459	805	507	184	-323
Colombia	143	316	114	246	215	363	183	211	215	4
Iraq	244	91	142	308	309	307	326	123	239	116
Ecuador	9	146	231	0	124	0	129	207	163	-44
Nigeria	215	136	43	173	136	89	322	212	144	-68
Brazil	230	147	257	189	492	0	217	293	315	22
Libya	88	117	24	21	100	98	1	86	0	-86
Top 10	5,444	5,411	5,097	4,832	5,548	5,565	5,997	5,647	5,241	-406
Others	1,258	1,207	1,337	1,629	949	1,207	972	1,097	1,422	325
Total US	**6,702**	**6,618**	**6,434**	**6,461**	**6,497**	**6,772**	**6,969**	**6,744**	**6,663**	**-81**

Source: EIA, SAF

Oil: Mexico oil production including partner volumes hits low of 1.485 mmb/d

Pemex April oil production

On Friday, Pemex posted its April 2024 oil production data [LINK]. Pemex does not provide any commentary on the data, but reported April oil production, including partners, was 1.485 mmb/d, which was -10.3% YoY and down -3.1% MoM from 1.532 mmb/d in March. This is the lowest oil production in almost 40 years. We don't know what is the reason for the dip below 1.5 mmb/d but we suspect it likely due to some sort of temporary interruption at a field. The big picture story remains the same - Mexico (Pemex) oil production has been stuck around 1.6 mmb/d for the last three years, hitting a low this month. Pemex has been unable to grow Mexico oil production, which means that any increase in Pemex Mexico refineries crude oil input will result in less Mexico oil for export including to the US Gulf Coast. And it also means that if Mexico has refinery issues in a month, there will be more Mexico oil for export in a month. Below is our table tracking Pemex oil production.

Figure 25: Pemex (Incl Partners) Mexico Oil Production

Oil Production (thousand b/d)	2016	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	2,259	2,020	1,909	1,623	1,724	1,651	1,649	1,628	1,545	-5.1%
Feb	2,214	2,016	1,876	1,701	1,729	1,669	1,619	1,619	1,538	-5.0%
Mar	2,217	2,018	1,846	1,691	1,745	1,697	1,620	1,636	1,532	-6.4%
Apr	2,177	2,012	1,868	1,675	1,703	1,693	1,586	1,656	1,485	-10.3%
May	2,174	2,020	1,850	1,663	1,633	1,688	1,588	1,661		
June	2,178	2,008	1,828	1,671	1,605	1,698	1,570	1,610		
July	2,157	1,986	1,823	1,671	1,595	1,701	1,583	1,550		
Aug	2,144	1,930	1,798	1,683	1,632	1,657	1,604	1,552		
Sept	2,113	1,730	1,808	1,705	1,643	1,709	1,594	1,581		
Oct	2,103	1,902	1,747	1,655	1,627	1,692	1,592	1,560		
Nov	2,072	1,867	1,697	1,696	1,633	1,691	1,582	1,558		
Dec	2,035	1,873	1,710	1,706	1,650	1,694	1,561	1,545		

Source: Pemex, SAF

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

Pemex April oil exports

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 26: 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: New Olmeca (Dos Bocas) refinery reportedly only processing 16,300 b /d

Olmeca only processing 16,300 b/d

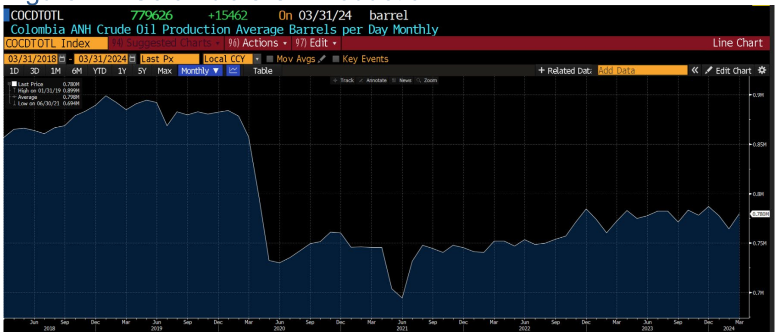
Pemex and Mexico have avoided saying how much crude oil the new Olmeca (originally called Dos Bocas) has been processing and, if the bne IntelliNews report is right, we can see why because the crude volumes are very low at 16,300 b/d compared to the refinery capacity of 340,000 b/d. bne IntelliNews reported "*Mexican national oil company Pemex has begun sending only 16,300 bpd of crude oil to its new Olmeca refinery, significantly below its full capacity, indicating yet another delay. This initial output represents less than 5% of* *the refinery's total capacity. President Andrés Manuel López Obrador (AMLO), who had described this ambitious infrastructure project in his home state of Tabasco as "a dream come true," intended the refinery to reduce Mexico's dependency on imported gasoline and diesel, primarily sourced from the United States. With the presidential election just two weeks away, Pemex officials are eager to demonstrate progress at the Dos Bocas refinery, suggesting that Lopez Obrador's promises are being fulfilled. However, internal data cited by Reuters reveals that in August, the refinery is scheduled to receive 170,000 bpd—still only half of its 340,000-bpd capacity."*

Oil: Colombia oil production still well below pre-Covid, March was 0.780 mmb/d

We continue to believe it's hard to see how Colombia oil production ever sustainably rallies anywhere back to 1 mmb/d or even 900,000 b/d. Despite stronger oil prices post Covid, Colombia oil production has been stuck below 800,000 b/d. As of Friday, Hydrocarbons Colombia had not updated their website to reflect the most recent data, however the original source, The National Hydrocarbons Agency, production data for March was available onf Bloomberg. Production in March was up +2.1% MoM to 0.780 mmb/d from 0.764 mmb/d. This puts March's production up +1.2% YoY vs 0.771 mmb/d in March 2023. Production is now -12.0% below pre-Covid levels of 0.886 mmb/d in 2019.

Colombia oil production stuck below 800,000 b/d

Figure 27: Colombia's Oil Production



Source: Bloomberg

Figure 28: Colombia's Oil Production by Month

mmb/d	2016	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	0.986	0.860	0.860	0.899	0.884	0.745	0.740	0.774	0.777	0.4%
Feb	0.955	0.864	0.823	0.893	0.878	0.746	0.740	0.759	0.764	0.7%
Mar	0.917	0.804	0.856	0.885	0.857	0.745	0.751	0.771	0.780	1.2%
Apr	0.915	0.857	0.865	0.891	0.796	0.745	0.751	0.782		
May	0.904	0.851	0.866	0.895	0.732	0.703	0.746	0.774		
June	0.888	0.857	0.864	0.892	0.730	0.694	0.752	0.778		
July	0.843	0.856	0.860	0.869	0.735	0.731	0.748	0.782		
Aug	0.827	0.858	0.866	0.883	0.742	0.748	0.749	0.782		
Sept	0.859	0.851	0.869	0.879	0.749	0.744	0.754	0.771		
Oct	0.846	0.864	0.879	0.883	0.751	0.740	0.757	0.778		
Nov	0.855	0.851	0.883	0.880	0.761	0.747	0.771	0.783		
Dec	0.837	0.870	0.889	0.882	0.759	0.745	0.784	0.787		

Source: Bloomberg, The National Hydrocarbons Agency

Oil: Norway April oil production of 1.854 mmb/d is basically flat MoM and up small YoY

On Wednesday, the Norwegian Offshore Directorate released its April production figures [LINK]. It reported oil production of 1.854 mmb/d, up +0.5% from revised March figures of 1.844 mmb/d and up +2.8% YoY from 1.804 mmb/d in April 2023. April's production actuals

Norway April oil production

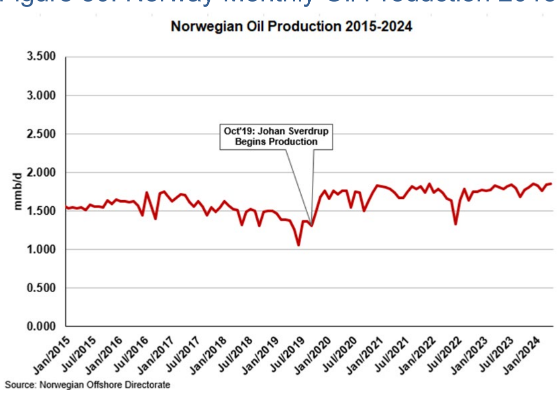
came in +5.2% (+0.092 mmb/d) over the forecast volumes of 1.762 mmb/d. The NOD does not provide any explanation for any MoM changes. The watch on Norway oil production will intensify as Norway expects Norway oil production to reach peak oil production in 2025. Note that, prior to 2024, the Norwegian Offshore Directorate was called the Norwegian Petroleum Directorate.

Figure 29: Norway April 2024 Production

		Oil mill bbl/day	Sum liquid mill bbl/day	Gas MSm³/day	Total MSm³ o.e/day
Production	**April 2024**	**1.854**	**2.104**	**346.6**	**0.681**
Forecast for	April 2024	1.762	1.999	323.9	0.642
Deviation from forecast		0.092	0.105	22.7	0.039
Deviation from forecaset in %		5.2 %	5.3 %	7 %	6.1 %
Production	March 2024	1.844	2.089	366	0.698
Deviation from	March 2024	0.010	0.015	-19.4	-0.017
Deviation in % from	March 2024	0.5 %	0.7 %	-5.3 %	-2.4 %
Production	April 2023	1.804	2.050	341.9	0.668
Deviation from	April 2023	0.050	0.054	4.7	0.013
Deviation in % from	April 2023	2.8 %	2.6 %	1.4 %	1.9 %

Source: Norwegian Offshore Directorate

Figure 30: Norway Monthly Oil Production 2015-2024



Source: Norwegian Offshore Directorate

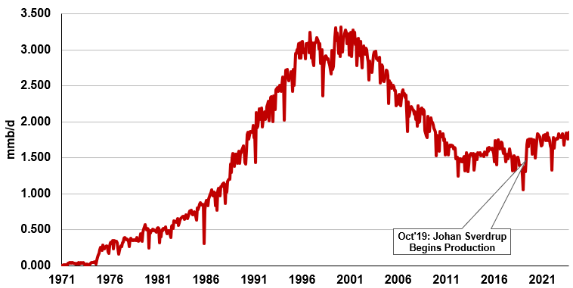
Norway forecasts Norway reaching peak oil production in 2025, then to decline
As noted above, the watch on Norway monthly oil production numbers should escalate moving into Q4/24 because that is when the giant oilfield, Johan Sverdrup is expected to start to decline. Here is what we wrote in our Mar 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."

Has Norway oil production peaked 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*

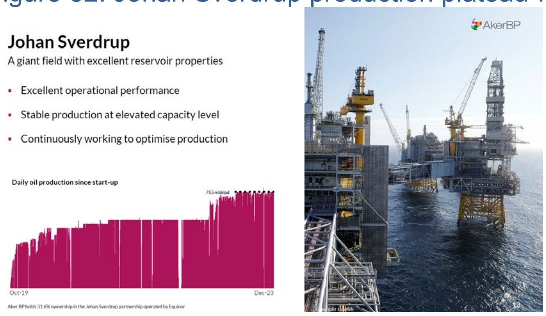
now 755,000 b/d. And Norway oi production was 1.31 mmb/d in Sept 2019 and is now 1.85 mmb/d in Dec 2023. Johan Sverdrup is currently 40% of total Norway oil production. (iii) There was a great Q&A exchange on the Aker BP Q4 call on Thursday that led to the CEO noting a few key points. Aker BP has 31.6% 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 31: Norway oil production



Source: Norwegian Offshore Directorate

Figure 32: Johan Sverdrup production plateau 755,000 b/d



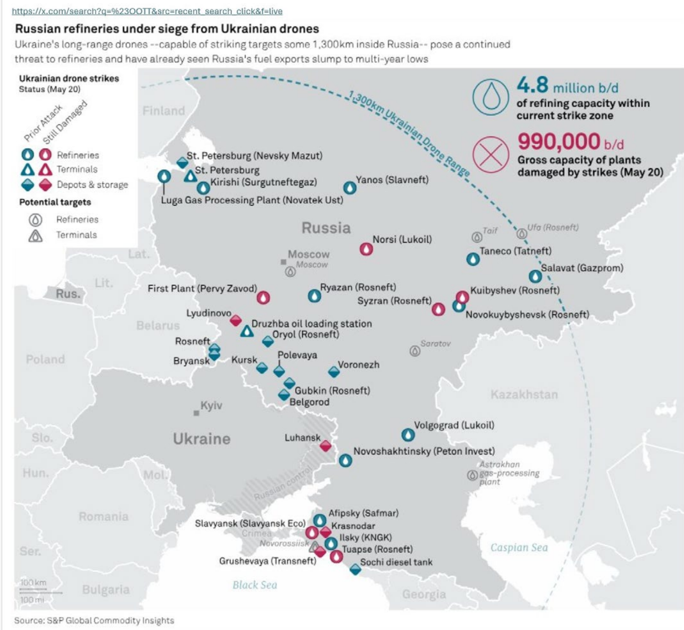
Source: Aker BP Q4 Presentation Feb 8, 2024

Oil: Good Russian refinery & terminals map within Ukrainian drone range

Russia refinery map

On Tuesday, we tweeted [LINK] "*Great map! 4.8 mmb/d refining capacity & 0.99 mmb/d of "gross capacity hit by drones to May 20 of Russian refineries within "current strike zone" of Ukrainian drones. Reminds UKR can also hit RUS major export terminals in Baltic & Black Seas. Thx @ncoleman100 @SPGCIOil #OOTT.*" The map shows the current proven range of Ukrainian drones and all the refineries and terminals with that range. It also notes the "gross capacity" of the Russian refineries that have been hit ie. it doesn't note how much of the gross capacity has been out and for how long.

Figure 33: Russian refineries & terminals within Ukrainian drone reach



Source: Platts

Will Ukraine escalate its drones to target after Russia oil/LNG export terminals

Our tweet on the Platts map noted "*Reminds UKR can also hit RUS major export terminals in Baltic & Black Seas.*" We followed up with a reply tweet "*Agreed. Ukraine has so far attacked refineries to hurt RUS supply of diesel, jet fuel, to hurt supply to military & economy. But has avoided export terminals/infra, which would be what impact global #Oil prices. See 👇@CroftHelima 03/27 highlight this as the big risk #OOTT.*" The reminder is that Ukraine has not gone after Russian oil and LNG export terminals that are basically right near refineries on the Black Sea and Baltic Sea. And Ukraine hitting refineries has hurt Russian fuel supplies to domestic uses but it really hasn't had a huge impact on Russian oil exports as Ukraine hasn't really disrupted Russia's oil export terminal infrastructure. There is no reason why Ukraine can't hit the Russian oil export terminals if it is hitting close nearby refineries. And hitting the export terminals would be what will drive up oil prices. We have been highlighting this risk scenario for the past two months. Here is what we wrote in our

March 31, 2024 Energy Tidbits memo was titled "*Helima Croft "closely watching whether Ukraine moves at some stage to target actual [Russian] export facilities.*" Here is what we wrote in our March 31, 2024 Energy Tidbits memo. " *We couldn't help think of the above RBC Helima Croft comment this morning when start looking at overnight news and seeing more Russian escalating drone attacks on Ukraine energy/power infrastructure. Earlier this morning, we tweeted [LINK] "This 👇Must Read from @CroftHelima looks even more relevant with the last 4 days, incl last night, of escalating Russia drone attacks on Ukraine energy/power infra. Will Ukraine expand its drone attacks to target RUS oil export facilities? has to be at least a risk? #OOTT." The news of the last four days, including last night, was on escalating Russian drone attacks on Ukraine energy and power infrastructure. Bloomberg reported "Russia continues almost daily strikes at Ukraine's critical infrastructure, and hit energy facilities in the country's south and in the far western region of Lviv on Sunday, local authorities said. Kremlin forces targeted high-voltage electricity substations in the Odesa region, damaging equipment, which caused power to be cut off to more than 170,000 households in Ukraine's third largest city, according to electricity provider DTEK." Ukraine hasn't gone along with the reported US request to not go after Russian refineries and so we have to believe there is at least a risk they expand their drone attacks to go after Russian oil and LNG export facilities."* Our Supplemental Documents package includes the cover page of the Helima Croft note.

Oil: Russia says will compensate for slightly exceeding April target

Russia exceeded target in April

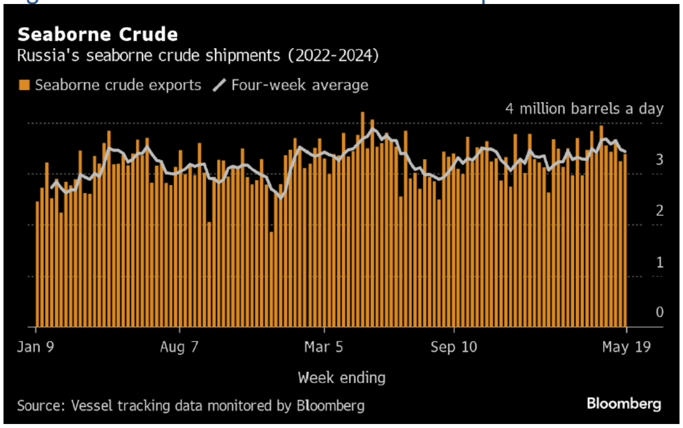
No surprise to see Russia come out ahead of the OPEC+ June 2 meeting to say they will compensate for their April overproduction. The last thing Novak would have wanted is for Russia to be viewed as not committed to OPEC+ targets. On Wednesday, TASS reported [LINK] "*Russia's crude oil output in April was slightly above the target in April due to technical difficulties of cutting production, so the country will soon sent to the OPEC Secretariat its plan to compensate for it, the Russian Energy Ministry said in a statement. The ministry said that Russia's oil production in the first quarter of 2024 was consistently kept below the agreed quotas. "In April, within the framework of voluntary reductions, oil output in Russia was slightly below target levels. The overproduction was due to technical difficulties of a major reduction in production," the statement says. Russia remains fully committed to its OPEC+ agreements and plans to compensate for the shortfall and will soon inform the OPEC*

Oil: Russian oil exports up as Moscow pivots from export curbs

Russia's crude exports increase WoW

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 reducing 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, there have been reports of Russia moving more crude and products via rail. On Tuesday, Bloomberg reported *"Russia's crude exports edged higher in the week to May 19, as Moscow prepares to replace a ceiling on overseas shipments with a production limit favored by its OPEC+ partners. An increase in cargoes from the country's Baltic and Arctic terminals was mostly offset by a dip in flows from the Pacific oil ports, and the less volatile four-week average slipped for a second straight week."* Russia also increased refinery runs in the first half of May, before the latest drone attacks that began on Friday. If the run rates are maintained for the rest of the month, it will result in the first increase in processing since December. In the week to May 19, Russia exported 3.39 mmb/d via tankers, up ~ +140,000b/d WoW from 3.24 mmb/d for the week to May 12. However, the four-week average fell by ~ -40,000 b/d to 3.43 mmb/d. Our Supplemental Documents package includes the Bloomberg report.

Figure 34: Russia's Seaborne Crude Shipments



Source: Bloomberg

Russia oil exports to China down with lesser discounts

Bloomberg's above weekly report on Russia oil shipments to China are down over 200,000 b/d in the past month. We were warned on reduced China oil imports from Russia this a month ago 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 35: 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
April 14, 2024	1.43	1.83	0.00	0.05	0.00	3.31
April 21, 2024	1.31	1.96	0.04	0.03	0.00	3.33
April 28, 2024	1.23	1.90	0.04	0.08	0.00	3.25
May 5, 2024	1.21	1.94	0.04	0.10	0.00	3.29
May 12, 2024	1.13	1.72	0.04	0.18	0.00	3.06
May 19, 2025	1.17	1.39	0.00	0.29	0.14	3.00

Source: Vessel tracking data compiled by Bloomberg — Bloomberg

Source: Bloomberg

Oil: OPEC+ meeting moved to a video conference meeting on June 2

OPEC+ meeting is June 2

OPEC posted that its OPEC+ JMMC and ministerial meetings will be June 2 and be video conference meetings. Amena Bakr (Energy Intelligence) tweeted "*The JMMC will also be on June 2nd… and the meetings are expected to be smooth, according to delegates.*" The expectation is that there will be no changes to the voluntary cuts or quotas. And if it is to be a short meeting, it also means there won't be the discussion on which countries get higher baseline or lower baseline reference production levels.

Oil: Saudi Crown Prince MBS going to meet with Iran in Tehran

MBS to go to Tehran

Yesterday, we tweeted [LINK] "*Wow! Credit to MBS. Significant that he will be the first Saudi royal to meet Iran in Tehran in >20 yrs. Strongly reinforces Saudi/Iran are rebuilding their relationship. Can't help wonder what this means for how strongly Saudi is aligned with Iran re Palestine. #OOTT.*" We were surprised to see the news that MBS has accepted an invitation to meet with Iran in Tehran. This is a significant event as he will be the first Saudi royal to meet in Tehran in over 20 years. And we have to believe it's a positive indicator in Saudi and Iran rebuilding their relationship. We also have to wonder if it proves, at least to Biden, that MBS is a key player to regional peace. But the one key question is what does this mean for how much Saudi is aligned with Iran on what happens or has to happen in Palestine. Our Supplemental Documents package includes the IRNA report and the Saudi Press Agency report on MBS condolences to Iran on Raisi's passing.

Oil: Saudi Aramco reportedly planning $10b equity issue in June

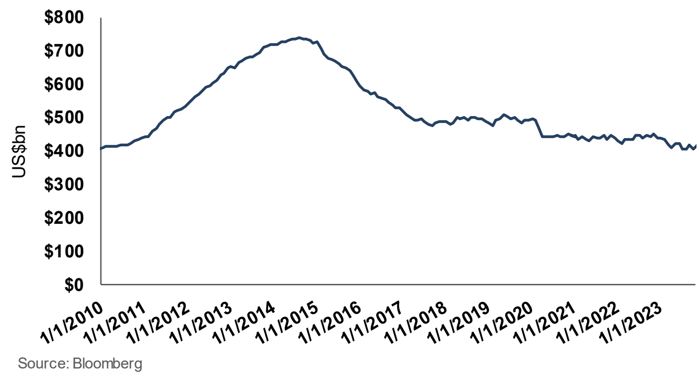
Saudi Aramco $10b equity issue?

We believe it is a positive for oil markets to see the reports that Saudi Aramco is planning a $10b equity issue for June as we believe the market will see this as another reminder Saudi Arabia is going to keep doing all it can to protect oil prices. For the last several years, we have been consistent in our view that the #1 financial theme for Saudi Arabia for the 2020s will be accessing Other People's Money to fund its Vision 2030 and more. So we weren't surprised to see the Reuters Friday report "*Exclusive: Saudi Arabia plans Aramco share sale as soon as June, sources say.*" [LINK] that Saudi Aramco is looking at a $10b equity issue in June. And "*Saudi Arabia is planning a multi-billion-dollar share sale in energy giant Aramco (2222.SE), opens new tab as soon as June in what would be one of the region's biggest stock deals, two people familiar with the matter said. The offering could raise around $10* *billion, one of the people said. The preparations are ongoing and the details could still change, the sources said, who were speaking on condition of anonymity because the matter is private. The shares will be listed in Riyadh and it will be a fully marketed offering rather than an accelerated sale over a few days."* Our Supplemental Documents package includes the Reuters report.

Saudi nest egg, its net foreign assets down $256.2b over last nine years

The major reason why we have stayed on our theme that Saudi Arabia will needed more Other People's Money is the massive decline in its net foreign assets over the past nine years. Here is what we wrote in our May 5, 2024 Energy Tidbitrs memo. "*On Tuesday, the Saudi Central Bank (SAMA) released its Monthly Statistical Bulletin for the month of March [LINK]. We continue to believe the #1 financial theme for Saudi Arabia in the 2020s will be their continued, and increasing, use of Other People's Money as they try to transition their country to MBS's Vision 2030. We believe this has been obvious with how Saudi Arabia's net foreign assets dropped by ~37% or $256.2b over the last nine years (since March 2015). We are surprised that markets and oil watchers didn't seem to pay attention to the Saudi net foreign assets data i.e., what we call their nest egg to help them their push to MBS's Vision 2030. There was a +$22.1b MoM increase to Saudi Arabia's net foreign assets which are now $434.2b in March vs $412.1b in February. Recall that in November, there was a +$11.7b increase after a -$13.9b MoM decrease to $406.3b in October vs $420.2b in September. We have to believe this was due to some timing issues or other external fund injections. But the thesis and big picture remains, Saudi net foreign assets as of March 31 of $434.2b is a decline of ~41% or $302.8b over the last 9 years from its peak of $737.0b on Aug 31, 2014. That is an average of $2.7b per month for the last 114 months since the peak. One factor over the last several years is that Saudi Arabia has been moving more capital to its PIF (Public Investment Fund) but those would generally be into less liquid assets. Saudi Arabia is far from going broke but there has been a huge decline in the last 9 years. This net foreign asset depletion is why we have been highlighting that the primary financial theme for Saudi Arabia in the 2020s is getting Other People's Money (OPM) to fund as much of their Vision 2030 as possible. And no question, accessing OPM has helped to slow down and temporarily pause the decline in net foreign assets. Our supplemental documents package includes an excerpt from the SAMA monthly bulletin. Below is our graph of Saudi Arabia net foreign assets updated for the March data."*

Figure 36: Saudi Arabia Net Foreign Assets



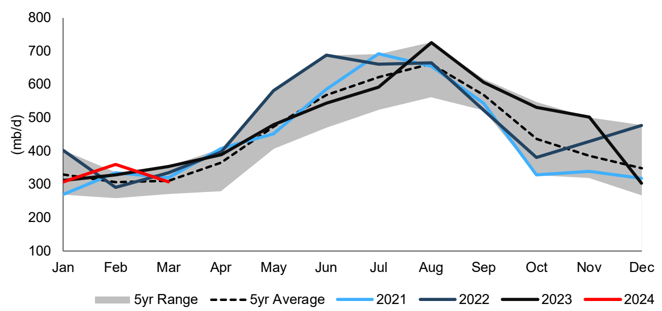
Source: Bloomberg

Saudi oil use for electricity down in Mar

Oil: Saudi use of oil for electricity down MoM in Mar

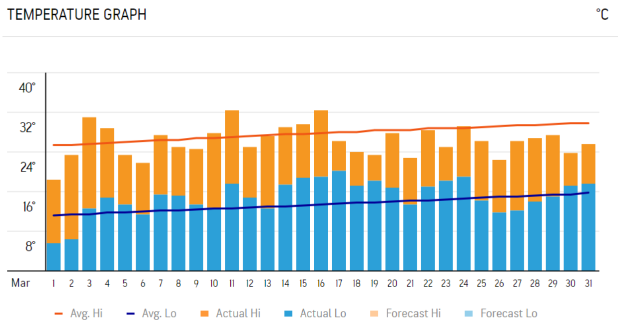
Saudi Arabia is now moving into its normal season increasing use of oil for electricity for air conditioning. It happens every year around March and that means that, all things equal, there will be less oil for exports. However, oil used for electricity generation (direct use) in March was 307,000 b/d (vs March 2023 of 354,000 b/d) and February was 360,000 b/d (vs February 2023 of 329,000 b/d). The AccuWeather temperature recap was that it wasn't that hot in March where there were daytime highs during March were in the high 20's, while the nighttime lows were mild in the teens. Direct use in March 2024 is in line with the 5-year average. Also note that this year fits the normal trough-to-peak swing of 400,000 b/d. Remember, we saw as much as 726,000 b/d in August. .The JODI data for Saudi Arabia oil supply and demand for March [LINK] was updated on Monday. Also note that 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 March and February.

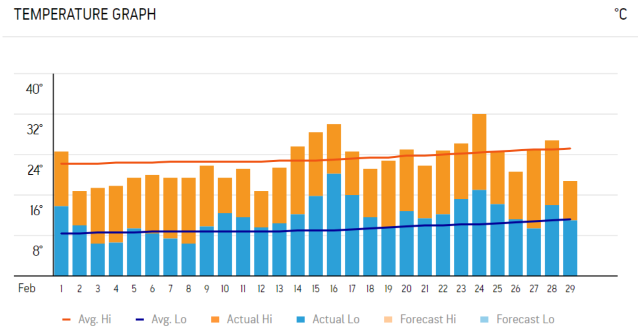
Figure 37: Saudi Arabia Direct Use of Crude Oil for Electricity Generation



Source: JODI, SAF

Figure 38: Riyadh Temperature Recaps for March (top) and February (bottom)





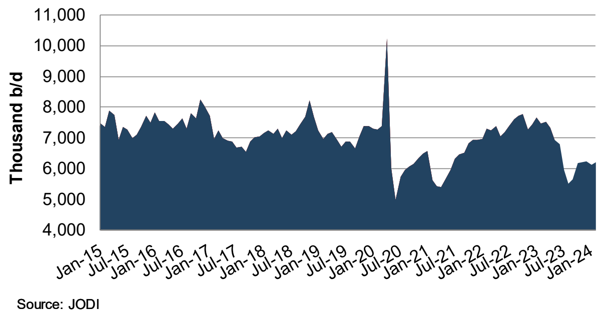
Source: AccuWeather

Oil: Saudi net oil exports up +85,000 b/d to 6.293 mmb/d in March

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 March, the JODI data showed Saudi net oil exports were up +85,000 b/d MoM to 6.293 mmb/d. This comes as imports were up +11,000 b/d and exports are up +96,000 b/d. Below is our graph of Saudi Arabia monthly net oil exports.

Saudi net oil exports up +85,000 b/d MoM

Figure 39: Saudi Arabia Net Oil Exports (mb/d)



Source: JODI, SAF

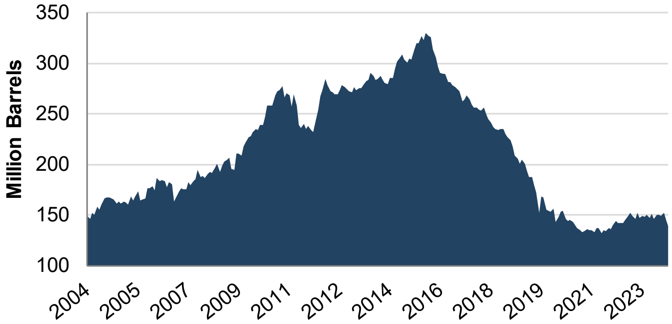
11/10/23 Saudi reminds oil exports are seasonal, less in summer/more in winter
Here is what we wrote in the Nov 12, 2023 Energy Tidbits memo. "*We probably should have called it Saudi Oil 101, but we were a little surprised that Saudi Energy Minister felt the need to explain how there is seasonality 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.*"

Oil: Did Saudi make a downward revision to its oil inventories or was it loading delays

Saudi oil inventory data

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. The JODI data for Saudi oil stocks is 139.285 mmb at March 31, which is down 5.807 mmb MoM from 145.092 mmb at Feb 29. It's a big MoM decrease but not out of the ordinary. 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 1.395 mmb in March ie. a difference of 7.202 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 7.202 mmb, which is why we wonder if there was a downward revision to Saudi oil inventories or if tanker loadings were on Apr 1 instead of Mar 31 or some other reason? For the math components. Saudi production in Mar was 8.973 mmb/d, down 38,000 b/d MoM vs 9.011 mmb/d in Feb ie. this would have led to a 38,000 b/d or 1.178 mmb MoM draw in inventories. MoM decrease in oil inventories. Saudi direct use of oil for electricity was 307,000 b/d in March, down 53,000 b/d MoM vs 360,000 b/d in Feb ie. this would lead to a 53,000 b/d or 1.643 mmb MoM build in oil inventories. Refinery intake of oil was 2.560 mmb/d in March or -115,000 b/d MoM vs 2.675 mmb/d in Feb ie. this would have led to a 115,000 b/d or 3.565 mmb MoM build in oil inventories. Net oil exports were 6.293 mmb/d in March, up 85,000 b/d MoM vs 6.208 mmb/d in Feb ie. would lead to a 85,000 b/d or 2.635 mmb MoM draw in oil inventories. The net impact of the key components would have been a MoM build of 1.395 mmb in oil inventories in March vs the reported MoM draw of 5.807 mmb.

Figure 40: Saudi Arabia Oil Inventories (million barrels)



Source: JODI, SAF

Oil: US confirms Houthis drones have range to hit in Mediterranean Sea

Houthis can reach the Mediterranean

Yesterday we tweeted [LINK] "*Add Mediterranean to Houthis watch. 05/23. Houthis say targeted Essex in Mediterranean, no confirming reports. 05/22. US defense officials confirm Houthis drones can reach Mediterranean. no strikes yet detected or if Houthis can hit moving target there. @RamseyAlRikabi #OOTT.*" (i) We were surprised that Bloomberg's May 22 report "*US Says Houthis Have Weapons That Can Reach Mediterranean Sea*" didn't get much attention as Bloomberg reported a senior US defense official confirmed The Houthis can reach the Mediterranean. On Wednesday, Bloomberg wrote "*The Houthi militants in Yemen have weapons that can reach as far as the Mediterranean Sea, according to a senior defense official, lending some credence to the group's threats that it can expand its attacks on shipping beyond its immediate borders. The US government is concerned that the Iran-backed group has the capability to extend strikes on shipping beyond the Red Sea and Gulf of Aden to the Mediterranean, said the official, who asked for anonymity to discuss private talks. The official said Houthis have access to advanced weaponry and that their deployment of anti-ship ballistic missiles is virtually unprecedented.*" Bloomberg also noted that "*The official added that no strikes in the Mediterranean have been detected, and didn't specify if the group had the capability to hit moving targets on the water over such a distance.*" (ii) On Thursday, the Houthis said they attacked the Essex in the Mediterranean Sea. There were reports confirming the attack or any effects. An attack in the Mediterranean was in line with what we reported in last week's (May 19, 2024) Energy Tidbits memo expanding their attacks to the Mediterranean Our Supplemental Documents package includes the Bloomberg report and the Al Masirah (Yemen news) report on the Houthis claiming the attack on the Essex.

05/17/24 Houthi Leader claims they have attacked in the Mediterranean Sea

Here is what we wrote in last week's (May 26, 2024) Energy Tidbits memo. "*On Friday, Saba (Houthi news) reported on the Houthis Leader speech on Thursday, where he claimed the Houthis have launched attacks in the Mediterranean Sea. He has been pretty decent in backing up his claims but, we could not find any confirmation of Houthi missile/drone attacks in the Mediterranean Sea. Saba reported "The leader confirmed that Yemen carried out 40 operations against the Zionist enemy with 211 rockets. This week alone saw 7 operations in the Red Sea, Gulf of Aden, and Indian Ocean, with additional operations in the Mediterranean. Over 100 attacks targeted American ships using missiles and drones, causing a shift* *in US, Israeli, and British routes eastward." Our Supplemental Documents package includes the Saba report*."

Oil: Iran Supreme Leader does not infer foul play in Raisi's helicopter crash

Iran Supreme Leader

No one should have expected anything from Iran to suggest there was foul play as that would have boxed Iran into have do to something against someone soon. And the key is what the Supreme Leader Khamenei said and he made no inference that there was foul play on Raisi's helicopter crash. On Monday, we tweeted [LINK] "*No surprise. See 👇Iran Supreme Leader public message calls Raisi helicopter crash a "bitter tragedy" & "tragic event". State media (Tasnim) calls it "tragic accident". Anything to infer foul play would force Iran into some retaliatory action NOW. #OOTT."* Our tweet included the Tasnim (Iran state media) posting of the full Ayatollah Khamenei message. Khamenei said '*This bitter tragedy took place while he was serving the people" "In this bitter tragedy, the Iranian nation lost a devoted, sincere, valuable individual who served their country." "In this tragic event."* In its report of Khamenei's message, Tasnim called it an accident, writing "*The tragic accident happened as the president and his entourage."* Our Supplemental Documents package includes the Tasnim report.

Oil: Iran, Houthis, Hamas & Hezbollah continuing jihad until Palestine wins

Iran & allies to continue Palestine fight

No one should have been surprised to see the reports out of Iran that Iran and its allies (Houthis, Hamas and Hezollah) are not going to stop their support of Palestine. On Thursday, we tweeted [LINK] "*Iran, Houthis, Hamas, Hezbollah meet in Tehran. ".. emphasized on the continuation of jihad and struggle until the full victory of the Palestinian Islamic Resistance with the participation of all groups and the resistance front in the region." Iran State media. #OOTT."* The Iran allies were in Tehran for Raisi funeral and met to discuss Palestine. Irna (Iran state media) reported [LINK] "*The Leaders of the Resistance Groups Met with General Salami and General Qaani* ." We didn't see any specific mention of Iran's allies in Iraq. And "*According to IRNA political group from the IRGC News, on the sidelines of the funeral ceremony of Ayatollah Raeesi, President of the Islamic Republic of Iran and other martyrs of the service, officials of Islamic Resistance groups met with Brigadier General Hossein Salami, commander of the Islamic Revolutionary Guard Corps (IRGC) and Brigadier General Esmail Qaani, commander of the IRGC-QF. In this meeting, the latest political, social and military situation in Gaza, Operation Al-Aqsa storm, and the role of the Resistance Front were discussed and exchanged, and emphasized on the continuation of jihad and struggle until the full victory of the Palestinian Islamic Resistance with the participation of all groups and the resistance front in the region."*

Oil: Iran says $3b can add 400,000 b/d, a crazy low cost to add oil production

Iran $3b to add 400,000 b/d

The headline on Iran's oil update is that it plans to increase its oil capacity from 3.6 to 4.0 mmb/d. But these numbers also remind that Iran has a lot of low risk oil development projects. We have been of the view that the decades of sanctions against Iran that led to very little foreign capex in Iran's oil sector would mean there is still lots of low hanging fruit for Iran to add oil production at low cost. But, yesterday, the numbers that Iran are saying is equal to crazy low costs to add oil production. Yesterday, we tweeted [LINK] "*WOW! Decades of sanctions & very low foreign capital = lots of low hanging fruit to add oil b/d. Iran says invest $3b to add 400,000 b/d. That is crazy low cost to add oil production. Compare that to Exxon 04/12/24 invest $12.7b to add 250,000 b/d Whiptail (Guyana).#OOTT."*

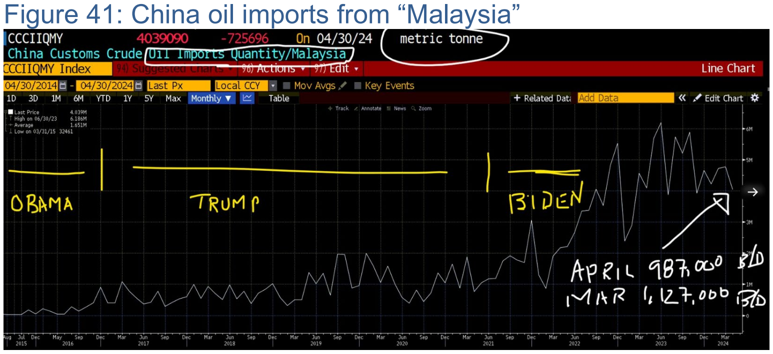
Yesterday, IRNA reported “*In the plan to increase crude oil production by the National Iranian Company with an investment of three billion dollars only in 1403 and with an increase of 400,000 barrels per day equivalent to seven billion oil revenues for the country.*” That is only $3b to add 400,000 b/d, which is crazy low cost to add oil of $7,500 per b/d. Our tweet compared that to the recent Exxon 04/12/24 press release on its latest Guyana development project, Whiptail, that Exxon says it will invest $12.7b to add 250,000 b/d. Our Supplemental Documents package includes the IRNA report and Exxon’s Apr 12, 2024 press release.

Oil: Some Iran oil to China continues to be rebranded as Malaysia oil

What Iran sanctions?

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. Our May 12, 2024 Energy Tidbits memo highlighted how as Malaysia has said they don’t follow individual country sanctions like US on Iran but follow all UN sanctions and that the US has been told of that position. On Monday, we tweeted [LINK] “*Iran #Oil keeps getting rebranded as Malaysia oil. China imported 0.987 mmb/d Malaysia oil in Apr, 1.127 mmb/d in Mar. Malaysia total oil production ~0.6 mmb/d. Recall Malaysia says only recognizes UN sanction, not individual country sanctions. #OOTT.*” China oil imports from Malaysia were down MoM to 0.987 mmb/d in April, but these levels are basically double Malaysia oil production of ~0.6 mmb/d. Note in its monthly MOMR, OPEC continues to forecast Malaysia oil production declines to 0.5 mmb/d in 2025. Our Supplemental Documents package includes the Straits Times report on Malaysia saying they do not recognize individual country sanctions but do follow UN sanctions.

Figure 41: China oil imports from “Malaysia”



Source: Bloomberg

Oil: No production update from Libya NOC since Mar 21

No Libya oil production update

As of our 7am MT news cut off, we still haven’t seen any oil production updates from the Libya National Oil Corporation since their Mar 21 update that oil production was 1.241 mmb/d. Other than the short protest that briefly shut in Sharara oil field in Q1/24, Libya’s oil production has been stable at ~1.2 mmb/d for the past several months.

Oil: Chinese household savings dip down in April as happens every year

Chinese household savings

On Wednesday, we tweeted [LINK] “*Too early to believe Chinese consumer is back to spending. China household savings down in April* ***BUT*** *that is the normal seasonal dip into savings that happens every Apr/May in every year. Thx @business #OOTT*”. China’s household savings at the end of April were US $20.0T, down MoM from $20.3T at the end of

March. 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. Our Wednesday tweet included the below graph that notes every April/May normally sees a seasonal dip in savings.

Figure 42: China Household Savings

Source: Bloomberg

Oil: China visitors to Hong Kong up YoY in Apr, but still nowhere near pre-Covid

Chinese visitors to Hong Kong

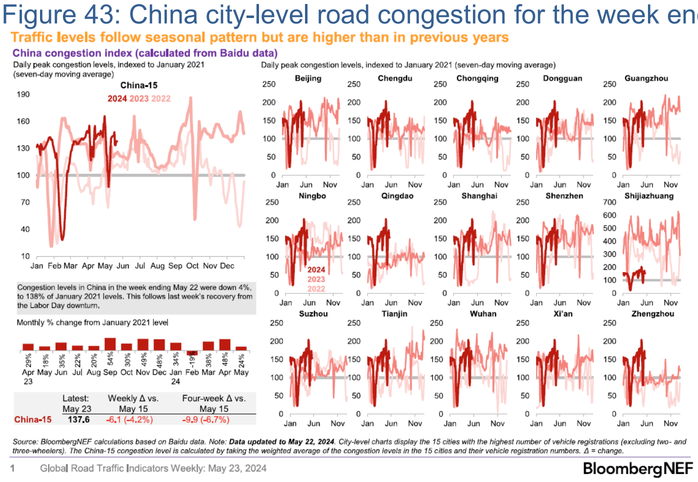
Last Sunday night, we tweeted [LINK] *"Visitors to Hong Kong +17.3% YoY to 3.391 million in Apr, but -39.2% vs pre-Covid 5.577 million in Apr 2019. Positive indicator in non-Mainland visitors +54.4% YoY in Apr, incl long-haul international visitors to Hong Kong are +72.8% YoY in Apr and +130.8% in YTD Apr 30. #OOTT."* On May 14, the Hong Kong Tourism Board released their April 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 April, there were 2.483 million mainland Chinese visitors to Hong Kong, which is up +0.8% MoM. There were 2.462 million visitors from mainland China in March, and 3.248 million in Feb. Keep in mind February's numbers were high due to Chinese new year travel. On a YoY basis, April's figures are +7.8% higher than April 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 continues higher YoY in May

China city-level traffic congestion

On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly May 23 report, which includes the Baidu city-level road congestion for the week ended May 22. BloombergNEF's report was titled "*China's traffic levels dip but remain elevated*" and its key slide was titled "*Traffic levels follow seasonal pattern but are higher than in previous years*". Baidu city-level road congestion was down -4% WoW to 138% of Jan 2021 levels. The key to the data is the that China city-level road congestion is tracking high YoY in May. The top 15 cities are, in total, +5% YoY in May with 9 of the top 15 cities road congestion up YoY> Below is the BloombergNEF key graph.

Figure 43: China city-level road congestion for the week ended May 22



Source: BloombergNEF

Figure 44: China city-level road congestion for the week ended May 22

Indexed to the same month in previous year = 100

Mar 23	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 24	Feb	Mar	Apr	May
144	145	116	104	110	107	112	126	155	187	151	55	100	114	105
149	160	397	146	96	95	106	149	214	275	135	42	92	113	97
108	122	93	101	116	135	174	117	131	124	144	51	106	107	107
115	116	92	99	107	145	98	130	395	224	136	64	101	125	118
178	121	89	96	113	92	105	108	104	156	258	41	99	127	114
156	200	110	108	127	104	114	146	317	307	199	45	99	127	123
90	100	61	62	78	79	69	95	101	127	203	59	115	140	115
154	113	80	78	105	97	100	96	124	195	175	62	94	97	99
248	446	350	111	106	81	81	115	93	172	156	54	98	117	98
245	100	74	99	114	97	122	108	97	156	189	41	96	120	122
139	161	113	121	125	173	218	120	459	258	156	69	93	85	80
134	163	72	75	89	84	87	91	88	157	171	60	111	130	113
181	136	139	100	127	122	213	109	137	244	136	60	114	121	115
163	171	118	128	133	138	144	199	192	187	151	55	94	100	92
121	117	92	111	132	119	106	149	139	152	132	66	110	112	101
122	146	144	93	111	112	112	171	294	164	119	76	98	102	89

Source: BloombergNEF

Oil: Why does India want refiners to lock in long term discounted Russia oil now?

People are people and over the years, it always makes us wonder when we see someone do something that seems out of character. So when we see someone do something out of character, we have to believe there is a reason why. Yesterday, we tweeted [LINK] " *Why Now? India is best at opportunistically buying cheap RUS, Iran, VEN oil. So why lock-in long term discounted RUS oil? Does India see tighter oil mkts ahead in 2025, 2026? Or is it insurance in case Trump wins & enforces Iran/Ven sanctions? Or other reason? #OOTT."* India has been the best at being an opportunistic buyer of Russian, Iran and some Venezuela crude at discounted prices. And they were clear with the US from Day 1 of sanctions against

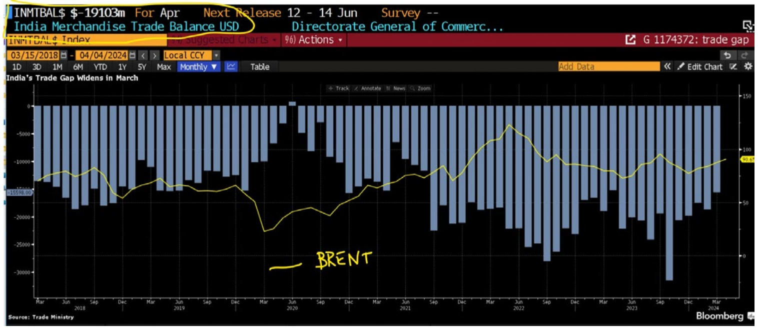
Why now for India to lock in long term RUS oil?

Russia that India buys oil where it gets the best price. It's worked so far in trying to minimize their oil import costs. So the Wednesday reports that India asked their refiners to lock in discounted Russian oil for long-term oil supply makes us wonder if they see something ahead that could potentially change the level of discounts for Russian oil. One answer could be they see tighter oil markets ahead in 2025 and 2026 and want to lock in the discounts for long-term ahead of the normal seasonal ramp up in global oil consumption. The other reason is if it's an insurance policy approach in case Trump wins the election and moves to enforce Iran sanctions, which could take ~1 mmb/d off global markets. And this would be taking the discounted barrels away from China, India and a few others that take Iran oil. And that would mean more opportunity/lesser discount on Russian oil. It would fit with our warning from last week's (May 19, 2024) Energy Tidbits memo on how Trump could dramatically impact oil markets.

India wants refiners to lock in long term supply of discounted Russia oil
On Wednesday, we tweeted [LINK] "*No surprise, India asks "refiners to lock in >1/3 of their contracted supply from Russia at a fixed discount to help shield the nation's economy from volatile prices" See 👇05/15 tweet on how #Oil prices drive India trade deficit. Thx @journorakesh @sudhiranjansen #OOTT.*" On Tuesday night, Bloomberg reported "*India Makes Rare Request for Refiners to Join on Russia Oil Deal. India has made a rare request to its state-run oil refiners and private processor Reliance Industries Ltd. to jointly negotiate a long-term supply deal with Russia, according to people familiar with the matter. The government wants its refiners to lock in at least a third of their contracted supply from Russia at a fixed discount to help shield the nation's economy from volatile prices, the people said, asking not to be named due to the sensitivity of talks. The appeal to join forces was informal, they added.*" Our Supplemental Documents package includes the Bloomberg report.

India will keep buying discounted Iran and Russian oil
Here is what we wrote in last week's (May 19, 2024) Energy Tidbits memo. "*On Wednesday, we tweeted [LINK] "Here's why India will take as much discounted Russia and Iran #OIl as possible. India trade deficit in Apr was $19.1b. #Oil #PetroleumProducts #LNG imports stood at $16.46b in Apr" reports @shruti838. Added Brent $ to the @business India trade deficit graph. #OOTT." We were watching Bloomberg TV and they were talking about the Indian trade deficit for April and we took their graph and added Brent oil price to the graph because oil imports are probably the #1 monthly import cost for India. So the price of oil is the key wildcard each month to India imports and reinforces why India will continue to buy as much discounted oil as possible from Iran and Russia. Below is the Bloomberg TV graph that we modified to add Brent oil price*."

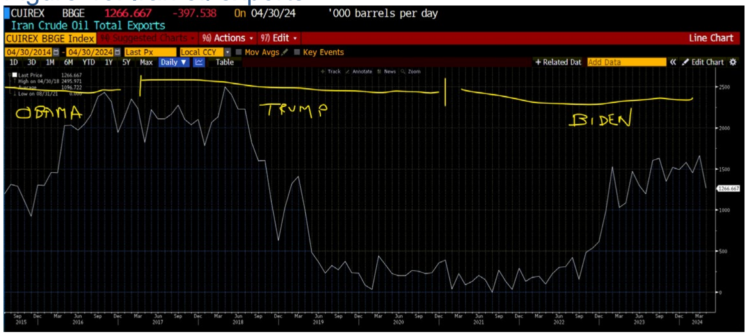
Figure 45: India trade deficit and Brent oil



Source: Bloomberg

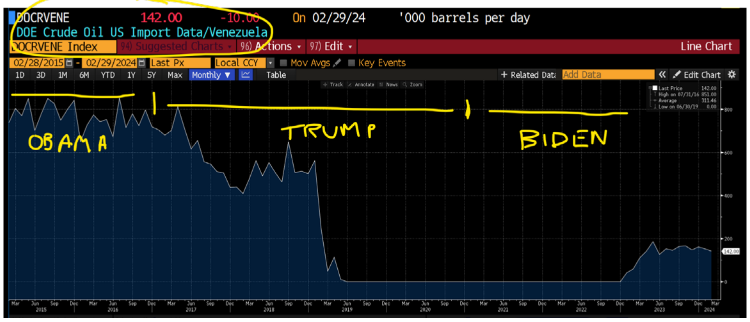
Trump's big impact on oil will be from what he does on Iran and Venezuela
Here is what we wrote in last week's (May 19, 2024) Energy Tidbits memo. "*There were a number of comments on Trump reportedly promising to work with the oil industry, but we believe the bigger impact that Trump will have on oil prices is he moves back to enforcing sanctions on Iran and Venezuela sanctions   If he goes back to what he did, he will be knocking a million b/d or Ifan oil exports off global oil markets and likely at least 150,000 b/d of Venezuela oil out of US oil imports."*

Figure 46: Iran oil exports



Source: Bloomberg

Figure 47: US oil imports from Venezuela



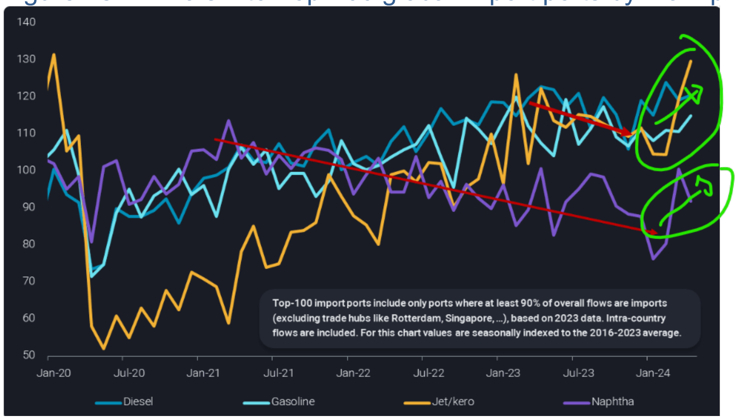
Source: Bloomberg

Oil: Vortexa, diesel, gasoline & jet imports seasonally adjusted are significantly higher

Vortexa: diesel, gasoline & jet fuel imports

On Friday, we tweeted [LINK] "*Tanker 101 from @Vortexa David Wech. One week/month seaborne loading/unloading does NOT make a trend! ie. need to look at 3 consecutive mths. "But interestingly enough, our import demand indicators are showing a clear trend reversal over the last couple of months, with the seasonally adjusted indices for all for products being significantly higher over the last 2-3 months than in the preceding 5 months or so" Diesel, Gasoline, Jet/Kerosene imports all well above 2016-23 average. #OOTT.*" We are big fans of blogs that remind of oil and gas fundamentals that get overlooked in the race to interpret daily, weekly or even monthly data. Vortexa Chief Economist David Wech posted a May 16 blog [LINK] where Wech specifically warned how tanker loading/unloading data for a short period like a week can be significantly distorted if tankers are delayed or early a day or two. And that they believe you need to watch monthly data over a few months and not just one month to see the picture that is unfolding in tanker loading/unloading. Wech's blog is titled '*Vortexa import indicators suggest trend reversal in fuel demand. The last couple of months broke a persistent trend of slowing fuel imports into main consumption hubs, heralding a potential trend change in pricing patterns and giving some hope to crude sellers.*" Wech looks at the petroleum products unloadings at the Top 100 import ports for oil consuming regions and excludes unloadings at trading hubs like Rotterdam and Singapore. So the focus is petroleum products imports directly linked to oil consuming regions. Wech then says it is important to look at the 3-mth trends to get a true sense of the import demand. He wrote " *With 2024 starting with a lot of optimism on global oil demand growth. We have often been perceived as spoilers when we told our clients about a persistent slowdown in motor fuel and naphtha imports. This trend emerged some time in Q2 2023, and persisted largely into January and February this year. And finally the overall market sentiment has really soured over the last couple of week's with the IEA continuing downward revisions in its 2024 oil demand growth to just about 1mbd, citing disappointing Q1 observations. But interestingly enough, our import demand indicators are showing a clear trend reversal over the last couple of months, with the seasonally adjusted indices for all for products being significantly higher over the last 2-3 months than in the preceding 5 months or so (see chart below).*" Note that his graph below also shows how arrivals of diesel, gasoline and jet/kerosene at the Top 100 ports are well above 2016-23 averages. And with the trend of higher imports, Wech says "*So while the overall picture is still mixed, there is at least a chance that prices (both cracks and outright) may have found the low point.*" Our Supplemental Documents package includes the Vortexa blog.

Figure 48: Arrivals into Top-100 global import ports by main products (seasonal index



Source: Vortexa

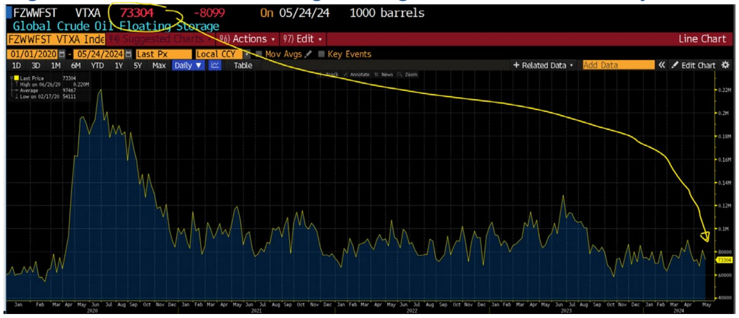
Vortexa floating storage

Oil: Vortexa crude oil floating storage est 73.30 mmb at May 24, -8.10 mmb WoW

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 May 18 at 9am MT. (i) Yesterday, we tweeted [LINK] "*Vortexa oil floating storage back over 70 at 73.30 mmb & last seven weeks were revised higher. Move above 70 driven by US Gulf Coast +6.38 mmb over past 2 wks. want to watch as should be temporary, driven by recent big winds & Houston area power outage. Thx @vortexa @business #OOTT.".* (ii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for May 24 at 73.30 mmb, which is -8.10 mmb WoW vs upwardly revised May 17 of 81.40 mmb. Noe May 17 was revised +12.19 mmb to 81.40 mmb vs 69.21 mmb originally posted at 9am MT on May 18. (iii) It isn't confirmed, but seems the probable reason, that the high winds in the Gulf Coast and power outages around Houston was the reason for US Gulf Coast floating storage hitting the highest level since 2020. Gulf Coast is now +6.38 mmb over the past two weeks to 10.13 mmb at May24. (iv) Revisions. All of the last seven weeks were revised up with large upward revisions fo the past three weeks. Here are the revisions for the past seven weeks compared to the estimates originally posted on Bloomberg at 9am MT on May 18. May 17 revised +12.19 mmb. May 10 revised +7.71 mmb. May 3 revised +6.77 mmb. Apr 26 revised +3.62 mmb. Apr 19 revised +3.14 mmb. Apr 12 revised +1.21 mmb. Apr 5 revised +0.86 mmb. (v) There is a wide range of floating storage estimates for the past seven weeks, but a simple average for the past seven weeks is 76.67 mmb vs last week's then seven-week average of 72.57 mmb. The large increase to the 7-week average was primarily due to the upward revisions. (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) May 24 estimate of 73.30 mmb is -55.63 mmb vs the last year peak June 23, 2023 high of 128.93 mmb. Recall Saudi Arabia stepped in on July 1, 2023 for additional cuts. (ix) May 24 estimate of 73.30 mmb is -22.62 mmb YoY vs May 26 2023 of 95.92 mmb. (x) Below are the last several weeks of estimates posted on Bloomberg as of 9am MT May 25, 9am MT May 18, and 9am MT May 11.

Figure 49: Vortexa Floating Storage Jan 1, 2000 – May 24, 2024, posted May 25 at 9am MT



Source: Bloomberg, Vortexa

Figure 50: Vortexa Estimates Posted 9am MT on May 25, May 18, and May 11

Posted May 25, 9am MT

	Date	Last Px
Fr	05/24/2024	73304
Fr	05/17/2024	81403
Fr	05/10/2024	67652
Fr	05/03/2024	73325
Fr	04/26/2024	71884
Fr	04/19/2024	78914
Fr	04/12/2024	90176
Fr	04/05/2024	80135
Fr	03/29/2024	83284
Fr	03/22/2024	74512
Fr	03/15/2024	76698
Fr	03/08/2024	77124

May 18, 9am MT

	Date	Last Px
Fr	05/17/2024	69209
Fr	05/10/2024	59937
Fr	05/03/2024	66556
Fr	04/26/2024	68256
Fr	04/19/2024	75770
Fr	04/12/2024	88967
Fr	04/05/2024	79280
Fr	03/29/2024	82459
Fr	03/22/2024	74554
Fr	03/15/2024	77036
Fr	03/08/2024	76494
Fr	03/01/2024	69929

May 11, 9am MT

	Date	Last Px
Fr	05/10/2024	59787
Fr	05/03/2024	62109
Fr	04/26/2024	63996
Fr	04/19/2024	73829
Fr	04/12/2024	89841
Fr	04/05/2024	79699
Fr	03/29/2024	83332
Fr	03/22/2024	74836
Fr	03/15/2024	77271
Fr	03/08/2024	76856
Fr	03/01/2024	70150
Fr	02/23/2024	63409

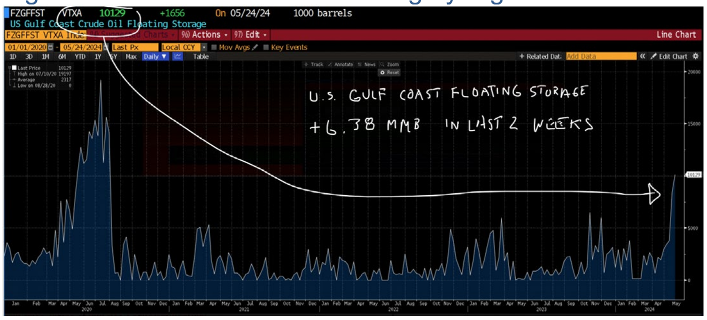
Source: Bloomberg, Vortexa

Oil: US Gulf Coast floating storage +1.66 mmb to 10.13 mmb, highest since 2020

Gulf Coast storage at highest since 2020

Last week's (May 19, 2024) Energy Tidbits memo highlighted the large increase to US Gulf Coast storage for the May 18 data to the highest level since the high floating storage in 2020 once Covid hit. Yesterday, Vortexa's Gulf Coast floating storage was +1.66 mmb to 10.13 mmb as of May 24 to a new high since Covid. US Gulf Coast floating storage is now +6.38 mmb over the past two weeks. The explanation being given for back up in the Gulf Coast was the high winds and power outages from 10 days ago in the Houston area that lingered for days and how that would lead to a back up of tankers in the Gulf Coast. We had initially thought that if the power outages had stopped tankers from going into some of the Houston area wouldn't be considered more oil in water ie. oi in tankers in transit that are just taking longer to get to destination. But we have to believe, with the ramp up the last two weeks, it's related to a back up of tankers in the aftermath of the power outages. Keep in mind that it only takes less than a handful of tankers to cause the big jump. We should be expecting to see the Gulf Coast floating storage decline over the next two weeks.

Figure 51: Vortexa crude oil floating by region



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 May 17, in total, was revised +12,19 mmb with the key revisions being Asia revised +6.94 mmb and Europe revised +4.57 mmb. (ii) The major WoW changes were Asia -877 mmb WoW, Middle East -4.69 mmb WoW and Europe +4.53 mmb WoW. (iii) Above we highlight US Gulf Coast storage was +1.66 mmb WoW to 10.13 mmb, which is the highest since the high floating storage in 2020 once Covid hit. The reasons look to be the high winds that would have impacted tanker travel and the Houston area power outages that could have caused a back up of tankers in the Gulf Coast. big power outage around Houston where there are several refineries. (iv) May 24 estimate of 73.30 mmb is -55.63 mmb vs the last year peak June 23, 2023 high of 128.93 mmb. Recall Saudi Arabia started its voluntary 1 mmb/d production cuts on July 1, 2023. The major changes by region vs the summer June 23 peak are Asia -48.55 mmb and Other -20.91 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 May 17 that was posted on Bloomberg at 9am MT on May 18.

Figure 52: Vortexa crude oil floating by region

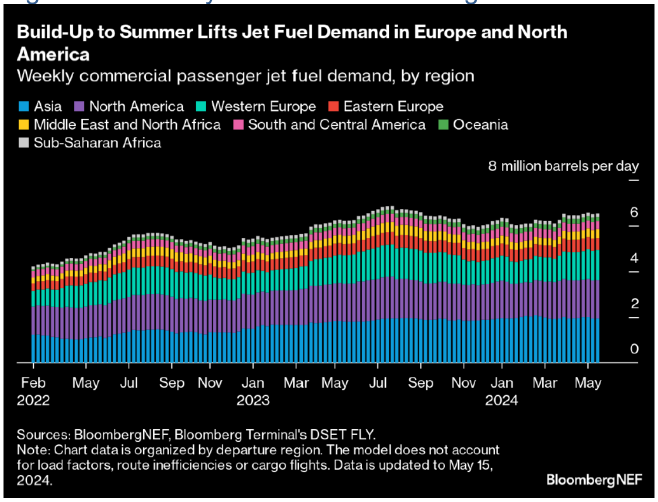
				Original Posted	Recent Peak	
Region	May 24/24	May 17/24	WoW	May 17/24	Jun 23/23	May 24 vs Jun 23
Asia	24.29	33.06	-8.77	26.12	72.84	-48.55
North Sea	3.08	3.33	-0.25	3.11	5.42	-2.34
Europe	10.20	5.67	4.53	5.19	6.16	4.04
Middle East	7.39	12.08	-4.69	7.51	6.76	0.63
West Africa	9.99	9.43	0.56	9.52	7.62	2.37
US Gulf Coast	10.13	8.47	1.66	8.39	1.00	9.13
Other	8.22	9.36	-1.14	9.37	29.13	-20.91
Global Total	73.30	81.40	-8.10	69.21	128.93	-55.63
Vortexa crude oil floating storage posted on Bloomberg 9am MT on May 25						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

Bloomberg oil demand monitor

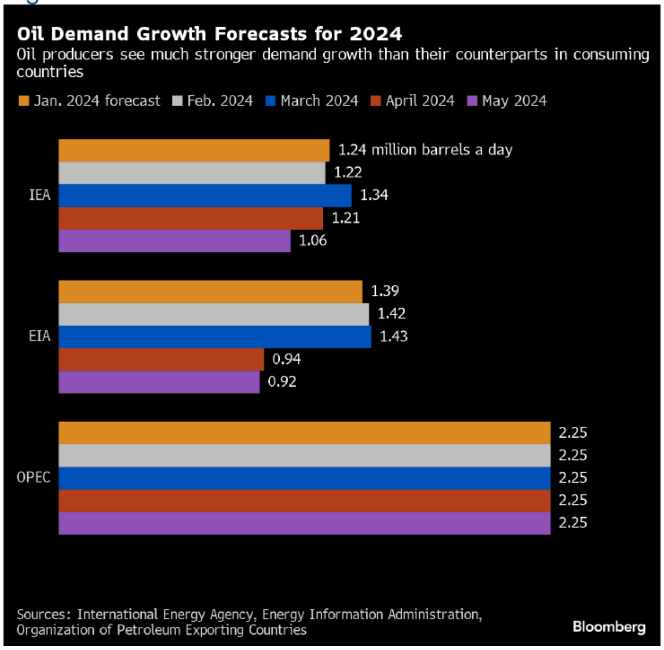
Oil: Bloomberg Oil Demand Monitor "Market Watchers at Odds on Demand Propects"
The Bloomberg Oil Demand Monitor is a good recap of key oil demand indicators around the world. This week's report reflects opposing views from the main oil forecasting agencies on demand forecasts for the remainder of 2024. 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, while the IEA has highlighted they have taken their YoY 2024 oil demand growth down from +1.24 mmb/d to +1.03 mmb/d in the same period however, as we have highlighted, the IEA also raised its 2023 oil demand such that the lower YoY growth rates result in no change to their 2024 oil demand forecast. 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. The Bloomberg oil demand monitor highlights this difference in YoY growth and put that in the below graph. Looking at consumption indicators, the demand monitor showed that global flights tracked above both 2023 and 2022 levels during the week of May 20, up +2.9% and +12% respectively, and up +2.3% on a MoM basis. Diesel and gasoline sales in India were down -1.1% and +0.5% YoY, respectively, and, compared to the first two weeks of May, were +4% and +11% MoM, respectively. Refinery utilization in the US for the week leading up to May 17 was at 91.7%, which is up 1.3% WoW and flat 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: Record air travelers at US airports on Friday, but no major air travel chaos

Record # air travelers on Friday

It looks like the US has first the first major air travel test for the summer and so far so good. The TSA screened record number of air travelers on Friday and we didn't see any reports on cable news and the internet about any major travel chaos at the US airports. esterday, the TSA tweeted [LINK] "*BREAKING NEWS: TSA Officers have set a new record for most travelers screened in a single day! On Friday, May 24, 2,951,163 individuals were screened at checkpoints nationwide, surpassing the previous record on Nov. 26, 2023. We recommend arriving early. Have travel questions? For LIVE assistance, message @AskTSA or text TRAVEL to (275-872).*". Below is the TSA chart.

Figure 55: Travelers screened at US airports

TOP 10 BUSIEST TRAVEL DAYS

Date	Total Passenger Volume	Date	Total Passenger Volume
1. 5/24/2024	2,951,163	6. 5/17/2024	2,855,596
2. 11/26/2023	2,908,785	7. 7/30/2023	2,815,068
3. 5/23/2024	2,897,421	8. 5/19/2024	2,808,317
4. 6/30/2023	2,884,783	9. 5/16/2024	2,807,609
5. 12/1/2019	2,882,915	10. 7/23/2023	2,800,368

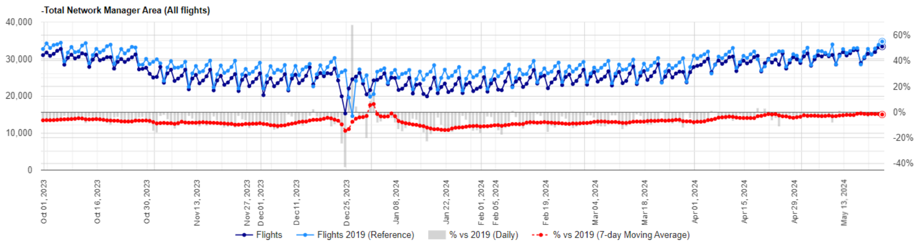
Source: TSA

Oil: Europe airports daily traffic 7-day average is -1.9% below pre-Covid levels

Europe airports daily traffic

Yesterday, we tweeted [LINK] "*Daily Europe air traffic continue below pre-Covid. 7-day average as of: May 23: -1.9% below pre-Covid. 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. However, it has been staying just a little below over the past five weeks and even got to only 1.2% below pre-Covid as of May 16 before falling back a bit this week to 1.9% below pre-Covid as of the 7-day average on May 23. The closes to back to pre-Covid lately was 1.2% below as of the 7-day average on May 16. Eurocontrol updates this data daily and it is found at [LINK]

Figure 56: Europe Air Traffic: Daily Traffic Variation to end of May 23



Source: Eurocontrol

Oil: Ryanair "*kind of recessionary feel out there*" "*not a lot of consumer spending*"

EU consumer weakness

It looks like Ryanair CEO Michael O'Leary gave a preview of his earnings call when he spoke to reporters on May 7 in Brussels. Last week's (May 19, 2024) Energy Tidbits memo wrote Ryanair CEO Michael O'Leary pulled back on his prior comments and now doesn't see airfares rising as fast as they had previously assumed. On May 7, Reuters reported [LINK] "*Summer ticket fares will rise less than expected, Ryanair CEO says. Ticket fare prices this summer are likely going to be lower than previously expected, Ryanair Chief Executive Michael O'Leary said on Tuesday …."Looking at summer ... We thought pricing would be up 5-10%. We're heading to flat (pricing year-on-year) to 5% up, which is surprising with a lot of the Airbus (AIR.PA), opens new tab fleet grounded for maintenance," he told Reporters in Brussels.*" Ryanair held its Y 2024 call on Monday and O'Leary highlighted EU consumer weakness. On Monday, we tweeted [LINK] "*European consumer resistance! "There's a degree, or appears to be some degree of consumer resistance. There may be some kind of recessionary feel out there. There's not a lot of consumer spending," Ryanair CEO O'Leary in today's earnings call. #OOTT.*" Our Supplemental Documents package includes excerpts from the Ryanair earnings call.

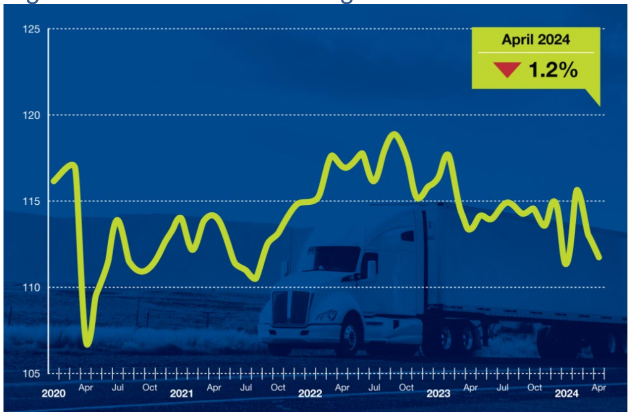
Oil: ATA Truck tonnage index in April down -1.2% MoM, -2.2% YoY

April Truck Tonnage -1.2% MoM

We look to items like truck tonnage for indicators on the US economy, and the April truck tonnage is indicative of a slowing US economy. The American Trucking Association released its seasonally adjusted Truck Tonnage Index for April on Tuesday [LINK]. Truck tonnage decreased -1.2% MoM and fell -2.2% YoY from April 2023. Chief Economist Bob Costello noted *"The truck freight market remained soft in April as seasonally adjusted volumes fell for the second straight month. With a rebound in freight remaining elusive, it is likely that additional capacity will leave the industry in the face of continued softness in the market."*

Recall the index in March was down -2% MoM and was -1% on a YoY basis. 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 57: ATA Truck Tonnage Index



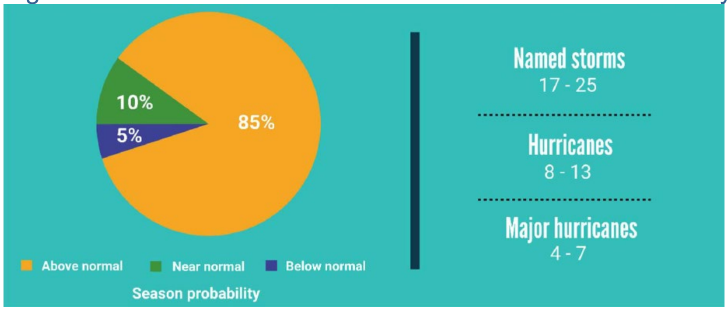
Source: ATA

Oil & Natural Gas: NOAA forecasts above-normal Atlantic hurricane season

Above-normal Atlantic hurricane season expected

On Thursday, NOAA released its predictions for the 2024 Atlantic hurricane season. We tweeted [LINK] *"Buckle up. @NOAA forecasts 85% chance of above-normal Atlantic hurricane season. Reminder, hurricanes in GoM are much more than shutting in GoM oil & gas production. There is global impact given the growth US in #Oil, #PetroleumProducts & #LNG exports. #OOTT."* The NOAA is forecasting that there will be between 17-25 total named storms, with between 8-13 of them having potential of becoming hurricanes. Note that this is the NOAA'S highest number of named storms, hurricanes, and major hurricanes in a May outlook. The NOAA estimations are in line with the Colorado State (Klotzbach) and AccuWeather hurricane forecasts. Below is the NOAA forecast table. Our Supplemental Documents package includes NOAA's forecast.

Figure 58: NOAA Forecast for 2024 Atlantic Hurricane Activity



Source: NOAA

Atlantic hurricane/tropical storm names for 2024

Every year, there is a different list of names for the Atlantic hurricanes or tropical storms. The hurricanes/tropical storms naming follow the alphabet. But a hurricane name is retired if it causes major damage ie. Katrina is never to be used again. The NOAA Atlantic hurricane forecast also included the below list of Atlantic storm names for 2024.

Figure 59: NOAA 2024 Atlantic Hurricane Names

Source: NOAA

Oil & Natural Gas: NOAA forecasts below-normal Pacific hurricane season

Below-normal Pacific hurricane season expected

The Pacific coast hurricane activity isn't a significant oil and gas factor but that will be changing over the coming years as Mexico builds out its LNG export facilities. On Tuesday, NOAA released its predictions for the 2024 Pacific hurricane season [LINK]. The NOAA is forecasting that there will be between 1-4 tropical cyclones across the central Pacific Hurricane region. A near-normal season has 4 or 5 tropical cyclones, which include tropical depressions, tropical storms, and hurricanes. The NOAA reports, *"Overall, there is a 50% chance of below-normal tropical cyclone activity. The outlook also indicates a 30% chance of a near-normal season and 20% for an above-normal hurricane season across the central Pacific hurricane region. The central Pacific hurricane region is located north of the equator between 140°W and the International Date Line…..A key factor influencing our forecast is the predicted arrival of La Nina this summer, which typically contributes to less tropical cyclone activity across the central Pacific Ocean basin."* Here is what we wrote in our April 14, 2024, Energy Tidbits Memo, "*The El Nino/La Nina focus shifts to the summer and to hurricane season. The probability forecast is at ~80% for La Nina conditions in the peak hurricane months of Aug/Sep/Oct."* Our Supplemental Documents package includes the NOAA's forecast.

Energy Transition: Platts, data center NatGas demand less than utilities forecast

Platts on data center natural gas demand

We are big believers in looking at both sides of a call or view because we think it is a positive to see why people have different views. The starting point is always that no one is 100% correct and data/circumstance/developments are always changing so views have to be adjusted or changed. Earlier this morning, we tweeted [LINK] "*Big contrary call from @SPGCIGas. US power sector #NatGas demand to peak in 2024. Data center NatGas demand "below utility forecasts owing to significant data center electric energy efficiency gains" "strong incentives to improve efficiency & minimize environmental impacts" #OOTT."* The growing strong consensus is that AI/data centers is going to drive way more growth in natural gas power generation than previously forecast. On Friday, Platts posted a contrary view that data center demand for natural gas will be less than forecast and therefore that means power demand for natural gas is peaking in 2024. And that call is based on a "*massive buildout of renewables*" and new energy efficiency of data centers. That is a huge contrary call. Platts wrote "*Power sector gas demand in the US is expected to peak in 2024 thanks to a massive buildout of renewables that will offset rising power demand, including from data centers, S&P Global Commodity Insights analysts wrote in their latest short-term natural gas outlook. The outlook, which now includes 2029, forecasts a total decline of 12% in power sector gas demand by 2029 compared with 2023. "Even though net on-grid electricity demand is anticipated to grow robustly over 2023-2029, gas-fired generation is expected to decline as the US Inflation Reduction Act (IRA) promotes a surge in renewable capacity build," analysts wrote late May 23."* And "*Midstream gas companies including Kinder Morgan and TC Energy were confident of continued growth in demand from power plants during Q1 earnings calls, often citing demand from data centers. US utilities also struck a bullish tone, partially from data centers. Commodity Insights power analysts are less bullish. Growth from data centers is expected to be "substantial, but below utility forecasts owing to significant data center electric energy efficiency gains," analysts wrote April 24. Companies driving the data center buildout, like Microsoft, Alphabet and Amazon, "have strong incentives to improve efficiency and minimize environmental impacts." Major chip suppliers, including Nvidia, have announced "huge efficiency gains" in their next-generation chip designs, the analysts wrote. Outside of chips, "AI models can be configured to be more energy efficient, such as by using fewer bits. More water-based cooling mechanisms are emerging as an alternative or supplement to air cooling, further reducing energy use."* Our Supplemental Documents package includes the Platts report. [LINK]

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

EU April new car sales

On Wednesday, ACEA posted its Europe new car registrations for April. [LINK]. The April EU new car sales reinforce that hybrids continue to win the day. Hybrids are taking market share from EVs and petrol cars. And for Europe, petrol and diesel cars inched up to 47.4% of total Europe car sales but remain below 50%. We tweeted [LINK] "*#HEVs keep winning the day in Total Europe new car registrations. Apr & YTD % YoY changes #EV: +14.4%, +6.0% #PHEV: +5.5%, +9.3% #HEV: +29.1%, +21.8% Others: +22.6%, +15.6% (fuel cell, NGVs, LPG, E85/ethanol, others) Petrol: +4.6%, +0.3% Diesel: -0.8%, -8.5% Total: +12.0%, +6.5% Petrol/Diesel % share of total Europe is inching higher 47.4% in Apr, 46.9% YTD Apr 30. #OOTT."* For April, EVs, PHEVs, Diesel, Petrol, all other and Total new car registrations were all down MoM. Our Supplemental Documents package includes the ACEA press release.

SAF GROUP

Figure 60: EU New Car Registrations in April 2024

MONTHLY

	BATTERY ELECTRIC			PLUG-IN HYBRID			HYBRID ELECTRIC[1]			OTHERS[2]		
	April 2024	April 2023	% change 24/23	April 2024	April 2023	% change 24/23	April 2024	April 2023	% change 24/23	April 2024	April 2023	% change 24/23
Austria	3,232	3,395	-4.8	1,344	1,345	-0.1	4,493	3,965	+13.3	1	2	-50.0
Belgium	9,181	6,486	+41.6	6,404	7,770	-17.6	3,595	2,648	+35.8	379	397	-4.5
Bulgaria	174	108	+61.1	37	24	+54.2	84	28	+200.0	11	3	+266.7
Croatia	35	118	-70.3	105	103	+1.9	1,914	1,469	+30.3	65	161	-59.6
Cyprus	77	16	+381.3	61	22	+177.3	784	236	+232.2	0	0	
Czechia	586	472	+24.2	434	369	+17.6	4,234	2,994	+41.4	399	348	+14.7
Denmark	6,580	3,466	+89.8	772	1,518	-49.1	2,458	2,399	+2.5	0	0	
Estonia	82	112	-26.8	60	30	+100.0	780	707	+10.3	17	8	+112.5
Finland	1,677	2,347	-28.5	1,198	1,673	-28.4	2,126	1,897	+12.1	12	36	-66.7
France	24,850	17,113	+45.2	10,867	10,882	-0.1	45,798	30,933	+48.1	6,839	6,215	+10.0
Germany	29,668	29,740	-0.2	15,135	11,787	+28.4	60,047	47,681	+25.9	1,206	1,082	+11.5
Greece	604	463	+30.5	783	434	+80.4	4,523	3,017	+49.9	218	359	-39.3
Hungary	719	402	+78.9	488	426	+14.6	4,765	3,375	+41.2	22	65	-66.2
Ireland	1,088	1,863	-41.6	1,042	841	+23.9	1,506	1,543	-2.4	0	0	
Italy	3,190	3,986	-20.0	4,467	5,947	-24.9	53,526	43,605	+22.8	12,532	10,540	+18.9
Latvia	101	159	-36.5	47	34	+38.2	514	405	+26.9	29	26	+11.5
Lithuania	214	197	+8.6	95	107	-11.2	1,193	754	+58.2	68	45	+51.1
Luxembourg	1,254	765	+63.9	301	402	-25.1	829	716	+15.8	0	0	
Malta	224	110	+103.6	53	165	-67.9	160	213	-24.9	0	0	
Netherlands	9,092	8,299	+9.6	4,004	3,830	+4.5	8,604	7,261	+18.5	214	112	+91.1
Poland	1,264	1,231	+2.7	1,182	1,166	+1.4	20,611	12,391	+66.3	1,461	1,029	+42.0
Portugal	2,823	2,006	+40.7	2,189	1,906	+14.8	3,172	2,583	+22.8	1,271	982	+29.4
Romania	728	881	-17.4	0	0		5,028	2,836	+77.3	1,394	1,186	+17.5
Slovakia	229	175	+30.9	158	186	-15.1	2,245	1,910	+17.5	162	117	+38.5
Slovenia	237	307	-22.8	145	99	+46.5	433	651	-33.5	33	48	-31.3
Spain	3,842	3,436	+11.8	5,060	4,326	+17.0	30,439	21,973	+38.5	3,427	1,452	+136.0
Sweden	6,801	6,928	-1.8	5,717	4,549	+25.7	2,131	1,716	+24.2	645	575	+12.2
EUROPEAN UNION	**108,552**	**94,581**	**+14.8**	**62,148**	**59,941**	**+3.7**	**265,992**	**199,906**	**+33.1**	**30,405**	**24,788**	**+22.7**
Iceland	157	475	-66.9	234	200	+17.0	277	453	-38.9	0	0	
Norway	10,051	7,471	+34.5	178	703	-74.7	520	399	+30.3	0	0	
Switzerland	3,179	3,375	-5.8	1,713	1,443	+18.7	6,380	5,061	+26.1	1	6	-83.3
EFTA	**13,387**	**11,321**	**+18.2**	**2,125**	**2,346**	**-9.4**	**7,177**	**5,913**	**+21.4**	**1**	**6**	**-83.3**
United Kingdom	22,717	20,522	+10.7	10,493	8,595	+22.1	45,685	41,163	+11.0	0	0	
EU + EFTA + UK	**144,656**	**126,424**	**+14.4**	**74,766**	**70,882**	**+5.5**	**318,854**	**246,982**	**+29.1**	**30,406**	**24,794**	**+22.6**

	PETROL			DIESEL			TOTAL		
	April 2024	April 2023	% change 24/23	April 2024	April 2023	% change 24/23	April 2024	April 2023	% change 24/23
Austria	8,070	6,355	+27.0	4,197	3,442	+21.9	21,337	18,504	+15.3
Belgium	17,943	18,601	-3.5	2,197	3,970	-44.7	39,699	39,872	-0.4
Bulgaria	3,307	2,125	+55.6	630	516	+22.1	4,243	2,804	+51.3
Croatia	3,866	3,173	+21.8	1,279	1,346	-5.0	7,264	6,370	+14.03
Cyprus	655	468	+40.0	31	41	-24.4	1,608	783	+105.4
Czechia	9,387	9,636	-2.6	4,506	4,610	-2.3	19,546	18,429	+6.1
Denmark	5,011	4,041	+24.0	501	634	-21.0	15,322	12,058	+27.1
Estonia	510	813	-37.3	285	253	+12.6	1,734	1,923	-9.8
Finland	854	1,030	-17.1	289	322	-10.2	6,156	7,305	-15.7
France	47,245	53,478	-11.7	11,378	13,885	-18.1	146,977	132,506	+10.9
Germany	90,729	76,519	+18.6	46,317	36,138	+28.2	243,102	202,947	+19.8
Greece	6,063	4,768	+27.2	1,254	1,198	+4.7	13,445	10,239	+31.3
Hungary	3,131	3,070	+2.0	1,277	1,233	+3.6	10,402	8,571	+21.4
Ireland	2,656	2,928	-9.3	2,273	1,737	+30.9	8,565	8,912	-3.9
Italy	42,211	37,009	+14.1	19,392	24,577	-21.1	135,318	125,664	+7.7
Latvia	594	792	-25.0	220	210	+4.8	1,505	1,626	-7.4
Lithuania	728	979	-25.6	405	258	+57.0	2,703	2,340	+15.5
Luxembourg	1,437	1,594	-9.8	624	699	-10.7	4,445	4,176	+6.4
Malta	296	369	-19.8	86	96	-10.4	819	953	-14.1
Netherlands	5,984	9,553	-37.4	534	504	+6.0	28,432	29,559	-3.8
Poland	15,442	15,932	-3.1	4,426	3,737	+18.4	44,386	35,486	+25.1
Portugal	6,595	6,757	-2.4	1,279	1,873	-31.7	17,329	16,107	+7.6
Romania	4,314	3,642	+18.5	1,812	1,320	+37.3	13,276	9,865	+34.6
Slovakia	3,547	3,315	+7.0	1,370	1,189	+15.2	7,711	6,892	+11.9
Slovenia	2,983	2,366	+26.1	863	867	-0.5	4,694	4,338	+8.21
Spain	40,232	32,410	+24.1	9,000	11,150	-19.3	92,000	74,747	+23.1
Sweden	5,177	4,739	+9.2	1,506	2,085	-27.8	21,977	20,592	+6.7
EUROPEAN UNION	**328,967**	**306,462**	**+7.3**	**117,931**	**117,890**	**+0.03**	**913,995**	**803,568**	**+13.7**
Iceland	259	233	+11.2	435	268	+62.3	1,362	1,629	-16.4
Norway	136	112	+21.4	356	291	+22.3	11,241	8,976	+25.2
Switzerland	6,716	6,617	+1.5	2,052	1,648	+24.5	20,041	18,150	+10.4
EFTA	**7,111**	**6,962**	**+2.1**	**2,843**	**2,207**	**+28.8**	**32,644**	**28,755**	**+13.5**
United Kingdom	51,210	56,885	-10.0	4,169	5,825	-28.4	134,274	132,990	+1.0
EU + EFTA + UK	**387,288**	**370,309**	**+4.6**	**124,943**	**125,922**	**-0.8**	**1,080,913**	**965,313**	**+12.0**

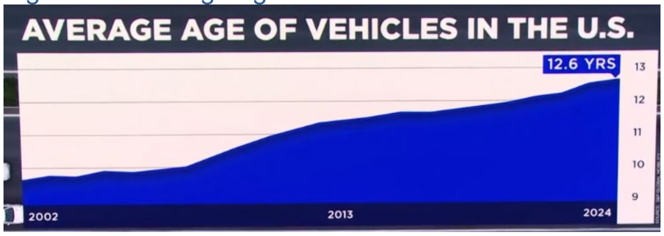
Source: ACEA

Energy Transition: Reliable longer life ICE vehicles aren't being junked

Reliable longer life ICE vehicles

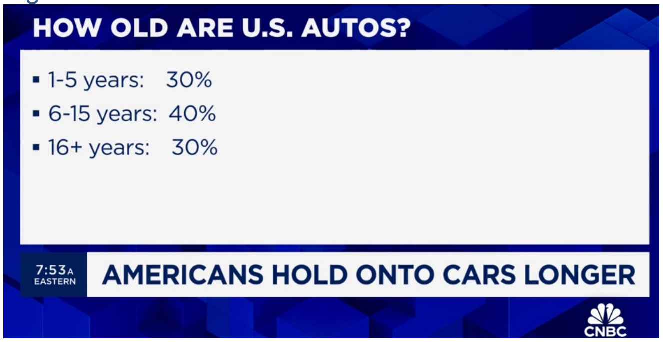
We have been highlighting that one of the challenges for EVs adoption is that ICE vehicles aren't being junked as fast as prior times. And if people are keeping their ICE vehicles for longer, it means there is less replacement of vehicle demand. People are driving ICE vehicles for much longer including in the US. On Wednesday, we tweeted [LINK] "*Are old ICE cars too reliable to junk or are new cars, incl EVs, too expensive to consider junking an ICE? Or a bit of both? Regardless which is the chicken or the egg, driving ICE vehicles way longer = slower EV adoption than per aspirations. Thx @Lebeaucarnews #OOTT.*" Our tweet included a few of the graphics from CNBC's Phil LeBeau report "*Americans hold onto cars longer*." LeBeau noted how the average age of vehicles in the US keeps going higher and is now 12.5 years. The key reasons why old cars are around are the ICE vehicles are reliable, the cost of new vehicles including new EVs, and slow EV adoption. LeBeau reminded that high financing costs and high insurance costs add to the new vehicle prices and keep people waiting. And "*there is also slow EV adoption that has many potential buyers in a wait and see mode*". So it's a bit of chicken and egg scenario. Are longer life reliable ICE vehicles holding up EV adoption or is slow EV adoption encouraging people to keep driving their reliable ICE vehicles for longer, or a some of both. Regardless, longer life reliable ICE vehicles are a factor leading to slow EV adoption. So unless the US and other western governments order that ICE vehicles be junked, reliable longer life ICE vehicles will continue to slow down EV adoption.

Figure 61: Average age of vehicles in the US



Source: CNBC

Figure 62: How old are US autos

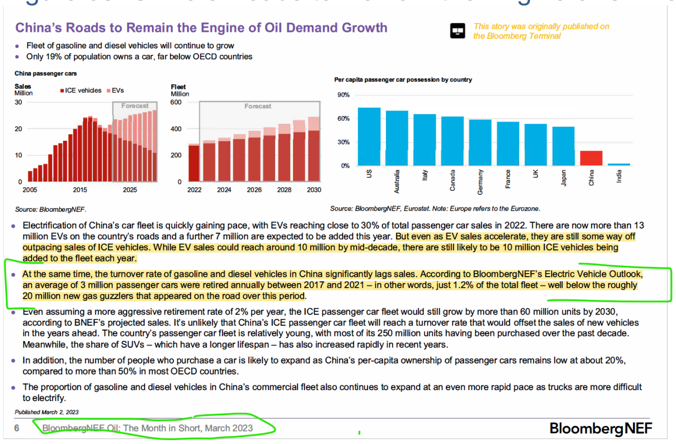


Source: CNBC

04/26/23, reminder Chinese haven't been junking their ICE vehicles

ICE vehicles not being junked is also happening in China, which is the leader in EVs sales. Here is what we wrote in our April 30, 2023 Energy Tidbits memo. "*Absent governments mandating ICE vehicles get junked, the other key factor is that ICE vehicles are lasting longer. We tweeted [LINK] "6/7. A concept everyone has experienced - ICE vehicles are lasting longer. 03/31. @BloombergNEF. at least in China, ICE vehicles retirements are at a very low level even in the face of increasing EV and ICE sales. #OOTT." (vii) It is important to remember that the IEA forecasting a 60% EV share of total car sales means a displacement of nearly 6 mmb/d in 2030 is not an IEA forecast that says its oil demand forecast will be reduced by 6 mmb/d. It's WEO Oct 2022 assumed EVs were 50% of total car sales in 2030 and didn't see peak oil demand until the mid 2030s. So the incremental 10% EV sales penetration, by itself, isn't likely to move its peak oil demand closer by very much.*" At that time, our April 26, 2023 tweet included the below graphic from BloombergNEF's "*BNEF Oil: This Month in Short*".

Figure 63: China's Roads to Remain the Engine of Oil Demand Growth



China's Roads to Remain the Engine of Oil Demand Growth

This story was originally published on the Bloomberg Terminal

- Fleet of gasoline and diesel vehicles will continue to grow
- Only 19% of population owns a car, far below OECD countries

Source: BloombergNEF.

Source: BloombergNEF, Eurostat. Note: Europe refers to the Eurozone.

- Electrification of China's car fleet is quickly gaining pace, with EVs reaching close to 30% of total passenger car sales in 2022. There are now more than 13 million EVs on the country's roads and a further 7 million are expected to be added this year. But even as EV sales accelerate, they are still some way off outpacing sales of ICE vehicles. While EV sales could reach around 10 million by mid-decade, there are still likely to be 10 million ICE vehicles being added to the fleet each year.
- At the same time, the turnover rate of gasoline and diesel vehicles in China significantly lags sales. According to BloombergNEF's Electric Vehicle Outlook, an average of 3 million passenger cars were retired annually between 2017 and 2021 – in other words, just 1.2% of the total fleet – well below the roughly 20 million new gas guzzlers that appeared on the road over this period.
- Even assuming a more aggressive retirement rate of 2% per year, the ICE passenger car fleet would still grow by more than 60 million units by 2030, according to BNEF's projected sales. It's unlikely that China's ICE passenger car fleet will reach a turnover rate that would offset the sales of new vehicles in the years ahead. The country's passenger car fleet is relatively young, with most of its 250 million units having been purchased over the past decade. Meanwhile, the share of SUVs – which have a longer lifespan – has also increased rapidly in recent years.
- In addition, the number of people who purchase a car is likely to expand as China's per-capita ownership of passenger cars remains low at about 20%, compared to more than 50% in most OECD countries.
- The proportion of gasoline and diesel vehicles in China's commercial fleet also continues to expand at an even more rapid pace as trucks are more difficult to electrify.

Published March 2, 2023

6 BloombergNEF Oil: The Month in Short, March 2023 BloombergNEF

Source: BloombergNEF

Energy Transition: Woodside CEO reminds coal retirements = more natural gas

Coal retirements = more natural gas

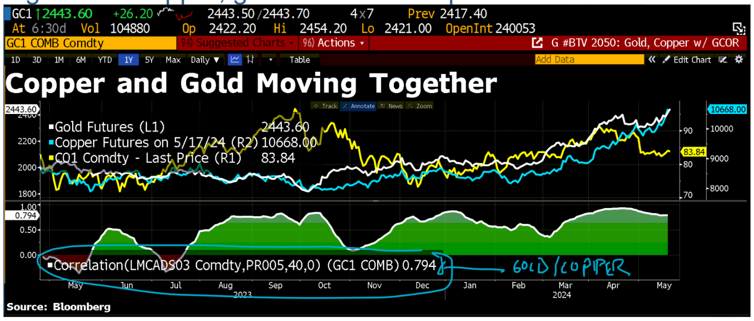
The driving force for how countries like UK cut emissions was replacing coal power generation with natural gas power generation as baseload power generation. Plus there is the increasing need for natural gas to fill in for intermittency of increasing renewable power. Woodside CEO Meg O'Neill reminded of this basic of natural gas replacing coal as coal plants continue be retired and therefore increasing the need for natural gas to offset the intermittent solar and wind generation. On Wednesday, we tweeted [LINK] "*Energy Transition 101. Retiring #Coal power generation = increased need for #NatGas power. "And, importantly when coal fired power stations start coming out of the mix, we need more gas to back up renewables than we're using today" Woodside CEO Thx @PaulAllenLive #OOTT.*" Our tweet included the transcript we made of O'Neill's comments. SAF Group created transcript of comments by Woodside Energy CEO Meg O'Neill with Bloomberg's Paul Allen in Perth, Australia on May 21, 2024 [LINK]. Items in "*italics*" are SAF Group created transcript. At 0:00 min mark, O'Neill "*The Australian energy market operator has been forecasting for some time now that there is a gap arising between the demand for natural gas and the supply that's available. I think there are other factors that are going to cause that potential gap to widen even further. Things like electrification as heavy industry moves to reduce emissions and moves to lower carbon intensity sources of power. Processing for critical minerals. And, importantly when coal fired power stations start coming out of the mix, we need more gas to back up renewables than we're using today. So the demand picture and the gap is clear*."

Capital Markets: Copper and Gold moving together to record highs

Copper and gold prices

One of the key market stories for the past few months has been how copper and gold keep roaring to new record highs. And early morning, Bloomberg TV had a good copper and gold graph and we tweeted [LINK] *"#Copper & #Gold both keep moving together and charging to new highs. I added Brent #Oil to the @business chart as of 4:25am MT. Brent was >$90 on Apr 16 but has backed off to low $80s. #OOTT."* The Bloomberg graph was on how copper and gold prices have been moving together lately with a 0.794 R2., We added Brent oil price to the graph to remind how oil has been moving down when copper, gold and some other commodities keep ramping up.

Figure 64: Copper, gold and Brent oil prices



Source: Bloomberg

IFIC Cdn mutual fund data

Capital Markets: IFIC, mutual funds equity & balanced funds back to net redemptions

We have been highlighting the big change to Cdn mutual funds that started in Q2/22 – when there started a shift from net sales to massive net redemptions in balanced and equity funds. What started in H2/22 played out even bigger in 2023 and is continuing into 2024. On Wednesday, IFIC (Investment Funds Institute of Canada) reported mutual funds and ETF sales for April [LINK]. IFIC reported net redemptions (sale of positions) for balanced mutual funds were -$3,498b in April vs net redemptions of -$2.727b in March. This brings the YTD figure for Balanced net redemptions to -$11,572. Equity funds saw redemptions of -$0.015b in April, after net sales of $0.792 in March and $1.548b of sales in February. For equity funds, there was a return to net redemptions of -$0.807b MoM from March. Recall February was the first net sales in equity funds in 12 months and March followed with small net sales in equity funds. But April was a return to net redemptions. Our Supplemental Documents package includes the IFIC release.

Figure 65: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual fund net sales/net redemptions ($ millions)*

Asset class	Apr 2024	Mar 2024	Apr 2023	YTD 2024	YTD 2023
Long-term funds					
Balanced	(3,498)	(2,727)	(3,940)	(11,572)	(13,452)
Equity	(15)	792	(2,777)	1,273	(5,033)
Bond	366	1,688	858	7,564	7,165
Specialty	720	626	284	2,687	1,453
Total long-term funds	(2,428)	379	(5,574)	(49)	(9,866)
Total money market funds	(281)	(107)	992	60	5,109
Total	(2,708)	272	(4,582)	11	(4,757)

Source: IFIC

There were massive redemptions in Cdn active equity/balanced funds in 2023

2023 was a brutal year for net redemptions for Cdn balanced and equity funds and even more than in 2022. Here is what we wrote in our Jan 28, 2024 Energy Tidbits memo. *On Friday, we tweeted [LINK] "Brutal year for net redemptions in balanced and equity mutual funds in Canada. @ific reflects $82.5 billion net redemptions including $56.9b from balanced mutual funds and $25.6b from equity mutual funds. #OOTT." One of the big Cdn equity stories in 2022 continued to play out in an even bigger way in 2023 – the continued net redemptions from active managed Cdn equity and balanced mutual funds. This flipped in Q2/22 from massive net sales into balanced and equity mutual funds to massive net redemptions in equity and balanced mutual funds. This year, the 2023 net redemption total dwarfed those in 2022. On Wednesday, IFIC (Investment Funds Institute of Canada) reported [LINK] mutual funds and ETF sales for November. IFIC reported net redemptions for balanced mutual funds were $4.612b in December vs $6.510b in November and $8.569b in October. IFIC also reported net redemptions for equity mutual funds were $2.514b vs net redemptions of $3.178b in November and $4.142b in October. This means, barring any major revisions, that in 2023 there were $82.5b of net redemptions in balanced and equity mutual funds! This is more than double the net redemptions of 2022.*

Figure 66: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual fund net sales/net redemptions ($ millions)*

Asset class	Dec 2023	Nov 2023	Dec 2022	2023	2022
Long-term funds					
Balanced	(4,612)	(6,510)	(4,935)	(56,866)	(29,959)
Equity	(2,514)	(3,178)	(3,069)	(25,568)	(8,461)
Bond	845	(435)	(2,187)	6,986	(13,811)
Specialty	176	391	102	3,538	1,306
Total long-term funds	(6,105)	(9,732)	(10,088)	(71,909)	(50,925)
Total money market funds	790	1,227	1,802	14,825	7,196
Total	(5,315)	(8,506)	(8,286)	(57,084)	(43,729)

Source: IFIC

Capital Markets: USDA Consumer Price Index April for food +0.4% MoM, +3.4% YoY

USDA CPI for food +3.4% YoY

We recognize that the USDA consumer food price index is a much better indicator for grocery store prices than the UN's food commodity price index. But we still continue to believe the actual prices at the grocery stores are way higher than indicated by the USDA. And we highly doubt anyone who buys groceries would think grocery prices are only up 3.4% YoY. On Friday, the USDA posted its April Consumer Price Index for food [LINK], which reported the all-items Consumer Price Index (CPI) was +0.4% MoM and +3.4% YoY in April. The +3.4% YoY increase in the Consumer Price Index has a relative weighting for the various food categories. Beef and veal were up +0.8% MoM, +7.0% YoY, and are expected to increase +4.0% over 2024, farm-level vegetables are down -18.7% MoM, -23.9% YoY, and expected to increase 0.2% in 2024, retail eggs are -3.9% MoM and -9.0% YoY, and expected to increase 1.8% in 2024, and wholesale pork prices are +2.9% MoM, +18.3% YoY and are expected to increase +10.2% over 2024. It is important to note the USDA said that the "*Food prices are expected to continue to decelerate in 2024 compared to recent years. In 2024, all food prices are predicted to increase 2.2 percent, with a prediction interval of 1.0 to 3.5 percent. Food-at-home prices are predicted to increase 1.2 percent, with a prediction interval of -0.7 to 3.1 percent, and food-away-from-home prices are predicted to increase 4.2 percent, with a prediction interval of 3.4 to 4.9 percent."*

Demographics: Florida experienced housekeepers now $100 to $150k

Florida housekeepers income

We are in the camp that still expects to see wage pressures, in particular at the lower levels, continue in 2024. It's like the recent increase in minimum wages at California major fast food chains and how that has to trickle down to other fast food workers in smaller places and to other sectors. And that feeling is reinforced when we were watching CNBC Squawk Box on Thursday morning and couldn't help tweeting [LINK] "*Rich people problem! Is how my mom would have described this @robtfrank report experienced housekeepers in Florida now making $100 to $150k. Will impact more than the really rich. @BeckyQuick reminds trickle down impact ie. will pull up wages for all levels of housekeepers."* If experienced housekeepers in Palm Beach are making $100 to $150k, that has to have a trickle down impact on housekeepers in other parts of Florida. Our tweet included a video clip of the Robert Frank report.

Twitter: Thank you for getting me to 11,000 followers

@Energy_Tidbits on Twitter

Last week, I went over 11,000 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

Look for energy items 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].

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.

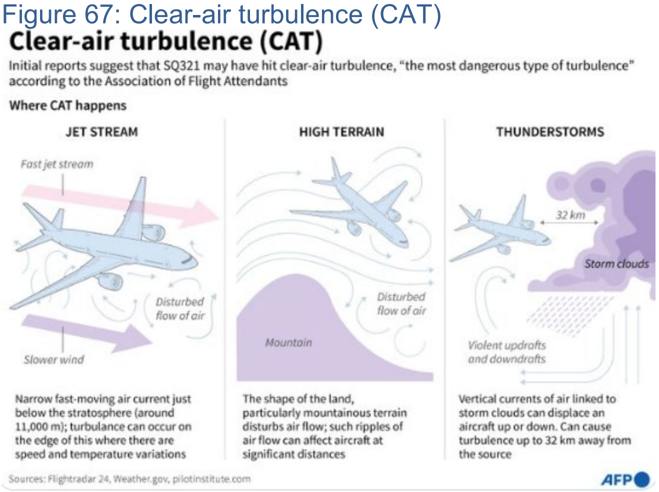
Good reminder from Dolphins coach Mike McDaniel on public comments

It's the slow time for NFL news, a month after the NFL draft and months until the season kicks off. So the most publicized story was on Kansas City Chiefs kicker Harrison Butker's address at a commencement last week. He was heavily criticized for his views. But the comment we thought mentioning was Miami Dolphins Head Coach Mike McDaniel reminder on making public comments. Profootball Talk wrote "*On Tuesday, Dolphins coach Mike McDaniel was asked about the Butker situation. Specifically, how does McDaniel handle political issues that make their way into the locker room? "I think you do have to open the eyes of the players to their platform if they're new to the situation," McDaniel told reporters. "I think you have to understand that what you say publicly can be fragmented and last with you forever. I really* *emphasize that whatever you're going to say, you better believe it. You just try to educate people to understand the consequences of whatever they do. They have the freedom of choice, and if they want to go that direction, go right ahead." McDaniel is right. Whatever you say when expressing political opinions, you'd better damn sure believe it. Because it will basically be a tattoo on your public persona."*

Clear-air turbulence is less of a problem for people who fly private

We can't believe how traumatic it would have been for the passengers on the Singapore Airlines flight that hit clear air turbulence that resulted in one passenger death and many injured. One thing came to mind in seeing the AFP tweet explaining Clear-air turbulence (CAT) [LINK] was how one of the CAT causes, the Jet Stream, will impact commercial airlines more than private jets. AFP explains the jet stream impact "*narrow fast-moving air current just below the stratosphere (around 11,000 m); turbulence can occur on the edge of this where there are speed and temperatures variations*." 11,000 meters is 36,000 ft and the sweet spot where commercial airlines fly as opposed to private jets that fly more around ~43,000 ft.

Figure 67: Clear-air turbulence (CAT)



Source: AFP News Agency