Energy Tidbits

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No Shortage of LNG Buyers for Post-2026 Supply, Qatar Expects Multiple Deals Including with Europeans

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. Our 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 our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector. Our target is to write on 48 to 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. We extended our normal 7am MT news cut off to 9am MT for OPEC+ news but no news yet as the ministerial meeting only just now started.

2. No shortage of LNG buyers for post 2026 supply, Qatar expects multiple deals including with European customers. (Click here)

3. Iran says condensate floating oil storage is all gone, didn't specifically address floating oil storage. (Click here)

4. US natural gas hit another new record being +6.8 bcf/d YoY to 102.3 bcf/d in March. (Click here)

5. EIA actuals for March US oil production of 12.696 mmb/d are +473,000 b/d vs EIA weekly estimates and +995,000 b/d YoY. (Click here)

6. Pease 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 – +110 bcf build in US gas storage; now 557 bcf YoY surplus

US gas storage 557 bcf YoY surplus

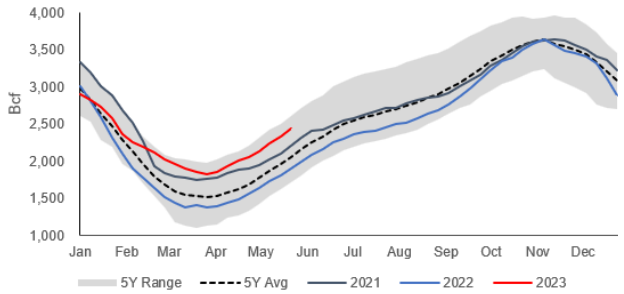
Weather and strong YoY natural gas production continue to lead to an increasing YoY surplus in gas storage. It's May so it's the normal natural gas injection season absent some unusual event. For the week of May 26, the EIA reported a +110 bcf build (under the expectations of a 107 bcf build), compared to the +87 bcf build reported for the week of May 26 last year. This is a slight increase from last week's build of +96 bcf, and a big increase vs the 5-year average build of +43 bcf. Total storage is now 2.446 tcf, representing a surplus of +557 bcf YoY compared to a surplus of +529 bcf last week and is +349 bcf above the 5-year average, in line with the +340 bcf above last week. Below is the EIA's storage table from its Weekly Natural Gas Storage report [LINK].

Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Year ago (05/26/22)		5-year average (2018-22)	
Region	05/26/23	05/19/23	net change	implied flow	Bcf	% change	Bcf	% change
East	522	489	33	33	342	52.6	399	30.8
Midwest	577	546	31	31	421	37.1	457	26.3
Mountain	127	120	7	7	112	13.4	121	5.0
Pacific	151	139	12	12	199	-24.1	231	-34.6
South Central	1,070	1,042	28	28	814	31.4	888	20.5
Salt	304	294	10	10	249	22.1	278	9.4
Nonsalt	766	748	18	18	566	35.3	610	25.6
Total	**2,446**	**2,336**	**110**	**110**	**1,889**	**29.5**	**2,097**	**16.6**

Source: EIA

Figure xx: US Natural Gas Storage – Historical vs Current



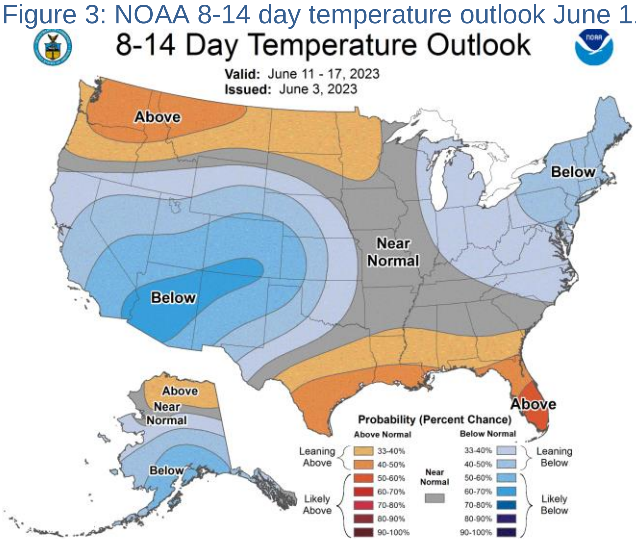
Source: EIA, SAF

Natural Gas – NOAA 8-14 day temperature outlook is no major weather driven demand

NOAA 8-14 day outlook

May is over and we are moving in to the hot months of the summer. But it looks like the 1st half of June will see the majority of the US having normal to below normal temperatures for June 9-17. Note that it looks to be turning hot along the Gulf Coast in mid June. But for the most part, normal to below normal temperatures won't drive huge A/C demand. Every day normally by 1pm MT, NOAA posts updated its 6-10 and 8-14 day temperature outlooks. Yesterday, we tweeted [LINK] "*Today's @NOAA 6-10 & 8-14 day outlook covering June 9-17 calls for majority of US to move to normal/below normal. Should keep pressure on HH #NatGas prices. #OOTT.*"

Figure 3: NOAA 8-14 day temperature outlook June 11-17



Source: NOAA

US March gas production hits all-time high

Natural Gas – US dry gas production hits all-time high in March at 102.3 bcf/d

Apart from winter, the big negative to HH and AECO natural gas prices is the continued huge growth in US natural gas production. The big picture natural gas story is unchanged this month in that US natural gas supply, driven by shale/tight natural gas, continues to be up significantly YoY and has hit an all-time high of 102.3 bcf/d in March. As a precursor to the key takeaways from this month's Natural Gas Monthly, it is important to note that in our April 30, 2023 Energy Tidbits we pointed out that Feb's (+7.0 bcf/d YoY to 101.5 bcf/d) was the all time high for monthly production in February. However, Feb's data was revised up by +0.4 bcf/d to 101.9 bcf/d since then. With that in mind, the EIA released its Natural Gas Monthly on Wednesday [LINK], which includes its estimated "actuals" for March's dry gas production. Key items to note are as follows: (i) March's production of 102.3 bcf/d was up +6.8 bcf/d YoY from 95.4 bcf/d in March 2022 and +0.4 bcf/d MoM from Feb's revised production of 101.9 bcf/d. (ii) This puts March's production at a 10+ year high vs the next closest of 101.5 bcf/d in Feb and 101.3 bcf/d in Jan. (iii) In addition to being up +0.4 bcf/d MoM and +6.8 bcf/d YoY, Mar's production came in +15.7 bcf/d higher than the Covid low of 86.2 bcf/d in Feb 2021. Our Supplemental Documents package includes excerpts from the EIA Natural Gas Monthly.

Figure 4: US Dry Natural Gas Production

bcf/d	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Jan	56.0	60.0	66.0	65.3	66.8	73.4	73.6	70.6	78.7	89.4	95.1	92.8	95.3	101.3
Feb	57.2	58.8	67.0	65.4	68.4	73.8	77.3	71.5	80.4	90.0	98.1	86.2	94.5	101.5
March	57.3	61.5	65.0	65.3	68.9	74.1	73.8	73.2	81.3	90.6	94.6	92.3	95.4	102.3
Apr	57.6	62.3	64.8	66.1	70.5	75.2	73.7	73.3	81.2	91.0	92.9	93.2	96.5	
May	58.0	62.4	65.0	65.9	70.2	74.1	72.9	73.3	82.1	91.7	87.8	93.0	97.7	
June	57.2	62.1	64.6	65.8	70.5	74.0	72.2	74.0	82.5	92.0	88.4	93.2	98.5	
July	58.2	62.5	66.3	67.1	72.0	74.2	72.8	74.7	84.2	92.5	89.8	93.7	98.5	
Aug	58.9	63.2	66.0	66.9	72.4	74.3	72.2	74.7	85.9	94.8	90.2	94.3	99.3	
Sept	59.1	63.1	66.4	66.8	72.4	74.7	71.7	76.0	87.3	94.7	89.5	93.6	100.5	
Oct	60.1	65.1	66.5	67.0	73.1	74.2	71.4	77.3	88.4	96.0	88.9	95.6	100.6	
Nov	60.1	65.9	66.6	67.7	72.6	73.9	72.0	79.8	89.9	96.7	92.0	97.0	101.0	
Dec	61.0	65.6	66.0	66.5	73.2	73.9	71.2	80.4	89.5	97.0	92.5	97.0	99.3	
Average	58.4	62.7	65.9	66.3	70.9	74.2	72.9	74.9	84.3	93.0	91.6	93.5	98.1	101.7

Source: EIA, SAF

Natural Gas – US pipeline exports to Mexico up +0.3 bcf/d MoM to 5.7 bcf/d in Mar

US pipeline exports to Mexico up MoM

The EIA Natural Gas Monthly also provides its "actuals" for gas pipeline exports to Mexico [LINK], which were 5.7 bcf/d in March, up +0.3 bcf/d MoM from 5.4 bcf/d in Feb and is up +0.2 bcf/d YoY from 5.5 bcf/d in March 2022. The EIA doesn't provide explanation for the MoM increase, and we expect to see volumes continue to increase as we move into the summer. January's data was revised up by +0.1 bcf/d to 5.3 bcf/d, there are no other revisions to note at this time. Mexico's relatively unchanged production over the past five years has created the need for increased US pipeline exports as Mexico builds out its domestic natural gas infrastructure. Below is our table of the EIA's monthly gas exports to Mexico.

Figure 5: US Dry Natural Gas Production

bcf/d	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Jan	1.7	2.2	3.2	3.9	4.4	4.9	5.2	5.6	5.7	5.2
Feb	1.8	2.3	3.5	4.0	4.5	4.8	5.4	4.9	5.5	5.4
March	1.9	2.4	3.3	4.2	4.3	4.8	5.4	5.9	5.5	5.7
Apr	1.9	2.6	3.5	3.7	4.4	4.7	4.6	6.1	5.9	
May	2.0	2.8	3.7	4.0	4.4	5.0	4.7	6.2	6.0	
June	2.2	3.0	3.9	4.5	4.6	5.2	5.4	6.6	6.1	
July	2.2	3.3	4.0	4.4	4.9	5.4	5.8	6.4	6.1	
Aug	2.1	3.3	4.3	4.4	5.0	5.4	6.0	6.2	5.8	
Sept	2.2	3.3	4.1	4.2	5.0	5.4	6.1	6.0	5.6	
Oct	1.9	3.2	4.2	4.2	4.9	5.5	6.0	6.0	5.5	
Nov	1.9	3.0	4.0	4.5	4.7	5.3	5.5	5.5	5.4	
Dec	2.1	3.2	3.6	4.4	4.5	4.9	5.3	5.4	5.1	
Full Year	2.0	2.9	3.8	4.2	4.6	5.1	5.5	5.9	5.7	5.5

Source: EIA, SAF

What if TC is right that Mexico attracts +3 bcf/d of Permian by 2030?

Here is what we wrote in our Dec 18, 2022 Energy Tidbits memo. *"It won't affect stock trading, but for those that look at capital allocation on a mid to long term basis or look at tail-end risks/opportunities, the question of Mexico's natural gas infrastructure build-out is worth tracking. We had the opportunity to listen to a major energy analysis group recent US natural gas outlook and it didn't include any slides or commentary on the potential (or expectation by some) for Mexico to ramp up its natural gas pipeline imports from the Permian in the 2020s. It's something that most either overlook or discount or just don't care about, but a factor that could a material impact on the US natural gas view. TC Energy is probably the driving force behind much of Mexico's domestic natural gas pipeline infrastructure build-out and has a very bullish view that Mexico will attract an additional +3 bcf/d to 2030. If they are right, this will attract Permian natural gas, and that means there will be less Permian natural gas for LNG export. And will raise the question is there enough natural gas to support the growth in US LNG exports? And, since US LNG export growth, it means that there will be a need to try to get Appalachia natural gas down to the Gulf Coast. And, or course, TC Energy has the solution for that. But you can see how the TC view on Mexico has a very big impact on US natural gas in the 2020s, if not necessarily in the next couple years. We highlighted this in our Dec 4, 2022 Energy Tidbits."*

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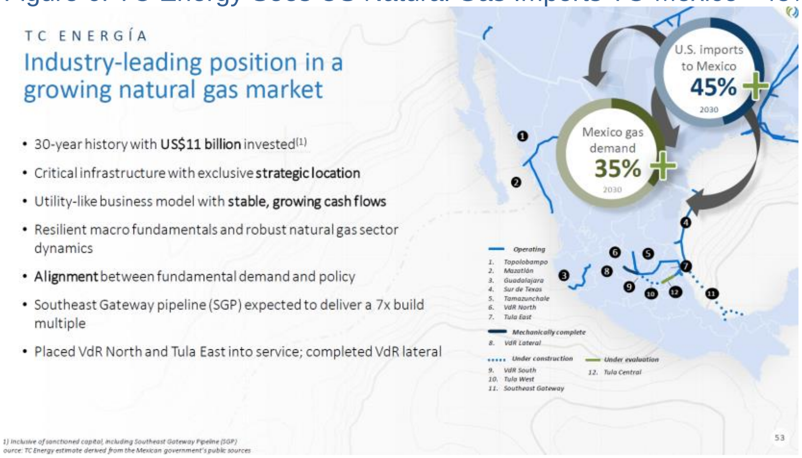
TC Energy sees Permian natural gas +3 bcf/d to Mexico by 2030

Here is what we wrote in our Dec 4, 2022 Energy Tidbits. "*One overlooked upside to US natural gas in the 2020s is that the growth Mexico infrastructure projects are starting to kick in. Yesterday, we tweeted [LINK] "Positive for US #NatGas for 2020s. It's not just increasing #LNG exports, it's also Mexico. Mexico #NatGas demand from 9 bcfd to 12 bcfd in 2030. @TCEnergy expects MEX #NatGas pipeline imports from Permian +45% from 6 bcfd in 2022 to 9 bcfd by 2030. #OOTT." The growth in Mexico natural gas demand is a big plus to the Permian. For the last few years, every time we write on Mexico's natural gas production, we say it is still stuck below 5 bcf/d and that any increase in Mexico natural gas demand has to be met by increasing natural gas or LNG imports. For the past 5+ years, other than a few months, Mexico gas production was below 5 bcf/d. Mexico's natural gas demand growth and growing infrastructure was one of the key growth themes at TC Energy's investor day on Tuesday. Mgmt's slide deck included the below slide and mgmt said "We expect Mexican natural gas demand to increase by 3% per year across the country from 9 Bcf to 12 Bcf in 2030, with strategic government projects creating over 1 Bcf a day of incremental gas demand in the southeast alone by 2025. Now given Mexico's limited natural gas production, this increase in demand will likely be served by supplies in the U.S. and more specifically the Permian as we believe Mexican imports from the Permian are likely to increase by 45% from 6 Bcf a day in 2022 to 9 Bcf by 2030."*

Figure 6: TC Energy Sees US Natural Gas Imports TO Mexico +45% to 2030



Source: TC Energy

Natural Gas – US LNG exports up +1.5% MoM to 11.8 bcf/d in Mar; +1.5% YoY

US Mar LNG exports

The May EIA Natural Gas Monthly estimates US LNG exports for March were 11.8 bcf/d, up +0.1 bcf/d MoM from 11.7 bcf/d in Feb and was up +0.1 bcf/d from 11.7 bcf/d in March 2022. March was expected to be up small and April up more with the restart of Freeport LNG in March and reaching full operations in April the month-end timing for the EIA Natural Gas Monthly is also a reminder that the US LNG export data is available about two weeks prior to the Natural Gas Monthly. The EIA is a group under the Dept of Energy, and the Dept of

Energy posts its LNG Monthly about two weeks before the EIA's Natural Gas Monthly. The data for LNG exports is either identical or just a rounding issue. In our May 21, 2023 Energy Tidbits memo, we wrote '*On May 15, the Department of Energy posted its US LNG exports estimates for March [LINK] at 11.8 bcf/d which is +0.100 bcf/d MoM and +0.100 bcf/d YoY. This is a reminder that the US LNG export data is available about two weeks prior to the more popularly referenced US LNG exports from the Natural Gas Monthly. The EIA is a group under the Dept of Energy, and the Dept of Energy posts its LNG Monthly about two weeks before the EIA's Natural Gas Monthly. The data for LNG exports is either identical or just a rounding issue. On Wednesday we tweeted [LINK] "US #LNG exports Mar/23 of 11.8 bcfd, up marginal YoY & MoM. #FreeportLNG feedstock ramp in Mar, LNG exports ramp up in Apr. Mar/23 top 5 export markets: UK, Dutch, Spain, France, Germany Mar/22 top 5 export markets: France, Spain, UK, Dutch, Korea This DOE LNG export data is 2 wks before @EIAgov Natural Gas Monthly data. #OOTT". Our Supplemental Documents package includes excerpts from the DOE LNG Monthly.*'\

Figure 7: US LNG exports

(bcf/d)	2016	2017	2018	2019	2020	2021	2022	2023
Jan	0.0	1.7	2.3	4.1	8.1	9.8	11.4	10.9
Feb	0.1	1.9	2.6	3.7	8.1	7.4	11.3	11.7
March	0.3	1.4	3.0	4.2	7.9	10.4	11.7	11.8
Apr	0.3	1.7	2.9	4.2	7.0	10.2	11.0	
May	0.3	2.0	3.1	4.7	5.9	10.2	11.3	
June	0.5	1.7	2.5	4.7	3.6	9.0	10.0	
July	0.5	1.7	3.2	5.1	3.1	9.7	9.7	
Aug	0.9	1.5	3.0	4.5	3.6	9.6	9.7	
Sept	0.6	1.8	2.7	5.3	5.0	9.5	9.8	
Oct	0.1	2.6	2.9	5.7	7.2	9.6	10.0	
Nov	1.1	2.7	3.6	6.4	9.4	10.2	10.1	
Dec	1.3	2.7	4.0	7.1	9.8	11.1	11.0	
Full Year	0.5	1.9	3.0	5.0	6.6	9.7	10.6	11.5

Source: EIA, SAF

April should see larger impact on LNG exports from Freeport LNG restart
Here is what we wrote in our April 23, 2023 Energy Tidbits memo. "*Natural gas deliveries to Freeport LNG averaged >2 bcf/d so far in April. US LNG exports will see an increase in March and then also again in April with the restart of Freeport LNG Freeport did not get the full approval for a restart until late Feb and so natural gas deliveries only ramped up in March before returning to full levels in the beginning of April. Bloomberg regularly reports on natural gas delivers (not LNG output) to all US LNG export facilities. Bloomberg reported natural gas deliveries to Freeport hit 1.94 bcf/d on March 31 and deliveries for March averaged 1.10 bcf/d. But for April, Bloomberg reports that natural gas deliveries to Freeport LNG have averaged >2 bcf/d.*"

Natural Gas – Another long-term LNG deal: Qatar Energy & Bangladesh sign LT SPA

QatarEnergy & Bangladesh sign LT SPA

There was a significant slowdown in long-term LNG deals in since the end of H1/22 compared to the activity seen from July 1, 2021 through June 30, 2022. That's because most, if not all the available long term LNG supply available before 2026 was locked up in the July 1, 2021 through June 30, 2022 rush. Rather, the long-term deals now being done are generally for long-term supply starting in 2026 or later. And the other significant item to note is that these long-term deals are going out close to 2050. There was one long term LNG deal announced this week. On Thursday, Qatar Energy announced that it has agreed to enter into a long-term LNG sale and purchase agreement with Bangladesh Oil [LINK]. The deal is set to begin in 2026 and end in 2031, with Bangladesh purchasing ~0.24 bcf/d annually. Qatar Energy commented, *"Qatar currently delivers more than 3.5 million tons per annum of LNG to Bangladesh. With this new SPA, Qatar Energy reaffirms its position as the LNG supplier of choice for its partners in the South Asia LNG markets."* Qatar Energy's North Field Expansion plan includes 6 LNG trains, estimated to increase LNG capacity by 64% from 10.1 bcf/d to 16.5 bcf/d by 2027. The Sabine Pass SPL expansion project is under development with plans to include up to three LNG trains, with an expected total production capacity increase of +2.6 bcf/d. Our Supplemental Documents package includes the Qatar Energy release.

Qatar says have lots of potential new buyers besides Bangladesh

Our initial thought on seeing the Qatar deal with Bangladesh was wondering if a deal with Bangladesh represents a sign that there is a lack of perceived higher quality buyers in Asia and Europe for long term LNG supply post 2026. Ie. was the buyer market thinning out? We don't know the specifics of the contract but, we doubt anyone would look at Bangladesh as a prime buyer. We have to believe Qatar Energy might have thought some would feel this way so it was fortunate (planned?) to have, at the media event for the Bangladesh deal, Gulf Times (Qatar news) ask the right question to let Qatar Energy reassure that there are a lot of prime buyers in Asia and Europe. Qatar Energy made a point at the media event for the Bangladesh deal to say they are dealing with a range of new customers in both Asia and Europe that, if get done, would mean all their expansion capacity could be allocated. Those additional comments provide support that there are still many more prime buyers for new LNG capacity post 2026 startup. The following item in the memo goes into these other potential LNG buyers.

Asia was early to secure long term LNG supply

Our March 13, 2022 Energy Tidbits memo noted that Europe LNG buyers were starting 9 months behind the wave of Asian LNG buyers who started to lock up long term LNG supply starting in July 2021. The LNG supply crunch is not a 2022 development. Rather, it was clear in H1/21 that there was a major sea change in LNG outlook. We turned very bullish on LNG outlook for the 2020s once TotalEnergies went force majeure on its Mozambique LNG in April 2021. We posted our April 28, 2021 blog *"Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?"* as we thought the market had overlooked that this force majeure backed up 5.0 bcf/d of Mozambique LNG that was originally planned to start in phases in 2024. And that this would create an earlier and larger LNG supply gap in the mid 2020s. Then we started to see validation of this view when Asian LNG buyers in July made an abrupt change to their LNG contracting and pivoted to trying to lock in long term LNG supply. On July 14, 2021 we posted our 8-pg "*Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs".* Here is an excerpt from the blog "*The last 7 days has shown there is a sea change as Asian LNG buyers have made an abrupt change in their LNG contracting and are moving to lock in long term LNG supply. This is the complete opposite of what they were doing pre-Covid when they were trying to* *renegotiate Qatar LNG long term deals lower and moving away from long term deals to spot/short term sales. Why? We think they did the same math we did in our April 28 blog "Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?" and saw a much bigger and sooner LNG supply gap driven by the delay of 5 bcf/d of Mozambique LNG that was built into most, if not all LNG supply forecasts. Asian LNG buyers are committing real dollars to long term LNG deals, which we believe is the best validation for the LNG supply gap. Another validation, Shell, Total and others are aggressively competing to invest long term capital to partner in Qatar Petroleum's massive 4.3 bcf/d LNG expansion despite plans to reduce fossil fuels production in the 2020s. And even more importantly to LNG suppliers, the return to long term LNG contracts provides the financing capacity to commit to brownfield LNG FIDs. The abrupt change by Asian LNG buyers to long term contracts is a game changer for LNG markets and sets the stage for brownfield LNG FIDs likely as soon as before year end 2021. It has to be brownfield LNG FIDs if the gap is coming bigger and sooner. And we return to our April 28 blog point, if brownfield LNG is needed, what about Shell looking at 1.8 bcf/d brownfield LNG Canada Phase 2? LNG Canada Phase 1 at 1.8 bcf/d capacity is already a material positive for Cdn natural gas producers. A FID on LNG Canada Phase 2 would be huge, meaning 3.6 bcf/d of Cdn natural gas will be tied to Asian LNG markets and not competing in the US against Henry Hub. And with a much shorter distance to Asian LNG markets. This is why we focus on global LNG markets for our views on the future value of Canadian natural gas."* Our Supplemental Documents package includes our April and July blogs.

There have been 14.70 bcf/d of long-term LNG supply deals since July 1, 2021
We first highlighted this abrupt shift to long term LNG supply deals in our July 14, 2021 8-pg "*Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs".* We included a table of the deals done in that short two week period. We continue to update that table, which now shows 14.70 bcf/d of long term LNG deals since July 1, 2021. 67% of the deals have been by Asian LNG buyers, but we are now seeing rest of world locking up long term supply deals post Russia/Ukraine. Note in our non-Asian LNG deals will major LNG players (ie. Chevron, Shell, etc) buying for their LNG portfolio supply. China has been particularly active in this space, accounting for 75% of all Asian LNG buyers in long term contracts since July 1, 2021. Below is our updated table of Asian and Europe LNG buyers new long-term supply deals since July 1, 2021.

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Figure 8: Long-Term LNG Buyer Deals Since July 1, 2021

Long-Term LNG Buyer Deals Since July 1, 2021							
Date	Buyer	Seller	Country Buyer / Seller	Volume (bcf/d)	Duration Years	Start	End
Asian LNG Deals							
Jul 7, 2021	CNOOC	Petronas	China / Canada	0.30	10.0	2022	2032
Jul 9, 2021	CPC	QatarEnergy	Taiwan / Qatar	0.16	15.0	2022	2037
Jul 9, 2021	Guangzhou Gas	BP	China / US	0.13	12.0	2022	2034
Jul 12, 2021	Korea Gas	QatarEnergy	Korea / Qatar	0.25	20.0	2025	2045
Sep 29, 2021	CNOOC	QatarEnergy	China / Qatar	0.50	15.0	2022	2037
Oct 7, 2021	Shenzhen	BP	China / US	0.04	10.0	2023	2032
Oct 11, 2021	ENN	Cheniere	China / US	0.12	13.0	2022	2035
Nov 4, 2021	Unipec	Venture Global LNG	China / US	0.46	20.0	2023	2043
Nov 4, 2021	Sinopec	Venture Global LNG	China / US	0.53	20.0	2023	2043
Nov 5, 2021	Sinochem	Cheniere	China / US	0.12	17.5	2022	2040
Nov 22, 2021	Foran	Cheniere	China / US	0.04	20.0	2023	2043
Dec 6, 2021	Guangdong Energy	QatarEnergy	China / Qatar	0.13	10.0	2024	2034
Dec 8, 2021	S&T International	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 10, 2021	Suntien Green Energy	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 15, 2021	SPIC Guangdong	BP	China / US	0.03	10.0	2023	2033
Dec 20, 2021	CNOOC Gas & Power	Venture Global LNG	China / US	0.26	20.0	2023	2043
Dec 29, 2021	Foran	BP	China / US	0.01	10.0	2023	2032
Jan 11, 2022	ENN	Novatek	China / Russia	0.08	11.0	2024	2035
Jan 11, 2022	Zhejiang Energy	Novatek	China / Russia	0.13	15.0	2024	2039
Feb 4, 2022	CNPC	Gazprom	China / Russia	0.98	30.0	2023	2053
Mar 24, 2022	Guangdong Energy	NextDecade	China / US	0.20	20.0	2026	2046
Mar 29, 2022	ENN	Energy Transfer	China / US	0.36	20.0	2026	2046
Apr 1, 2022	Guangzhou Gas	Mexico Pacific Ltd	China / Mexico	0.26	20.0	n.a.	n.a.
Apr 6, 2022	ENN	NextDecade	China / US	0.26	20.0	2026	2026
Apr 22, 2022	Kogas	BP	Korea / US	0.20	18.0	2025	2043
May 2, 2022	Gunvor Singapore Pte	Energy Transfer LNG	Singapore / US	0.26	20.0	2026	2046
May 3, 2022	SK Gas Trading LLC	Energy Transfer LNG	Korea / US	0.05	18.0	2026	2042
May 10, 2022	Exxon Asia Pacific	Venture Global LNG	Singapore / US	0.26	n.a.	n.a.	n.a.
May 11, 2022	Petronas LNG	Venture Global LNG	Malaysia / US	0.13	20.0	n.a.	n.a.
May 24, 2022	Hanwha Energy	TotalEnergies	Korea / France	0.08	15.0	2024	2039
May 25, 2022	POSCO International	Cheniere	Korea / US	0.05	20.0	2026	2036
June 5, 2022	China Gas Holdings	Energy Transfer	China / US	0.09	25.0	2026	2051
Jul 5, 2022	China Gas Holdings	NextDecade	China / US	0.13	20.0	2027	2047
Jul 20, 2022	PetroChina	Cheniere	China / US	0.24	24.0	2026	2050
Jul 26, 2022	PTT Global	Cheniere	Thailand / US	0.13	20.0	2026	2046
Jul 27, 2022	Exxon Asia Pacific	NextDecade	Singapore / US	0.13	20.0	2026	2046
Sep 2, 2022	Woodside Singapore	Commonwealth	Singapore / US	0.33	20.0	2026	2046
Nov 21, 2022	Sinopec	QatarEnergy	China / Qatar	0.53	27.0	2026	2053
Dec 26, 2022	INPEX	Venture Global LNG	Japan/US	0.13	20.0	n.a.	n.a.
Dec 27, 2022	JERA	Oman LNG	Japan/Oman	0.11	10.0	2025	2035
Jan 19, 2023	ITOCHU	NextDecade	Japan / US	0.13	15.0	n.a.	n.a.
Feb 7, 2023	Exxon Asia Pacific	Mexico Pacific Ltd	Singapore / Mexico	0.26	20.0	n.a.	n.a.
Feb 23, 2023	China Gas Holdings	Venture Global LNG	China / US	0.26	20.0	n.a.	n.a.
Mar 6, 2023	Gunvor Singapore Pte	Chesapeake Energy	Singapore / US	0.26	15.0	2027	2042
Apr 28, 2023	JERA	Venture Global LNG	Japan/US	0.13	20.0	n.a.	n.a.
May 16, 2023	KOSPO	Cheniere	Korea/US	0.05	19.0	2027	2046
Jun 1, 2023	Bangladesh Oil	QatarEnergy	Bangladesh/Qatar	0.24	15.0	2026	2031
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				**9.80**			
Non-Asian LNG Deals							
Jul 28, 2021	PGNiG	Venture Global LNG	Poland / US	0.26	20.0	2023	2043
Nov 12, 2021	Engie	Cheniere	France / US	0.11	20.0	2021	2041
Mar 7, 2022	Shell	Venture Global LNG	US / US	0.26	20.0	2024	2044
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
May 2, 2022	Engie	NextDecade	France / US	0.23	15.0	2026	2041
May 17, 2022	PGNiG	Sempra Infrastructure	Poland / US	0.40	20.0	n.a.	n.a.
May 25, 2022	RWE Supply & Trading	Sempra Infrastructure	Germany / US	0.30	15.0	n.a.	n.a.
Jun 9, 2022	Equinor	Cheniere	Norway / US	0.23	15.0	2026	2041
Jun 21, 2022	EnBW	Venture Global LNG	Germany / US	0.20	20.0	2026	2046
Jun 22, 2022	INEOS Energy	Sempra Infrastructure	UK / US	0.21	20.0	2027	2047
Jun 22, 2022	Chevron	Venture Global LNG	US / US	0.26	20.0	n.a.	n.a.
Jun 22, 2022	Chevron	Cheniere	US / US	0.26	15.0	2027	2042
Jul 12, 2022	Shell	Mexico Pacific Ltd	US / Mexico	0.34	20.0	2026	2046
Jul 13, 2022	Vitol	Delfin Midstream	US / US	0.07	15.0	n.a.	n.a.
Aug 9, 2022	Centrica	Delfin Midstream	UK / US	0.13	15.0	2026	2041
Aug 24, 2022	Shell	Energy Transfer	US / US	0.28	20.0	2026	2046
Oct 6, 2022	EnBW	Venture Global LNG	Germany / US	0.26	20.0	2022	2042
Dec 6, 2022	ENGIE	Sempra Infrastructure	France / US	0.12	15.0	n.a.	n.a.
Dec 20, 2022	Galp	NextDecade	Portugal / US	0.13	20.0	n.a.	n.a.
Dec 20, 2022	Shell	Oman LNG	UK/Oman	0.11	10.0	2025	2035
Jan 25, 2023	PKN ORLEN	Sempra Infrastructure	EU//US	0.13	20.0	2027	2047
Jan 30, 2023	BOTAS	Oman	Turkey / Oman	0.13	10.0	2025	2035
Mar 27, 2023	Shell	Mexico Pacific Ltd	UK / Mexico	0.15	20.0	2026	2046
Apr 24, 2023	Hartree Partners LP	Delfin Midstream	US / US	0.08	20.0	n.a.	n.a.
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				**4.91**			
Total New Long Term LNG Contracts since Jul/21				**14.70**			

Source: SAF

Natural Gas – Qatar expects multiple LNG deals with Europe this summer

Qatar expects LNG deals with Europe soon

As noted above, it's a good thing when the right questions are asked It was interesting to see the comments from Qatar that they expect to sign LNG deals (we assume long term) with multiple European customers over the next few months. Also that if they can close on all the advanced discussions, they could sell out all their capacity of the upcoming North Field East and North Field South LNG projects. That's an "IF", but the point is that Qatar could be announcing a very large amount of future LNG being tied up in the coming months. Yesterday, we tweeted [LINK] "*No shortage in #LNG buyers for post 2026 supply. @qatarenergy CEO. IF can sign everything are negotiating today "big portion of it will be going to Asia, the other will be going to Europe & we will be more than sold out as far as volumes of NFE and NFS are concerned." #OOTT."* Gulf Times (Qatar media) reported on comments by HE the Minister of State for Energy Affairs, Saad bin Sherida al-Kaabi at the media event to announce the above Qatar/Bangladesh deal [LINK]. Gulf Times report was titled "*LNG supply deals with European customers likely after summer: Al-Kaabi*" and wrote "*HE the Minister of State for Energy Affairs, Saad bin Sherida al-Kaabi said on Thursday. "Agreements with several European destinations... are very close to being finalised," he said at a media event at the QatarEnergy headquarters on Thursday. Replying to a question by Gulf Times, al-Kaabi said, "We are talking to many companies in different countries. We are in advanced discussions with some customers. If I put everything that we have on the table and assume that we are going to be successful in signing everything that we are negotiating today, a big portion of it will be going to Asia, the other will be going to Europe and we will be more than sold out as far as volumes of North Field East (NFE) and the North Field South (NFS) are concerned."* Our Supplemental Documents package includes the Gulf Times report.

Natural Gas – Iraq expects TotalEnergies deal to add 0.8 bcf/d from low hanging fruit

Iraq to add 0.8 bcf/d

There was a good Kudaw (Kurdistan news) interview with Iraq Oil Minister Ghani yesterday [LINK] that included the first insight we have seen on how much natural gas production will be added by the recent April 5 deal with TotalEnergiies. It's big at 0.8 bcf/d that looks to be from low-hanging fruit of capturing flared gas. (i) We did not highlight the TotalEnergies press release [LINK] as there was no indication therein or on the TotalEnergies Q1 call as to the volume of additional Iraq natural gas production. TotalEnergies Apr 5 release only said "*to recover flared gas on three oil fields in order to supply gas to power generation plants*," (ii) Yesterday, Ghani said the TotalEnergies deal would increase Iraq natural gas production by 0.8 bcf/d. Kudaw reported "*According to the minister, the contract consists of a facility processing 600 million cubic feet of gas per day, which is expected to be completed in two stages over five years. The agreement was reached after five rounds of talks between TotalEnergies CEO Patrick Pouyanne and Iraqi Prime Minister Mohammed Shia' al-Sudani. The contract was initially signed in 2021 but faced a delay due to disagreements over Iraq's stake in the deal as Baghdad demanded a 40 percent share. A final agreement was reached in early April and TotalEnergies will have the lion's share with a 40 percent stake in the Gas Growth Integrated Project (GGIP), followed by Iraqi state-owned Basra Oil Company with 30 percent, and QatarEnergy with 25 percent. "Gas will be invested from five primary oil fields – the Majnoon field, the West Qurna 2 field, the Luhais field, the Artawi field, and the Tuba field," Ghani said. An increase in crude oil production "within the range of 150,000 to 160,000 barrels per day from the Artawi field" is also part of the deal as well as sulfur extraction from the oil and a seawater station capable of supplying 5 million barrels of water every two days.*

"With the implementation of this contract, the gas flaring in these fields will completely stop," said Ghani."

Natural Gas – Short 9-day downtime for 0.63 bcf/d Norway Hammerfest LNG

Hammerfest 0.63 bcf/d LNG back on June 8

It was good to see for Equinor that it's 0.63 bcf/d Hammerfest LNG (Melkoya, Norway) unplanned shut-in only supposed to last 9 days. The LNG plant was was stopped on May 31 due to a gas leak. Our initial reaction was that the source of the leak will determine the nature of the repair and the expected time to repair. Fortunately, within a matter of hours, they determined the source of the leak. Bloomberg reported that "*The outage started on Wednesday. * Outage is due to "trip of production due to gas leak" Saying leak occurred in connection with a valve in one of the plant's cooling circuits."* Our initial thoughts on seeing the gas leak was linked to a valve and not something like cracks was that it should mean that the shut-in wouldn't be too long. That appears to be the case. On Thursday, Bloomberg reported "E*quinor's Hammerfest LNG plant will remain shut until 11pm June 8, according to gas network operator Gassco."* If so, that would be a relatively short 9-day shut-in.

Equinor's 0.63 bcf/d Hammerfest Melkoeya LNG was down Sept 2020-May 2022

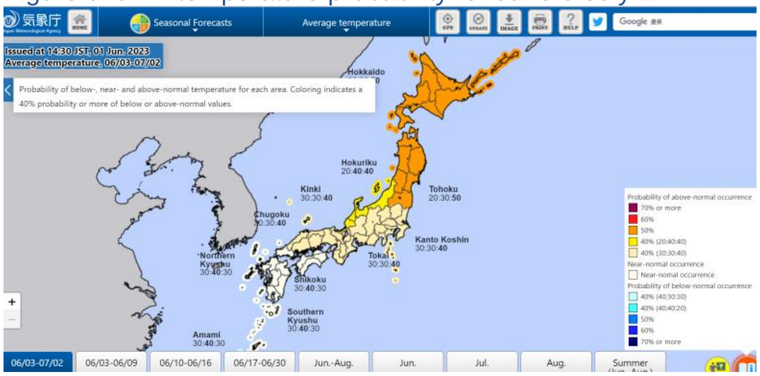
The Equinor Hammerfest LNG plant was one of the big unplanned LNG supply interruptions when it went down in Sept 20, 2020 and didn't come back on until May 2022. Here is what we wrote in our May 22, 2022 Energy Tidbits. "*The restart of Equinor's Hammerfest LNG, including the Melkoeya LNG facility was completed this week, but a minor fault at a compressor will delay the restart to sometime this coming week. Last week's (May 15) Energy Tidbit memo indicated that the restart had been scheduled for May 17 after months of delays. In its Q1/22 release on May 4, Equinor said "Hammerfest LNG is on track for a safe start-up on 17 May." Equinor issued a press release on May 16 stated [LINK] "During the weekend, a minor fault was discovered on a compressor that needs to be rectified prior to start-up. The component is now being replaced, and the stepwise process towards operations continues through the week." The Melkoeya LNG facility has a capacity of 0.63 bcf/d and has been offline since Sept 2020. In February, Equinor reported that the operational restrictions associated with the repairs and the uncertainty over the past months related to the pandemic are responsible for the delay in the restart from the original date of March 31. The Equinor facility has been closed since September 2020 due to a build up of insects in the pre filters of the air intake-auto which caused an ignition.*"

Natural Gas – JMA expects above normal temperatures for June

Above normal temperatures in June in Japan

Every Thursday, the Japan Meteorological Agency provides an updated temperature probability forecast for the next 30 days in Japan. The June 1 update [LINK] calls for warmer than normal temperatures for June 3-July 2. We checked the by-week forecasts and the JMA expects warmer than normal temps for the first half of June and then normal temperatures for the second half of June. AccuWeather's daily forecasts for Tokyo are showing daytime highs up to 29c in the first half of June and then down to 25c in the second half. Overall, the forecast should be supportive but not necessarily a big driver in natural gas demand. As anyone who has done business in Japan in June knows, the offices are set at much higher temperature levels than in Canada or the US.

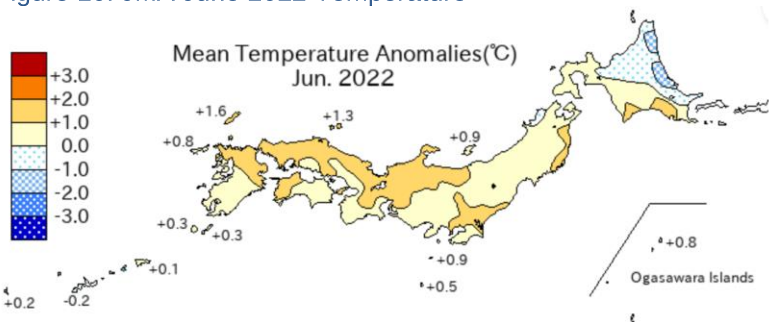
Figure 9: JMA temperature probability for June 3-July 2



Source: Bloomberg

June 2023 hot at first is the reverse of June 2022 that was hot at the end
Any time temperatures are a little warmer than normal is supportive for natural gas, but we would have preferred a June like June 2022 that was a little colder to start but then very hot in the latter part of June. Here is how the Japan Meteorological Agency described June 2022 temperatures '*From early to mid-June, cloudy and rainy days were dominant in northern and eastern Japan and Okinawa/Amami due to the Baiu-front, moist air inflow and the Okhotsk High. In late June, extreme hot weather condition was dominant in eastern and western Japan because the North Pacific Subtropical High enlarged its area to the mainland of Japan*."

Figure 10: JMA June 2022 Temperature

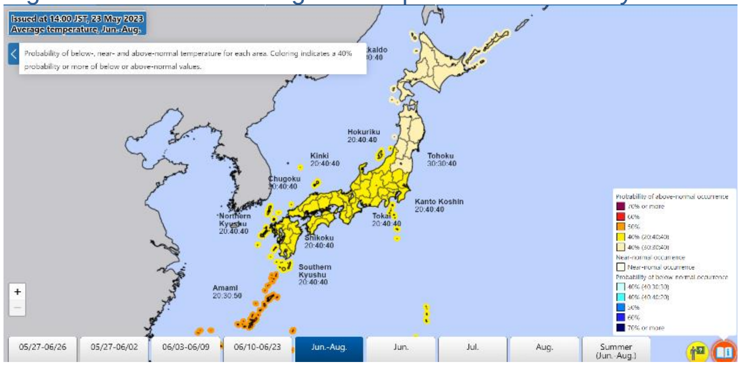


Source: JMA

JMA expects slightly above average temperatures in JJA in Japan
June is looking to be in-line with the JMA's May 25 temperature probability forecast for Jun/Jul/Aug. Here is what we wrote in last week's (May 28, 2023) Energy Tidbits memo. *"It looks like there should be some, but not necessarily big, weather support for natural gas demand in Japan in Jun/Jul/Aug with slightly above average temperatures starting in June. On Thursday, the Japan Meteorological Agency updated 30-day outlook [LINK] also included its look at Jun-Jul-Aug, which calls for warmer than normal temperatures from June through August, with temperatures*

increasing as the months progress. Below is the JMA's temperature probability forecast for June-Aug."

Figure 11: JMA June-August Temperature Probability Forecast



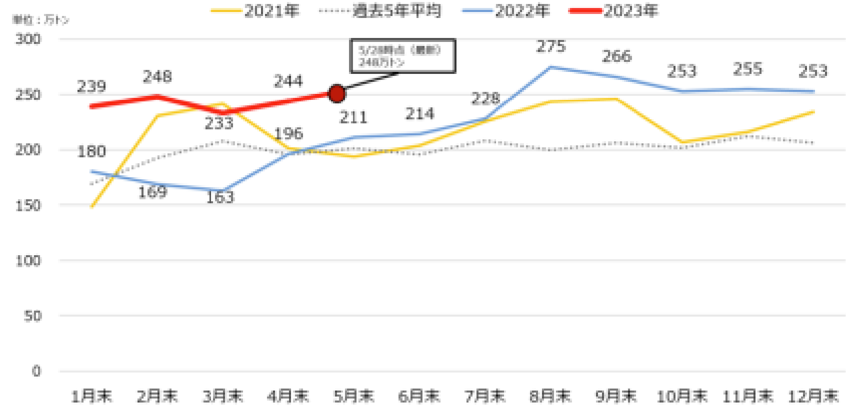
Source: JMA

Japan LNG stocks up +0.4% WoW

Natural Gas – Japan's LNG stocks up +0.4% WoW to ~119 bcf

Japan had a mild winter with a hot March to end winter, so it was able to escape any weather-driven LNG shortages. April and May were warm, but this is shoulder season and warmer than normal April and May doesn't drive any significant weather driven push for natural gas. The start of June is expected to be slightly warmer than typical temperatures so, at least for now, weather isn't expected to be a huge push for natural gas demand. LNG stockpiles held by Japanese power producers continue to exceed both last year's level and the seasonal average. Japan's METI weekly LNG stocks data was released on Wednesday [LINK]. LNG stocks on May 28 were 119.1 bcf and are up +0.4% WoW from May 21 of 118.6 bcf, and well above the 5-year average of 96.5 bcf. Below is the LNG stocks graph from the METI weekly report.

Figure 12: Japan LNG Stocks



Source: METI

Natural Gas – Japan LNG Imports down to 20 yr lows to 7.25 bcf/d in April

Japan LNG imports down

As we highlighted above, Japan had a very hot end to the winter paired with a warmer than normal spring. The warmer weather meant there really wasn't any cause for significant weather driven demand for natural gas and LNG. So not surprise when, on Friday, Japan's Ministry of Finance posted its import data for April [LINK] and pointed to a material YoY decline in LNG imports. The MOF reported Japan's April LNG imports were 7.25 bcf/d, which is down -18.7% MoM from 8.86 bcf/d in March, and -18.7% YoY from 8.92 bcf/d in April 2022. Notably, April 2023's imports of 7.25 bcf/d is the lowest LNG imports recorded for the month of April in over a decade. April's imports are only 0.16 bcf/d above the May 2020 imports when Covid heavily impacted imports. There is also the factor of the high LNG prices to end 2022 that would have impacted LNG imports in the proceeding months of 2023. In addition, Japan's thermal coal imports in April were -10.8% YoY, compared to -19.9% YoY in March and petroleum products imports were up 8.3% YoY. Plus, in April the look ahead temperature forecast for Japan in May was for warmer than typical weather, so there was no real urgency to import LNG. Below is our table that tracks Japan LNG import data.

Figure 13: Japan Monthly LNG Imports

bcf/d	2014	2015	2016	2017	2018	2019	2020	2021	2022	22/21	2023	23/22
Jan	12.66	13.06	11.22	12.85	12.79	11.69	11.63	12.48	10.51	-15.8%	10.56	0.5%
Feb	12.88	13.26	12.30	13.36	14.23	12.61	10.99	13.84	12.19	-11.9%	10.98	-9.9%
Mar	12.46	12.60	12.62	12.61	12.28	11.30	11.16	11.04	10.07	-8.7%	8.86	-12.0%
Apr	11.54	10.56	10.21	10.52	8.97	9.00	8.31	7.96	8.92	12.0%	7.25	-18.7%
May	10.06	8.91	8.55	9.66	9.92	8.62	7.09	7.67	8.92	16.3%		
June	10.91	10.61	10.02	9.90	8.88	8.32	8.42	9.13	9.29	1.7%		
July	12.14	10.77	10.19	10.19	10.55	10.56	9.35	9.58	9.54	-0.4%		
Aug	10.92	10.93	11.96	11.24	11.73	9.45	9.04	9.75	9.71	-0.4%		
Sept	11.64	11.06	10.67	9.31	10.04	10.30	10.41	8.66	8.52	-1.6%		
Oct	10.75	9.38	9.73	9.50	10.12	9.75	9.20	7.17	7.88	9.9%		
Nov	11.00	10.71	12.07	10.26	10.15	10.03	9.63	9.38	8.88	-5.4%		
Dec	12.79	12.51	11.69	12.31	11.23	10.54	11.96	10.89	9.39	-13.8%		

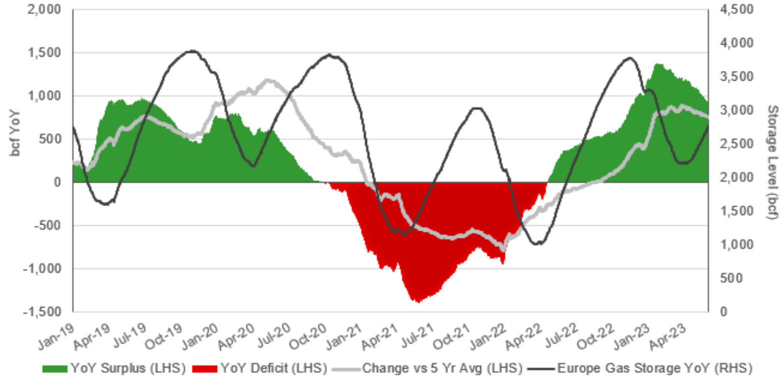
Source: Japan Ministry of Finance, SAF

Natural Gas – Europe storage is now +17.72% vs 5-yr average, but within 5-yr range

Europe gas storage

The big global natural gas story for Q1/23 was how mild winters in Europe and Asia were the key reason why Europe made it through winter without a natural gas shortage. We have been seeing a modest but steady narrowing of the gas storage surplus on a YoY and vs the 5-yr average. However, this week, it was basically no change to the YoY gas storage surplus. This winter (Nov 1, 2022) began with gas storage at 94.94% capacity, +17.86% YoY and a YoY surplus of 27.02%. The mild winter kept the storage surplus high on a YoY basis. But the last 5 weeks have seen a decline in the YoY surplus and the surplus vs the 5-yr average. This week, Europe storage increased by +2.16% WoW to 68.87% on May 31. Storage is now +21.41% greater than last year levels of 47.46% and is +17.72% above the 5-year average of 51.15%. The prior four weeks, starting with the most recent has seen the YoY surplus at +21.50%, +23.53%, +24.63% and +25.80%. The prior four weeks starting with most recent has seen the surplus vs the 5-yr average at +18.18%, +18.69%, +18.91%, and +19.34%. In addition, current storage is currently within the 5-year range, albeit at the top end of the range. Below is our graph of Europe Gas Storage Level.

Figure 14: European Gas Storage Level



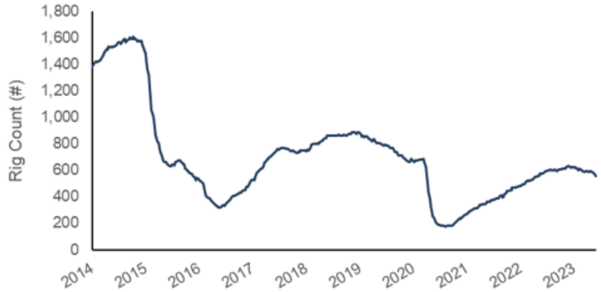
Source: Bloomberg:

Oil – US oil rigs -15 WoW at 555 rigs on Jun 2, US gas rigs unchanged at 137 rigs

US oil rigs down WoW

The US sees another week of big declines in oil rigs this week. Baker Hughes released its weekly North American drilling activity data on Friday. This week total US oil rigs were down -15 rigs WoW as of June 2. We note that another large decrease in US oil rigs reinforces the fact that producers need visibility of stabile, higher oil prices. The total US oil rig count is now at 550 rigs, -19 rigs YoY, +74 from the 2022 low of 481 rigs in January and +383 since the 2020 low of 172 rigs on Aug 14. Notably, none of the basin's reported an increase in oil rigs. The Permian and "Other" rig counts both declined this week by -4 rigs to 343 and -5 rigs to 80, respectively. It was expected to see US gas rigs decline given the low $2.30 Henry Hub, however they remained flat WoW at a total of 137 rigs. US gas rigs have decreased -14 rigs YoY. Notably, on a per basin basis the Permian increased by +2 rigs to 5, and Haynesville declined this week by -2 rigs to 52. Below is our graph of total US oil rigs.

Figure 15: Baker Hughes Total US Oil Rigs



Source: Baker Hughes, SAF

Oil – Precision Drilling lowers its US rig activity level expectations for Q2

Precision's US rig activity outlook

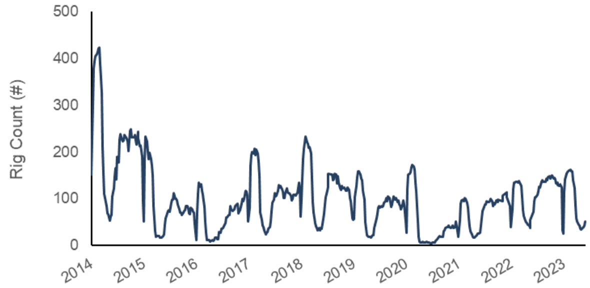
Early Thursday morning, Precision Drilling issued a brief activity update [LINK] We always try to compare to what did a company say last time to see if there is any change in views because companies don't normally come out, except for financial guidance, and say here is what we changed. In Precision's case, we compared to their comments on their Q1/23 earning call on April 26. No surprise, Precision lowered its rig activity for the US, but, in a bit of surprise, there has only been a "*modest impact*" of wildfires on Precision's Cdn rig activity. We tweeted [LINK] "*. $PD's rig activity update vs 04/26 Q1 call. US down. "active rig count is currently 50 & may further soften in coming weeks". 04/26 "hard to guide an exit level for PD's Q2 activity, i believe we'll have sustained activity levels in at least the low 50s". CAN in line. "expect to have over 60 rigs active by end of the month" "wildfires in AB & BC have had a modest impact on our operations". 04/26 "So I think we'll see good loading levels that start early and get to levels in that 60-plus rig range in July". #OOTT.* Here is the more complete comparison of what they said on Thursday vs Apr 26. Canada: Looks in line vs Q1 call on Apr 26. 06/01: "*In Canada, we have 46 rigs active today and expect to have over 60 rigs active by the end of the month*". 04/26: In Q&A, "*So I think we'll see good loading levels that start early and get to levels in that 60-plus rig range in July and then hold there for the rest of the year. Very stable loading. Our customers are focused on trying to minimize variability in this market. It's real industrial-based market now, and that plays well into our model*." Plus only a modest impact from wildfires. "*To date, the wildfires in Alberta and British Columbia have had a modest impact on our operations*." US looks a little weaker vs Q1 call on Apr 26. 06/01: "*In the U.S., our active rig count is currently 50 and activity may further soften in the coming weeks. For the second quarter, we expect our U.S. activity to average approximately 50 rigs*." 04/26: "*And while it's hard to guide an exit level for Precision's Q2 activity, I believe we'll have sustained activity levels in at least the low 50s.*"

Oil – Total Cdn rigs +10 WoW to 97 total rigs, better week but still wildfires wildcard

Cdn total rigs up WoW

Wildfires are the story for Cdn rigs. Cdn drilling is now in what is the normal seasonal increase in drilling rigs from early May thru to before Xmas. Traditionally, Cdn rigs hit their trough the last week of April or first week of May. That happened this year, but then wildfires caused a further dip in May. But moderation in wildfires means Cdn rigs will begin to increase as typically expected after hitting their trough. We normally see stronger increases at the end of May/early June, but wildfires have been a wildcard every week. The risk of weekly declines is there depending on wildfires. Total Cdn rigs were up +10 rigs WoW at 97 rigs as of Jun 2. Notably, Alberta was +6 rigs WoW, and BC was -1 rig WoW through the wildfires. Saskatchewan increased +6 WoW to 11 rigs. Cdn oil rigs were up +9 WoW to 51, and Cdn gas rigs increased +1 to 46 rigs. Cdn oil rigs are now -21 rig YoY compared to 72 rigs last year, while gas rigs are up +1 YoY from 45 rigs. Below is our graph of total Cdn oil rigs.

Figure 16: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes, SAF

US oil production decreases WoW

Oil – US weekly oil production decreases –0.100 mmb/d WoW to 12.3 mmb/d

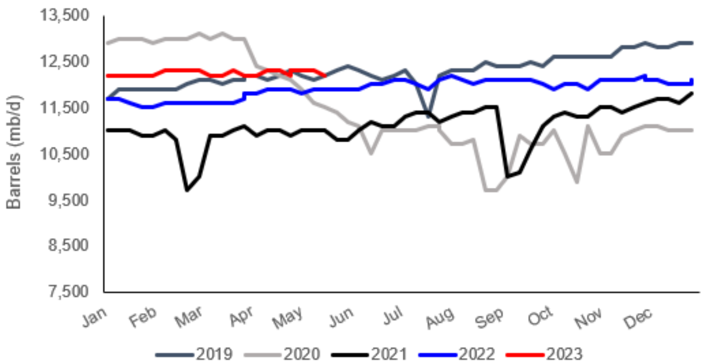
It was another week of relatively no change to the EIA's estimates for weekly US oil production. As noted in the following item, these are estimates of the current week and the actuals have been higher than the weekly estimates ie. the weekly estimates have been low. The EIA estimates US oil production shrunk -0.100 mmb/d WoW to 12.2 mmb/d for the week ended May 26. Lower 48 was also down -0.100 mmb/d WoW at 11.8 mmb/d, and Alaska -0.020 mmb/d to 0.418 mmb/d. US oil production, based on the weekly estimates, broke above 12.1 mmb/d to 12.2 mmb/d for the week ended Jan 6, 2023, and has remained at or just above 12.2 mmb/d ever since. The first time since it touched 12.2 mmb/d since the pandemic was the 1st week of August in 2022. Total US production reached its highest level since March 13, 2020, this year on Feb 3 at 12.3 mmb/d. US oil production is up YoY at +0.300 mmb/d but is still down significantly at -0.900 mmb/d since the 2020 peak of 13.1 mmb/d on March 13.

Figure 17: EIA's Estimated Weekly US Oil Production

	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
2022-Jan	01/07	11,700	01/14	11,700	01/21	11,600	01/28	11,500		
2022-Feb	02/04	11,600	02/11	11,600	02/18	11,600	02/25	11,600		
2022-Mar	03/04	11,600	03/11	11,600	03/18	11,600	03/25	11,700		
2022-Apr	04/01	11,800	04/08	11,800	04/15	11,900	04/22	11,900	04/29	11,900
2022-May	05/06	11,800	05/13	11,900	05/20	11,900	05/27	11,900		
2022-Jun	06/03	11,900	06/10	12,000	06/17	12,000	06/24	12,100		
2022-Jul	07/01	12,100	07/08	12,000	07/15	11,900	07/22	12,100	07/29	12,100
2022-Aug	08/05	12,200	08/12	12,100	08/19	12,000	08/26	12,100		
2022-Sep	09/02	12,100	09/09	12,100	09/16	12,100	09/23	12,000	09/30	12,000
2022-Oct	10/07	11,900	10/14	12,000	10/21	12,000	10/28	11,900		
2022-Nov	11/04	12,100	11/11	12,100	11/18	12,100	11/25	12,100		
2022-Dec	12/02	12,200	12/09	12,100	12/16	12,100	12/23	12,000	12/30	12,100
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		

Source: EIA

Figure 18: EIA's Estimated Weekly Oil Production



Source: EIA, SAF

Oil – EIA Form 914: US March oil actuals +473,000 b/d vs weekly estimates

EIA Form 914 March

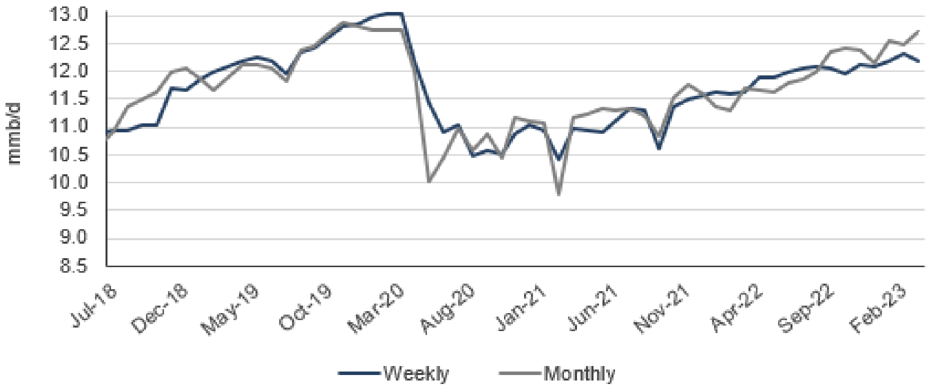
As a reminder, the EIA's actuals for US oil production continue to be well above their weekly estimates. There is a growing difference between what the EIA looks at as "actuals" for US oil production vs the EIA's weekly estimates noted above. The actuals continue to be significantly higher than the weekly estimates. On Wednesday, the EIA released its Form 914 data [LINK], which is the EIA's "actuals" for March US oil and natural gas production. (i) On Wednesday, we tweeted [LINK] "*US #Oil production continues to surprise to upside. See 👇EIA excerpts. @EIAgov Form 914: Mar/23 actuals of 12.696 mmb/d is +995,000 b/d YoY vs Mar/22 of 11.701 mmb/d. Also +473,000 b/d vs EIA estimates of weekly oil production that were 12.223 mmb/d. #OOTT.*" The Form 914 actuals for March have March production at 12.696 mmb/d, which is +473,000 b/d vs the EIA weekly estimates. And because of this significant difference, the Form 914 March production is +995,000 b/d YoY, just shy of 1 mmb/d YoY. The actuals paint a picture of much stronger than expected US oil production.

Figure 19: EIA Form 914 US Oil Production (thousand b/d)

State	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2023	12,568	12,525	12,696									
2022	11,369	11,316	11,701	11,668	11,629	11,797	11,844	12,002	12,337	12,417	12,379	12,149
2021	11,124	9,925	11,326	11,305	11,356	11,356	11,347	11,277	10,918	11,569	11,790	11,634
2020	12,852	12,842	12,797	11,914	9,713	10,442	11,006	10,577	10,921	10,457	11,196	11,168
2019	11,869	11,673	11,913	12,149	12,154	12,218	11,902	12,486	12,590	12,809	13,000	12,978
2018	10,001	10,281	10,467	10,500	10,435	10,641	10,897	11,392	11,443	11,509	11,886	11,945
2017	8,875	9,110	9,166	9,101	9,185	9,111	9,247	9,250	9,517	9,669	10,085	9,983

Source: EIA

Figure 20: EIA Form 914 US Oil Production vs Weekly Estimate



Source: EIA, SAF

Oil – Exxon wants to double 10% recovery factor from unconventional (shale/tight)

Exxon on shale recovery factor

The big headlines from Exxon CEO Darren Woods Thursday comments at a US sell side conference was on his views that they see big potential to increase the recovery factor of unconventionals (shale/tight) from the current expected 10% to possible double ie. to 20% or so. Note that Woods didn't say which plays, but we would assume there is upside recoveyr factor from the Woods concepts in all shale/tight plays. Woods didn't specifically say the entire double in recovery factor was due to better fracking. Woods said "*My challenge to the organization was to double recoveries and to find technologies that could unlock that. And* *that's been a kind of a five-year program, and we're beginning to see the signs of some, I think, very promising new technologies to better unlock some of that resource."* Woods then explained the upside for fracking. "*Yeah, I think, if you look at that, the unconventional fracking's been around for around for a really long time. But the science of fracking is not well understood. There are very few companies or organizations out there that could tell you exactly how fracks propagate and what that looks like underground. Our view is that's just a hard science project, a problem to solve. And so we can start looking at and have been doing a lot of work to understand how we better frack so you get better fracks all along the lateral. So if you think about capital efficiency, the longer laterals you can drill, the less capital you have to spend to access the resource. One of the challenges with long laterals is how do you efficiently frack along that entire lateral? Make sure that you're opening the rock up along that entire length. We've been doing a lot of work there and see some really good progress around improving the ability to frack along a very long lateral. And then the other big challenge in terms of recovery is once you get those fracks, how do you keep them open so that the resources will flow And doing a lot of work in that space to unlock and better keep the fracks open. And so that in my mind in my mind is where the first wave of technology will come into that field And we think we've got some promising techniques to employ there that will significantly improve our recovery."* Our Supplemental Documents includes the Woods comments on increasing the recovery factor.

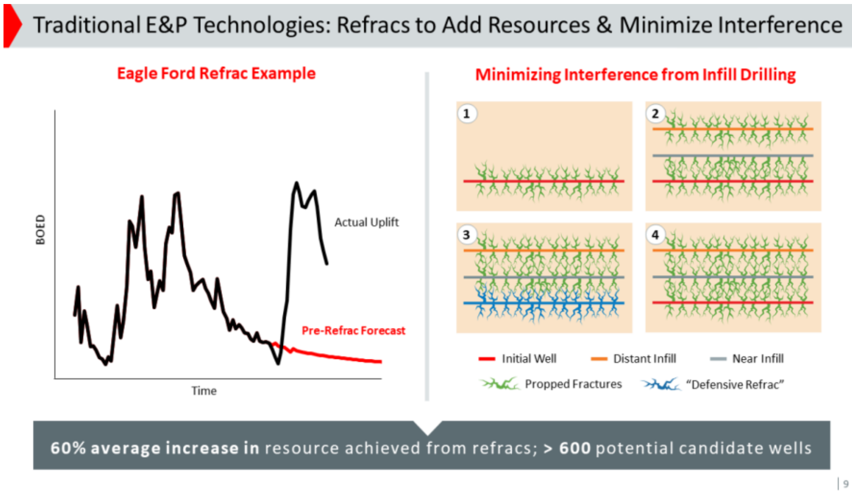
Exxon CEO didn't mention refracks

When we saw the brief Bloomberg headlines breaking on the Exxon CEO increased recovery factor for shale, we expected Woods would have included refrack potential. But he did not mention. This was before the transcript was posted. We tweeted [LINK] "*Headlines on #Exxon sees technology to improve recovery rate of shale. see 👇08/09/22 tweet, have to believe refrack is part of this approach. Also perhaps engineered gas for enhanced recovery. question does this provide US shale growth or more likely better chance for plateau. #OOTT."* Rfracks have been working for a at least a few years and every shale/tigh oil and gas player is aware of the success.

10/24/2019: Core Labs says refracking is working in Eagle Ford and Bakken

Here is what we wrote in our Oct 27, 2019 Energy Tidbits. "*We were a little surprised that Core Labs Q3 call comments on refracking didn't get any traction. Perhaps its because the impact of refracking success won't really show up for years to come, But Core Labs had bullish comments on the industry refrack success in Eagle Ford and Bakken. We don't expect refrack success will lead to growth in these plays, but it should reduce mid term declines by increasing rate and recovery on old 1st and likely 2nd generation fracked wells. Mgmt said "Moving now to Production Enhancement. Core's Production Enhancement energetics team partnered with one of the world's largest independent E&P companies to develop a breakthrough perforating solution for their mechanically isolated recompletion programs in both the Eagle Ford and Bakken formations onshore U.S. This technology helped the operator minimize risk, improve recovery from existing wells and optimize their return on investment." "The operator has reported the ability to complete double the number of stages per day over conventional perforating techniques. The E&P company has also seen consistent and reliable frac -- fracs from stage to stage and well to well* *along with encouraging production results. Core's refrac technology breathes new life into the large fleet of older existing wells that were originally under-stimulated. High-quality reservoir rock and the intervals between the original stages can now be tapped, increasing oil recovery and significantly without the expense of drilling and completing an additional well." With respect to the significance to industry, it really doesn't't' matter who is the company, But we believe the "one of the world's largest independent E&P companies" refers to ConocoPhillips. In theory, it could be big companies who in both plays like EOG Resources, Marathon Oil, but we think its Conoco even though Conoco has stated clearly Bakken is in plateau production and Eagle Ford is in late stage growth (see our Aug 4, 2019 Energy Tidbits on Conoco's Q2 call). Conoco's regular investor presentations do not mention refracking success, but Conoco held a Feb 19, 2019 "Shale Oil Technical Teach In" that had the below refrack Eagle Ford slide."*

Figure 21: Conoco Eagle Ford Refrack



Source: ConocoPhillips

Reminder shale technology advancements get adopted quickly

Three are very few technology advancements in drilling and recovery that don't get quickly adopted by others. We Have seen this over the decade going back to the late 80s when horizontal drilling started, in the 2000s when fracking started to have success and we see no difference in the technology that Exxon sees can double recovery factor in unconventionals. The limiting factor tends to be availability of equipment and service people to execute. A technology leader will have an edge bu tit is n't normally an edge for years, rather it's an edge for months.

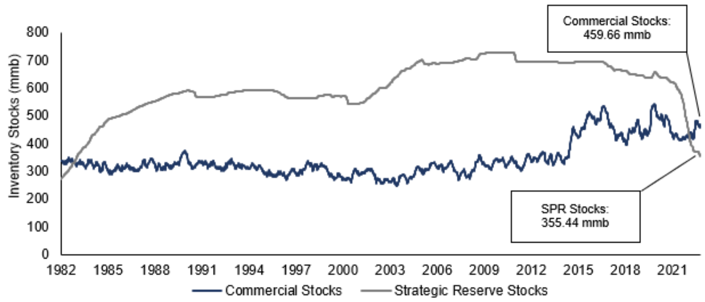
Oil - US SPR reserves now –104.221 mmb lower than commercial crude oil reserves

Oil in US Strategic Petroleum Reserves (SPR) continues to move below total US commercial crude oil reserves. SPR first went back below commercial for the first time since 1983 in the Sept 16, 2022 week. This deficit widened this week with a build in commercial oil stocks of

US SPR reserves

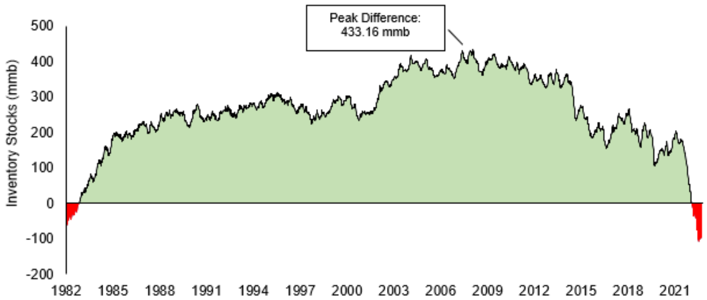
4.49 mmb. The EIA's weekly oil data for May 26 has SPR reserves at 355.436 mmb vs commercial crude oil reserves at 459.657 mmb. The below graphs highlight the difference between commercial and SPR stockpiles.

Figure 22: US Oil Inventories: Commercial & SPR



Source: EIA, SAF

Figure 23: US Oil Inventories: SPR less Commercial



Source: EIA, SAF

Oil – SPR now down 16.1mmb of planned 26 mmb SPR draw ie. 9.9 mmb to go

9.9 mmb SPR sales to go

We have been reminding that the US SPR was going 26 mmb lower. In Feb, the US Dept of Energy reminded of the congressionally mandated sale of 26 million barrels of crude from the SPR to be enacted this fiscal year. At that time the SPR included 371.579 million barrels. That stayed flat until the sales started at the end of March. Since then the SPR is down 16.143 mmb to 355.436 million barrels as of May 26, 2023. This is draw of 16.143 million barrels leaving ~9.9 million barrels to go for the full 26 million barrel sales.

Oil – Cdn oil differentials narrowed by $0.85 to close at $12.90 on June 2

WCS less WTI differentials

WCS less WTI differentials narrowed by $12.90 as of June 2. It's hard to determine exactly what led to the narrowing. There was a modest increase in wildfires, with one Out of Control fire that is nearby some smaller oil sands projects. And the other factor could be linked to some impact of the OPEC+ cuts that started on May 1 and these barrels tend to be medium/heavy barrels. WCS less WTI differentials have narrowed since Alberta wildfires started to hit hard in early May. WCS less WTI differentials were $14.15 on March 31, which was the Friday before the Sun Apr 2 reports that OPEC+ was going to cut production effective May 1. The WCS less WTI differential widened to $15.40 on Apr 13, and then narrowed to $14.65 on Apr 28, then to $14.15/b on May 5, then to $12.85/b on May 12, then to $12.80/b on May 19, widened to $13.75 on May 26, before narrowing this week to $12.90 as of June 2. For perspective, a year ago, the WCS-WTI differentials widened in May from $12.80 at the end of April to $19.10 on June 2, 2022. Below is Bloomberg's current WCS–WTI differential as of June 2, 2023 close

Figure 24: WCS less WTI oil differentials including June 2 close

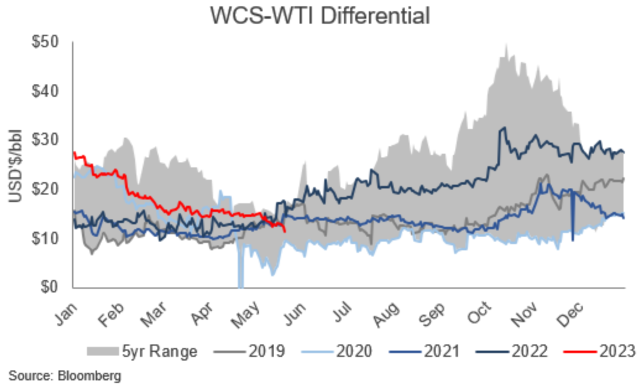
Source: Bloomberg

Oil – WCS less WTI differentials normally widen after early May

WCS differentials normally widen after early May

As noted above, we are seeing the impact of extraordinary unplanned events that are impacting WCS less WTI differentials – the wildfires are number one and there is also the OPEC+ cuts. The wildfires have disrupted the normal seasonal pattern for WCS less WTI differentials. Our prior comments on the normal WCS-WTI differentials patter said there are always unplanned events that impact WCs-WTI differentials. However, special items aside, May is normally when Cdn heavy oil differentials are at their narrowest. In 2022, the narrowest for WCS-WTI differential was May 2, 2022 at $12.50/b and increased to $18.25/b by May 31. Cdn heavy oil differentials normally narrow in the Feb/Mar/Apr period as this is when refineries tend to maximize production of asphalt ahead of the annual summer paving season. As is said in Canada, there are two seasons in Canada – winter and paving season. Below is graph showing WCS-WTI differentials that shows this normal seasonal trend of narrowing WCS-WTI differentials from Feb thru April with the narrowest normally being in early May ie. two weeks ago.

Figure 25: WCS less WTI oil differentials



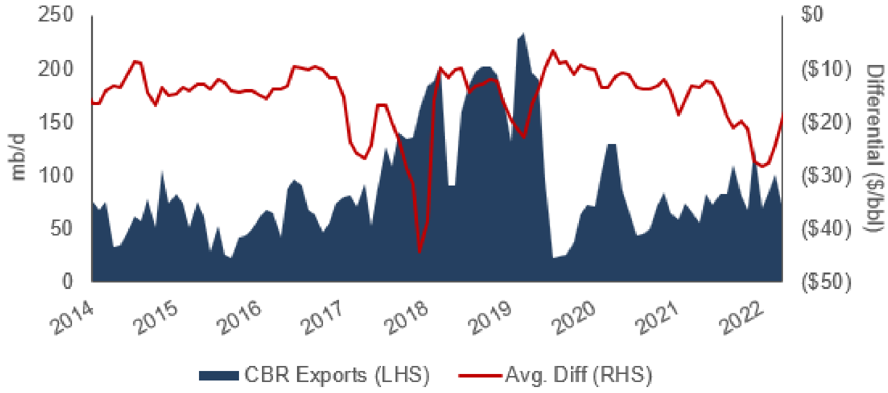
Source: Bloomberg

Oil – EIA estimate total Cdn crude by rail imports down ~33% MoM to 44,032 b/d in Mar

EIA Cdn crude by rail imports

The EIA posted its monthly "U.S. Movements of Crude Oil by Rail" [LINK] on Wednesday, which also provided EIA data on Cdn crude by rail exports. EIA estimates that total Cdn crude by rail exports to the US decreased significantly by -33.4% MoM to 44,032 b/d in Mar. Canadian CBR volumes to PADD 3 (Gulf Coast) of 44,032 b/d in Mar reflect a -22,039 b/d MoM decrease from 66,071 b/d in Feb, and a -37,710 b/d YoY decrease from 81,742 b/d in Mar 2022. Below is our graph of Cdn CBR exports to the Gulf Coast and WCS differential over time.

Figure 26: Canada CBR Exports to US Gulf Coast vs WCS Differential



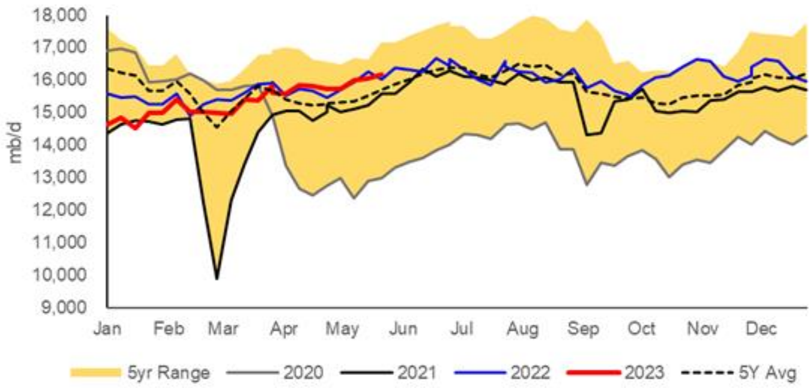
Source: EIA, Bloomberg

Oil - Refinery inputs up +0.096 mmb/d WoW to 16.165 mmb/d

Refiners switching to summer fuel blends

There are always unplanned refinery issues that impact crude oil inputs into refineries, but refineries around the world follow seasonal patterns for their maintenance such they are producing the key petroleum products at the right time of year. We normally see Feb/early March as a refinery turnaround season for refineries in the US to be ready to produce summer fuels, including asphalt. So that normally leads to less crude oil inputs during turnaround. And normally, refineries come out of turnarounds in late March/early April to start their ramp up in refining of summer blend fuels, which typically peaks in Aug/early Sept. So, unless there are unplanned refinery issues, we should be in a period of increasing crude oil inputs into US oil refineries in the ramp up for peak driving season. On Thursday, the EIA released its estimated crude oil input to refinery data for the week ended May 26. The EIA reported crude oil inputs to refineries were up +0.096 mmb/d this week to 16.165 mmb/d and are up +0.132 mmb/d YoY. Refinery utilization was up +1.4% to 93.1%, which is up +0.5% YoY as well. Total products supplied (i.e., demand) decreased WoW, down -1.259 mmb/d to 19.442 mmb/d, and Motor gasoline was down -0.339 mmb/d to 9.098 mmb/d from 9.437 mmb/d last week. The 4-week average for Motor Gasoline was up +0.310 mmb/d YoY to 9.186 mmb/d. The 4-week average of Total demand was up +0.444 mmb/d YoY to 19.996 mmb/d.

Figure 27: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA, SAF

Oil – Lighting hit tank containing Naptha at Calcasieu 135,000 b/d refinery

Calcasieu 135,000 b/d refinery

As of our 7am MT news cut off, we have not see any reports on the impact of the fire yesterday operations at the Calcasieu 135,000 b/d refinery in Lake Charles, Louisiana. Yesterday, we tweeted [LINK] "*Breaking. Fire at Calcasieu 135,000 b/d refinery in Lake Charles, Louisiana. See 👇@KPLC7News reports fire in an oil tank and not part of the refining process. Also that cause is lightning strike. #OOTT [LINK] ".* The reason why we tweeted was that there were a number of breaking reports as refinery fires are always headlines especially when the cause is a lightning strike. But we didn't see any include the key detail – the fire was in an oil tank and not part of the key refining processes. It turns out it was in a tank holding Naptha. But the key to us is that a fire in an oil tank shouldn't impact refining operations for any real length of time

Oil - Something isn't right in the EIA weekly oil imports by country data

US net oil imports

We repeat the same commentary as last week that something doesn't look quite right in the EIA weekly oil imports by country data. It looks like something is off in the EIA's estimates of weekly oil imports by country data, but we don't know if the total US crude oil imports are wrong or if's just that the EIA has incorrectly allocated import volumes to the wrong country. (i) For some reason, the EIA weekly data does not include any oil imports from Venezuela in their weekly reporting of US oil imports by country. Yet we have seen Chevron importing oil from Venezuela into its and other PADD 3 Gulf Coast refineries. What we don't know if the EIA has just allocated to some other country. We have been highlighting how Chevron has steadily increasing US Gulf Coast (PADD 3) imports from Venezuela every month in 2023. And the EIA reports oil imports from Venezuela in its monthly data but for reason not in these weekly estimates. (ii) US "NET" imports were up +1.001 mmb/d to 2.302 mmb/d for the May 26 week. US imports were up +1.367 mmb/d to 7.217 mmb/d. US exports were up +0.366 mmb/d to 4.915 mmb/d. The WoW increase in US oil imports was driven mostly by "Other". The Top 10 was up +0.674 mmb/d. Some items to note on the country data: (i) Canada was down -0.118 mmb/d to 3.589 mmb/d. (ii) Saudi Arabia was up +0.322 mmb/d to 0.534 mmb/d. (iii) Mexico was up +0.256 mmb/d to 0.913 mmb/d. (iv) Colombia was up +0.072 mmb/d to 0.286 mmb/d. (v) Iraq was down -0.022 mmb/d to 0.114 mmb/d. (vi) Ecuador was up +0.143 mmb/d to 0.214 mmb/d. (vii) Nigeria was up +0.021 mmb/d to 0.098 mmb/d. (viii) Saudi Arabia was down -0.203 mmb/d to 0.212 mmb/d.

Figure 28: US Weekly Preliminary Imports by Major Countries

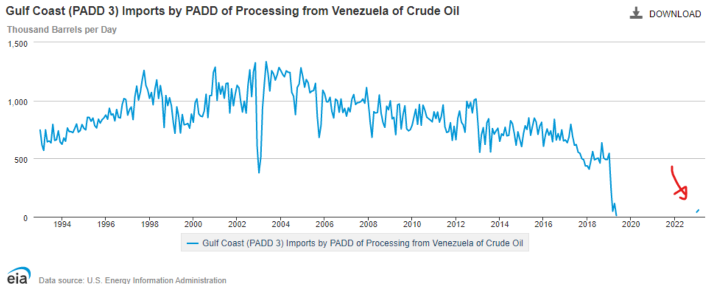
US Weekly Preliminary Crude Imports By Top 10 Countries (thousand b/d)												
(thousand b/d)	Mar 17/23	Mar 24/23	Mar 31/23	Apr 7/23	Apr 14/23	Apr 21/23	Apr 28/23	May 5/23	May 12/23	May 19/23	May 26/23	WoW
Canada	3,240	2,957	3,980	3,590	3,519	3,327	3,526	3,269	3,592	3,707	3,589	-118
Saudi Arabia	483	228	514	376	339	393	242	381	415	212	534	322
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	1,118	541	920	450	615	728	706	393	676	657	913	256
Colombia	244	269	71	159	303	143	143	47	339	214	286	72
Iraq	144	138	345	241	180	222	148	247	174	136	114	-22
Ecuador	0	118	80	242	131	36	57	145	101	71	214	143
Nigeria	129	104	302	236	112	104	214	143	329	77	98	21
Kuwait	0	0	0	0	0	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0	0	0	0	0	0
Top 10	5,358	4,355	6,212	5,294	5,199	4,953	5,036	4,625	5,626	5,074	5,748	674
Others	814	970	932	899	1,095	1,423	1,360	928	1,234	776	1,469	693
Total US	6,172	5,325	7,144	6,193	6,294	6,376	6,396	5,553	6,860	5,850	7,217	1,367

Source: EIA, SAF

EIA shows imports from Venezuela in its monthly import data.

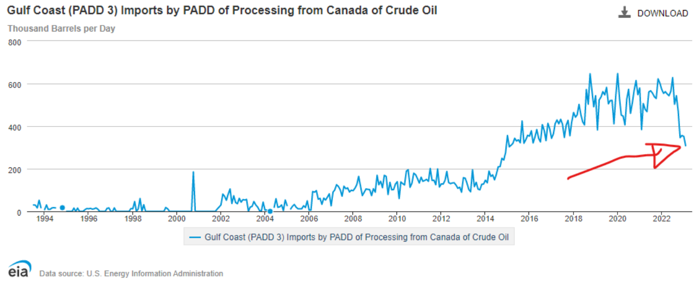
Here is what we wrote in our May 7, 2023 Energy Tidbits memo. *"Last week's (Apr 30, 2023) Energy Tidbits memo highlighted our Apr 29 tweet [LINK] that Chevron's start of Venezuela oil imports into the Gulf Coast is likely impacting Cdn WCS less WTI differentials and how Venezuela oil into the Gulf Coast will be increasing in March and April. On Monday, Bloomberg's Tanker Tracker for Venezuela confirmed the increases in March and April. We tweeted [LINK] 'Blame it on #Chevron. Seasonal narrowing for WCS-WTI differentials, but not as much as might be expected. Increasing PADD 3 Gulf Coast imports of VEN #Oil. Feb: 89 kbd. Mar: 115 kbd. Apr: 143 kbd. Thx @business Tanker Tracker, @lkassai. #OOTT".* (ii) Here is what we wrote in our Apr 30, 2023 Energy Tidbits memo on the EIA monthly data. "*Our tweet included the below EIA graphs of crude oil imports into the Gulf Coast PADD 3. They remind how Cdn heavy/medium crude was able to penetrate PADD 3 (Gulf Coast) because there was a need with declining Mexico and Venezuela crude oil. Conversely, if Venezuela increases, it will mean more Venezuela crude to the Gulf Coast and less need/increased pressure on Cdn differentials. It's hard to see form the graph but we pointed to the first Venezuela oil imports into the Gulf Coast in* *about 3 ½ years were 40,000 b/d in Jan and 58,000 b/d in Feb, and this will be higher in March."*

Figure 29: Gulf Coast PADD 3 Crude Oil Imports From Venezuela



Source: EIA

Figure 30: Gulf Coast PADD 3 Crude Oil Imports From Canada



Source: EIA

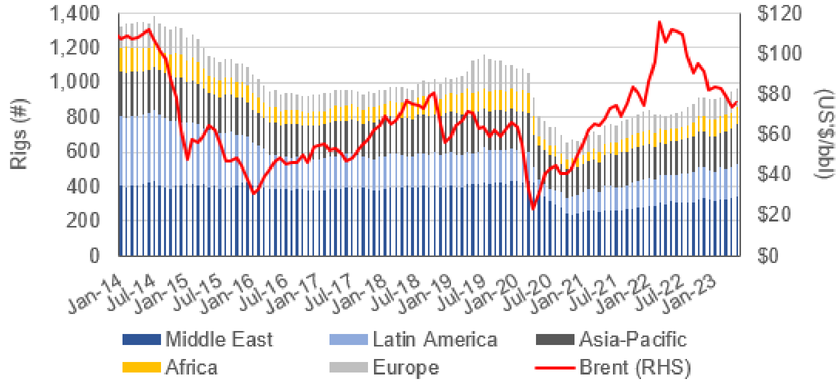
Oil – Baker Hughes International rigs +18 MoM to 965 rigs in May

International rigs +18 MoM

Baker Hughes posted its monthly update to international rigs on Friday, which showed a large MoM increase in rig counts. May's increase is back in-line with the six-month trend of rig net additions seen from May to October of 2022. (i) Total international rigs increased by +18 rigs MoM to 965 rigs in May, and total rigs are now up +159 rigs from the recent low of 806 in April 2022. (ii) Mexico, Indonesia, and Thailand had the largest MoM increases of +16 to 64 rigs, +3 to 46 rigs, and +3 to 15 rigs, respectively. Note that this is a very large increase for Mexico, the last time it was over 60 rigs was April 2015. Mexico has only broken over 50 rigs 4 times since June 2015.In contrast, Norway, Columbia, and Sudan had the largest MoM declines of -7 to 9 rigs, -6 to 25 rigs, and -2 to 0 rigs, respectively. Notably, Ukraine's rig count was flat for the fifth straight month at 37 rigs and is up +32 rigs YoY. (iii) Mexico, Iraq, and UAE are up +21 rigs, +14 rigs, and +10 rigs YoY. Saudi Arabia has also realized a healthy increase of +6 rigs YoY. The largest YoY decreases were realized by Norway, Columbia, and Pakistan which had declines of -8 rigs, -4 rigs, and -4 rigs, respectively. (iv) May's count of 947 rigs was +18% YoY from 817 in May 2022, and up +5% vs pre-Covid May 2020 of 806 rigs. The YoY rig count is as follows: Africa +18, Asia-Pacific +40, Europe +30, Latin America +35, and the Middle East +25. (v) Rig counts continue to be solid in the major Persian Gulf countries but remain below pre-Covid levels. Since February 2022, the UAE has added +23 rigs YoY to 57 active rigs in April 2023, while Saudi Arabia added +17 rigs and

Iraq added +16 rigs each over the same period. Asia Pacific moderately increased its rig count YoY with China adding +12 rigs, Thailand adding +11, and Indonesia adding +9 rigs. Below is our graph of international rigs by region and avg monthly Brent price.

Figure 31: Baker Hughes International Rig Count and Brent Price



Source: Baker Hughes, SAF

Oil – 1st hiccup in Chevron's faster than expected ramp up of Venezuela oil production

Chevron in Venezuela

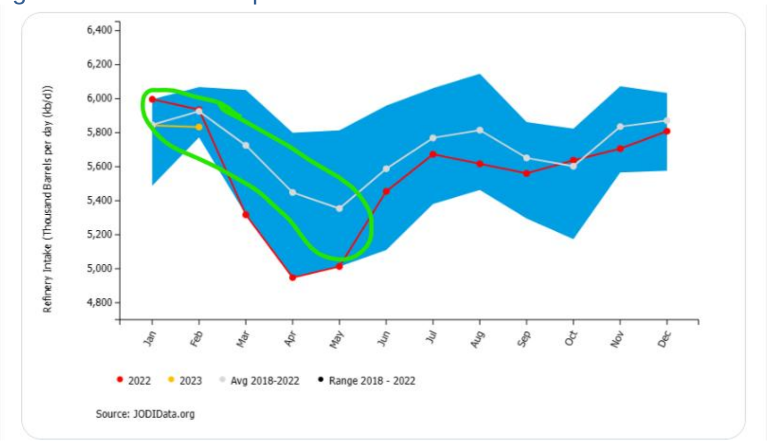
We have been highlighting how, since Chevron got is license in Nov 2022, it has bee able to move faster than most expected on ramping up its Venezuela oil production and imports into the Gulf Coast without moving to a reinvestment case of more drilling. Rather, it's been taking advantage of low-hangng fruit like well repairs, etc. But we saw the first hiccup in this faster than expected ramp up in Venezuela crude oil. And it sounds like the state of disrepair in Venezuela's infrastructure is the limiting factor. On Tuesday, we tweeted [LINK] *"#Chevron lowers yr-end 23 VEN #Oil estimate from 200 kbd to 175 kbd. 1st real indication since US approved Chevron license in Nov that ramp up in VEN oil can't happen as fast as hoped due to bigger VEN infrastructure disrepair. Thx @ArgusMedia Carlos Camacho. #OOTT."* On Tuesday, Argus Media reported [LINK] "*US oil major Chevron is lowering its estimated year-end oil production target in Venezuela from 200,000 b/d to 175,000 b/d, according to sources familiar with operations, citing severe problems with oil-transportation infrastructure in western Venezuela. The general state of disrepair in the Lake Maracaibo navigation channel in Zulia state, which limits the size of oil tankers Chevron can use to ship oil out, remains a major concern, according to the sources. The poor condition of oil storage facilities in Zulia are also a factor. General disrepair of Venezuela's energy infrastructure was expected to be a limit on any plans to increase production."* Our Supplemental Documents package includes the Argus Media report.

Oil – Russia's refineries normally increase oil processed in June ie. less oil for export

Norway oil production

Here is what we wrote in last week's (May 28, 2023) Energy Tidbits memo. "*One of the big negatives for oil markets has been the view that more Russian oil crude has been hitting export markets and the generally accepted cause is that Russia hasn't delivered on stated plan to cut 500,000 b/d beginning in March. However, there is another reason why more Russia oil would have hit export markets in March/April/May – it's the season when Russian refineries process less crude due to refinery maintenance. So less crude processed by* *refineries frees up more oil for export. Yesterday, we tweeted [LINK] "Should see RUS #oil production cuts hit Jun/Jul/Aug physical markets & why cuts hasn't hit exports yet. Normal seasonal pattern of RUS refinery turnarounds reduce oil intake by ~500,000 b/d from Feb thru May. Thx @JODI_Data. #OOTT." Nothing is normal in Russia post its invasion of Ukraine, but the normal seasonal pattern of Russian refineries is that they reduce crude oil inputs in March, April and May, and this is down over 500,000 b/d in this period in the normal seasonal trend. Below is the JODI graph attached to our tweet*."

Figure 32: Crude oil input into Russian refineries



Source: JODI

Oil – Tanker tracking data indicates record Russia oil exports to India in May

Record Russia oil exports to India

No surprise, India keeps importing cheap Russian oil and, as noted previously, exporting more petroleum products to Europe. Earlier this morning, the Economic Times (India media) reported [LINK] *"India's import of cheap Russian oil is now more than the combined amount bought from Saudi Arabia, Iraq, UAE and the US, industry data showed. India took 1.96 million barrels a day from Russia in May, 15% more than the previous high in April, according to data from energy cargo tracker Vortexa. The imports from Russia are now more than the combined purchases from Iraq and Saudi Arabia -- India's biggest suppliers in the last decade -- as well as UAE and the US."* Increasing India imports of cheap Russian crude means decreasing India imports of Middle East crude.

Oil – No word from OPEC+ as of 9am MT

No word yet from OPEC+

We made one exception to our normal 7am MT news cut off and that was for news from today's OPEC+ ministerial meeting, which, unfortunately, started 4 hours later than originally planned. So no word yet but we expect there will be by the time the memo is actually posted.

Oil – Saudi's Abdulaziz is The Man and kept everyone guessing

The Man is Saudi Energy Minister Abdulaziz

Earlier this morning, we tweeted [LINK] "*As usual, "The Man" Saudi Energy Minister keeps everyone guessing. #OPEC+ ministers must have huge respect/fear for him as there aren't leaks! #OOTT [LINK]."* The thought that struck us this morning is how there just don't seem to be any leaks on what Saudi Energy Minister is thinking or has been discussing in the wide range of meetings with other OPEC+ ministers. Abdulaziz is excellent at holding his cards close to his chest but, what is even more impressive is that there aren't leaks on what he said after meeting other OPEC+ ministers. It's why our tweet said OPEC+ ministers must have huge respect/fear for him as there aren't leaks. It's impressive how he kept everyone guessing.

Oil – Saudi nest egg, its net foreign assets were down $8.6b MoM in April

Saudi net foreign assets

We continue to believe the #1 financial theme for Saudi Arabia in the 2020s will be their continued, and likely 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 about $300 billion over seven years. 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 thru the Energy Transition. On Tuesday, we tweeted [LINK] "*Why Saudi wants high #Oil prices and also Other People's Money to help fund Vision 2030. KSA Net Foreign Assets, its Nest Egg, was -$8.6b MoM to $410.1b at 04/30/23. Lowest since 01/31/10. That's down $326.9b or $3.1b/mth since peak of $737.0b at 08/31/14. #OOTT." A*bove $100 oil last year helped arrest the decline in the Saudi nest egg. But Saudi net foreign assets have dropped by $326.9 over the last 8 years & 8 months from is peak of $737.0b on Aug 31, 2014, to $410.1b on April 30, 2023. That is an average of $3,1b per month for the last 104 months since the peak. Oil prices remained relatively flat throughout the month with Brent crude averaging ~$80 in April compared to ~$73 in March. Saudi Arabia's net foreign assets on April 30 were down -$8.6b MoM to $410.1b vs $418.7b in March and $433.0b in February. At $410.1b on April 30, 2023, this is the lowest it has been since Jan 31, 2010 at $409.4b,. The last time Saudi Arabia's net foreign assets were below $400b was on Nov 30,2009 at $388.9b. Saudi Arabia is far from going broke but there has been a huge decline in the last 8 years and 8 months, but it is still a very big nest egg. 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. Saudi Arabia's central bank (SAMA) doesn't provide explanations for the monthly swings. Below is our graph of Saudi Arabia net foreign assets updated for the April 30 data.

Figure 33: Saudi Arabia Net Foreign Assets

Source: Bloomberg

Oil – Iran says condensate floating storage now gone, didn't say on floating oil

One of the big overhangs to oil markets has been the estimated 100 million or more barrels of floating oil and condensate barrels in floating storage around the world, in particular believed to be in Asia. (i) Last Sunday night, we tweeted [LINK] "*Torque to #Oil price when demand returns. Iran says floating gas condensate storage reduced to zero makes Tehran-based @DanialRahmat12 👇05/05 intel look good. Iran didn't specifically comment on floating oil storage, but recall Rahmat also said Iran decided to sell most of floating oil. Note the big drop in global floating oil storage since early April in my 05/27 tweet likely reflects some of Rahmat's Iran oil views. Don't think most assume Iran's floating storage is down to very low levels. #OOTT.*" (ii) Our tweet included the Shana (news agency for Iran's oil ministry) report on comments from Oil Minister Owji last Saturday. Shana wrote "*Owji, adding the country had 87 million barrels of gas condensates in storage offshore before the incumbent government took over and witnessed numerous blackouts in 2020 winter due to the imbalance between gas production and consumption. "Now, the offshore gas condensate storage has been reduced to zero, and we have made great investments and enjoyed banks and holdings' funding to redress the imbalance," he continued.*" Owji said floating condensate had gone from 87 million barrels and is now zero. (iii) Our May 5 tweet an's floating condensate storage is what we heard on May 5 from Tehran-based Danial Rahmat. Our May 5 tweet included the transcript we made of Rahmat's comments on May 5 that included his comments that most of Iran's 100 mmb of floating oil storage was gone and there was almost no gas condensate in floating storage. The Iran Oil Minister comments confirm Rahmat's intelligence on Iran's floating condensate. But he did not specifically comment on Iran's floating crude oil that Rahmat says is almost all gone. (iv) Our tweet also included noted the big drop in Vortexa global oil floating storage since early April would also fit the Rahmat view on Iran's floating oil storage mostly gone. Our Supplemental Documents package includes the Shana report.

Iran's floating condensate now gone

Iran's floating oil and condensate storage reportedly sold in past few months

Here is what we wrote in our May 7, 2023 Energy Tidbits on the Danial Rahmat comments on Iran's floating storage. "*No question oil has been week over the past couple months and one overlooked, at least by us, is that Iran has reportedly sold off all their 100 million barrels of floating oil and undisclosed million barrels of condensate over the past few months. No question, it's been a negative to oil prices, but it also means that floating storage isn't there when demand increases over the coming months. Please note that some of this oil will be in floating oil storage estimates and some will be in transit oil, albeit very slow moving in transit. But the point is that it takes this either floating storage or in very slow transit off the market and into customers. On Friday morning, we tweeted [LINK] " "Iran, during the last 3 mths, decided to sell most of its [floating] #Oil with remarkable discounts" "And there is almost no gas condensate floating right now" Tehran-based @DanialRahmat12 to @FrankKaneDubai on @gulf_intel. Torque to oil price when demand returns. #OOTT". We hadn't realized Iran had recently sold its floating oil and condensate storage. We try to listen to the 30-min Gulf Intelligence podcast every morning as they have an excellent group of experienced guests from all over the world. One of the regular commentators is Tehran-based Senior Energy Security Consultant, Danial Rahmat. We have referenced his comments in prior memos as Rahmat has typically been a pretty plugged in energy consultant in Iran. Our tweet included the*

SAF Group created transcript of comments by Danial Rahmat (Tehran-based Senior Energy Security Consultant) with moderator Frank Kane (Editor-at-Large, Arabian Gulf Business Insights) on Gulf Intelligence PODCAST Daily Energy Markets – May 5th. [LINK]. Items in "italics" are SAF Group created transcript. Kane asked Ramat on Iran saying they are increasing more oil of late and one of the reasons "we have seen the price weakness of late?" Rahmat "…. Please consider, remember last year at this time, we were speaking about Iran's floating reserves in Asia, which was about 100 million barrels. Right now there is almost nothing left of that. So you see that Iran has delivered a very huge amount of oil to the markets this last year. Basically, within the last six months." Kane: "Dan, let me clarify one point, you said that the 100 million barrels of floating oil has now gone?" Rahmat "Mostly. Iran, because of the high level of uncertainty in the market. And actually, backwardation in the market where future contracts are cheaper than the spot prices. Iran, during the last 3 months, decided to sell most of its oil with remarkable discounts. Because it was not making sense to keep that oil floating because the prices were getting better and better so you were there to sell your oil with a discount instead of keeping that floating accepting the risk, and also spending the money for keeping that floating. So sold most of its oil. And there is almost no gas condensate floating right now. "

Oil – Iraq hope to receive a delegation from the Turkish side soon to resolve this issue

Turkey holds up Kurdistan oil exports

Yesterday, there was a good interview by Iraq oil minister Hayyan Abdul Ghani with Kurdistan media, Rudaw. [LINK] Ghani may have tried to be optimistic but has no idea when they will be meeting with Turkey to negotiate/resolve the issue. Rudaw reported "*The oil minister expressed optimism about the resumption of the Region's oil exports, saying that the stoppage "will not continue" amid ongoing negotiations with Turkey. "We hope to receive a delegation from the Turkish side soon to resolve this issue," he said."* We expect that there will still be some time if the negotiations are done at a higher level as Erdogan only appointed his new cabinet yesterday included a new energy minister lparslan Bayraktar. However Bayraktar should be up to speed quickly as he is a former deputy energy minister. But it will still take time for any high-level negotiations. No one was expecting any Turkey negotiations before the election and most still believe Turkey isn't going to give in until it has negotiated on the award against them as they know their best leverage is while they are holding up the resumption of Kurdistan oil exports. Prior to the halt there was 450,000 b/d of Iraq/Kurdistan oil exports via Ceyhan (Turkey). Our Supplemental Documents package includes the Rudaw interview with the Iraq oil minister..

But Vitol sees Iraq compensating by increasing oil exports from the south

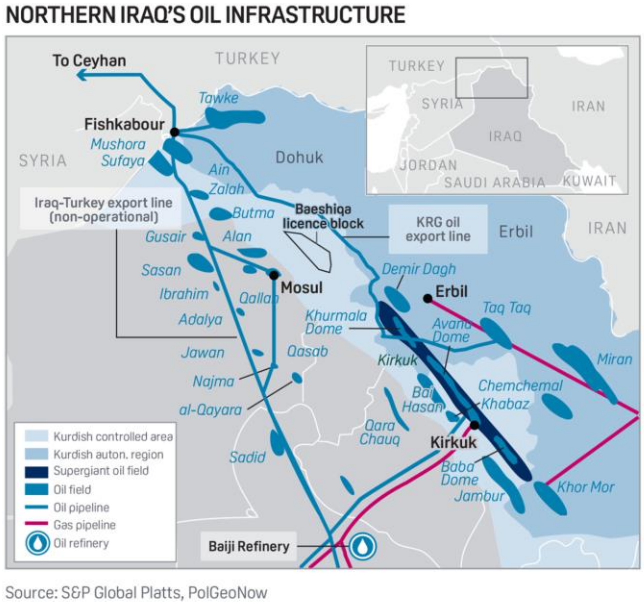
It sounds like the only production being shut-in are the Kurdistan oil volumes and that Iraq has been able to move their oil that normally goes north via Turkey to their southern export port. Here is what we wrote in our May 7, 2023 Energy Tidbits memo. "*One of the supply surprises to the negative from the northern Persian Gulf countries is Iraq. No question they are not exporting their +400,000 b/d of Kurdistan/Iraq oil via Turkey. However an interesting comment this morning from Vitol's Mike Muller on the Gulf Intelligence daily podcast that Iraq is making up for a good portion of the >400,000 b/d Kurdistan and Iraq oil that hasn't been able to be moved thru the northern pipeline to export via Ceyhan in Turkey. Earlier this morning, we tweeted [LINK] "#Oil supply surprise. There is no visibility to return of*

.400 kbd of Kurdish/Iraq exports via Turkey, BUT @michaelwmuller to @gulf_intel "i think Iraq seems to have compensated for reduced or cancelled Kurdish exports to the north by exporting more from the south". #OOTT."

Iraq's court case win halted 370,000 Kurdistan & 75,000 b/d Iraq oil exports

Here is what we wrote in our March 26, 2023 Energy Tidbits memo. "*Breaking news yesterday that Iraq reportedly halted 445,000 b/d of crude oil exports thru its north on the export pipeline to Ceyhan, Turkey. Iraq won an arbitration with Turkey, which means that Turkey has to deal with Iraq's oil marketing arm for approval of all Iraq oil exports, including oil from Kurdistan. It's not clear how long it will take to get to a mechanism for Iraq dealing with Turkey on the oil exports. Don't know if's wishful thinking but Kurdistan media was pointing to not too long to get an understanding. Regardless, until Iraq resumes oil exports via Turkey, it means there will be ~445,000 b/d of crude oil off the market. Yesterday, we tweeted [LINK] Iraq reportedly halts 370 kbd KRG + 75 kbd federal oil thru export pipeline thru Turkey reports @Ahmed_Rasheed_R @RowenaCaine. Positive for #Oil until Iraq resumes northern exports ie. agrees on mechanism to export Iraq oil thru Turkey in line with its arbitration win. #OOTT." Yesterday, Reuters reported [LINK] "Iraq halted crude exports from the semi-autonomous Kurdistan region and northern Kirkuk fields on Saturday, an oil official told Reuters, after the country won a longstanding arbitration case against Turkey. The decision to stop shipments of 450,000 barrels per day (bpd) of crude relates to a case from 2014, when Baghdad claimed that Turkey violated a joint agreement by allowing the Kurdistan Regional Government (KRG) to export oil through a pipeline to the Turkish port of Ceyhan. Baghdad deems KRG exports via Turkish Ceyhan port as illegal. The International Chamber of Commerce ruled in favour of Iraq on Thursday, Iraq's oil ministry confirmed on Saturday. Turkey has informed Iraq that it will respect the arbitration ruling, a source said. Turkish shipping officials told Iraqi employees at the Ceyhan oil export hub that no ship will be allowed to load Kurdish crude without the approval of the Iraqi government, according to a document seen by Reuters. Turkey subsequently halted the pumping of Iraqi crude from the pipeline that leads to Ceyhan, a separate document seen by Reuters showed. On Saturday, Iraq stopped pumping oil through its side of the pipeline which runs from its northern Kirkuk oil fields, an official told Reuters. Iraq had been pumping 370,000 bpd of KRG crude and 75,000 bpd of federal crude through the pipeline, according to a source familiar with its operations. "A delegation from the oil ministry will travel to Turkey soon to meet energy officials to agree on new mechanism to export Iraq's northern crude oil in line with the arbitration ruling," a second oil ministry official said." Kurdistan region Prime Minister Masrour Barzani expects this to be quickly resolved. Yesterday Kurdistan 24 news reported [LINK] "Kurdistan Region Prime Minister, Masrour Barzani, on Saturday reiterated the Kurdistan Regional Government's (KRG) good relations with the Iraqi federal government. "Our recent understandings with Baghdad have laid the groundwork for us to overcome the arbitration ruling today," PM Barzani wrote in the tweet. "A team from the KRG will visit Baghdad for talks tomorrow to build on the goodwill of our discussions," Barzani added." Below is a Platts Northern Iraq's oil infrastructure map from 2020 [LINK].*

Figure 34: Northern Iraq's oi infrastructure map from 2020



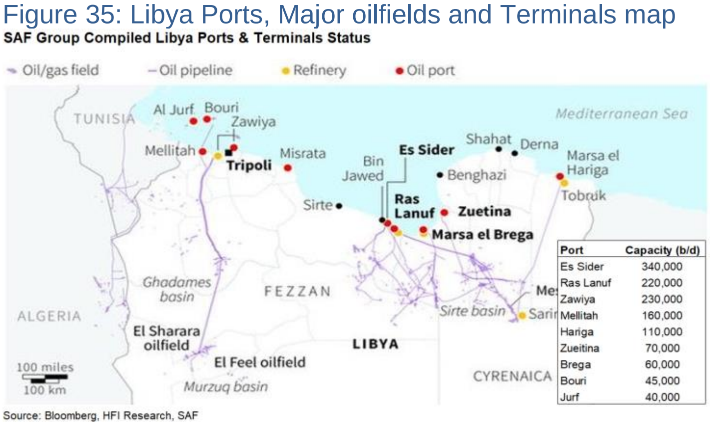
Source: Platts

Oil – Libya NOC says oil production continues to be stable at ~1.2 mmb/d

We have to give the Libya National Oil Corporation credit that it's been able to keep oil production pretty stable right around 1.2 mmb/d for the past several months. The Libya National Corporation tends to post a short oil production update on its Twitter [LINK] and Facebook [LINK]. They didn't post an update last week, but they did on Friday June 2 and the Google Translate was "*Crude oil production reached 1.214 million barrels per day, and condensate production reached 53 thousand barrels per day during the past 24 hours*."

Libya oil production 1.2 mmb/d

Figure 35: Libya Ports, Major oilfields and Terminals map



Port	Capacity (b/d)
Es Sider	340,000
Ras Lanuf	220,000
Zawiya	230,000
Mellitah	160,000
Hariga	110,000
Zueitina	70,000
Brega	60,000
Bouri	45,000
Jurf	40,000

Source: SAF Group

05/19/23 – Libya NOC Chair sees production about 1.3 mmb/d by yr-end

Here is what we wrote in our May 21, 2023 Energy Tidbits memo. *"For the past few months, we have been expecting to see some indication from the Libya National Oil Corporation of where they see oil production growth in 2023, especially since we are almost at the end of May. Libya oil production has been steady right around 1.2 mmb/d. On Friday, Bloomberg reported that Libya NOC Chair Farhat Bengdara expects production to reach ~1.3 mmb/d by yr-end 2023 and, with $17b, could reach 2 mmb/d within five years. We have been expecting a higher 2023 exit production rate given the Feb comments from one of the Libya NOC operating companies (see following item) that production to reach 1.5 mmb/d by yr-end 2023. Bloomberg wrote "Libya is aiming to boost oil production by about 8% by December, a level that would catapult it to the highest in a over a decade. North Africa's biggest producer should be able to pump about 1.3 million barrels a day by the end of the year, Farhat Bengdara, chairman of the National Oil Company, said in an interview. Avoiding field closures and steps like improving oil workers' pay already helped boost output by nearly a quarter since January 2022 to 1.2 million barrels a day now, he said. Libya has been dogged by political turmoil ever since the overthrow and killing of leader Moammar Al Qaddafi in 2011, with a political stalemate pitting rival governments and factions against each other." And "Bengdara said that $17 billion of investment across 45 projects would allow the National Oil Corp. to raise production to 2 million barrels a day within five years. If sustained, that would far exceed anything achieved during Qaddafi's rule." Our Supplemental Documents package includes the Bloomberg report."*

Oil – Exxon CEO "people continue to forget about the depletion curve"

Exxon warns on global oil declines

The focus of investor attention on the Exxon sell-side presentation on Thursday was on their shale oil potential. So overlooked was their regular and, at least annual, reminder that there is a 7% annual depletion/decline rate in global oil production. This is on a global basis so would work in the very high decline rates in US shale oil and essentially zero decline rate in oil sands mining. It means that, on average, the world has to add another 7 mmb/d of oil production to stay offset decline and stay flat. This is the challenge for growing global oil supply especially in the face of the well understood underinvestment in the oil and gas upstream. And Exxon says that if you're not investing, the market will be short at some point in time. Exxon CEO Darren Woods said "*So you can call it being stubborn. Our focus on it is a disciplined approach to understanding what the business required and sticking to it, because the facts didn't change. And with time, the facts were proven right. And it's not, wasn't that we were somehow magical in understanding it. It's basic math and understanding depletion curves and where the rest of the industry is. I'll tell you something else that's happening right now. If you look at, people continue to forget about the depletion curve and that every barrel of crude that you produce, or every ton of LNG that you produce is that much less supply available to the world. And you have to replace that, even if demand is flat So think about a 7% depletion curve. Maintaining volumes flat means you have to grow production by 7% to offset the decline. That's huge growth. People don't appreciate that. And the bigger the demand, that 7% becomes bigger, the bigger the hole that you're digging every year. If you look at where the demand for oil and gas is today, you look at a depletion and then you look at the investment going into the industry, the industry as a whole is under-investing in those resources. So whatever your view of demand is, and I* *said before, if we go back in time, what we typically miss is supply. No matter what your view of demand and where that's going to be at, that depletion curve eventually catches up to that demand equation. And if you're not investing, you will find the market gets short at some point in time. And my view is we're in that point in time today. The industry is under-investing. You hear that coming out of OPEC in Saudi Arabia, they're making that point. I think many people can see that maybe thinking it's self-serving, but the reality is that's an Issue."*

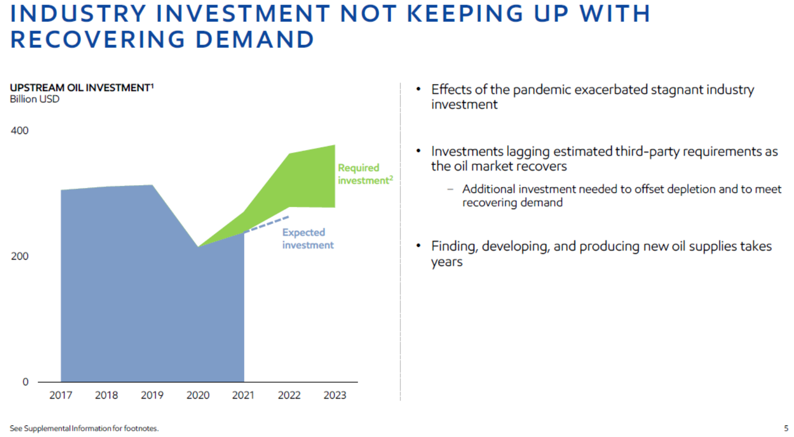
04/28/23: Exxon, oil & gas is a depletion business, basically on a treadmill

Here is what we wrote in our April 30, 2023 Energy Tidbits memo. "*Exxon CEO Woods was on CNBC Squawk Box on Friday morning after the Q1 release and before the Q1 earning call. And he reminded that the first priority for Exxon is to replace declines. Basically every barrel produced has to be replaced just to keep production flat. He was asked about capital allocation priorities given the big profits. We tweeted [LINK] a video clip of Woods comments and wrote "1st & foremost priority for #Exxon capital allocation. CEO woods "this is a depletion business on the #Oil & #NatGas side ... basically on a treadmill, every barrel is another barrel you have to replace". World needs ~5mmbd adds to stay flat. Thx @BeckyQuick @SquawkCNBC #OOTT." Woods replied "first and foremost" and then went on to highlight how "this is a depletion business on the oil and gas side and you're on basically a treadmill. Every barrel you produce is another barrel you have to replace. So finding the projects that do that cost effectively, have low cost of supply, that are advantaged versus rest of the industry is kind of job number one." Note that in our tweet we referred to ~5 mmb/d that needs to be added to keep global oil production flat. In a reply to one of our Twitter followers, we said we didn't use Exxon's prior stated 7% decline (ie. 7 mmb/d of adds needed) as Woods didn't refer to that in his Squawk Box comments and, given there is a range of views on global oil decline rate, we put in 5% or 5 mmb/d to make the point*."

Exxon is using a global oil production supply base decline of ~7% per year

The 7% decline curve referenced by Exxon on Thursday is unchanged. Here is what we wrote in our July 31, 2022 Energy Tidbits. "*There was a great reminder from Exxon's Q2 call presentation of one of the reasons why oil looks good for the 2020s. Everyone has been made well aware of the underinvestment in the oil and gas sector, whether it be from industry, OPEC countries or pro-climate change agencies like the IEA. But most have overlooked the biggest challenge for the oil sector – the existing production supply base declines every day. This is very bullish for oil in the 2020s. We were reminded of this in the Exxon Q2 call prepared remarks. Exxon posted the remarks shortly before their Q2 call and we tweeted [LINK] "Bullish for #Oil. #Exxon reminds #Oil #NatGas supply declines at ~7% per year ie. need to replace 7% to stay flat. not a new argument, see 👇SAF 06/20/19 blog ""Exxon's Math Calls For Overall Global Oil Decline Rate of ~7%, A Very Bullish Argument For Post 2020 Oil Prices" #OOTT." On an existing oil supply base of 100 mmb/d, that is approximately 7 mmb/d of annual declines. Note that Exxon said for oil and natural gas and they have previously suggested the oil decline rate was lower ie. below 6%. So that is 6 mmb/d of declines. Exxon said "As a depletion business, large annual* *investments in oil and gas production are needed to offset the decline in supply – roughly a 7% per year reduction. Even more investment is required to grow net production. As the world began to recover from the pandemic, demand for all but jet fuels recovered far faster than the time required to bring on new investments. As a result, the industry hasn't been able to meet the recovery in demand."*

Figure 36: Industry Investment Not Keeping Up With Recovering Demand

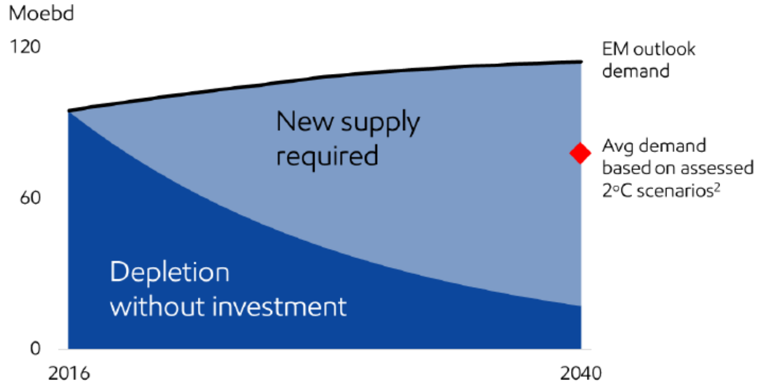


Source: ExxonMobil

Our June 19, 2019 blog was all about global oil decline rate

Exxon's warning on global oil decline rates in June 2019 was the reason for our SAF Group June 19, 2019 blog "*Exxon's Math Calls For Overall Global Oil Decline Rate Of ~7%, A Very Bullish Argument For Post 2020 Oil Prices"* [LINK]. Exxon presented at a sellside conference that week in June 2019 and then thought Exxon presented a very bullish argument for oil prices beyond 2020 which was overlooked because most readers only flip thru a slide deck and don't listen to or read transcripts of management's spoken words. Exxon's spoken words highlighted one of the forgotten (and perhaps most important) oil supply/demand concerns for post 2020 – the mid term challenge to replace increasing rate of overall global oil declines. And what was eye opening was Exxon's estimated overall global oil decline rate, which is way higher than any we could then ever remember seeing. Our blog said *"Its impossible to tell from the small oil supply/demand graph in the slide deck, but Exxon's spoken words says long term oil demand is 0.7% per year and then "When you factor in depletion rates, the need for new oil grows at close to 8% per year and new gas at close to 6% per year." Exxon may not specifically say what the global decline rate is, but their math is that the world needs new oil supply to grow annually at close to 8% to meet the 0.7% annual increase in oil demand and offset declines ie. an overall global decline rate of approx. 7%. This is an overall global oil decline rate for OPEC and non-OPEC".* At that time in 2019, BP's estimate of overall global oil decline rate is 4.5% and we expect most are probably assuming something around 5%, certainly not above 6%. No one should be surprised by the increased decline rate given that high decline US shale and tight oil have increased by ~2.5 mmb/d in the last ~2 years. But an implied ~7% overall global oil decline rate is way higher than expectations. There is a big difference between needing to offset oil declines of ~7 mmb/d vs declines of ~4.5 mmb/d ie. an additional 2.5 mmb/d of new oil supply every year. Even if the implied difference was to 6%, it would still be an additional 1.5 mmb/d of new oil supply and that would also be very bullish for post 2020 oil. At that time, we said we recognized that the 2019/2020 oil supply demand story is the need for OPEC+ to keep cuts thru 2020, but Exxon's math implying ~7% overall global oil decline rate sets up a very bullish view for oil post 2020. We believe the reality to replace oil declines post 2020 is overlooked. Our Supplemental Documents package includes our June 19, 2019 blog.

Figure 37: Exxon Estimated Oil Supply/Demand, June 2019 slide deck



Source: ExxonMobil June 2019

Oil – China 1st timers getting Covid are having "relatively severe" impact

China Covid 1st timers

As of our 7am MT news cut off, we have not seen any new Chinese state media (Global Times, People's Daily & Xinhua) reports on Covid. (i) Yesterday we tweeted [LINK] "*#ChinaCovid. China state media. Same primary messaging that reinfection people are "generally milder than those of the first infection". But that means an undisclosed portion of the reinfections are more severe like last time. But looks like new disclosure on first timers "The symptoms of people infected for the first time in recent period are similar to those that were infected last winter, and are relatively severe, such as body temperature exceeding 38.5 C and severe respiratory symptoms". Can't help but feel there has to be some slowdown/pause in what people are doing in China #OOTT ."* (ii) Up until Friday, we have only seen Chinese state media primary messaging was that most who were being reinfected were only having mild symptoms. On Wednesday, we tweeted [LINK] "*Will increasing #ChinaCovid cases only have a minor impact on activity/economy? Hope the state media reports are accurate. Despite a recent increase, the total amount of fever clinic patients is far less than that during the peak of the previous infection wave, and most of the patients only have mild symptoms, said Wang Liping, a researcher with the Chinese Center for Disease Control and Prevention (China CDC). #OOTT #OilDemand."* So "most" have mild smptoms. China has not mentioned what the percentage for "most' was but it infers something more than 50%. But the implication is that the non-most percentage of the reinfected have something other than mild symptoms. (iii) On Friday we saw the first commentary on those infected for the first time. And it was that these are similar to what was seen last winter and "*relatively severe*". We recognie that the vast majority of Chinese have already had Covid so the 1st timers population is low, but when we saw the "relatively severe", it made us think more of the non-most percentage of reinfected that aren't having mild symptoms. And why we put in our tweet can't elp but feel there has to be some slowdown/pause in what people are doing in China. Our Supplemental Documents package includes the state media reports attached to our two tweets.

China's model predicts new Covid wave peaks at 65 million/week in late June
Here is what we wrote in last week's (May 28, 2023) Energy Tidbits memo. "On Monday, China admitted there is a new wave of Covid that their predictive model calls for a peak of 65 million cases per week at the end of June, but also thinks the impact wont' be as bad. On Tuesday, we tweeted [LINK] "China on market watch for next several weeks as to how severe is this new wave of Covid. State media: China's top respiratory disease expert says new COVID-19 wave will likely peak in late June at ~65 million cases per week. Thinks 2nd peak won't be as bad as 1st, now will hospitals be overloaded as usually mild symptoms. Also new variant XBB has no significant change in pathogenicity. Even if only mild, will slow down pace of recovery. #OOTT". Our tweet included the Global Times (China state media) reporting that included "A small wave of COVID-19 infections at the end of April and early May was "anticipated." Projections showed that a small peak of infections is likely at the end of May, with the number of infections peaking at about 40 million per week. By the end of June, the epidemic is expected to peak at about 65 million infections a week. The second peak won't be as bad as the first, nor will hospitals be overloaded as reinfection usually comes with milder symptoms, Wang Guangfa, a respiratory expert at Peking University First Hospital, told the Global Times on Monday*."*.

Reminder these are predictive models that might be wrong
Here is another item fromlast week's (May 28, 2023) Energy Tidbits memo. "*Earlier this morning we tweeted [LINK] on the Global Times Friday reporting "Wave of COVID-19 reinfection in China has 'limited impact' on everyday life" that included the reminder that these are predictive models that might not be accurate. Global Times wrote 'The country is predicted to face a peak at the end of June, with about 65 million people infected with COVID-19 each week, according to Zhong. But Zhong also noted that it's predicted based on model calculation, which might not be accurate." As a reminder, last week's (May 21, 2023) Energy Tidbits included the updates from Chinese state media and how there was a low probability of large scale infection. We wrote "On Wednesday, Xinhua news reported [LINK] "China sees low possibility of a large-scale COVID-19 epidemic outbreak in the country at the current stage, according to an expert with the Chinese Center for Disease Control and Prevention (China CDC The number of confirmed COVID-19 cases reported nationwide has been on the rise since mid-to-late April, according to official surveillance data, said Wang Liping, a researcher with the China CDC, adding the symptoms of the majority of confirmed cases reported are mild. The COVID-19 Omicron XBB subvariants had developed into dominant subvariants in China as of early May, while there is no significant change in the pathogenicity of XBB subvariants, said Chen Cao, a researcher with the China CDC."*

Couldn't help notice Xi and others mask wearing on Thurs/Fri

As readers know, we try to go to the source and not just 3rd party reportin. One of the reasons is that there will often be pictures and pictures tell a story. That was the case when we saw Xinhua's report "*Xi stresses building modern Chinese civilization*" and opened up the story to see several pictures of Xi in big and small meetings on Thursday and Friday and noted all the masks. It felt like picture es of Xi in 2022 and not 2023. It's why we tweeted [LINK] *"#ChinaCovid. Can't help notice a lot of mask wearing by Xi and others in Thurs/Fri meetings in today's Xinhua Xi story. Hope state media reports are accurate. But would think Xi's mask wearing will cause some to go slow/pause their activities a bit? #OOTT."* If we were in China and saw everyone one wearing masks, we would be wondering if Covid is a little worse than being portrayed. Our Supplemental Documents package includes all the pictures from the Xinhua report.

Figure 38: Xi in Beijing on June 2

Source: Xinhua

Oil – China imports twice as much Malaysia oil as Malaysia produces

China oil imports from Malaysia

One of the oil market stories on Tuesday was on China's oil imports from Malaysia at levels that are twice as much as Malaysia produces. On Tuesday, we tweeted [LINK] "*Here's how China imports Malaysia #Oil at 2x Malaysia's oil production. It doesn't take much! See 👇 @TankchatTony 05/25 on rebranding RUS crude/products, in this case as UAE. No reason why RUS/Iran oil can't be rebranded as Malaysian. #OOTT."* The answer is that there must be Iran or Russia or some combination of oil that is going into Malaysia and is coming out as Malaysia oil. This is not unique to Malaysia, rather it is bein done elsewhere like the UAE. Last week', we saw a simp explanation of how this happens in the UAE and we suspect this must be the same explanation in Malaysia. We expect that most if not all of the crude is likely Iran oil but it could easily be a fair amount from Russia. Below is what we wrote in last week's (May 28, 2023) Energy Tidbits memo.

How to recertify Iran/Russia crude as being from another country

Our 05/29/23 tweet on how China imports twice as much Malaysia oil as Malaysia producer linked tour 05/25/23 tweet on how Russia crude/petroleum products go into UAE and come out as UAE origin. Here is what we wrote in last week's (May 28,

2023) Energy Tidbits memo. "*Everyone knows or hears how more Russian crude oil and petroleum products are going into Saudi Arabia and UAE, and then end up being reexported as UAE. But it is always good to hear that directly from people who own/control storage tanks in Fujairah (UAE) and are doing it. Let's be clear, it isn't against the law. It's just what happens to Russian crude and petroleum products to reduce the revenue to Russia while maintaining the supply into global oil markets. One of our must listen-to daily webcasts is the Gulf Intelligence Daily Energy Markets podcast. On Thursday, Tony Quinn (Operating Partner, Prostar Capital & CEO Tankbank International) gave the insight on Russia flows into UAE and out as rebranded UAE based on what he sees as an owner/controller of storage tanks at Fujairah. Fujairah is the major Middle East crude oil and petroleum products storage hub. On Thursday, we tweeted [LINK] "Big Russian #Oil #PetroleumProducts flows into UAE (Fujairah), blended that changes certificate of origin & "moved to all sorts of strange places you would never expect to be exported to" says @TankchatTony to @FrankKaneDubai @gulf_intel. See 👇SAF Group transcript #OOTT." Our tweet included the transcript we made. SAF Group created transcript of comments by Tony Quinn (Operating Partner, Prostar Capital & CEO Tankbank International) with host Frank Kane (Editor-at-Large, Arabian Gulf Business Insights) on Gulf Intelligence PODCAST: Daily Energy Markets May 25th. [LINK] Items in "italics" are SAF Group created transcript. At 18:10 min mark, Quinn "I have to be careful what I say because I get in trouble here, but the oil [Russian oil] is still flowing. I'm sitting amongst 11 terminals here [Their terminals in Fujairah] and probably 50% of them are full of Russian product. So, it's still moving….. But I think in general, I'm seeing more flows. I'm seeing more traders taking Russian flows directly into here. We have seen product moving here to all sorts of strange places that you would never expect to be exported to. So there are big movements particularly out of this part of the Gulf of Russian crude. It's all being diverted. We have a different customer base. Whereas we used to bunker the Kuwaitis, now we're unloading the Russians." At 20:15 min mark, Kane asking if some the product diverting elsewhere, some of it must be Russian ending up in Europe. Quinn "…. offloading of product here or any terminal in the world, you have to remember that, once they blend that product, the certificate of origin changes. So you're suddenly dealing with a product that has a new origin. So If that's here, it suddenly become a UAE product wherever it was before. So all of those things happen. So looking at the flows, you really don't know where it comes from."*

Oil – China scheduled domestic flights for back to April 18-24 levels

China domestic flights

Chinese domestic air travel mobility indicators continue to point to a stalling or at least a much slower than expected China recovery in China domestic scheduled flights continuing into June. China scheduled domestic flights have given back the last month's gains. On Tuesday, we tweeted [LINK] "*China consumers taking a pause. Scheduled domestic air flights back to Apr 18-24 levels. Scheduled domestic flights -0.1% WoW to 94,321. Scheduled "over" next 4-wk is increasing to 100,316 flights is -15.8% vs 119,180 flights that were scheduled on Mar 28 for Apr. Thx @BloombergNEF Claudio Lubis #OOTT #Oil".* This week's (May 30) update of scheduled China domestic flights continued with the same negative as last week – it's a give back of last month's flight increases and scheduled domestic flights are back to Apr 18-24 levels. On Tuesday, BloombergNEF posted its

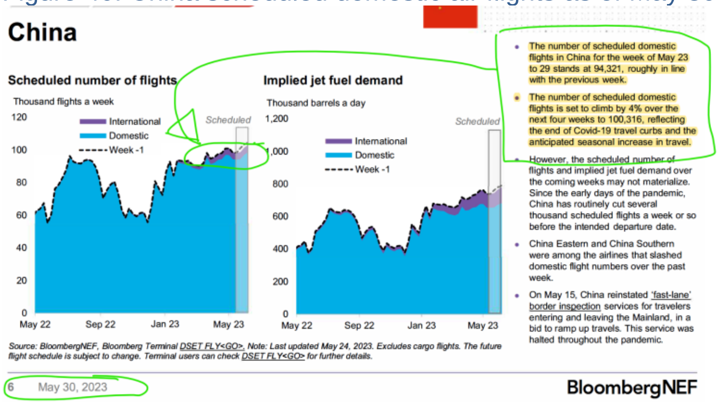
Aviation Indicators Weekly May 30, 2023. BNEF reported China scheduled domestic flights were -0.1% WoW to 94,321 flights for May 23-29 week vs 94,417 flights for May 16-22 week, The recent 5-day May Day Holiday was Apr 29-May 3. Note scheduled domestic flights for May 23-29 at 94,321 flights is -20.9% vs what was scheduled on March 28 for the then next 4-weeks ie. April) of 119,180 flights. Today's number of scheduled domestic flights for the next four weeks is set to increase by 4% "over" the next weeks to reach 100,316 flights. Again still -15.8% below the 4-week scheduled on March 28 for the end of April that was 119,180 domestic scheduled flights. This is still saying the big jump up in scheduled domestic flights for April didn't happen. China scheduled domestic flights are back to pre May Day Holiday levels. And, at best there is modest increases in scheduled flights to levels far less than expected two months ago. Our tweet included the BloombergNEF charts from May 30 and March 28, and our listing of WoW changes from the prior BloombergNEF reports.

Figure 39: China scheduled domestic flights from BNEF Aviation Indicators Weekly reports

May 23-29: -0.1% WoW to 94,321 flights
May 16-22: -2.8% WoW to 94,417 flights
May 9-15: basically flat at 97,049
May 2-8: +2.8% WoW to 97,087
Apr 25-May 1: +0.04% to 94,471
Apr 18-24: +2.1% WoW to 94,138
Apr 11-17: +0.7% WoW to 92,231
Apr 3-10: -4.2% WoW to 91,567
Mar 28-apr 3: +6.8% WoW to 95,624
Mar 21-27: +1.5% WoW to 89,513
Mar 14-20: -0.6% WoW
Mar 7-13 week: -0.8% WoW
Feb 27-Mar 3 week: -2.6% WoW
Feb 21-27 week: +0.0% WoW (note this was +0.01%)
Feb 14-20 week -0.5% WoW
Feb 7-13 week -0.7% WoW
Jan 31- Feb 6 week +10.9% WoW
Jan 24-30 week -9.2% WoW
Jan 17-23 week +7% WoW
Jan 10-16 week +20% WoW

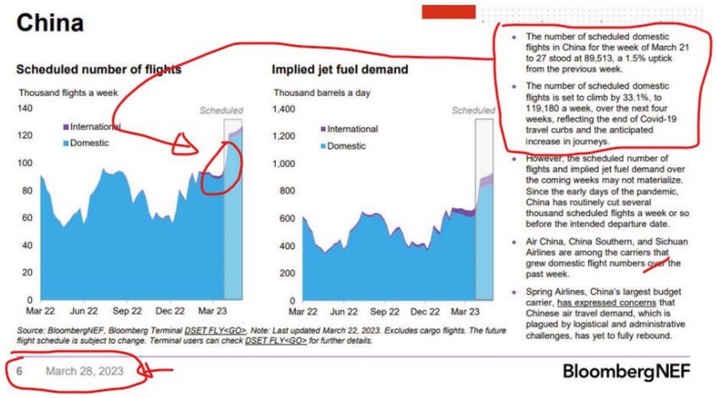
Source: BloombergNEF

Figure 40: China scheduled domestic air flights as of May 30



Source: BloombergNEF

Figure 41: China scheduled domestic air flights as of March 28



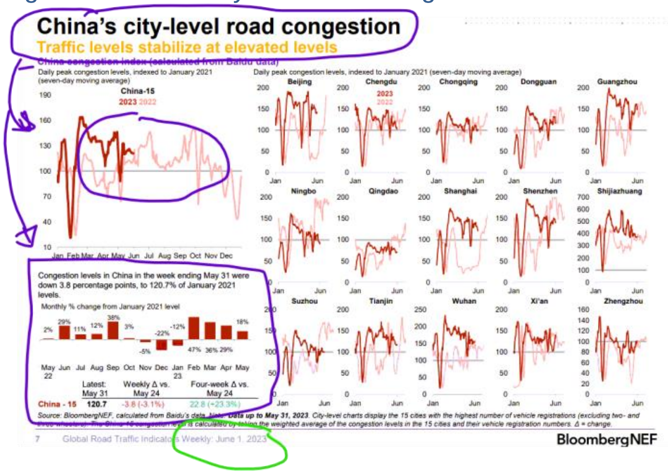
Source: BloombergNEF

Oil – Game playing in Baidu China city-level road congestion data??

China city traffic congestion

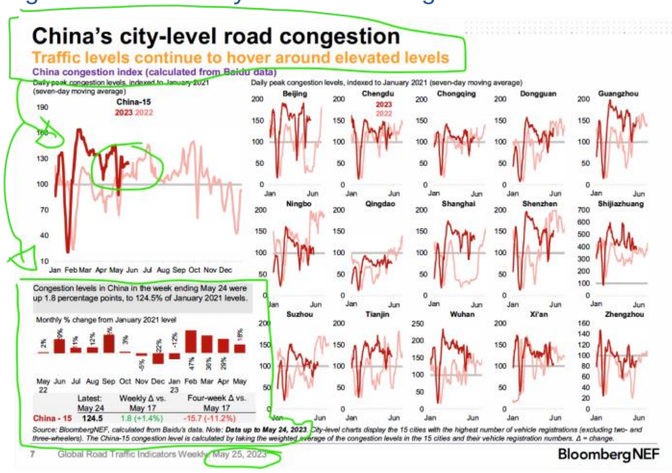
We have a similar question/concern as last week's (May 28, 2023) Energy Tidbits memo on the Baidu mobility data on China city-level road congestion data in the BloombergNEF Global Road Traffic June 1 report from two weeks ago. (i) Here is our question. As readers know, we track the weekly mobility data in China, which means that we normally, but not always, catch when there are big revisions as was the case with the Baidu data last week. Last week's (May 28, 2023) Energy Tidbits wrote "This week's report includes Baidu data for the week ended May 24. BloombergNEF wrote ""*Congestion levels in China in the week ending May 24 were up 1.8 percentage points, to 124.5% of January 2021 levels"* (ii*) A small +1.8% WoW increase isn't what we would have expected with the big increase in Covid cases but isn't unbelievable asi tis only +1.8% WoW. However, as soon as we saw it, it jumped out that something doesn't sound right. Last week's (May 21, 2023) Energy Tidbits memo highlighted the Baidu data for the week ended May 27. And here's what BloombergNEF wrote in the Global Road Traffic Indicators May 18, 2023 report "Congestion levels in China in the week ending May 17 were down 38.2 percentage points, to 94.4% of January 2021 levels."(iii) So something is off in the Baidu data and, assuming the new data for the May 24 week is right, Baidu made a huge upward revision to its May 17 data and that would have been in the face of rising Covid cases. We have been tracking this report for some time and don't recall ever seeing such a revision. If May 24 week data is right, the Chinese didn't have the big collapse in city-level traffic in the May 17 week and everything looks solid. (iv) But if the May 17 Baidu data is right, it's hard to believe that China city-level road congestion was +31.9% WoW and not +1.8% WoW in the face of rising Covid cases. (v) Something seems off in the Baidu data, but we just don't yet know what is off."* (ii) In the new June 1 report, Baidu data for week ending May 31, "congestion levels in China in the week ending May 31 were down 3.8 percentage points to 120.7% of January 2021 levels". This would seem to make sense given the higher Covid and mostly weaker China economic views. However, it looks the Baidu data wasn't revised again as happened last week ie. the big upward revision last week wasn't changed. So this week follows last week and is saying the big second crash down in Baidu congestion didn't happen. (iii) We will continue to track, but the takeaway based on the new data is that there was a WoW decrease in China city-level road traffic, which would makes sense with the increasing Covid cases. Below are the BloombergNEF China city-level congestion data for the week ended May 31, May 24 and May 17.

Figure 42: China city-level road congestion for the week ended May 31



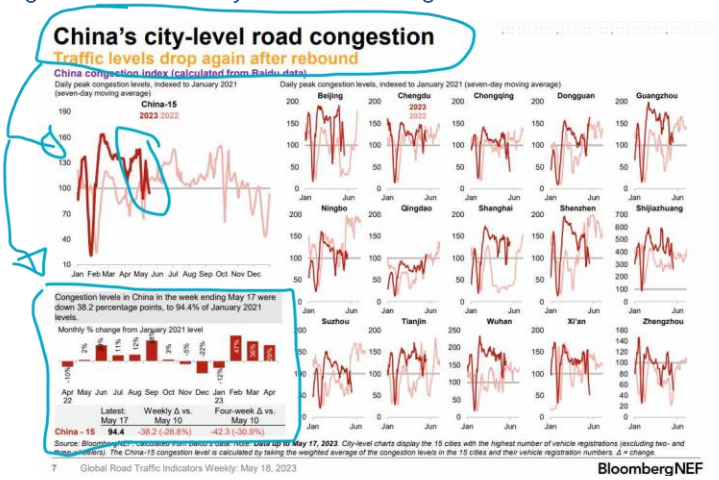
Source: BloombergNEF

Figure 43: China city-level road congestion for the week ended May 24



Source: BloombergNEF

Figure 44: China city-level road congestion for the week ended May 17



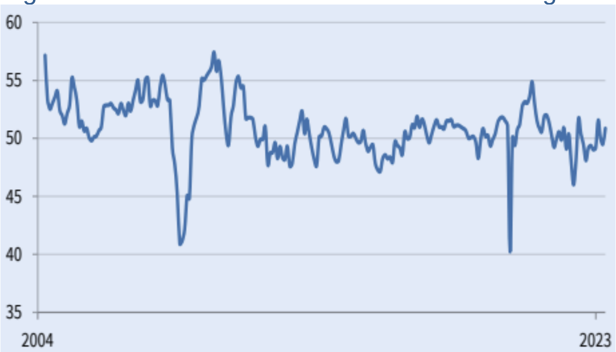
Source: BloombergNEF

Oil - Caixin PMI surprise back to expansion with +1.4 MoM to 50.9 in May

Caixin PMI back to expansion in May

There was a big surprise on Wed night with the China Caixin Manufacturing PMI data for May. As a reminder, there are two China manufacturing PMI data that come out each month. the Official Manufacturing PMI that normally comes out the day before the Caixin Manufacturing PMI data that we track. These two PMI's generally track each other but sometimes, like this month, there is a big difference. We have focused on the Caixin PMI as we look at it more as a leading indicator for how the China recovery is doing as it is a more export-oriented PMI and export have been the big drive of China for the past 20 years. The expectation for the Caixin was for contraction given the official PMI fell back into contraction at 48.8 in May. So it was a big surprise to see the Caixin Manufacturing PMI for May that was released at 7:45pm MT on Wed night. [LINK]. The PMI increased from 49.5 in April to 50.9 in May and was a big beat to expectations of 49.5. This increase is the first sign of improvement in the manufacturing sector's health over the last three months, according to the PMI data. We typically tweet out as soon as the Caixin Manufacturing PMI is released and, on Wed night, we tweeted [LINK], *"Positive surprise to upside. China Caixin Manufacturing PMI returns to expansion. May 50.9 vs Est 49.5, Apr 49.5, Mar 50.0, Feb 51.6, Jan 49.2. "China's manufacturing experienced a patchy recovery..... market supply and demand improved significantly". Thx @SPGlobalPMI. #OOTT".* IHS wrote "*The Caixin China General Manufacturing PMI in May grew 1.4 points from the previous month to 50.9, returning to expansion as both supply and demand picked up; "Both manufacturing supply and demand improved. Manufacturing output grew significantly, with the related subindex logging its highest since June 2022. The subindex for total new orders recorded its second-highest reading since May 2021 as surveyed businesses reported more clients and demand, even though demand remained a bit weaker than supply. External demand remained stable, with the gauge for new export orders rising marginally within expansionary territory. Exports of intermediate goods significantly outperformed shipments of consumer and investment products."* Our Supplemental Documents package includes the Caixin China Manufacturing PMI for May. Below is a snapshot of the China general manufacturing PMI.

Figure 45: China Caixin General Manufacturing PMI



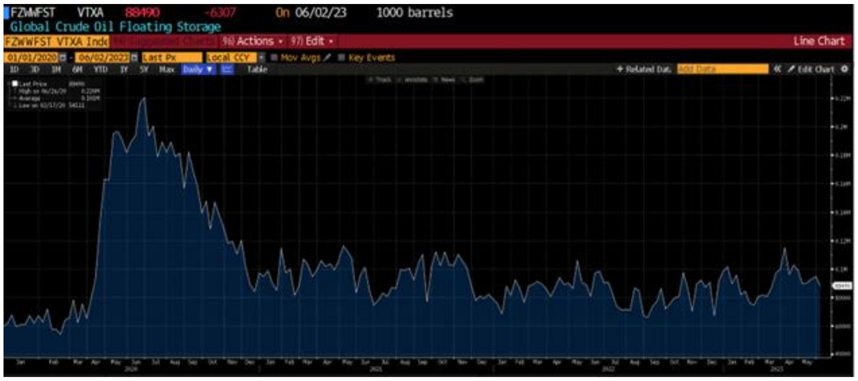
Source: S&P Global

Oil – Vortexa crude oil floating storage at June 2 was 88.49 mmb, -6.31 mmb WoW

Vortexa floating storage

We are referencing the Vortexa global 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 27 at 9am MT. (i) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for June 2 at 88.49 mmb, which was -6.31 mmb WoW vs upwardly revised May 26 of 94.80 mmb. Note May 26 was revised +9.53 mmb vs the 85.27 mmb posted on Bloomberg as of 9am MT on May 27. (ii) Please note our tweet yesterday [LINK] on Vortexa floating storage highlighted the big -29.46 mmb drop in floating storage vs the recent Apr 7, 2023 peak. And we wrote "*See 👇table, -29.46 mmb vs 04/07, is this Iran selling floating storage, RUS oil being rerouted after floating, blending or transferred?"* We discuss this more in a couple items in this memo. (iii) Other than the big +9.53 mmb revision to May 26, all the rest of the seven weeks' revisions were positive but a lot smaller. The revisions from the estimates posted yesterday at 9am MT vs the estimates posted on Bloomberg at 9am on May 27 are as follows: May 26 revised +9.53 mmb. May 19 revised +0.89 mmb. May 12 revised +2.21 mmb. May 5 revised +1.09 mmb. Apr 28 revised +2.19 mmb. Apr 21 revised +1.10 mmb. Apr 14 revised +1.34 mmmb. (iv) There is a wide range of floating storage estimates for the past seven weeks, but a simple average for the past seven weeks is 93.93 mmb, which is up vs last week's then seven-week average of 92.39 mmb. (v) Also remember Vortexa revises these weekly storage estimates on a regular basis and 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. (vi) Note the below graph now goes back to Jan 1, 2020 and not just three years as floating storage in Apr 2020 had started to reflect the Covid impact. (vii) June 2 estimate of 88.49 mmb is -131.81 mmb vs the Covid peak on June 26, 2020 of 220.30 mmb. (viii) Jun 2 estimate of 88.49 mmb is +22.88 mmb s pre-Covid Feb 28, 2020 of 65.61 mmb. (ix) June 2 estimate of 88.49 mmb is +7.69 mmb YoY vs June 3, 2022 of 80.80 mmb. (x) Below are the last several weeks of estimates posted on Bloomberg as of 9am MT June 3, 9am MT May 27, and 9am MT May 20.

Figure 46: Vortexa Floating Storage posted on Bloomberg June 3 at 9am MT



Source: Bloomberg, Vortexa

Figure 47: Vortexa Estimates Posted June 3 9am MT, May 27 9am MT, May 20 9am MT

Posted June 3, 9am MT

	Date	FZWFST VT... Last Px
Fr	06/02/2023	88490
Fr	05/26/2023	94797
Fr	05/19/2023	92877
Fr	05/12/2023	90256
Fr	05/05/2023	89326
Fr	04/28/2023	99073
Fr	04/21/2023	102.658k
Fr	04/14/2023	96064
Fr	04/07/2023	114.915k
Fr	03/31/2023	99827
Fr	03/24/2023	97139

May 27, 9am MT

	Date	FZWFST VT... Last Px
Fr	05/26/2023	85268
Fr	05/19/2023	91991
Fr	05/12/2023	88048
Fr	05/05/2023	88236
Fr	04/28/2023	96881
Fr	04/21/2023	101.561k
Fr	04/14/2023	94718
Fr	04/07/2023	113.444k
Fr	03/31/2023	98654
Fr	03/24/2023	95716
Fr	03/17/2023	86093

May 20, 9am MT

	Date	FZWFST VT... Last Px
Fr	05/19/2023	84904
Fr	05/12/2023	89302
Fr	05/05/2023	84925
Fr	04/28/2023	97375
Fr	04/21/2023	100.845k
Fr	04/14/2023	96206
Fr	04/07/2023	114.358k
Fr	03/31/2023	99009
Fr	03/24/2023	95814
Fr	03/17/2023	86464
Fr	03/10/2023	80745

Source: Bloomberg, Vortexa

Oil – Vortexa crude oil floating storage WoW changes by regions

Vortexa floating storage by region

Please note the following comment on Iran/Russia floating storage. Bloomberg also posts the Vortexa crude oil floating storage in the key regions, but not all regions of the world. The regions covered are Asia, Europe, Middle East, West Africa and US Gulf Coast. We then back into the "Other" or rest of world. The largest WoW changes were in Asia -4.24 mmb WoW and then Other -3.09 mmb WoW. 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 26 that was posted on Bloomberg at 9am MT on May 27.

Figure 48: Vortexa Estimates Posted June 3 9am MT, May 27 9am MT, May 20 9am MT

Vortexa Crude Oil Floating Storage by Region (mmb)				Original Posted	Recent Peak	
Region	June 2/23	May 26/23	WoW	May 26/23	Apr 7/23	June 2 vs Apr 7
Asia	46.70	50.94	-4.24	43.69	58.31	-11.61
Europe	6.97	4.83	2.14	4.73	23.80	-16.83
Middle East	4.91	6.47	-1.56	6.11	6.07	-1.16
West Africa	5.60	7.85	-2.25	6.53	5.97	-0.37
US Gulf Coast	0.11	1.01	-0.90	1.09	3.17	-3.06
Other	24.20	23.7	-3.09	23.12	17.60	4.17
Global Total	88.49	94.80	3.25	85.27	114.92	-29.46
Vortexa crude oil floating storage posted on Bloomberg 9am MT on June 3						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

Oil – Is it Russia/Iran floating oil that is impacting the Vortexa floating oil data?

Is it Russia and Iran floating oil?

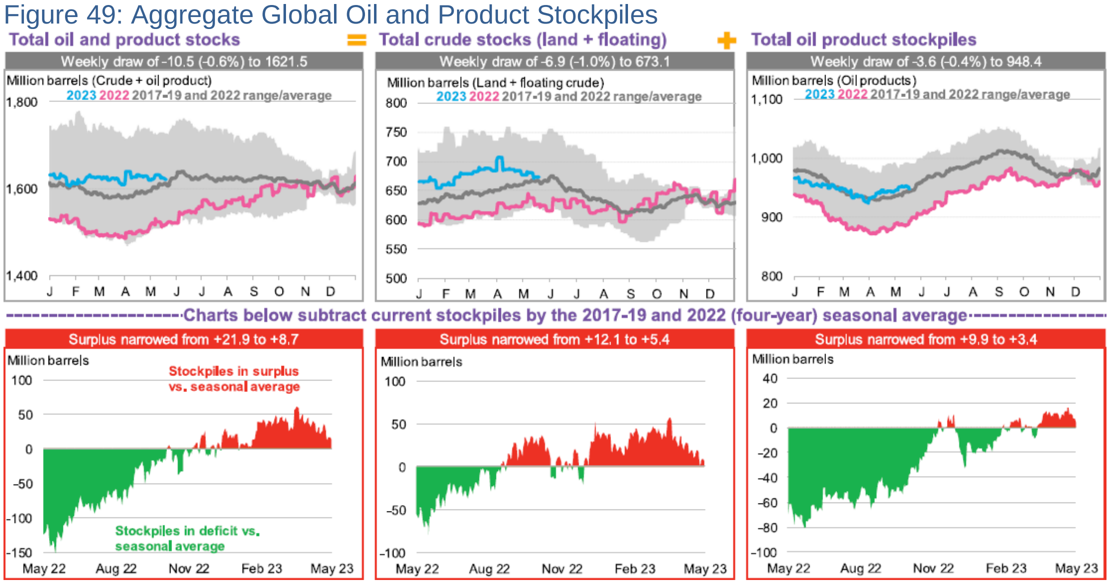
Our May 7, 2023 Energy Tidbits memo noted how Saudi Arabia is increasing imports of Russian oil and petroleum products and increasing its exports of petroleum products in particular to Europe. And how Iran has reportedly been selling its floating storage/very slow in transit oil at discounted prices. When we look at the Vortexa data, we have to wonder if these two factors are part of what is at play in the Vortexa data. Floating crude oil recent peak was on Apr 7 at 114.92 mmb, and June 2 is down 29.46 mmb since then. This includes Europe -16.83 mmb and Asia -11.61 mmb since Apr 7. We have to wonder if these large declines represent Russian and Iran oil being transferred and rerouted to Asia and Europe, and Iran selling down its floating storage and very slow moving oil in Asia. Note the above table shows the floating storage by region at Apr 7 and the changes vs June 2 floating storage.

Oil – BNEF: global oil and product stocks surplus narrowed WoW to 8.7 mmb

BNEF's global oil inventories

One of the negatives for oil going into 2023 was that there was expected to be surplus oil in Q1 and a building of global oil inventories. That's happened. So, a key data point to watch has been if this build turns into a draw over Q2/23 and certainly into Q3/23. And we remind that there are weekly changes that can flip flop but the key will be to watch the trend. For those with a Bloomberg terminal we recommend flipping through BloombergNEF's "Oil Price Indicators" weekly that is released weekly on Monday, as it provides good charts depicting near-term global oil demand and supply indicators. The global stockpile for crude oil and products surplus narrowed from 21.9 mmb to 8.7 mmb for the week ending May 19. Land crude oil inventories decreased by 11.2 mmb WoW to 579.1 mmb, widening the deficit to 31.6 mmb against the five-year average (2016-2019, 2022). Total crude inventories (incl. floating) decreased by -6.9 mmb WoW to 673.1 mmb, narrowing the surplus from +12.1 mmb to +5.4 mmb. Total product stocks were down by -3.6 mmb WoW to 948.4 mmb, narrowing the stockpile surplus against the 4-year average (2017-2019,2022) to 3.4 mmb for the May 19 week. The gas, oil, and middle distillate stocks decreased by -1.7 mmb WoW at 144.7 mmb/d, with the deficit against the four-year average widening to -18.3 mmb. Jet fuel consumption by international departures for the week of June 5 is set to increase by +21,200 b/d WoW, while consumption by domestic passenger departures is forecast to increase by +8,400 b/d WoW. Below is a snapshot of aggregate global stockpiles.

Figure 49: Aggregate Global Oil and Product Stockpiles



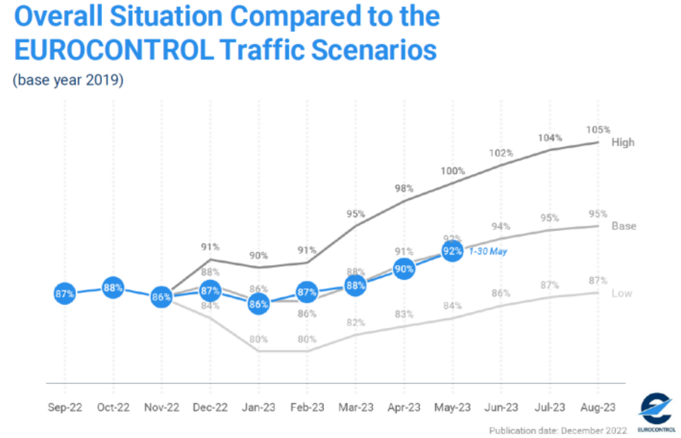
Source: BloombergNEF

Oil – Eurocontrol sees air travel in May at 92% of 2019 levels

Eurocontrol May Aviation Overview

European air travel continues to steadily increase. On Friday, we tweeted [LINK] "*#EU average daily air flights continues to steadily ramp up & in line with @eurocontrol base case fcast. May 24-30 wk: +4% WoW, 93% of 2019. May: 92% of 2019. YTD May: +15% MoM, 89% of 2019. One surprise, EU/Asia Pacific flights only -10% of 2019, expected bigger gap. #OOTT."* On Friday, Eurocontrol posted its European Aviation Overview May 24-30. [LINK] The update was in line with Eurocontrol's Dec 2022 forecast that called for steading increases in 2023. Eurocontol noted that the week of May 24-30 had 30,231 average daily flights, was +4% WoW, and +6% YoY, and back to 93% of 2019 levels. Also "*For May, the number of flights in the Network was 92% of 2019 levels".* And also "YTD, network traffic is +15% YoY and 89% of 2019". Below is the Eurocontrol graph showing monthly actuals vs their base forecast.

Figure 50: Eurocontrol Air Traffic Scenarios at June 2



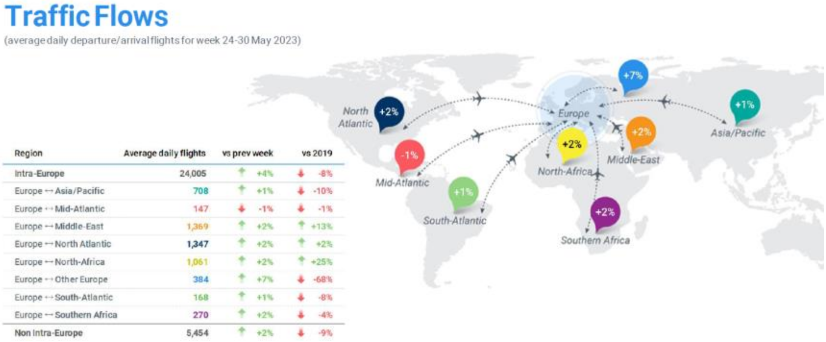
Source: Eurocontrol

Oil – Eurocontrol sees Europe-Asia Pacific is only down 10% vs 2019

Europe to Asia Pacific air travel

There was one surprise, at least to us, from Eurocontrol 's European Aviation Overview May 24-30. [LINK] Our Friday tweet included the comment "*One surprise, EU/Asia Pacific flights only -10% of 2019, expected bigger gap. #OOTT.*" We recognize that that most of the focus on Asian international travel is how China was only just ramping up international air travel around the end of May, so we were surprised to the see the Eurocontrol graphic that shows average daily departure/arrival flights averaged 708 flights for May 24-30 week, which was +1% WoW and only -10% vs 2019. We were surprised that it is only -10% vs 2019. Below is the Eurocontrol graphic on the major international travel areas.

Figure 51: Eurocontrol Traffic Flows May 24-30



Region	Average daily flights	vs prev week	vs 2019
Intra-Europe	24,005	+4%	-8%
Europe ↔ Asia/Pacific	708	+1%	-10%
Europe ↔ Mid-Atlantic	147	-1%	-1%
Europe ↔ Middle-East	1,369	+2%	+13%
Europe ↔ North Atlantic	1,347	+2%	+2%
Europe ↔ North-Africa	1,061	+2%	+25%
Europe ↔ Other Europe	384	+7%	-68%
Europe ↔ South-Atlantic	168	+1%	-8%
Europe ↔ Southern Africa	270	+2%	-4%
Non Intra-Europe	5,454	+2%	-9%

Source: Eurocontrol

Oil – Asia Pacific Airlines April air traffic results show stalling air cargo volume

Asian Pacific air traffic in April

On Tuesday, the Association of Asia Pacific Airlines released its April traffic results [LINK] which is comprised of aggregate data across a total of 40 Asia Pacific airline carriers. (i) On Thursday, we tweeted [LINK] *"Asian #AirCargo reflecting global economic uncertainty. @AAPAirlines Apr data for 40 Asian airlines. "export activity remained relatively muted, held back by declines in new business orders & trade barriers due to geopolitical tensions... ". Air* *cargo -5.5% YoY in Apr. For travel, +249.8% YoY increase in # of "international" passengers but still long way to go with demand averaging 63.3% of Apr 2019. #OOTT."* (ii) Air travel. International passenger air travel on the 40 airlines is up big YoY, but still well below 2019 levels. The AAPA reports preliminary April travel figures "*showed continuing recovery in international passenger demand, reflecting the unabated appetite for travel in the region. Collectively, Asia Pacific airlines recorded a 249.8% year-on-year increase in the number of international passengers carried to a total of 20.3 million in April, with demand averaging 63.3% of the corresponding month in 2019*." (iii) Air cargo is stalling out, which is an indicator for the global economy. The AAPA wrote "*Meanwhile, export activity remained relatively muted, held back by declines in new business orders and trade barriers due to geopolitical tensions. The easing of supply chain pressures globally also encouraged a shift to maritime shipping. Against this background, air cargo demand as measured in freight tonne kilometres (FTK) fell by 5.5% year-on-year in April. As offered freight capacity continued to increase 10.4%, the average international freight load factor declined markedly by 10.1 percentage points to 59.8% for the month."* Below is a snapshot of the APAA's traffic update.

Figure 52: APAA Preliminary International Air Traffic Data

International	Jan-23	Jan-22	% Change
Passengers (Thousand)	17,205	2,311	+ 644.5%
RPK (Million)	67,548	11,916	+ 466.9%
ASK (Million)	82,915	28,106	+ 195.0%
Passenger Load Factor	81.5%	42.4%	+ 39.1 pp
FTK (Million)	4,561	5,739	- 20.5%
FATK (Million)	7,703	8,328	- 7.5%
Freight Load Factor	59.2%	68.9%	- 9.7 pp

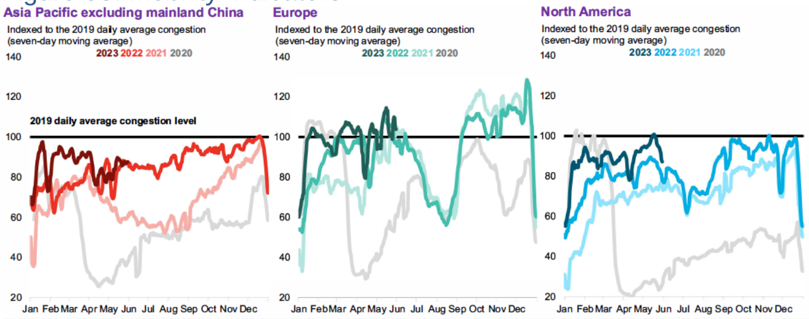
Source: APAA

Oil – TomTom mobility indicators: EU, and Asia Pacific traffic increases, NA decreases

Global road traffic indicators

On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly report, which recaps traffic indicators in all the major economic regions of the world ie. mobility indicators like TomTom. For week ending May 30, European and Asia Pacific (ex-China) traffic levels increased, while North America decreased WoW by +2.8%, +1.5%, and -8.6%, respectively. Traffic levels in Europe are now +3.8% above the 2019 average and up +13.3% YoY. North America and Asia Pacific (ex-China) traffic are -12.9% and -12.4% below the 2019 average and are -0.5% and +2.4%YoY, respectively. Traffic in Europe and the Asia-Pacific region has steadily increased throughout the month of May. We would be expecting to see stronger YoY driving in the US given the Memorial Day Holiday this week being paired with a big drop in gasoline prices YoY. It its worth noting that TomTom data on congestion levels now reflects daily average congestion compared to peak congestion previously. The change in methodology took effect from January 19.

Figure 53: Mobility Indicators



	Week-on-week (2019 average = 100)				Year-on-year (same week last year = 100)			
	Latest week: May 30	Δ vs. May 23	4-week MA	Δ vs. May 23	Latest week: May 30	Δ vs. May 23	4-week MA	Δ vs. May 23
Asia Pacific ex-mainland China	87.6	+1.3 (1.5%)	86.8	+1.7 (2.0%)	100.8	+2.3 (2.4%)	104.0	-0.4 (-0.4%)
Europe	103.8	+2.8 (2.8%)	106.0	+1.9 (1.8%)	107.9	+12.7 (13.3%)	101.7	+3.2 (+3.2%)
North America	87.1	-8.2 (-8.6%)	94.5	-1.8 (-1.9%)	112.6	-0.6 (-0.5%)	111.9	+0.9 (+0.8%)

Source: BloombergNEF

Oil – Luxury travelers are back, Rosewood Group Hotels seeing 6% above 2019 levels

Rosewood Group Hotels update

No one will be surprised to hear the Rosewood Group Hotel CEO say that they are seeing travelers, on a global basis, back above 2019 levels. Rosewood is viewed as a luxury hotel group so we believe her comments may not translate to the non-luxury market. But they do give a good perspective of what Rosewood is seeing in their bracket and they are seeing a return. On Wednesday, we tweeted [LINK] "*Luxury travelers are back! No surprise to anyone who has traveled in last year. Luxury hotelier, Rosewood CEO Sonia Cheng. "globally, actually travel demand has reeached, exceeding like above 6% over 2019 level". they are seeing China close to 90% of 2019. Thx @YvonneManTV @RishaadTV. #OOTT."* We were watching Bloomberg Markets: Asia on Tuesday night when Rosewood Hotel Group CEO Sonia Cheng came on at approx 8:30pm MT. Cheng said that they are back over 2019 levels on a global basis and are close to 90% of 2019 levels in China. Our tweet included the transcript we made of her key comments from the Bloomberg posted clip. [LINK]. Items in "*italics"* are SAF Group created transcript. Asked what she sees on the ground in China as a luxury hotelier. Cheng "*so we're seeing since the lifting of restrictions earlier this year, we're seeing actually travel bouncing back quite quickly and rebounding quite quickly. Our on the books in terms of hotels have doubled compared to last year driven by growth in occupancy, more than 85% and ADR growth of 9%. So overall in terms of domestic travel in China, it has actually reached close to 90% of 2019 level*." Cheng "…… *if you look at outbound travelers to date, we are seeing a significant growth in terms of outbound travel to Hong Kong, to main key gateway cities. If you look at Hong Kong in particular, just March alone, we have a record of 2 million tourists coming into Hong Kong*." Asked how is the pre pandemic benchmark faring for your hotels globally. Cheng "*So globally, actually travel demand has reached, exceeding like above 6% over 2019 level so it's really rebounding quite strong".*

Oil and Natural Gas – increase in total number of Alberta wildfires this week

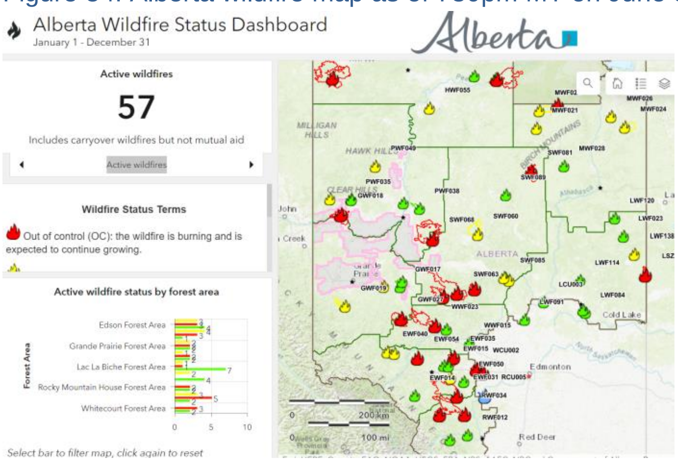
Big decline in Alberta wildfires

Last week's relief didn't last and this week saw an increase in total wildfires in Alberta. Two weeks there were 86 total wildfires on May 21, that dropped to 51 total wildfires as of 7:30pm on May 27, and this week it was up to 57 total wildfires as of 7:30pm June 3. 27. It's hard to tell precisely but it looks like a small increase in the number of Out of Control wildfires in Alberta.

Links to Alberta and BC wildfire status maps

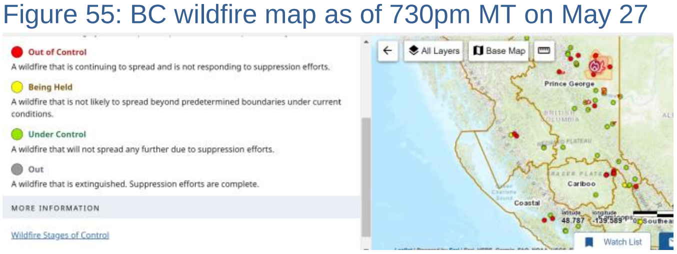
We recommend bookmarking the starting points for wildfire information are the Alberta Wildfire Status interactive map [LINK] and the BC Active Wildfires interactive map [LINK]. Please note these links have changed over the past few years. Both maps are interactive and open up for the information on any particular fire. Here are the wildfire maps as of 7:30pm MT last night.

Figure 54: Alberta wildfire map as of 730pm MT on June 3



Source: Alberta Wildfire Status Dashboard

Figure 55: BC wildfire map as of 730pm MT on May 27



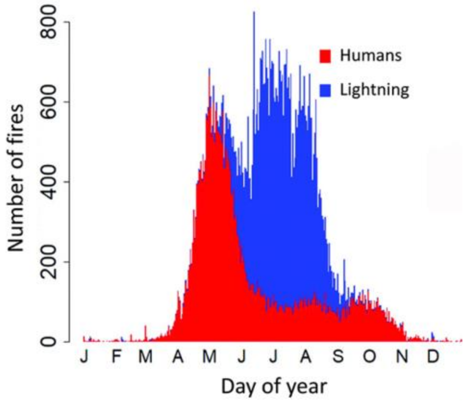
Source: Alberta Wildfire Status Dashboard, BC Wildfire Service

Oil and Natural Gas – High wildfire risk in Alberta/BC as peak is normally Jul/Aug

Wildfire peak is normally July Aug

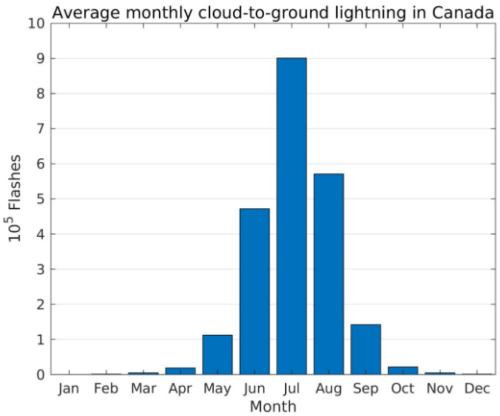
We don't track wildfires outside Alberta/BC as our focus is on the oil and gas sector but, the big Canada story this week were the wildfires in Nova Scotia. It's a reminder that wildfires are not just a western Canada. It's always better to see less wildfires. But we remind that wildfire season is just starting. Unfortunately, we have to remind that wildfire season peak isn't normally until July/Aug. (i) On May 9, we tweeted [LINK] *"#Wildfire season is, unfortunately, only just starting with normal peak Jul/Aug. See 👇excerpts. SAF 06/13/21 Energy Tidbits re distribution of wildfires by month in Canada. SAF 05/07/23 Energy Tidbits* *re heightened 2023 risk with very low precipitation in Nov 1-Mar 31 & Apr. Hope everyone can be safe! #OOTT."* (ii) Our tweet included two graphs from our June 13, 2021 Energy Tidbits memo that shows the normal peak for Canada wildfires is July/Aug with a key reason being that is when lightning strikes normally peak. (ii) Our tweet also included the Alberta Environment maps of precipitation % of normal for Nov 1 thru Mar 31, and for the month of April that clearly show how dry it was this winter and especially so in April. We have included these maps previously in our memos.

Figure 56: Canada Wildfires Distribution Over Year



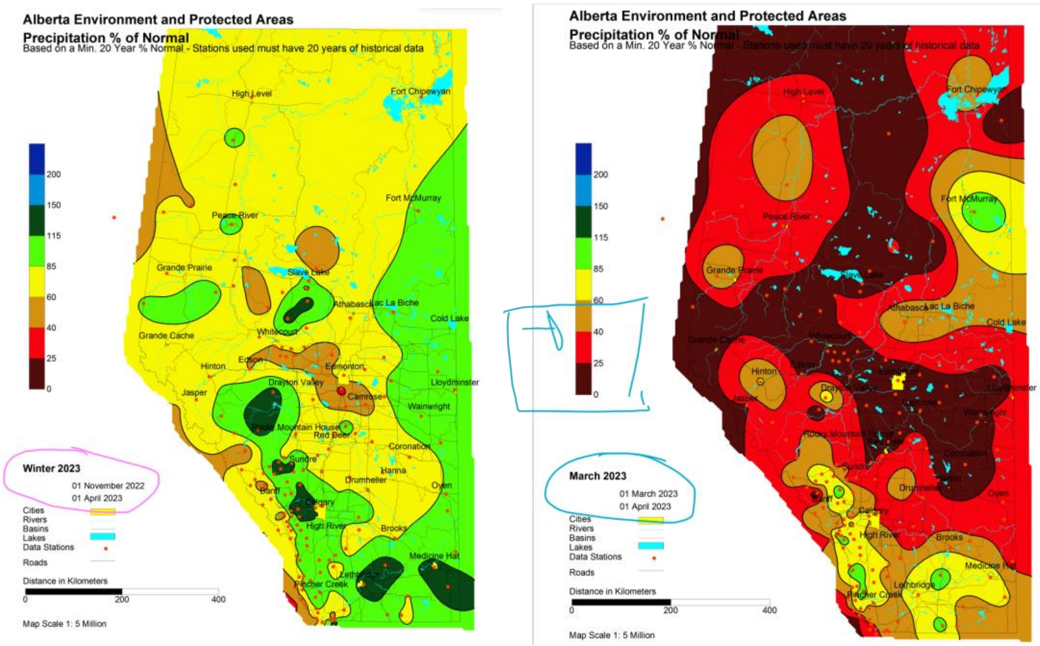
Source: Wildfire Today

Figure 57: Average monthly cloud-to-ground lightning in Canada



Source: Canada Environment and Natural Resources

Figure 58: Alberta Precipitation % of Normal for Nov 1-Mar 31, and for April



Source: Alberta Environment

Oil & Natural Gas – Klotzbach ups Atlantic hurricane forecast to near-average activity

Near-average hurricane activity

On Thursday, Phil Klotzbach and his team at Colorado State University posted an updated forecast for the 2023 Atlantic hurricane season [LINK]. The new forecast estimates there will be 15 named storms this season, with 7 having the potential to become a hurricane. The forecast commented "*We have increased our forecast and now call for a near-average Atlantic basin hurricane season in 2023. While we anticipate a robust El Niño for the peak of the Atlantic hurricane season, the tropical and subtropical Atlantic have continued to anomalously warm to near-record levels. El Niño increases vertical wind shear in the Caribbean and tropical Atlantic, but the anomalous warmth in the tropical and subtropical Atlantic may counteract some of the typical El Niño-driven increase in vertical wind shear. The probability of U.S. major hurricane landfall is estimated to be near the long-period average*." The early hurricane season forecasts tend to have greater uncertainty. Our Supplemental Documents package includes excerpts from the Klotzbach forecast.

Figure 59: Klotzbach updated 2023 Atlantic Hurricane Forecast

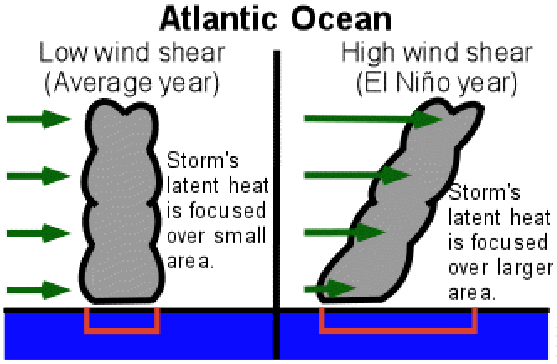
Forecast Parameter and 1991-2020 Average (in parentheses)	Issue Date 13 April 2023	Issue Date 1 June 2023	Observed Activity Through May 31 2023	Total Seasonal Forecast (Includes Unnamed Storm*)
Named Storms (14.4)	13	14	1	15
Named Storm Days (69.4)	55	57.75	2.25	60
Hurricanes (7.2)	6	7	0	7
Hurricane Days (27.0)	25	30	0	30
Major Hurricanes (3.2)	2	3	0	3
Major Hurricane Days (7.4)	5	7	0	7
Accumulated Cyclone Energy Index (123)	100	123	2	125
ACE West of 60°W (73)	55	68	2	70
Net Tropical Cyclone Activity (135%)	105	132	3	135

Source: Colorado State University

El Nino years tend to be low Atlantic hurricane years

Our prior Energy Tidbits over the years/decades noted that "*The hurricane forecasters note that warm El Nino years tend to have less hurricane activity in the Atlantic and Gulf of Mexico, but typically more hurricane activity in the Pacific. The primary explanation for the decline in hurricane frequency during El Niño years is due to the increased wind shear in the environment. It is commonly explained that "In El Niño years, the wind patterns are aligned in such a way that the vertical wind shear is increased over the Caribbean and Atlantic. The increased wind shear helps to prevent tropical disturbances from developing into hurricanes. In the eastern Pacific, the wind patterns are altered in such a way to reduce the wind shear in the atmosphere, contributing to more storms*". This is the common explanation, and we referenced the University of Illinois's description because they also had a good simple graphic (see below). We double checked the link this week, and it is still active after more than a decade, the University of Illinois explanation is found at: [LINK]

Figure 60: Early-March NOAA El Nino/La Nina Outlook



Source: University of Illinois

Oil & Natural Gas – Alberta Premier Smith warns on Trudeau energy policies ahead

We don't know when the next federal election will be, but we think there is a reasonable chance in 2024 after the new ridings allocation are in place as opposed to in 2025. Regardless when, we expect to see an increased Liberal federal policies/regulations against

Danielle Smith victory speech

the oil and gas sector as the Liberals plan for the next election. Alberta and Saskatchewan have basically zero impact on the Liberals re-election prospects, which means that there really isn't a re-election risk for anti-oil and gas policies especially if portrayed as a climate change need. The end of election polls turned out accurate and the UCP party won a majority in the Alberta provincial election on Monday and Danielle Smith was returned as Premier. We couldn't help notice that the biggest portion of her short 12+ minute victory speech was a warning on Prime Minister Trudeau's expected energy policies that will be a big hit to the oil and gas sector and Alberta. We tweeted [LINK] "*UCP win majority last night. 1/4 of @ABDanielleSmith victory speech warns on expected @JustinTrudeau energy policies. "we have been made aware that in the coming weeks, Justin Trudeau is planning on bringing forward new restrictions on electricity generation from natural gas that will not only massively increase your power bills, but will also endanger the integrity and reliability of our entire power grid, which we rely on during out cold and dark Alberta winters. In addition, the Prime Minister is already ready to introduce a de-factor production cap on our oil and gas sector that, if implemented, will result in tens of thousands jobs lost, tens of billions in lost investment, damage our provinces fiscal position and bring economic hardship to Albertans …#OOTT.*" And [LINK] "*Note @ABDanielleSmith highlight these will be new @JustinTrudeau "policies" ie. not new taxation. BUT because they're policies, regulations, etc, it means really can't be stopped from being put in place UNLESS the Liberals believe it will hurt their chances of an overall Canada basis to win next election ie. hurt them in Ont, Quebec. #OOTT.*" Our concern is that these are policies so, like regulations, can be enacted by the Liberal government without requiring any House of Commons votes so the only thing that is likely to stop any such policies will be if the Liberals feel the policies will hurt them in Ontario or Quebec.

Danielle Smith's victory speech warning on Trudeau energy policies ahead
Our tweet included the transcript we made of Smith's warning on Trudeau's energy policies ahead. SAF Group created transcript of comments by Premier Danielle Smith's victory 12+ minute victory speech. Attached clip is Global News 3 min clip of Smith addressing soon to be announced Canada policies on energy. [LINK] Items in "*italics*" are SAF Group created transcript. Smith "*And finally, my fellow Albertans, we need to come together no matter how we have voted to stand shoulder-to-shoulder against soon to be announced Ottawa policies that would significantly harm our provincial economy. Now, we have been made aware that in the coming weeks, Justin Trudeau is planning on bringing forward new restrictions on electricity generation from natural gas that will not only massively increase your power bills, but will also endanger the integrity and reliability of our entire power grid, which we rely on during out cold and dark Alberta winters. In addition, the Prime Minister is already ready to introduce a de-factor production cap on our oil and gas sector that, if implemented, will result in tens of thousands jobs lost, tens of billions in lost investment, damage our provinces fiscal position and bring economic hardship to Albertans* …."

Energy Transition – Exxon: policymakers don't fully understand policy implications
After seeing the below item on the US and EU progressives wanting to remove the UAE President for COP28 and to limit the influence of fossil fuel companies at COP28, we couldn't not include the comments on by Exxon CEO Darren Woods. On Thursday, Woods said "*By*

Exxon on policymakers

policy makers who don't fully understand the implications of some of the policies that are put in place and certainly don't understand the broader energy markets and energy systems, there are going to be discontinuities and disconnects. In my view, the world going forward in this system, as policy makers try to blunt force this and put policies in place that don't reflect the true understanding of what's happening, we're going to have very volatile markets, much more volatility." Do the western leaders not understand the implications of their policies, or do they know of the implications but just don't want to hear too many people make the case to their movement in their movement's signature event each year – COP28. This is the global get-together for the climate change side.

Energy Transition – Progressives want UAE COP28 head out & limit fossil fuels lobby

UAE's vision for COP28

The last thing the pro-climate change side wants is for the UAE, as the host country for COP28, to try to slow down in any way the energy transition. They only true believers and do not want to hear contrary views especially views that warn the energy transition is likely to lead to energy crisis if there isn't a realistic approach. This was clear last week. There are now less than six months to go until COP28 starts on Nov 30 in the UAE and we now know what the major western push will be in the next six months and who will be to blame for any lack of perceived success. It is important to note they also blame the fossil fuel and other major polluting industries for the lack of success so far in advancing climate action ie. they are to blame for the lack of progress on the global stage. On May 23, progressives from Congress and the European Parliament wrote to Biden, Ursula von derf Leyen (President of the European Commission), Antonio Guterres (Secretary General UN, Simon Stiell (Executive Secretary UN Framework Convention on Climate Change) with a clear request asking them to remove Dr. Sultan al Jaber as COP28 President and to limit the influence of "major fossil fuel industry players" at COP28. [LINK]. They wrote "*Ahead of the annual Conference of the Parties (COP28) climate negotiations, enacting policies that expose the influence of corporate polluters in UNFCCC meetings will help ensure that climate science takes precedence over climate delay and greenwashing. To that end, we urge you (i) to engage in diplomatic efforts to secure the withdrawal of the President-designate of COP28; and (ii) to take immediate steps to limit the influence of polluting industries, particularly major fossil fuel industry players whose business strategies lie at clear odds with the central goals of the Paris Agreement, at gatherings of the UNFCCC."* They also blamed the fossil fuel industry for the barriers to success so far. "*In this moment of great urgency, we must unblock the barriers that have kept us from advancing strong global collaboration to address climate change. One of the largest barriers to strong climate action has been and remains the political influence and obstruction of the fossil fuel industry and other major polluting industries. We have seen their negative influence in our home institutions; oil companies and their industry cheerleaders have spent billions of dollars lobbying both the European Parliament, other European institutions and Member States, and the U.S. Congress in order to obstruct or water down climate policy for years."* Our Supplemental Documents package includes the letter minus the 11 pages of signatures.

Energy Transition – UAE says need to have oil & gas, aviation, etc at COP28

UAE says need oil and gas at COP28

The UAE may not have said this was a response to the US/EU progressives but, it certainly seemed like the UAE's director-general for COP28, Majid al-Suwaidi, interview with the AP on Saturday was a message to them. The AP wrote ""*Our leadership have been very clear to me and our team and our president that they don't want just another COP that's incremental,"* *said Majid al-Suwaidi, who as director-general of the summit plays a key role in the diplomatic negotiations. "They want a COP that is going to deliver real, big, game-changing results because they see, just like all of us, that we're not on track to achieve the goals of Paris." Governments agreed eight years ago in the French capital to limit global warming to 2 degrees Celsius (3.6 Fahrenheit) — ideally no more than 1.5C (2.7F). With average global temperatures already about 1.2C (2.2F) above pre-industrial levels, experts say the window to meet the more ambitious target is closing fast and even the less stringent goal would be missed if emissions aren't slashed sharply soon. "We need to have everybody at the table discussing with us about how to deliver that," al-Suwaidi told The Associated Press in an interview Friday. "We need to have oil and gas, we need to have industry, we need to have aviation, we need to have shipping, we need to have all the hard to abate sectors," he said, adding: "We need all those who can to deliver what they can, regardless of who they are."* Our Supplemental Documents package includes the AP report.

Energy Transition – Mr. Bean feels duped, EVs aren't claimed environmental panacea

Mr. Bean opinion piece on EVs

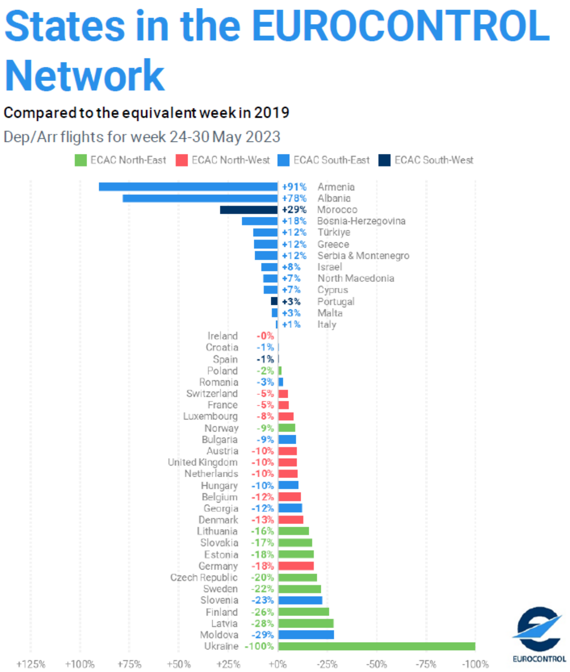
How could we not when Mr. Bean, Rowan Atkinson, stepped into the EV debate with an opinion piece in The Guardian yesterday. Like most, we didn't know his background. He starts off his EV opinion piece "*Electric motoring is, in theory, a subject about which I should know something. My first university degree was in electrical and electronic engineering, with a subsequent master's in control systems. Combine this, perhaps surprising, academic pathway with a lifelong passion for the motorcar, and you can see why I was drawn into an early adoption of electric vehicles. I bought my first electric hybrid 18 years ago and my first pure electric car nine years ago and (notwithstanding our poor electric charging infrastructure) have enjoyed my time with both very much. Electric vehicles may be a bit soulless, but they're wonderful mechanisms: fast, quiet and, until recently, very cheap to run. But increasingly, I feel a little duped. When you start to drill into the facts, electric motoring doesn't seem to be quite the environmental panacea it is claimed to be."* Mr. Bean's new view is based on a well-known fact that is kept in the closet by the climate change side – the full -cycle environmental impact of EVs inlcding the mining and processing of Lithium. And not just highlighting that EVs don't have any exhaust fumes. Our Supplemental Documents package includes the Rowan Atkinson opinion piece.

Capital Markets – Europe's move to bring Asia/China supply chains closer to home

Europe's supply chains

Earlier we highlighted the Eurocontrol's May 24-30 air travel update on Friday and the data reminded us of comments by Ryanair CEO Michael O'Leary on CNBC Squawk Box on May 22. Note Ryanair held its Q1 call that same day and O'Leary's comments were essentially the same as his Squawk Box comments. He noted their capturing increasing business travel despite not having a business section as he says short-haul business air travel is more focused on price, on-time and access to more regional airports whereas long-haul business travelers are prepared to pay up for business/first class. His takeaway from business travel is Europe is trying to move its supply chains away from Asia and China. On Friday, we tweeted [LINK] *"#SupplyChain. EU moving supply chains away from Asia, China closer to home ie. Morocco, Eastern EU, @Ryanair CEO O'Leary. He should know with increasing business & +21% flights vs 2019. @eurocontrol May 24-30 vs 2019: Armenia +91%, Albania +78%, Morocco +29%, etc. #OOTT."* Ryanair dominates EU air travel with about twice as many daily flights as the nearest competitors. In the Q&A of the Q1 call, O'Leary said ""*Business travel, we see the huge surge in business travel over the last -- over the last year. Post-COVID,* *there seems to be a not just a desire for B, to go back to the beaches, but businesses going back to work. Again, people were locked up working from home for two-year period. We see a lot of demand into countries into Eastern Europe, Poland, Morocco, a lot of focus on business, smaller businesses, fixing supply chain, switching supply chains away from Asia, China, which are now unreliable and repairing their supply chains or relocate their supply chains closer to Europe and close to home".* So we were reminded of O'Leary when we saw the below Eurocontrol graphic noting the increasing/decreasing flights vs 2019 by state. And the Eurocontrol graphic is a perfect layover for O'Leary's comments on where Europe businesses are looking to shift their supply chains.

Figure 61: Dep/Arr flights for May 24-30 week vs 2019



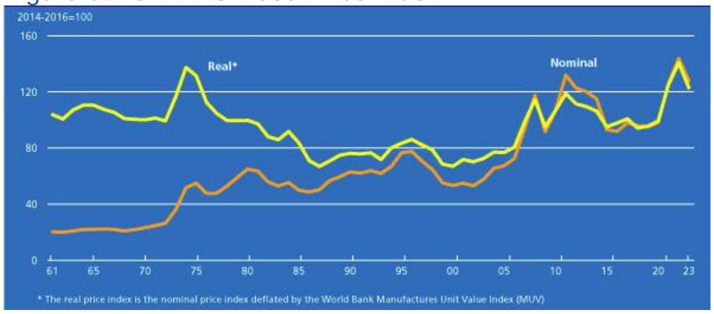
Source: Eurocontrol

Capital Markets – UN FAO Food Price Index decreases in May and is down YoY

UN Food Price Index up MoM

It's good news that food commodity prices seem to be easing and hopefully these will ultimately work their way thru the supply chain to grocery stores prices. We recognize the UN FAO Food Price Index isn't a measure of what people pay when they go to the grocery store. We know this because grocery prices aren't going down and there are added costs pushed through the supply chain to grocery shoppers. So the commodity price changes in the UN food price index then have to go thru the supply chain before they get to the grocery stores. The UN global food price index decreased in May 2023. On June 2, the UN posted its monthly update of its FAO Food Price Index [LINK] titled "*The FAO Food Price Index back to its downward trend in May".* Note that the index is calculated on a Real price basis. The FFPI averaged 124.3 points in May, which was an decrease of -2.6% MoM from 127.7 in April, and is down -21.4% YoY. The FFPI also reported MoM declines for most of its sub-indices in April. The Meat Price Index was up +1.0% MoM and is now -4.1% YoY while the Sugar Price Index was also up +5.5% MoM and is +30.9% YoY. In contrast, the Vegetable Oil, Dairy, and Cereal Price Indices were all down from last month by -8.7% (-48.2% YoY), -3.2% (-17.7% YoY), and -4.7% (-25.2% YoY), respectively. Below is the all time FFPI graph.

Figure 62: UN FAO Food Price Index



Source: UN

Loblaw explained why grocery prices go up higher than food commodity prices

Here is what we wrote in our May 7, 2023 Energy Tidbits memo. "*As we keep saying there is a big difference between what the UN and USDA say is the inflation on commodity food prices because there is a big supply chain by the time a commodity gets turned into the price someone pays when they go to the grocery store. Loblaw had their Q1 call on Wednesday and mgmt. noted how the prices they pay for product to put on their grocery store shelves keeps going higher than the underlying food commodity price increase. In their prepared remarks, mgmt said "We are continuing to see elevated cost increase from our food suppliers. This includes small and medium-sized Canadian vendors catching up on costs and we're doing our best to expedite those. More concerning, we're still seeing outsized cost increases rolling in from large global consumer goods companies, exceeding what we would be expecting at this point." And then in the Q&A, mgmt. was a little more specific confirming it was relative to the commodity price increases. Mgmt replied "We wanted to call it out because it is one of the big drivers of cost inflation that we are seeing. You also heard Richard mention the small Canadian mid-sized manufacturers. So, we're kind of catching up to the inflationary costs. But yes, we are definitely seeing more inflationary cost pressure from the large multinational CPGs than we would have expected at this time based on what's happening in the commodity cost environment."*

Demographics – Will anyone but 1st timers be traveling to San Francisco this summer?

Old Navy closing its Union Square

Americans are back to traveling and the Asians are coming to North America but we have to wonder what the summer travel season in San Francisco will be like in the face of all the retail closures in the major tourist shopping area, Union Square, from the rising theft/crime problem. Maybe it won't be an issue for 1st timers to San Francisco, but we have to believe it will be a deterrent for any who have been to San Francisco. That is, unless people see the TV videos and think they are an exaggeration. Last week, Old Navy was the latest big retailer to close their flagship store on Market Street, just off Union Square. Other recent announced closures in the past three months around Union Square and downtown San Francisco include Nordstrom, Nordstrom Rack Saks Off 5th, Banana Republic, Athleta, Anthropologie, Office Depot and Amazon Go.

Twitter – Look for our first comments on energy items on Twitter every day

@Energy_Tidbits on Twitter

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 and Calgary items.