

Energy Tidbits

Aug 6, 2023

Produced by: Dan Tsubouchi

Ukraine Declares Waters Around Six Russian Black Sea Ports, Including Its Oil Export Port Navorossiysk, are “War Risk Areas”

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. Big RUS/UKR development as 1st drone or missile attack on a ship carrying commodities and then Ukraine declaring the waters around six Russian Black Sea ports are “War Risk Areas”. ([Click here](#))
2. Bloomberg tanker tracking shows Russia crude oil shipments are at lowest level since January. ([Click here](#))
3. No surprise Saudi Arabia extended its voluntary 1 mmb/d cut thru Sept, but they did surprise oil markets that the 1 mmb/d voluntary cut could be “extended and deepened.” ([Click here](#))
4. CNQ reminded that Trans Mountain will soon call for line fill/pack volumes for TMX and that means there will be about 5 million barrels needed before TMX can start commercial deliveries. ([Click here](#))
5. UK PM Sunak says still committed to Net Zero but UK will take a “proportionate and pragmatic” path to Net Zero. ([Click here](#))
6. Please follow us on Twitter at [\[LINK\]](#) for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [\[LINK\]](#).

Dan Tsubouchi
Chief Market Strategist
dtsubouchi@safgroup.ca

Ryan Dunfield
CEO
rdunfield@safgroup.ca

Aaron Bunting
COO, CFO
abunting@safgroup.ca

Ryan Haughn
Managing Director
rhaughn@safgroup.ca

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Natural Gas: +14 bcf build in US gas storage; now 550 bcf YoY surplus

For the week of July 28, the EIA reported a +14 bcf build (just under the expectations of an +18 bcf build), and a decrease compared to the +41 bcf build reported for the week of July 29 last year. This is a slight decrease from last week's build of +16 bcf, and down vs the 5-year average build of +43 bcf. Total storage is now 3,001 tcf, representing a surplus of +550 bcf YoY compared to a surplus of +573 bcf last week. Total storage is +225 bcf above the 5-year average, down from the +345 bcf surplus last week. Below is the EIA's storage table from its Weekly Natural Gas Storage report [\[LINK\]](#).

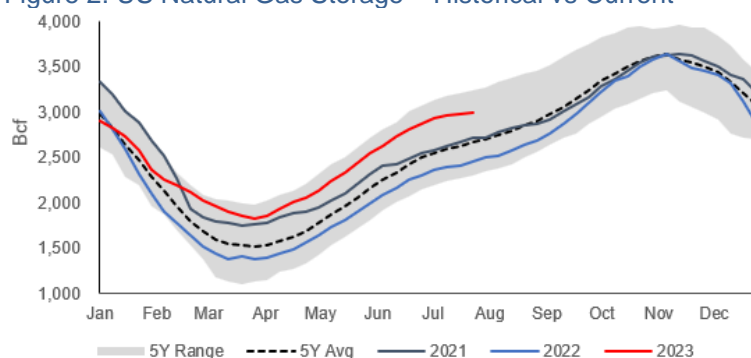
**US gas storage
550 bcf YoY
surplus**

Figure 1: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf)				Year ago (07/28/22)		5-year average (2018-22)	
	07/28/23	07/21/23	net change	implied flow	Bcf	% change	Bcf	% change
East	680	670	10	10	547	24.3	603	12.8
Midwest	775	757	18	18	640	21.1	684	13.3
Mountain	191	189	2	2	147	29.9	167	14.4
Pacific	230	232	-2	-2	253	-9.1	266	-13.5
South Central	1,124	1,139	-15	-15	865	29.9	961	17.0
Salt	297	310	-13	-13	195	52.3	244	21.7
Nonsalt	828	829	-1	-1	670	23.6	717	15.5
Total	3,001	2,987	14	14	2,451	22.4	2,679	12.0

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



Source: EIA, SAF

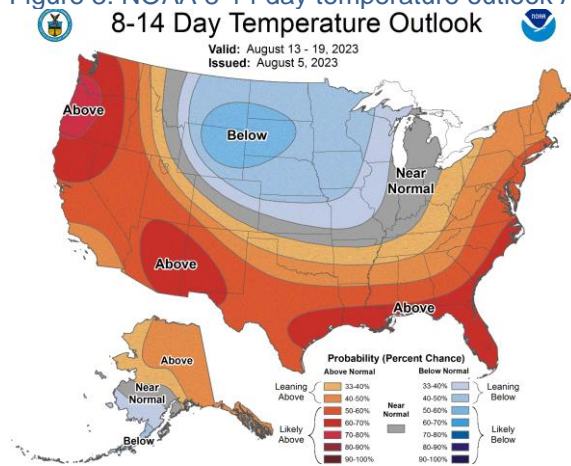
Natural Gas: NOAA 8-14 day temperature outlook stays supportive to gas price tone

One of our reminders on the NOAA temperature probability maps is that, at this time of year, below normal temperatures can still mean hot, humid temperatures. NOAA posts daily, around 1pm MT, an updated 6-10 day and 8-14 day temperature probability outlook. Yesterday, we tweeted [\[LINK\]](#) "Today's @NOAA updated 6-10 & 8-14 day temperature outlook covering Aug 11-19. Continued above normal temps expected for east coast, gulf coast, SW and west coast US. Should be supportive for US #NatGas. #OOTT." Yesterday's NOAA 6-10 day [\[LINK\]](#) and 8-14 day outlook [\[LINK\]](#) is valid for Aug 11-19.

**NOAA 8-14 day
outlook**

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Figure 3: NOAA 8-14 day temperature outlook Aug 13-19



Source: NOAA

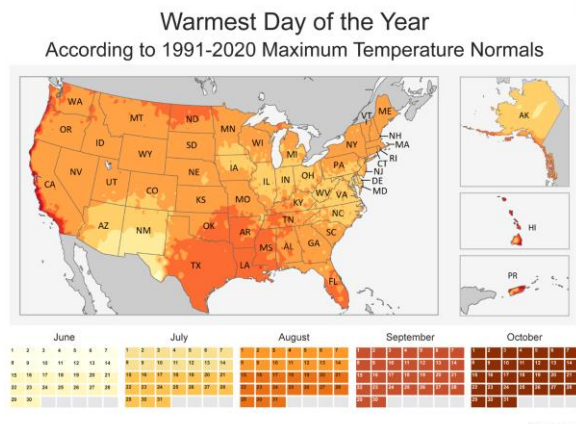
Natural Gas: NOAA’s normal warmest day of the year across the US

Its now the end of the first week of August so it’s still normally the hottest time of the year for many parts of the US. Our normal warning is that the normal hottest day in the south is normally the end of July/early Aug. Here is where we wrote in our July 2, 2023 Energy Tidbits memo. “Yesterday, we tweeted [LINK](#) “Here’s why temperature watch gets important in July ie. don’t want below normal temps when it is supposed to be the hottest. @NOAA map when to expect Warmest Day of the Year. Mid July starts to see hottest day of the year in states like IL, IN, OH, WV, VA, NC. And current @NOAA 8-14 day expects below normal temps in some of these states. #OOTT #NatGas.” On Thursday, NOAA posted “When to expect the Warmest Day of the Year” [LINK](#). Our tweet included the NOAA map, which reminds that mid-July is when we start to see the hottest day of the year in many states. It’s why the temperatures are important in July as we don’t want to see below normal temps when it is supposed to be peak heat and peak summer electricity/natural gas residential/commercial demand.”

Normal warmest day of the year across the US

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Figure 4: NOAA Warmest Day of the Year



Source: NOAA

Natural Gas: US dry gas production in May now +5.4 bcf/d YoY to 103.1 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. On Monday, the EIA released its Natural Gas Monthly [LINK](#), which includes its estimated “actuals” for May’s dry gas production. Key items to note are as follows: (i) May’s production of 103.1 bcf/d was up +5.4 bcf/d YoY from 97.7 bcf/d in May 2022 and +0.6 bcf/d MoM from April’s revised production of 102.5 bcf/d. (ii) May is marginally up vs April, due to higher MoM natural gas production in Pennsylvania/West Virginia (Marcellus/Utica), Texas (Permian), and Louisiana (Haynesville). (iii) May’s production of 103.1 bcf/d sets the all-time high, followed by March 2023 of 102.7 bcf/d. Our Supplemental Documents package includes excerpts from the EIA Natural Gas Monthly.

US gas production +5.3 bcf/d YoY in May

Figure 5: 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	101.8
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	101.8
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	102.7
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	102.5
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	103.1
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	102.4

Source: EIA, SAF

Natural Gas: US pipeline exports to Mexico up +0.6 bcf/d MoM to 6.2 bcf/d in May

The EIA Natural Gas Monthly also provides its “actuals” for gas pipeline exports to Mexico [LINK](#), which were 6.2 bcf/d in May, up +0.6 bcf/d MoM from 5.6 bcf/d in April and is up +0.23 bcf/d YoY from 6.0 bcf/d in May 2022. The EIA doesn’t provide explanation for the MoM increase. Mexico’s relatively unchanged production over the past five years has created

US pipeline exports to Mexico up MoM

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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 6: US Pipeline Exports to Mexico

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	5.3
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	5.6
May	2.0	2.8	3.7	4.0	4.4	5.0	4.7	6.2	6.0	6.2
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	5.7

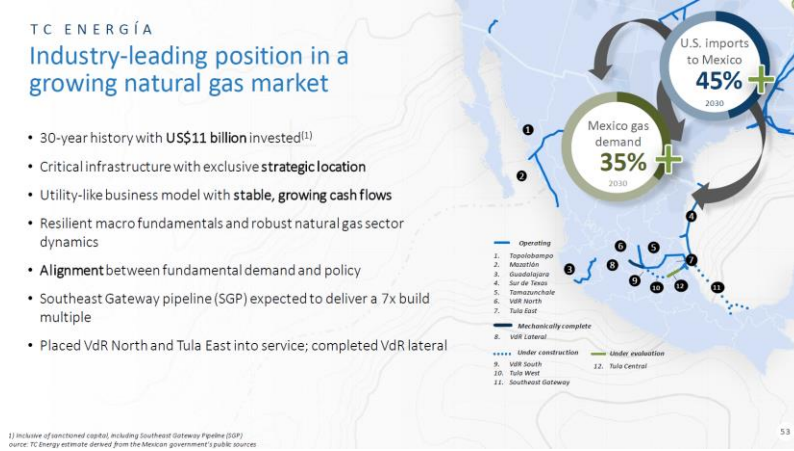
Source: EIA, SAF

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 bcf/d to 12 bcf/d in 2030. @TCEnergy expects MEX #NatGas pipeline imports from Permian +45% from 6 bcf/d in 2022 to 9 bcf/d 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.”*

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Figure 7: TC Energy Sees US Natural Gas Imports TO Mexico +45% to 2030



Source: TC Energy

Natural Gas: US LNG exports down -5.6% MoM to 11.8 bcf/d in May; up +4.4% YoY

As a reminder, the US LNG export data is always available one to two weeks before it is included in the EIA's Natural Gas Monthly report. Here is what we wrote in our July 23, 2023 Energy Tidbits memo. "On Monday, the Department of Energy (DOE) posted its US LNG exports estimates for May [\[LINK\]](#). 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 Department of Energy, and the Department 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 Tuesday, we tweeted [\[LINK\]](#) US #LNG exports May/23 of 11.83 bcf/d, +4.4% YoY, -1.4% MoM due to maintenance that should have a larger impact on Jun/23. May/23 top 5 export markets: Dutch, France, Japan, Argentina, UK May/22 top 5 export markets: France, Spain, Dutch, Japan, Italy This DOE LNG data is posted 2 wks before same data in [@EIAgov #NatGas](#) Monthly. #OOTT". On Monday, the EIA's Natural Gas Monthly reported the same data, US LNG exports for May were 11.8 bcf/d, down -0.7 bcf/d MoM from 12.5 bcf/d in April and was up +0.5 bcf/d from 11.3 bcf/d in May 2022. The Doe LNG report includes more information on US LNG exports and our Supplemental Documents package includes excerpts from the DOE LNG report.

US May LNG exports

Figure 8: 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	12.5
May	0.3	2.0	3.1	4.7	5.9	10.2	11.3	11.8
June	0.5	1.7	2.5	4.7	3.6	9.0	10.0	
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	11.7

Source: DOE, EIA

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LNG Canada
Phase 2

Natural Gas: STEP expects LNG Canada FID 1.8 bcf/d Phase 2 but not likely for a year

STEP Energy, a Cdn frack/completion services company, held its Q2 call on Friday. On the Q2 call, mgmt. highlighted the increasing activity for the Montney for LNG Canada and how they are getting commitments from these companies for their 2024 programs. Plus we have to believe they have specific feedback from their customers when they say *“Shell appears to be favorably disposed to moving forward with Phase II or the project.”* Cdn companies don’t tend to say a supermajor is favorably disposed without having some sort of basis to say so. So no surprise that STEP expects to see LNG Canada to FID the 1.8 bcf/d Phase 2, but not likely for a year. In their prepared remarks, mgmt. said *“Circling back to our strategic position as a diverse energy services company, we know that the most successful companies in our sector will have strong positions in both geographic markets, which include the best oil and gas players in North America. A major driver in our industry is LNG development, and the momentum continues to grow. The tone in Canada is positive, and it appears that Shell is roughly on track to begin commissioning the LNG Canada project a year from now, with the first gas exports expected in 2025. Shell appears to be favorably disposed to moving forward with Phase II of the project for train three and four, which would add another two Bcf a day to Western Canadian takeaway capacity toward the end of the decade. Although, the decision is at least a year away, these developments are making Canada a more constructive market for fracturing and coiled tubing services. A market that is less dependent on domestic oil and gas prices.”*

Surely Shell is going to FID “very attractive” LNG Canada Phase 2

Here is what we wrote in last week’s (July 30, 2023) Energy Tidbits memo. *“Shell CEO Wael Sawan had the perfect opportunity in the Q&A of the Q2 call on Thursday to throw some caution or doubt on the potential to FID the brownfield LNG Canada 1.8 bcf/d Phase 2 but didn’t say so. Rather he continued to speak glowingly about the under-construction 1.8 bcf/d LNG Canada Phase 1 and also about LNG Canada Phase 2. We believe he is setting the stage to FID Phase 2 in the coming months. (i) On Friday, we tweeted [\[LINK\]](#) “Feels like FID is when, not if. #Shell CEO Sawan on #LNGCanada 1.8 bcf/d Phase 2. “while the asset itself is very attractive for us, a big part of the attraction is also the optimization opportunities that full flex #LNG cargos offer us in a portfolio like ours”. LNG Canada 1.8 bcf/d Phase 1 will be “the cleanest, the lowest carbon intensity LNG out there in the market”. Post 2025 should be very good for AB, BC #NatGas! #OOTT.” (ii) There was no comments in the Q2 report or Q2 call mgmt. prepared remarks on Phase 2. (iii) But Sawan had the perfect opportunity to play down Phase 2. Shell took an impairment charge on LNG Canada Phase 1, which analysts described as “sizeable”. We couldn’t find the specific amount. In the Q&A, Shell CFO Sinead Gorman said “This one was an accounting mechanics one, pure and simple discount rates. So as you saw risk free rates changing of course, that played into the whack and that’s where we went up 1%. That’s where it played in on this asset.” Even though it was an accounting mechanics impairment, Sawan could have used this as an opportunity to put some caution on Phase 2. (iv) In the Q&A, Sawan was asked “One on LNG Canada, again, posted this, the impairment. Does that have any implications for a second phase of that project or not really, either from a returns perspective or anything else.” Sawan went thru how LNG Canada Phase 1 is a “really advantaged asset with the*

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“cleanest, lowest carbon intensity LNG” in the world, and then how Phase 2 is “very attractive” to Shell. Sawan full reply was “LNG Canada, I'll use the same frame. LNG Canada continues to be an advantaged asset, a really advantaged asset. You have, in essence, a captive export scheme for Western Canadian gas. You have a demand, a market, the Asian market that is within proximity. And you have, in essence, the cleanest, the lowest carbon intensity LNG out there in the market, all coming together at a good point in time for those volumes to, all of which will be full flexibility portfolio volumes for us, something which we, of course, like a lot. All that coming together around middle of this year. That's a project that now is over 75% complete on the midstream, over 90% complete on the pipeline. So it's coming along nicely. All the major units are either at the plant or are enroute to the plant. So knock on wood, all seems to be going well. Phase 2 is going to -- the impairment itself does not impact at all our view on Phase 2. In fact, all the reasons that Sinead, explained around this being more driven by accounting and of course, while the asset itself is very attractive for us, a big part of the attraction is also the optimization opportunities that full flex LNG cargos offers us in a portfolio like ours. And that doesn't change, of course. And so what we will do is we will wait for the joint venture to have put their best proposal forward, and with the other joint venture partners, we will assess it and make a decision at the time.”

Here's why a Shell FID on LNG Canada Phase 2 should drive Cdn M&A

Here is what we wrote in last week's (July 30, 2023) Energy Tidbits memo on how LNG Canada Phase 2 should drive M&A. “Yesterday, we tweeted [\[LINK\]](#) “Here's why a Shell FID on #LNGCanada 1.8 bcf/d Phase 2 should drive M&A in Cdn #NatGas. See 📌 02/21/22 tweet, Shell CEO Sawan wants to have enough #NatGas supply to match their LNG offtake share. In Q2/23 call, Phase 1 supply seems in good shape based on CFO Gorman comments. But a Phase 2 FID would be another question. #OOTT.” (i) In Feb 2022, Shell CEO Swan, in his previous role, spoke about LNG Canada and it jumped out at us that his comments were pointing to the likelihood for M&A for the natural gas supply for LNG Canada. On February 21, 2022, we tweeted [\[LINK\]](#) “Buckle up, could be huge for Cdn #NatGas M&A. @Shell just said like to align equity #NatGas supply and offtake obligations, used #LNGCanada, Shell has 40% interest so would be 1.44 bcf/d if it FIDs #LNGCanada phase 2. It's why #LNGCanada Phase 2 is the must watch event #OOTT #LNG.” Shell held its Integrated Business Deep Dive on Feb 21, 2022. Our tweet included the transcript we made of Sawan's comments. At approx. 9:18am MT, an analyst asks if the future equity percentage you have for the natural gas supply be less than the offtake percentage you have for the LNG? Sawan replied “.. typically, what I would say, as much as possible, having access across the entire value chain in as close of a percentage as you can, helps ensure that wherever value might rate at any point in time, you are capturing that value. So in general. Take our LNG Canada investment that you just referenced in the second question, we would look to be able to at least assure ourselves that we are not caught up by vagaries of one part of the market. let's say the gas supply, but we would want to have enough on the gas supply equity side to be able to make sure if gas prices go up there, we benefit from them while maybe disadvantaging the midstream or vice versa depending on where prices go. So we are not in the game of necessarily taking undue risk. we are in the

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game of creating integrated value chains that we can leverage as part of the broader portfolio.“ Unless Sawan has changed his mind since becoming CEO, he clearly says that for LNG Canada, he wants to have enough Shell natural gas supply to meet its LNG offtake share ie. 1.44 bcf/d if both Phase 1 and 2 go ahead. (ii) Our tweet yesterday said it looks they are in good shape for Phase 1. And we included CFO Gorman’s comments in the Q&A on LNG Canada. Gorman said “Again, it’s your upstream, which we have good confidence in as you know, a large part of the gas that’s coming from this is coming for us from our own assets, Groundbirch and otherwise.” We would think they would be able to get there with drilling their lands over the next 18 months. (iii) But an FID on LNG Canada 1.8 bcf/d Phase 2 would be another question. And we have to wonder, if Shell is looking to FID LNG Canada Phase 2 over the coming months, will this M&A cycle happen sooner than later before valuations of BC and Alberta natural gas reflect 1.8 bcf/d of LNG Canada Phase 1 sometime around 2025 and then another 1.8 bcf/d LNG Canada Phase 2 to follow perhaps in the 2030 range.”

Natural Gas: Mexico Pacific and ConocoPhillips sign long-term LNG deal for 0.29 bcf/d

Long-term LNG deal

June was the biggest month for new long-term LNG supply deals in a long time with six deals totalling 1.74 bcf/d per annum. But we continued to see more long term deals in July and to start August. This week, there was an agreement signed between Mexico Pacific and ConocoPhillips. Even still, there was a big slowdown in long-term LNG deals in the last year 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 in the last year have been for long-term supply starting in 2026 or later. And the other significant item to note is that we are seeing some very long-term out past 2050. (i) On Thursday, Mexico Pacific (Mexico) and ConocoPhillips (US) announced that they have signed a long-term LNG sale and purchase agreement [\[LINK\]](#). The deal is set to begin in 2025 and end in 2045, with ConocoPhillips purchasing ~0.29 bcf/d. The CCO of Mexico Pacific, Sarah Bairstow, commented “*This unprecedented market milestone is a testament to our compelling ability to bridge competitive Permian Gas with the largest LNG market, Asia, free of Panama Canal risk and unnecessary incremental shipping emissions and costs when compared to the US Gulf Coast. While trains 1 and 2 sales are now closed, we remain committed to providing further LNG supply to meet global energy security and energy transition needs and will now turn to execute against the contracting momentum in place for a subsequent train 3 FID as quickly as possible*”. The shipments are to begin upon completion of the Sanguaro Energia LNG facility which is currently on schedule for 2025. Our supplement document package contains the OMV press release.

Asia was early to secure and hasn’t stopped securing long term LNG supply

Asian buyers were early to secure long term LNG supply and started to lock up long term LNG supply starting in July 2021. The LNG supply crunch for the 2020s was clear before Russia invaded Ukraine. 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*”

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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 16.96 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 16.96 bcf/d of long-term LNG deals since July 1, 2021. 64% 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 65% of all Asian LNG buyers in long term contracts since July 1, 2021. Below is our updated

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table of Asian and Europe LNG buyers new long-term supply deals since July 1, 2021.

Figure 9: Long-Term LNG Buyer Deals Since July 1, 2021

Long-Term LNG Buyer Deals Since July 1, 2021							
Date	Buyer	Seller	Country	Volume	Duration	Start	End
			Buyer / Seller	(bcf/d)	Years		
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	Unipecc	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	Gurvor 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	Gurvor 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
Jun 21, 2023	Petro Bangle	Oman	Bangladesh/Oman	0.20	10.0	2026	2036
Jun 21, 2023	CNPC	QatarEnergy	China/Quatar	0.53	27.0	2027	2054
Jun 26, 2023	ENN LNG	Cheniere	Singapore / US	0.24	20.0	2026	2046
Jul 5, 2023	Zhejiang Energy	Mexico Pacific Ltd	China / Mexico	0.13	20.0	2027	2047
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				10.90			
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.
Jun 21, 2023	Equinor	Cheniere	Norway / US	0.23	15.0	2027	2042
Jun 22, 2023	SEFE	Venture Global LNG	EU/US	0.30	20.0	2026	2046
Jul 14, 2023	ONEE (Morocco)	Shell	Africa/US	0.05	12.0	2024	2036
Jul 18, 2023	IOCL	Adnoc	India/UAE	0.16	14.0	2026	2040
Jul 28, 2023	OMV	BP	Austria/UK	0.13	10.0	2026	2036
Aug 4, 2023	ConocoPhillips	Mexico Pacific Ltd	US/Mexico	0.29	20.0	2025	2045
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				6.07			
Total New Long Term LNG Contracts since Jul/21				16.96			

Source: SAF

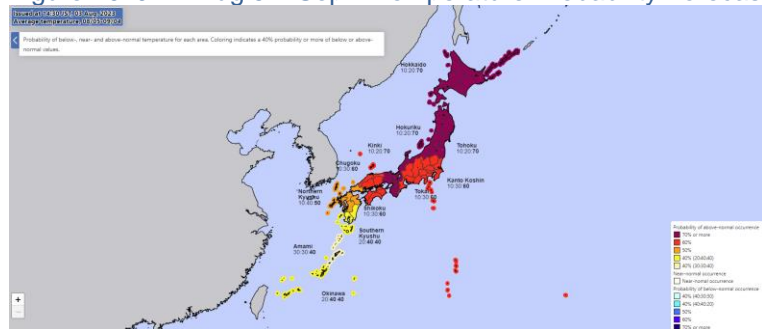
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Natural Gas: Forecast calls for well above normal temperatures in August

It has been really hot in Japan this summer and it looks like the hot weather will continue to the end of August. Every Thursday, the Japan Meteorological Agency updates its 30-day outlook [LINK](#). The August 3 update calls for much warmer than typical temperatures for the Aug 5 – Sep 4 period. The above average temperatures are forecasted through the whole country, with the northern and central regions being most affected. Even with this summer’s push to conserve natural gas, there should be strong demand for AC, which will benefit natural gas consumption. Below is the JMA’s 30-day temperature probability forecast for Aug 5 to Sep 4.

Japan’s 30-day temperature forecast

Figure 10: JMA Aug 5 – Sep 4 Temperature Probability Forecast



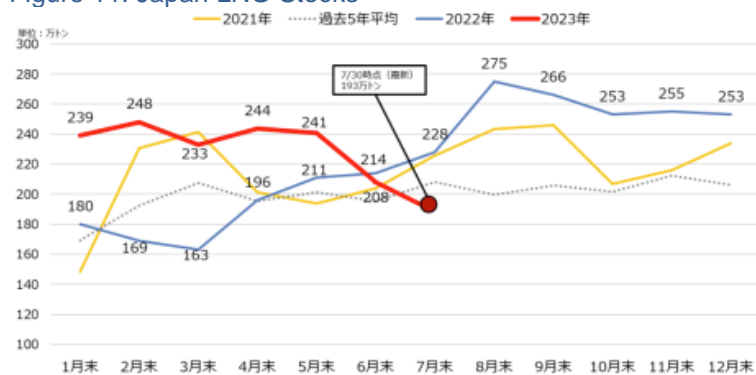
Source: Japan Meteorological Agency

Natural Gas: Japan’s LNG stocks remain below 2022 and 5-year average levels

It’s been hot in Japan and it looks like Japan has been drawing on its LNG stocks for power generation for the past few weeks, which means that Japan LNG stocks are now below 2022, 2021 and 5-year average levels. On Wednesdays, Japan’s METI releases its weekly LNG stocks data [LINK](#). LNG stocks on July 30 were 92.7 bcf and are down -2.5% WoW from July 23 of 95.1 bcf, and are now under the 5-year average of 99.9 bcf. Below is the LNG stocks graph from the METI weekly report.

Japan LNG stocks down -2.5% WoW

Figure 11: Japan LNG Stocks



Source: METI

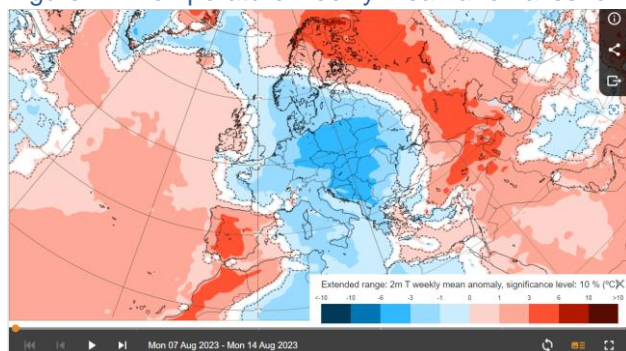
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Natural Gas: Western Europe heat wave break to last another week

It's not like it's cold in western Europe, but it looks like they will have another week or so break from the brutal heat wave a couple weeks ago that saw mid-40's temperatures in many places in western Europe. We looked at Rome weather last night and it looks like daily highs around 30C for the upcoming week so still hot but less than normal heat for the beginning of August. And then returning to warmer than normal temperatures for the Aug 14-21 week. Below are the ECMWF temperature probability maps, posted yesterday for Aug 7-14 and Aug 14-21. [\[LINK\]](#)

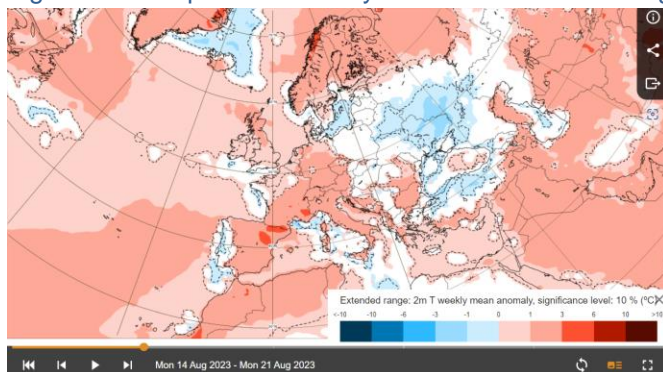
**Southern Europe
break from heat
wave**

Figure 12: Temperature weekly mean anomalies for Aug 7-14



Source: ECMWF

Figure 13: Temperature weekly mean anomalies for Aug 14-21



Source: ECMWF

Natural Gas: Europe storage is now +14.43% vs 5-yr average, but within 5-yr range

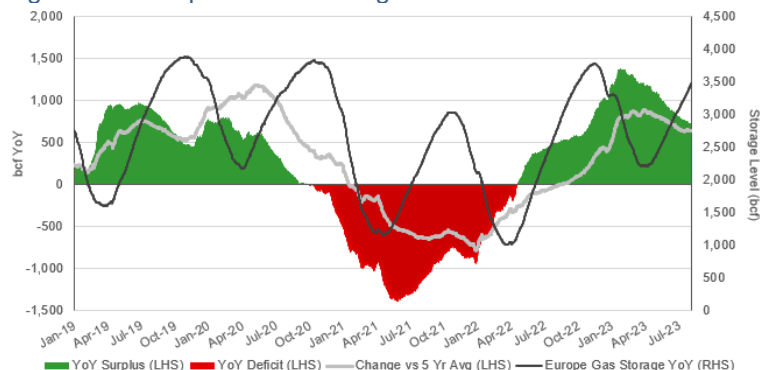
The Europe natural gas storage picture this week is much the same as the last several weeks – storage is significantly higher YoY and on track to be full or close to full for the start of the winter natural gas withdraw season. But hot weather (at least up until now) and relatively low natural gas prices have led to a modest narrowing of the gas storage surplus relative to last year and the 5-year average. Although not putting risk to Europe storage being full or near full for the start of winter. This week, Europe storage increased by +1.76% WoW to 86.54% on August 3. Storage is now +15.62% greater than last year levels of 70.92% and is +14.43%

**Europe gas
storage**

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above the 5-year average of 72.11%. The current storage is 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, SAF

Oil: US oil rigs -4 WoW at 525 rigs on August 4, US gas rigs flat WoW at 128 rigs

Baker Hughes released its weekly North American drilling rig data on Friday. Total US oil rigs were down -4 rigs WoW to 525 total rigs, and -73 rigs YoY for the week of August 4. This is up +44 rigs from the 2022 low of 481 rigs in January, and +353 rigs since the 2020 low of 172 rigs on Aug 14. “Others” increased +5 rigs WoW to 82 total rigs. The Permian, Eagle Ford, and Cana Woodford decreased this week by -4, -2 and -2 rigs WoW to a total of 320 rigs, 53 rigs, and 20 rigs, respectively.. We will be watching to see if there is a turn in US rigs with the recent strength in oil prices. This Permian is now down -37 rigs from it’s recent high of 357 rigs on April 28, 2023. Gas rigs were flat WoW at total of 128 rigs and have now decreased -33 rigs YoY. On a per basin basis, Eagle Ford and “Others” each increased by +1 rig WoW to a total of 1 rig and 30 rigs, respectively. In contrast, Marcellus and the Permian both decreased by -1 rig WoW to a total of 32 rigs and 9 rigs, respectively. Below is our graph of total US oil rigs.

US oil rigs down WoW

Figure 15: Baker Hughes Total US Oil Rigs



Source: Baker Hughes, SAF

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Oil: Total Cdn rigs down -5 rigs WoW to 188 total rigs

For the week of August 4, total Cdn rigs were down -5 rigs WoW to 188 rigs. NS Offshore increased +1 rig WoW, to a total of 1 rig. In contrast, Saskatchewan decreased by -3 rigs WoW to a total of 34 rigs, while Alberta, BC, and Newfoundland all decreased by -1 rig WoW to a total of 130 rigs, 19 rigs, and 0 rigs, respectively. Likely the decrease in Alberta and BC rigs are wildfire related, while it is unclear if the decrease in Saskatchewan is linked to any event. Cdn oil rigs were down -3 WoW to 118 rigs, and Cdn gas rigs decreased -2 to 70 rigs. Cdn oil rigs are down -22 rigs YoY, while gas rigs are up +7 rigs YoY. Below is our graph of total Cdn oil rigs.

**Cdn total rigs
down WoW**

Figure 16 Baker Hughes Total US Oil Rigs



Source: Baker Hughes, SAF

Oil: US weekly oil production estimates flat WoW at 12.2 mmb/d

The EIA weekly US oil production estimates were flat WoW at 12.2 mmb/d for the week ended July 28. [\[LINK\]](#) This is below the post Covid high level of 12.4 mmb/d, which was reached twice in June. And as noted in the following item, the EIA monthly “actuals” have been above 12.4 mmb/d in each of the 1st five months in 2023, so we have been expecting to see the weekly estimates remain at or above 12.4 mmb/d. The Lower 48 was also flat WoW at 11.8 mmb/d, and Alaska was down +0.014 mmb/d to 0.393 mmb/d. Below is a table of the EIA’s weekly oil production estimates.

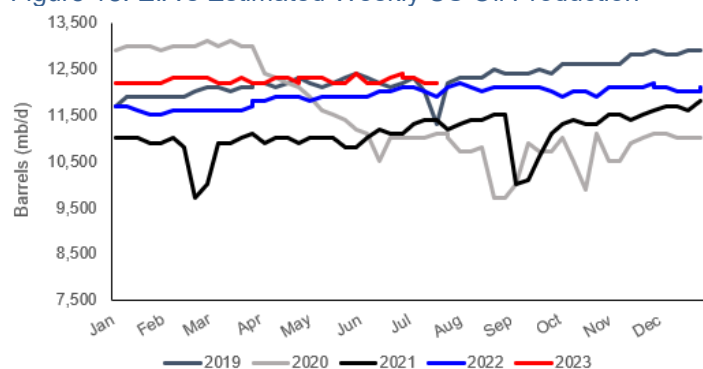
**US oil production
flat WoW**

Figure 17: EIA's Estimated Weekly US Field Oil Production

Year-Month	Week 1		Week 2		Week 3		Week 4		Week 5	
	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		
2023-Jun	06/02	12,400	06/09	12,400	06/16	12,200	06/23	12,200	06/30	12,400
2023-Jul	07/07	12,300	07/14	12,300	07/21	12,200	07/28	12,200		

Source: EIA

Figure 18: EIA's Estimated Weekly US Oil Production



Source: EIA, SAF

Oil: EIA Form 914 – US May oil actuals +387,000 b/d vs weekly estimates

EIA Form 914 May

As a reminder, the EIA’s actuals for US oil production continue to be well above their weekly estimates. On Monday, the EIA released its Form 914 data [\[LINK\]](#), which is the EIA’s “actuals” for May US oil and natural gas production. The Form 914 actuals for May have production at 12.662 mmb/d, which is +387,000 b/d vs the EIA weekly estimates of 12.275 mmb/d. And because of this significant difference, the Form 914 May production is +0.928 mmb/d YoY. The actuals paint a picture of much stronger than expected YoY growth in US oil production.

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

(thousands b/d)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2023	12,568	12,532	12,770	12,677	12,662							
2022	11,480	11,258	11,806	11,770	11,734	11,800	11,834	11,985	12,325	12,378	12,376	12,138
2021	11,137	9,916	11,351	11,318	11,390	11,366	11,392	11,276	10,921	11,564	11,782	11,678
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

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



Source: EIA, SAF

Oil: Devon Q2 reminds Permian Delaware Basin “oil” wells become gassier over time
 On Wednesday, Devon Energy reported Q2 and its Q2/23 backup data is a good reminder of the basic fundamental for “oil” plays that produce associated natural gas and NGLs – the oil wells become gassier over time. Devon’s major Lower 48 play is the Permian Delaware Basin oil play. Like other Permian “oil” zones, it is an oil play that produces associated natural gas and NGLs. We put together the below table that shows Devon’s Delaware Basin production split by oil, natural gas, NGLs and then total BOE. It shows how the oil percentage of Devon’s BOE Delaware “oil” production has dropped from 53.4% in Q2/21 to 50.9% in Q2/22 and now 49.8% in Q2/23.

Delaware Basin “oil” wells.

Figure 21: Devon Energy Delaware Basin production

	Volumes			% of Total BOE		
	Q2/21	Q2/22	Q2/23	Q2/21	Q2/22	Q3/23
Oil (Mbbbls/d)	191	222	209	53.4%	50.9%	49.8%
NGLs (Mbbbls/d)	82	111	105	22.9%	25.5%	25.0%
Natural Gas (MMcf/d)	513	618	636	23.9%	23.6%	25.2%
Total Oil Equivalent (Mboe/d)	358	436	420	100.1%	100.0%	100.0%
*Note some rounding issues						

Source: Devon Energy

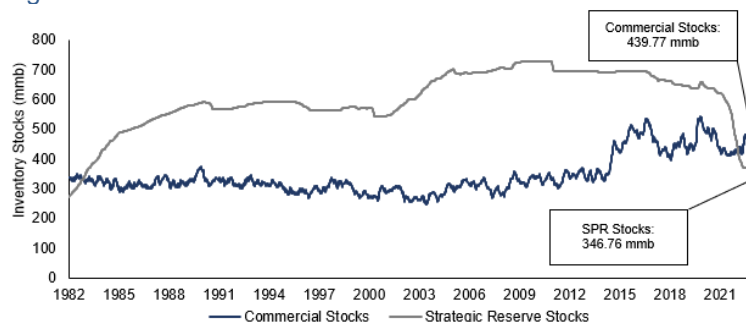
Source: Devon Energy

Oil: US SPR reserves now -93.012 mmb lower than commercial crude oil reserves
 Oil in US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. SPR went back below commercial for the first time since 1983 in the Sept 16, 2022 week. This deficit narrowed this week after a large draw in commercial oil stocks of -17.049 mmb. The EIA’s weekly oil data for July 28 [LINK](#) saw the SPR reserves flat WoW at 346.759 mmb, while commercial crude oil reserves decreased -17.049 mmb 439.771 mmb. There is now a -93.012 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles.

US SPR reserves

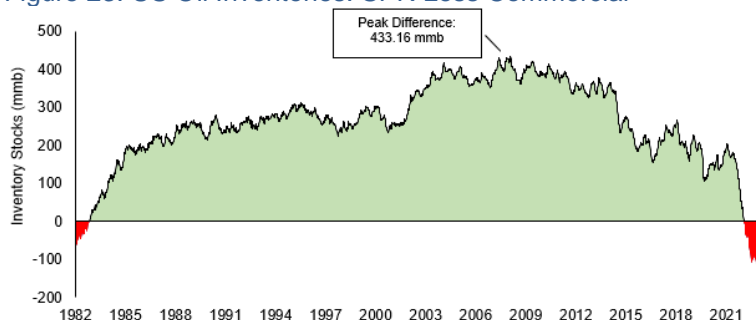
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Figure 22: US Oil Inventories: Commercial & SPR



Source: EIA, SAF

Figure 23: US Oil Inventories: SPR Less Commercial



Source: EIA, SAF

Oil: Cdn oil differentials narrowed -\$0.05 vs July 28 to close at \$15.35 on Aug 4

It's been a great last two months for WCS less WTI differentials that still continue to see the impact of OPEC+ cuts including Saudi Arabia's extra voluntary 1 mmb/d cut for July, August and now Sept. This has led to continued much narrower than normal WCS less WTI differentials for this time of year. WCS less WTI differentials narrowed by \$0.05 to close at \$15.35 on Aug 4. This has been a great May/June/July for WCS less WTI differentials, which are hugely narrower than normal as differentials normally start to widen in mid-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 was up and down but closed at \$14.65 on Apr 28, then narrowed in May to 13.50 on May 31, narrowed in June to \$11.25 on June 30, widened in July to \$13.75 on July 31, and widened the last few days to close at \$15.35 on Aug 4. The last couple weeks look like it is the start of the normal widening of the differentials as US refineries start to look to upcoming maintenance to change to winter fuel blends. The normal seasonal trend for WCS less WTI differentials that normally widen starting in mid-May. For perspective, a year ago, the WCS-WTI differentials last year were \$19.40 on Aug 4, 2022. Below is Bloomberg's current WCS-WTI differential as of Aug 4, 2023 close.

WCS less WTI differentials

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Figure 24: WCS less WTI oil differentials including Aug 4 close



Source: Bloomberg

Oil: Crack spreads at \$38.13 so no reason for refiners to stop buying crude

We remind that oil demand is driven by refiners and their ability to make money by processing oil and selling petroleum products. So crack spreads are a good indicator if refiners will be looking to buy more or less oil. This week, the US 321 crack spreads declined by \$3.34 to close at \$38.13 on Aug 4. Over \$40 is a very high crack spread and \$38.13 is still basically a double vs the more normal range pre-Covid that was more like \$15-\$20. A \$38.13 crack spread is a big incentive for US refiners to run hard and process as much crude as possible.

Crack spreads down this week

Explaining 321 crack spread

People often just say “cracks”, which refers to the 321 crack spread. This is the spread or margin that refiners make from buying crude at a certain price and then selling the finished petroleum products at their respective prices. The 321 crack spread is meant to represent what a typical US refinery produces. It assumes that for every three barrels of crude oil, the refinery will produce two barrels of gasoline and one barrel of distillates. So the crack spread is based on that formula and worked back to a crack spread per barrel. Below is the current 321 crack spread, which was \$41.47 as of the Friday July 28, 2023 close.

Figure 25: Cushing Crude Oil 321 Crack Spread Aug 4, 2013-to Aug 4, 2023



Source: Bloomberg

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Oil: Trans Mountain apportioned by 6% for August

On Tuesday, Trans Mountain released an update [\[LINK\]](#) on its capacity for the month of August. Total system nominations are apportioned by 6% for August (July was 5%, June was 13%), meaning 6% of demand for the pipeline exceeds its capacity. Trans Mountain has been running at full capacity and has seen regular monthly apportionment for over a decade. Our Supplemental Documents package includes the Trans Mountain release.

Trans Mountain apportionment**Oil: CNQ reminds 5 million barrel line fill (line pack) to soon start for TMX**

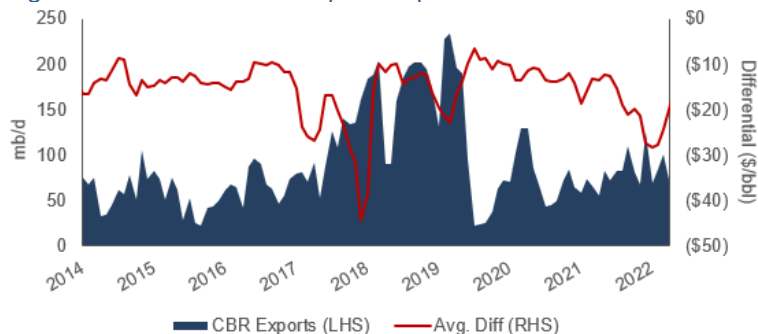
On Thursday, Canadian Natural Resources held its Q2 call and there was a huge surprise when mgmt. stated they thought Trans Mountain could call for line fill any time now. And CNQ reminded that there would be 5 million barrels of oil needed for the line fill (line pack). This surprised everyone. Whether the line fill starts in Oct, Nov or Dec, or in early 2024, CNQ's comments are a reminder that line fill is soon to come. And when it does, that means there will be a need for 5 million barrels of oil for line pack before the pipeline can be operational. Trans Mountain should be releasing Q2 in late August and there will be a formal construction update. Their last formal update was in their Q1 report on May 30 [\[LINK\]](#) said "Trans Mountain anticipates mechanical completion of the Project to occur at the end of 2023 with commercial service expected to occur in the first quarter of 2024." The Bloomberg transcript of CNQ mgmt. comments in the Q&A was "Sure. As far as the apportionment, we don't see it being an issue. From all indications TMX is -- will be making a call for line fill here in the fall here, August, September, October. So from that aspect. I look at it as a very positive and very constructive for Canada's oil WCS. Because you can appreciate one you'll have the line fill and I believe it's up around 5 million barrels of line fill for that line. And then on top of it heavy oil capacity, I believe is a little over 500,000 barrels a day. So it's going to take 500,000 barrels a day of heavy to a different market. So to me, I find that the WCS piece will be very constructive here. Obviously typically, historically the winter months it does widen a bit. B mean, let's face it's 20% that is still very strong on a relative basis."

TMX line fill**Oil: EIA estimate total Cdn crude by rail imports down MoM to 53,000 b/d in May**

On Monday, the EIA posted its monthly "U.S. Movements of Crude Oil by Rail" [\[LINK\]](#), which includes the EIA data on US imports of Cdn crude by rail. EIA estimates total US imports of Cdn crude by rail was 53,000 b/d in May, which was down -12,500 b/d MoM from 65,500 b/d in April. US imports of Cdn crude by rail into PADD 3 (Gulf Coast) were 41,000 b/d in May, which was down 11,900 b/d MoM from 52,900 b/d in April. The EIA did not comment on the MoM changes. Below is our graph of Cdn CBR exports to the Gulf Coast and WCS differential over time.

EIA Cdn crude by rail imports

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



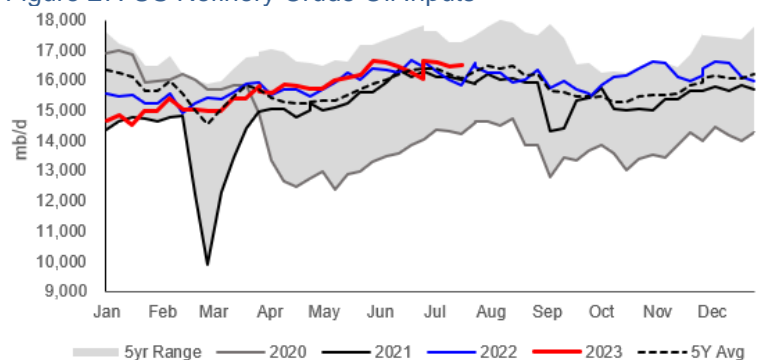
Source: EIA, Bloomberg

Oil: Refinery inputs up +0.039 mmb/d WoW to 16.517 mmb/d

There are always unplanned issues that impact crude oil inputs into refineries, but refineries around the world follow seasonal patterns for their maintenance. We'll normally see 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. And given the strong crack spreads noted above, refineries are incentivized to process as much crude as possible. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended July 28 [LINK](#). The EIA reported crude inputs to refineries were up +0.039 mmb/d this week to 16.517 mmb/d and are up +0.664 mmb/d YoY. Refinery utilization was down -0.7% WoW to 92.7%, which is +1.7% YoY. Total products supplied (i.e., demand) decreased WoW, down -1.253 mmb/d to 20.023 mmb/d, and Motor gasoline was down -0.101 mmb/d to 8.838 mmb/d from 8.939 mmb/d last week. The 4-week average for Motor Gasoline was down -0.190 mmb/d WoW to 8.847 mmb/d. The 4-week average of Total demand was down -0.303 mmb/d WoW to 20.192 mmb/d.

Refinery inputs up +0.039 mmb/d WoW

Figure 27: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil – 2.9 mmb/d of refining additions in Asia and Middle East for 2022 and 2023

One of the topical global oil stories over the past few weeks has been how there is new global refining capacity coming onstream. That is correct and 2022 and 2023 have been big years for major additions to global oil refining capacity. Here is what we wrote a year ago in

Asia and Middle East refining additions

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our Aug 7, 2022 Energy Tidbits memo. “We recommend adding to reference libraries the new EIA blog on Tuesday that listed all the new refinery capacity additions in the Middle East and Asia scheduled to come onstream in 2022 and 2023. The EIA identified nine refinery projects beginning operations or scheduled to come online before the end of 2023. On Wednesday, we tweeted [\[LINK\]](#) “Who doesn’t love a great map! @EIA shows ~2.9 mmb/d of 2022/23 refinery additions by refinery. China 1.120 mmb/d, Kuwait 0.615 mmb/d, Saudi 0.400 mmb/d, Malaysia 0.300 mmb/d, Oman 0.230 mmb/d, Iraq 0.140 mmb/d & India 0.135 mmb/d. #OOTT”. The EIA highlighted that China’s refinery capacity is scheduled to increase significantly this year. The 320,000 b/d Shenghong Petrochemical facility in Lianyungang reports that trial crude oil-processing operations began in May 2022. In addition, PetroChina’s 400,000 b/d Jieyang refinery is expected to come online in Q3/22. A planned 400,000 b/d Phase II capacity expansion also began operations earlier this year at Zhejiang Petrochemical Corporation’s Rongsheng facility. Outside of China, the 300,000 b/d Malaysian Pengerang refinery restarted in May 2022 after a fire forced the refinery to shut down in March 2020. In India, the Visakha Refinery is undergoing a major expansion, scheduled to add 135,000 b/d by 2023. Our Supplemental Documents package includes the EIA article.”

Figure 28: Selected Major Global Refinery Projects Scheduled for 2022 and 2023



Source: EIA

Oil: Something still isn’t right in the EIA weekly oil imports by country data

The reason why we continue to highlight this error is that no one can tell if it’s only the EIA allocating imports incorrectly by country or if the EIA is understating oil imports. But it’s the same commentary as the last several weeks 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, the reason we highlight this is that we just don’t know if the total US crude oil imports are wrong or if it’s just that the EIA has incorrectly allocated import volumes to the wrong country. Perhaps this is part of the reason for the big weekly plug in its oil supply and demand estimates. (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

US net oil imports

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in its monthly data but for reason not in these weekly estimates. (ii) US “NET” imports were down -0.391 mmb/d to 1.385 mmb/d for the July 28 week. US imports were up +0.301 mmb/d to 6.668 mmb/d. US exports were up +0.692 mmb/d to 5.283 mmb/d. The WoW increase in US oil imports was driven mostly by “Top 10”. The Top 10 was up +0.392 mmb/d. Some items to note on the country data: (i) Canada was up +0.488 mmb/d to 3.691 mmb/d. (ii) Saudi Arabia was up +0.185 mmb/d to 0.427 mmb/d. (iii) Mexico was down -0.070 mmb/d to 0.760 mmb/d. (iv) Colombia was up +0.003 mmb/d to 0.290 mmb/d. (v) Iraq was down -0.038 mmb/d to 0.235 mmb/d. (vi) Ecuador was down -0.041 mmb/d to 0.175 mmb/d. (vii) Nigeria was down -0.135 mmb/d to 0.094 mmb/d.

Figure 29: US Weekly Preliminary Imports by Major Country

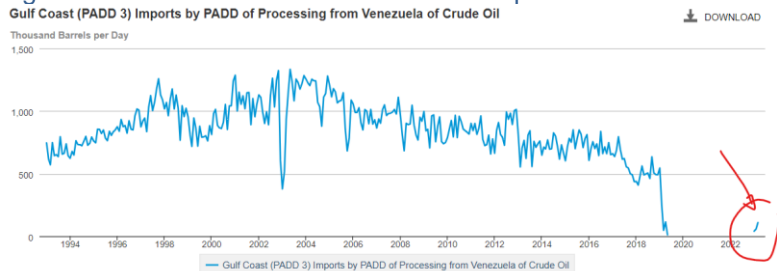
(thousand b/d)	May 19/23	May 26/23	Jun 2/23	Jun 9/23	Jun 16/23	Jun 23/23	Jun 30/23	Jul 7/23	Jul 14/23	Jul 21/23	Jul 28/23	WoW
Canada	3,707	3,589	3,504	3,339	3,570	3,776	3,611	3,385	3,698	3,203	3,691	488
Saudi Arabia	212	534	66	677	146	460	313	444	426	242	427	185
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	657	913	647	845	808	758	882	526	1,004	830	760	-70
Colombia	214	286	127	184	148	222	287	153	215	287	290	3
Iraq	136	114	430	252	102	216	122	134	259	273	235	-38
Ecuador	71	214	218	54	203	67	157	144	207	216	175	-41
Nigeria	77	98	144	132	204	96	192	189	91	229	94	-135
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	5,074	5,748	5,136	5,483	5,181	5,595	5,564	4,975	5,900	5,280	5,672	392
Others	776	1,469	1,264	898	980	985	1,474	905	1,274	1,087	996	-91
Total US	5,850	7,217	6,400	6,381	6,161	6,580	7,038	5,880	7,174	6,367	6,668	301

Source: EIA, SAF

EIA shows imports from Venezuela in its monthly import data.

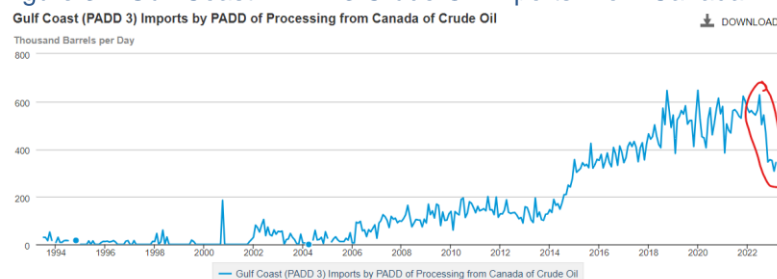
Here is what we wrote in our May 7, 2023 Energy Tidbits memo. “Last week’s (Apr 30, 2023) Energy Tidbits memo highlighted our Apr 29 tweet [\[LINK\]](#) that Chevron’s start of Venezuela oil imports into the Gulf Coast is likely impacting Cdn WCS less WTI differentials and how Venezuela oil into the 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 from 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 30: Gulf Coast PADD 3 Crude Oil Imports From Venezuela



eia Data source: U.S. Energy Information Administration
Source: EIA, SAF

Figure 31: Gulf Coast PADD 3 Crude Oil Imports From Canada



eia Data source: U.S. Energy Information Administration
Source: EIA, SAF

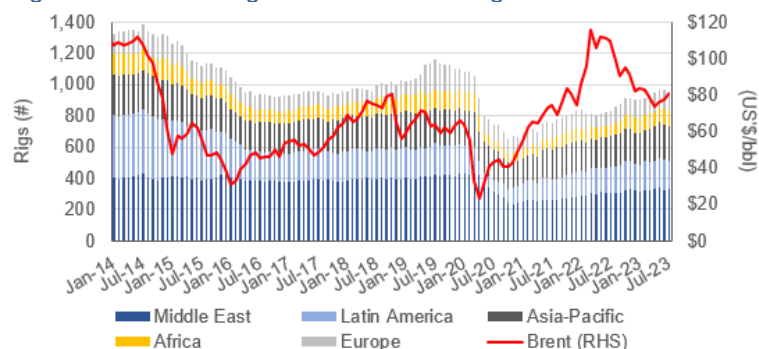
Oil: Baker Hughes International rigs -6 MoM to 961 rigs in July

On Friday, Baker Hughes posted its monthly update to international rigs, in total, that show rigs in July slightly decreased MoM. (i) Total international rigs decreased by -6 rigs MoM to 961 rigs in July, and total rigs are now up +155 rigs from the recent low of 806 in April 2022. (ii) Saudi Arabia, Kuwait, and Norway had the largest MoM increases of +5 to 86 rigs, +3 to 27 rigs, and +3 to 18 rigs, respectively. Notably this is the second consecutive month Ukraine has had any change in total rig count since the January 2023. In July Ukraine’s rigs continue to increase, up +2 MoM to 46 rigs and is +36 rigs YoY from 10 rigs in July 2022 post the Russia invasion. In contrast, Mexico, Abu Dhabi, and the UK had the largest MoM decreases of -11 to 56 rigs, -4 to 51 rigs, and -4 to 22 rigs, respectively. (iii) Ukraine, Saudi Arabia, and Libya are up +36 rigs, +14 rigs, and +13 rigs YoY. The largest YoY decreases were realized by Columbia, Pakistan, and Guyana which had declines of -9 rigs, -3 rigs, and -3 rigs, respectively. (iv) July’s count of 961 rigs was +15% YoY from 833 in July 2022, and down -17% vs pre-Covid July 2019 of 1,162 rigs. The YoY rig count is as follows: Africa +24, Asia-Pacific +28, Europe +37, Latin America +14, 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, Saudi Arabia has added +19 rigs to 86 active rigs in July 2023, while UAE (Abu Dhabi) added +17 rigs and Iraq added +16 rigs each over the same period. Europe increased its rig count YoY with Ukraine adding +36 rigs and Italy +4 rigs YoY. Below is our graph of international rigs by region and avg monthly Brent price.

International rigs -6 MoM in July

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Figure 32: Baker Hughes International Rig Count and Brent Price



Source: Baker Hughes, SAF

Oil: Venezuela crude oil production still stuck around 800,000 b/d

Venezuela had the good initial burst when once Chevron started back up at the beginning of the year, but the expectation has been for limited near term growth as Chevron hasn't cranked up investment in Venezuela as it never has certainty of more than six months licencing at any point in time. And without the certainty of a multi-year license, Chevron has limited its capital investment, which in turn limits the near term growth in Venezuela production. On Wednesday, Argus reported [LINK](#) that Venezuela oil production rebounded from a drop in June and that crude oil production was ~808,000 b/d in July. Argus wrote "Venezuela crude production rose to 843,700 b/d in July based on oil ministry figures, returning to an increase after June's drop that was one of the first such declines so far this year. The US eased sanctions on Venezuela late last year, allowing some increased investment from outside partners in Venezuela's fields. The July figure includes condensates and natural gas liquids (NGLs), the ministry reported. Once those byproducts are deducted — as Opec figures typically reflect — production was about 808,000 b/d, still an increase from the comparable figure of 788,000 b/d in June, an industry source estimated. June's production was about 806,300 b/d including condensates and NGLs, oil ministry Menpet said last month. Most outside sources report lower monthly production figures for the country. Argus estimated Venezuelan production in June at about 760,000 b/d." Our Supplemental Documents package includes the Argus report.

Venezuela at
~800,000 b/d

Chevron expected its Venezuela production +50,000 b/d to 150,000 b/d in 2023

Chevron was not asked on the Q2 call for any update on Venezuela oil production or plans in its July 28, 2023 Q2 earnings call. The last management update was on the Chevron Q1 call. Here is what we wrote in our April 30, 2023 Energy Tidbits memo. "It is important to remember Chevron CEO Wirth's prior comments that, given the Administration's license is only for six months and the Administration is under no obligation to do a monthly rollover to keep a six-month effective license, Wirth said Chevron wouldn't be doing any drilling in the first six months. Wirth wanted to know there was a longer term before they committed to a drilling program. As a result, Chevron would be increasing oil production by well workovers, fixing operations, bringing in diluent, etc ie. non-drilling items. The reminder is that if Chevron ever gets at it, they could ramp up production by probably 250 to 500,000 b/d within a year or so. And expects it to increase production by 50% from current 100,000 b/d in

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2023. Production was 50,000 b/d at the end of Nov when Chevron got the license. In the Q1 call, mgmt. was asked about Venezuela oil production. Note it looks like a typo in the transcript that says it was a six-month license from OPEC as the license was from the US. Mgmt replied “Is there a maximum? I mean, it’s limited by our position there, and the entities that we’re involved in, and what our portion of that production that we’re entitled to market is. We’re currently seeing about 100,000 barrels a day of production up from about 50,000 when the license terms changed. That could go up further this year, maybe another 50% if everything goes well. The crude comes to the U.S. and we’re finding a market for the crude. And yes, it’s a six-month license from OPEC and we have to bear that in mind. So that’s why we are proceeding as you said which is we’ve got some past receivables that are being paid from some of these proceeds and there’s a lot of relatively straightforward work over another activity that can help bring production up at – without major capital commitments. And so that’s current model, we’ll see how things unfold, and hopefully, pointed in a good direction, but it’s been a bit of an up-and-down situation and we have to -- we just have to take this one step at a time.”

Oil: Colombia oil production still below pre-Covid, June was 0.778 mmb/d

It’s hard to see how Colombia oil production ever sustainably rallies anywhere back to the 1 mmb/d or even 900,000 b/d given Colombia’s goal to reduce oil and natural gas. Despite stronger oil prices post Covid, Colombia oil production has been stuck below 800,000 b/d. The National Hydrocarbons Agency (ANH) reported [LINK](#) June’s oil production was up +0.5% MoM to 0.778 mmb/d. This puts June’s production up +3.4% YoY to 0.778 mmb/d vs 0.752 mmb/d in June 2022. June’s data brings the average YTD production to 0.773 mmb/d, up +2.53% YoY from 2022’s 0.754 mmb/d but production remains -12.8% below pre-Covid levels of 0.886 mmb/d in 2019. Campetrol commented “This positive behavior in production was mainly due to projects development in the department of Meta”.

Colombia oil production up in June

Figure 33: Colombia Oil Production

mmb/d	2016	2017	2018	2019	2020	2021	21/20	2022	22/21	2023	23/22
Jan	0.986	0.860	0.860	0.899	0.884	0.745	-15.7%	0.740	-0.7%	0.774	4.6%
Feb	0.955	0.864	0.823	0.893	0.878	0.746	-15.1%	0.740	-0.8%	0.757	2.4%
Mar	0.917	0.804	0.856	0.885	0.857	0.745	-13.0%	0.751	0.8%	0.771	2.6%
Apr	0.915	0.857	0.865	0.891	0.796	0.745	-6.4%	0.751	0.8%	0.782	4.1%
May	0.904	0.851	0.866	0.895	0.732	0.703	-3.9%	0.746	6.1%	0.774	3.8%
June	0.888	0.857	0.864	0.892	0.730	0.694	-4.9%	0.752	8.4%	0.778	3.4%
July	0.843	0.856	0.860	0.869	0.735	0.731	-0.5%	0.748	2.3%		
Aug	0.827	0.858	0.866	0.883	0.742	0.748	0.8%	0.749	0.1%		
Sept	0.859	0.851	0.869	0.879	0.749	0.744	-0.7%	0.754	1.3%		
Oct	0.846	0.864	0.879	0.883	0.751	0.740	-1.5%	0.757	2.3%		
Nov	0.855	0.851	0.883	0.880	0.761	0.747	-1.9%	0.771	3.2%		
Dec	0.837	0.870	0.889	0.882	0.759	0.745	-1.8%	0.784	5.2%		

Source: ANH, SAF

Oil: Ukraine hits oil tanker, warns Russia Black Sea oil port now “war risk area”

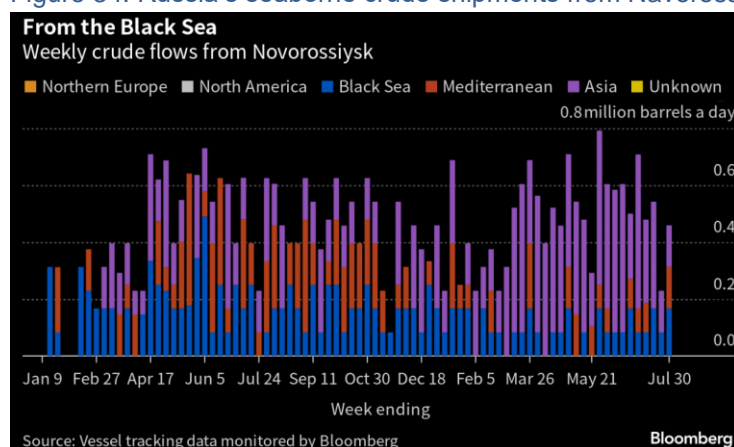
Big development in the Russia/Ukraine war yesterday morning that should impact commodities, including oil, when markets open on Monday. Early yesterday morning, we tweeted [LINK](#) “Buckle up! Ukraine hits Russian #Oil tanker & warns 6 Russian ports are now in “war risk area”. @business. Including major RUS Black Sea #Oil export port Novorossiysk. See great 📌 @JLeeEnergy graph, still loading ~0.4 million b/d. #OOTT.” There were two big developments yesterday morning. First, a Ukraine drone attack on a Russia oil tanker, which is the first case of any ship/tanker carrying commodities being attacked in the war.

Russia seaborne crude flows down

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Second, and even more significantly, Ukraine declare the water area around six Russian Black Sea ports are now in a “war risk zone”. And these six ports include Russia’s Black Sea oil port at Navorossiysk. The six ports are Anapa, Novorossiysk, Gelendzhik, Tuapse, Sochi, Taman. Our tweet included Bloomberg’s Aug 1 update of Russian seaborne oil shipments, which included the below graph that shows crude oil shipments from Navorossiysk have been about 400,000 b/d. It’s not just crude oil that is at risk. Ukraine isn’t necessarily saying exactly what will be attacked but we have to believe that the Ukraine declaration has to impact the volume of ships and also the cost of insurance, if available, for any ships. Our Supplemental Documents package includes the Bloomberg report on the Ukraine attack.

Figure 34: Russia’s seaborne crude shipments from Navorossiysk (Black Sea)



Source: Bloomberg

Ukraine’s drone boats

The Russian oil tanker was reportedly hit by a Ukraine drone boat. Last Sunday, we saw a CNN clip on the Ukraine drone boats. As of last night, the CNN video clip was still posted at [LINK](#). CNN wrote “The latest versions of the drone seen by CNN weigh up to 1,000 kilograms (2,200 pounds), with an explosive payload of up to 300 kilograms (661 pounds), a range of 800 kilometers (500 miles) and maximum speed of 80 kph (50 mph).” These are remote controlled. The challenge for Russia is that these are fast boats, small and Russian naval ships weren’t designed to defend against these small, fast moving boats. These are Ukraine made drone boats and are rumored to cost only about \$250,000 per boat.

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Figure 35: Ukraine Drone Boats



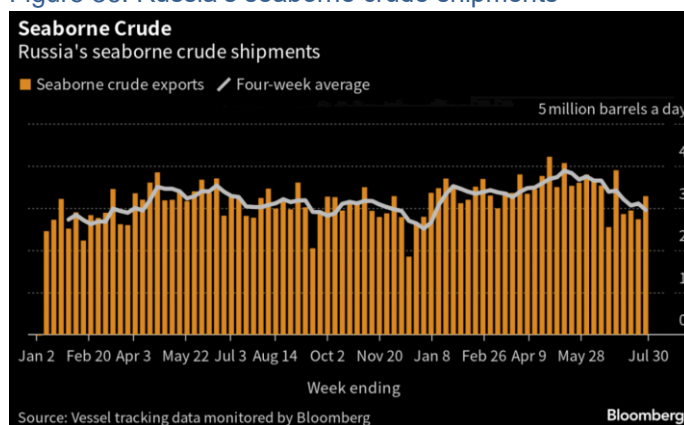
Source: CNN

**Russia
seaborne crude
flows down**

Oil: Russia’s seaborne crude flows lowest since early Jan

One of the positives for oil, prior to the Saudi Arabia Thursday announcement of extending its cuts, was the Bloomberg weekly report on Russia seaborne crude flows up until July 30. And it looks like Russia is finally following thru on its promises. On Wednesday, we tweeted [\[LINK\]](#) “Russia finally complying! RUS seaborne crude flows in the 4-weeks to July 30 fell to the lowest since early Jan. 4-week ave shipments dropped to 2.98 mmb/d, smallest since the 28-day period ending Jan. 8 & down >900,000 b/d from peak seen in mid-May. Thx @JLeeEnergy #OOTT.” The tanker tracking says Russia shipments back down to early Jan levels. Bloomberg reported “Russia’s seaborne crude flows in the four weeks to July 30 fell to the lowest since early January, shortly after a European Union import ban and a wider price cap on the country’s exports came into effect. Four-week average shipments dropped to 2.98 million barrels a day, the smallest since the 28-day period ending Jan. 8 and down by more than 900,000 barrels a day from the peak seen in mid-May. More volatile weekly flows rose, with record-equaling shipments from the Arctic.” Our Supplemental Documents package includes the Bloomberg report.

Figure 36: Russia’s seaborne crude shipments



Source: Bloomberg

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Oil: Novak says Russia to cut exports by 300,000 /d in Sept

The other positive to oil on Thursday was Russia saying it would cut its oil exports by 300,000 b/d in September. Shortly after the below Saudi Arabia statement that they were extending their voluntary 1 mmb/d cuts for September, Russia Deputy PM announced Russia would be cutting its oil exports for September by 300,000 b/d. This is not in addition to the voluntary 500,000 b/d cut to exports, rather it is taking the 500,000 b/d cut to exports down to 300,000 b/d. So still a positive. TASS reported [\[LINK\]](#) *“Shortly before Russia issued the statement, Saudi Arabia announced the extension of a voluntary cut in oil production by 1 million bpd through September. Russia announced the extension of a cutback on oil exports until September 2023 in the amount of 300,000 barrels per day (bpd), Deputy Prime Minister Alexander Novak told reporters on Thursday. “Within the efforts to ensure the oil market remains balanced Russia will continue to voluntarily reduce its oil supply in the month of September, now by 300,000 barrels per day by cutting its exports by that quantity to global markets,” he said. Earlier, Russia already announced a voluntary reduction of exports by 500,000 bpd but for August. There is also a decrease in oil production in August, which is also 500,000 bpd. Whether it has been extended is not yet known.*

Russia to cut Sept exports**Oil: Novak reminds OPEC+ sees oil demand +2.2 mmb/d in 2024**

Russia Deputy PM Novak received some attention post the OPEC+ JMMC meeting on saying how oil demand is expected to growth +2.4 mmb/d YoY in 2023 and a further +2.2 mmb/d YoY in 2024. TASS reported [\[LINK\]](#) *“It is about plus 2.2 mln barrels per day. This is the figure taken as the basis now, as a target to support the supply to the market, taking into account production of OPEC countries, non-OPEC countries, and non-OPEC+ countries,” Novak added.* Note that Novak is referencing OPEC Monthly Oil Market Report forecasts. Our July 16, 2023 Energy Tidbits memo highlighted the OPEC MOMR July, which included OPEC’s first forecast for 2024. Here is what we then wrote *“On Thursday, OPEC released its Monthly Oil Market Report. (i) We thought the overall takeaway from the data and forecasts was neutral to slightly positive. OPEC increased its demand forecast for 2023, but that was due to increasing Q1/Q2 demand which slightly reduced Q4 to end the year. Global oil stocks deficit as of May 31 are basically unchanged vs the 5-yr and 2015-2019 average. But OPEC introduces its 2024 forecast that includes demand forecast +2.25 mmb/d YoY to 104.25 mmb/d.”*

OPEC oil demand +2.2 mmb/d in 2024**Oil: OPEC+ JMMC recommends no change**

No surprise, it was a quick and uneventful OPEC+ Joint Ministerial Monitoring Committee meeting on Friday Aug 4. On Friday morning, we tweeted [\[LINK\]](#) *“#OPEC JMMC over. As expected, no changes. JMMC thanks Saudi for extending 1 mmb/d cut thru Sept and Russia for the 300,000 b/d voluntary reduction of exports for Sept. #OOTT.”* The big news for oil was on Thursday with the Saudi extension (see below) and the Russia voluntary cuts to exports (see above), which was why a non-event JMMC was expected on Friday. Our Supplemental Documents package includes the OPEC release. [\[LINK\]](#)

OPEC+ JMMC says no change**Oil: Saudi extends 1 mmb/d cut thru Sept, says it could be “extended and deepened”**

Once again, we see another example of why we call Saud Energy Minister Abdulaziz “The Man”. He knows how to make sure markets don’t underestimate his control of oil markets. On Thursday morning, we tweeted [\[LINK\]](#) *“Ouch! Saudi Energy Minister Abdulaziz does it*

Saudi 1 mmb/d cut could be deepened

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again. "Ministry of Energy: Saudi Arabia will extend the voluntary cut of one million barrels per day for another month to include September that can be extended OR EXTENDED AND DEEPENED" #Oil +\$1.15. #OOTT." The expectation was generally that Saudi would extend the 1 mmb/d thru September and that it could be extended thereafter. However, the surprise that no one expected was Saudi Arabia adding that the cut "can be extended or extended and deepened." No one expected the bonus reminder that the 1 mmb/d could be deepened. The Saudi Press Agency release [\[LINK\]](#) "Ministry of Energy: Saudi Arabia will extend the voluntary cut of one million barrels per day for another month to include September that can be extended or extended and deepened. An official source from the Ministry of Energy announced that the Kingdom of Saudi Arabia will extend the voluntary cut of one million barrels per day, which has gone into implementation in July, for another month to include the month of September that can be extended or extended and deepened. In effect, the Kingdom's production for the month of September 2023 will be approximately 9 million barrels per day. The source also noted that this cut is in addition to the voluntary cut previously announced by the Kingdom in April 2023, which extends until the end of December 2024. The source confirmed that this additional voluntary cut comes to reinforce the precautionary efforts made by OPEC Plus countries with the aim of supporting the stability and balance of oil markets."

No surprise, no outrage from White House on Saudi 1 mmb/d cut extension

It's amazing what a year makes or, more significantly, reducing the SPR by 291 million barrels makes in terms of the US expressing outrage when Saudi Arabia and OPEC cuts oil supply. We have a 7am MT news cut off and we haven't seen any real Biden Administration criticism of the Saudi Arabia decision to extend its voluntary 1 mmb/d cut thru September and also say that could be deepened. If this had been a year ago, there would have been some very loud criticisms and veiled threats. But we don't believe anyone should be surprised by this lack of criticism. Here is what we wrote in last week's (July 30, 2023) Energy Tidbits memo. "Expect Biden to try to repair not antagonize relations with Saudi Arabia and MBS. No one should be surprised to see Biden try to repair and not antagonize US relations with Saudi Arabia and MBS. The 2024 election now less than 16 months away and Biden knows the last thing he wants is to further antagonize MBS. Recall his big issue last summer ahead of the mid-terms was high gasoline prices. The last thing Biden wants is high gasoline prices in 2024 and he knows he spent a good chunk of the SPR reserves to keep oil prices down and therefore help keep gasoline prices down. He doesn't have that same SPR cushion and knows that. So the last thing he will want to do over the next year is antagonize MBS. The real question is likely what will MBS get from being in this position? It's also why we are seeing National Security Advisor Jake Sullivan travel to meet MBS. We don't expect Biden to do another trip to Saudi Arabia, but we wonder if there will be an MBS trip to Washington in 2024 if US gasoline prices are high next spring. On the Sullivan Thursday meeting, the White House readout tried to push a lot of specific discussion items, but one item that was noticeably absent was any indication for a discussion on oil prices. The White House read out did not mention energy security (buzz word for oil), areas of mutual concern (could include oil). Not mentioning oil is a good indicator that Biden knows he can't make the same threats as a year ago as he depleted a good chunk of the SPR. And MBS knows Biden doesn't have the same tools as he did last year on oil

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prices. The Saudi Press Agency readout was very general. Our Supplemental Documents package includes the White House and Saudi Press Agency readouts of the Sullivan meeting.

10/05/22: White House response to OPEC's production cut

We recognize that Saudi Arabia extending its 1 mmb/d voluntary cut and raising the potential to deepen the cut isn't the same magnitude as OPEC+'s Oct 2022 cut. However, the lack of any significant reaction pales in comparison to the Whitehouse Oct 5, 2022 statement on last year's OPEC+ cut. Here is the White House Oct 5, 2022 statement. [\[LINK\]](#) "Statement from National Security Advisor Jake Sullivan and NEC Director Brian Deese. OCTOBER 05, 2022. The President is disappointed by the shortsighted decision by OPEC+ to cut production quotas while the global economy is dealing with the continued negative impact of Putin's invasion of Ukraine. At a time when maintaining a global supply of energy is of paramount importance, this decision will have the most negative impact on lower- and middle-income countries that are already reeling from elevated energy prices. The President's work here at home, and with allies around the world, has helped to bring down U.S. gas prices: since the beginning of the summer, gas prices are down \$1.20 – and the most common price at gas stations today is \$3.29/gallon. At the President's direction, the Department of Energy will deliver another 10 million barrels from the Strategic Petroleum Reserve to the market next month, continuing the historic releases the President ordered in March. The President will continue to direct SPR releases as appropriate to protect American consumers and promote energy security, and he is directing the Secretary of Energy to explore any additional responsible actions to continue increasing domestic production in the immediate term. The President is also calling on U.S. energy companies to keep bringing pump prices down by closing the historically large gap between wholesale and retail gas prices — so that American consumers are paying less at the pump. In light of today's action, the Biden Administration will also consult with Congress on additional tools and authorities to reduce OPEC's control over energy prices. Finally, today's announcement is a reminder of why it is so critical that the United States reduce its reliance on foreign sources of fossil fuels. With the passage of the Inflation Reduction Act, the U.S. is now poised to make the most significant investment ever in accelerating the clean energy transition while increasing energy security, by increasing our reliance on American-made and American-produced clean energy and energy technologies."

03/03/22: MBS "simply, I do not care" if Biden misunderstands something about him

The reason we say why we wonder if the question is what will MBS get from Biden is because MBS has made no secret that he doesn't care if Biden misunderstands him. The reality is that the Saudi/US relationship changed and is now more transactional. Here is what we wrote in our March 6, 2023 Energy Tidbits on MBS view of Biden. "MBS "simply, I do not care" if Biden misunderstands something about him The Atlantic's March 3 report "Absolute Power" [\[LINK\]](#) based on its interviews Saudi crown prince Mohammed bin Salman got some good headlines. MBS says their "aim is to keep it and strengthen it" talking about their long historical relationship with the US. The headlines were on his Biden comments and warning to not interfere in Saudi domestic issues. The Atlantic wrote "We asked whether Biden misunderstands

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something about him. "Simply, I do not care," he replied. Alienating the Saudi monarchy, he suggested, would harm Biden's position. "It's up to him to think about the interests of America." He gave a shrug. "Go for it." For now, MBS's main request to the outside world, and especially the United States, is the usual request of misbehaving autocrats—namely, to stay out of his internal affairs. "We don't have the right to lecture you in America," he said. "The same goes the other way." Saudi affairs are for Saudis. "You don't have the right to interfere in our interior issues." It reminds that no one should expect the Saudi's to bend over in anyway to the US on oil. The problem for Biden and the Democrats is that it's difficult to reverse their view on MBS. We look at it as another of the situations where Biden and the Democrats like to have a villain to make sure they can get people inside their views. But by doing so, it makes it difficult for Biden to back track in a public way. It's like now with the oil companies, they really can't say anything positive about them or ask them to help without looking very weak. They made the oil companies the villains to sell energy transition for so long. How can they go back and say something good. They made MBS out to be a huge villain, Biden's team making it clear that Biden wouldn't meet or talk with MBS, only the King, they pulled out a Patriot missile defense system from Saudi Arabia, and have supposedly not given in to Saudi's request for more Patriot missiles to replace the shot missiles. So no surprise by the MBS comments on US. And unfortunately for the US, it means that Saudi isn't likely to help the US unless it helps them. We will be watching to see if there are reports on restocking Patriot missiles and any potential MBS/Biden meeting. Our Supplemental Documents package includes The Atlantic report. "

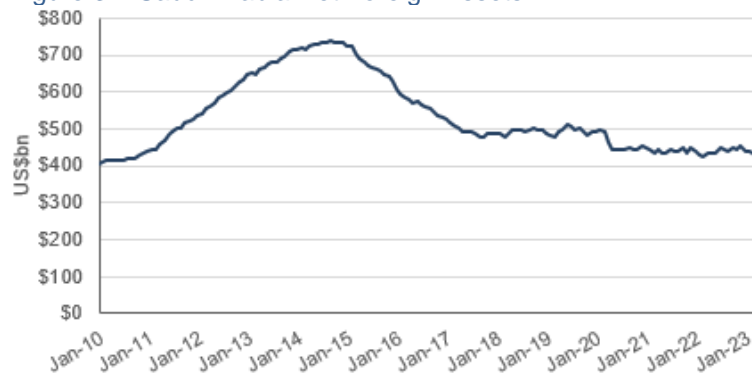
Oil: Saudi nest egg, its net foreign assets were up \$0.7b MoM in June

On Monday, the Saudi Central Bank released it's Monthly Statistical Bulletin for the month of June [\[LINK\]](#). 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 \$315b over the last nine 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. Above \$100 oil last year helped arrest the decline in the Saudi nest egg. But Saudi net foreign assets have dropped by \$313.6 over the last 8 years & 10 months from its peak of \$737.0b on Aug 31, 2014, to \$423.5b on June 30, 2023. That is an average of \$3.0b per month for the last 106 months since the peak. Oil prices remained relatively flat throughout the month with Brent crude averaging ~\$75 in June compared to ~\$76 in May. But there was a small +\$0.7b MoM increased to \$423.5b vs \$422.8b in May, and \$410.1b in April. We still wonder if there were were some in and out transactions that led to the large MoM increase in May. Saudi Arabia is far from going broke but there has been a huge decline in the last 8 years and 10 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 June 30 data.

Saudi net foreign assets

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Figure 37: Saudi Arabia Net Foreign Assets



Source: Bloomberg

Oil: No Erdogan visit to Iraq means no visibility to restart Kurdistan/Iraq oil via Turkey

Well, it looks like the Iraqi News Agency (official state news agency) report that Turkey President Erdogan was visiting Turkey this week to resolve some major outstanding issues was wrong – there was no visit. And that means there is still no near term visibility for Turkey allowing the resumption of Kurdistan/Iraq oil exports via Ceyhan. But it isn't clear why, if there was supposed to be a visit, the visit was cancelled. Were they just premature in announcing a visit? or were there no key items to announce? We had expected any visit by Erdogan was signaling items to announce and that the resumption of oil exports was likely to be one part of a package deal on multiple items. We checked the Iraqi News agency multiple times this week, including this morning, and we did not see any reports of why no Erdogan visit, what happened and when he was coming. However, yesterday, MENAFN reported [LINK](#) "Turkish President Recep Tayyip Erdogan is scheduled to undertake a visit to several Persian Gulf countries, trend reports. In August, Erdogan is expected to visit Bahrain, Oman, Kuwait, and Iraq. Following this, he will participate in the G-20 summit in India on September 9-10 and then travel to the United States to attend the session of the UN General Assembly on September 18-1". We will have to watch to see if the Erdogan visit to Iraq does emerge as we still have to believe he wouldn't go unless there were announcements to be made on some of the major Turkey/Iraq/Kurdistan issues including the resumption of Kurdistan oil via Turkey. And we believe that there is a better chance to resolve this Kurdistan oil export issue because it is only one of a package of issues so there is room to give-and-take on this issue as part of a broader negotiation.

Erdogan didn't
visit Iraq

Iraq 'PM Al-Sudani export of Iraqi oil through Turkey "is still suspended"

There may not have been an Iraqi News Agency report on why no Erdogan visit but, on Tuesday, they reported [LINK](#) on Iraq PM Al-Sudani's press conference "Al-Sudani concluded, "The federal government and the regional government deal responsibly with the bilateral agreement and what was stated in the budget, as today we launched financing for the entitlement of the Kurdistan region in the budget," stressing at the same time that "the export of Iraqi oil through Turkey to the port of Ceyhan is still suspended."

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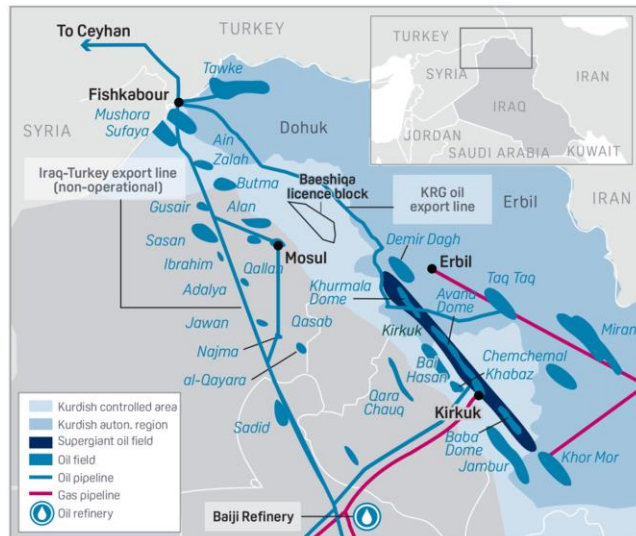
Iraq's court case win halted 370,000 Kurdistan & 75,000 b/d Iraq oil exports

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 it’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 [\[LINK\]](#).

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Figure 38: Northern Iraq's oil infrastructure map from 2020

NORTHERN IRAQ'S OIL INFRASTRUCTURE



Source: S&P Global Platts, PolGeoNow

Source: Platts

Oil: Libya oil production stable at ~1.2 mmb/d

We saw the first production update last week post the brief shut-in of the Sharara and El Feel oil fields and the production update was right at its normal ~1.2 mmb/d. We have a 7am MT news cut off so missed last Sunday's Libya National Oil Corporation production update [LINK](#) "Crude oil production reached 1.214 million barrels per day, and condensate production reached 48 thousand barrels per day during the past 24 hours." The 1.2 million barrels per day is the stable level of production Libya has had for the past several months.

**Libya oil stable
at 1.214 mmb/d**

The last Libya east vs west fight took oil production to almost zero

The shut in and return of the El Feel and Sharara oil fields three weeks ago was a reminder that there is ongoing risk to Libya's oil production. Especially as there is still no visibility to when the national election will be held. The eastern Libya threats to cut off oil exports without a fair sharing of oil revenues is not a new issue. It was one of the key reasons for the east vs west fighting and conflict that took Libya oil production to almost zero a few years ago. The conflict ended with the promise of a national election on Dec 24, 2021, which would also lead to a resolve over the fair sharing of oil revenues between east and west Libya. The promise of the election led to a restoration of production. The national election never happened and there is still no date for the election, which is why the eastern Libya threat to halt oil exports without a fair sharing of oil revenues is being watched.

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Figure 39: Libya oil production Starting July 1, 2010



Source: Bloomberg, OPEC

Oil: bp sees oil demand up >1 mmb/d in 2024 and prices strong over coming years

In the Q2 call, bp mgmt. was asked on its outlook for oil and sees oil demand growth >1 mmb/d in 2024 and for “oil prices to be strong over the coming months and years.” We tweeted [\[LINK\]](#) “#OilDemand. @bp_plc “... and yet we probably will see well in excess or in excess of 2 mmb/d of demand growth in #Oil this year. And we expect that to continue into next year. Maybe not at the 2 mm, but certainly in excess of 1 mm”. Thx @business transcript #OOTT.” Our tweet didn’t include the bp comments that they expect “oil prices to be strong over the coming months and years.” In the Q&A, mgmt. replied “I mean, I think on the second question, we all have views on the outlook for different products streams. And, of course, the reality is we never quite know. I can create a very strong case for oil. Why would I do that? I think everybody is talking about global economic growth and what’s happening there. Everybody’s talking about what’s happening in China. China, and yet we probably will see well in excess or in excess of 2 million barrels a day of demand growth in oil this year. And we expect that to continue into next year. Maybe not at the \$2 million, but certainly well in excess of \$1 million. So you look at that, you look at the fact that OPEC+ remains exceptionally disciplined, if not increasingly disciplined, and show no sign of changing that tack. And I guess in discipline you also look at the US., where I think the rig count has fallen to the lowest level now since February of last year, down by I think 20%. I think oil rigs down 12%, gas rigs down 12%, or gas rigs down more. So I can create there a situation where you describe the outlook for oil prices to be strong over the coming months and years.”

bp sees strong oil prices ahead

Oil: 6th consecutive WoW increase in China scheduled domestic flights

Early Tuesday morning, we tweeted [\[LINK\]](#) “China Scheduled domestic flights +0.4% WoW to 104,436 flights. Positive. Chinese consumer didn’t get Covid bonus money from govt like in West so spending own savings/money in summer travel. Key to watch: flights post Aug summer peak. Thx @BloombergNEF #OOTT #JetFuel.” (i) Our tweet was based on BloombergNEF’s Global Aviation Fuel Monthly as BloombergNEF did not post their Aviation Indicators Weekly report until much later on Tues. And we were able to go to Bloomberg’s <DSETFLY> GO to get the weekly data. (ii) Another week of a positive indicator for the Chinese consumer from China’s scheduled domestic flights for the July 25-31 week, which were +0.4% WoW to 104,436 flights. Besides topping 100,000 flights for the 3rd consecutive week, it was the 6th consecutive WoW increase. Flights were up for the recent Dragon Boat Festival national holiday and didn’t dip down post holiday as they did after the May Day

China scheduled domestic flights

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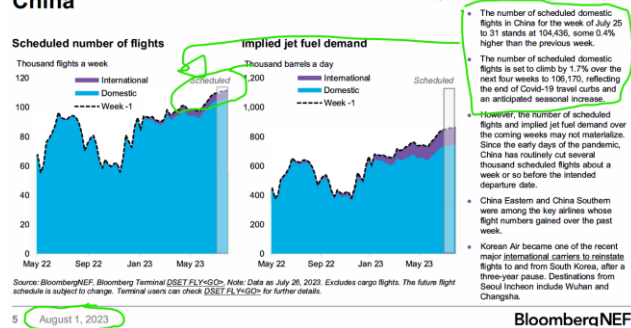
Holiday. Rather, there have been five more post Dragon Boat consecutive weeks of WoW increases. It looks like a steady increase is happening and that the Chinese consumer moved back to the normal trend of increasing domestic air travel for the summer holiday season. One reminder is that summer travel season normally ends in August so we will want to see how flights do in Sept/Oct. But the flying remains well below what was expected in March before there was a new Covid phase and the Chinese economy outlook dimmed. The return to normal summer season flying increase signaled the Chinese consumers aren't worried about Covid so are back to spending to flying. But given that it still less than was expected four months ago, the working assumption should be they are spending their savings/income but not as much as might have expected four months ago. Recall the Chinese consumer didn't get the free handout as happened in the west for Covid so for them its more spending their own money and not the bonus Covid money received elsewhere like in the US/Canada. (iii) China scheduled domestic flights +0.4% WoW to 104,436 flights for July 25-31 week. Flights are up for the 6th consecutive week but that is the norm with summer holiday season. So as noted in the below table, a steady WoW increase from 92,568 flights in June 13-19 week to 104,436 flights in July 25-31 week. And there wasn't a dip back down after the recent 3-day national holiday Dragon Boat Festival on June 22/23/24. Also the 3rd consecutive week of >100,000 flights and what appears to be post Covid highs.. (iv) So positive as there have been five consecutive up weeks following the Dragon Boat Festival up week. But still less than what was expected 4 months ago. Scheduled flights for July 25-31 week of 104,436 flights is still -12.4% vs what was scheduled on March 28 for the then next 4-weeks (ie. April) of 119,180 flights. But flights are at post Covid highs and well above the prior high of 97,087 flights for the May Day Holiday travel. (v) Today's number of scheduled domestic flights for the next four weeks is set to increase by 1.7% "over" the next four weeks to reach 106,170 flights. But note the end of August is the typical end of summer holiday travel so the question will be how domestic flights hold in Sept/Oct. Despite the scheduled flights being up 11,868 flights over the past six weeks, the lookahead is only slightly more than the prior five weekly reports that had then 4-week lookahead flights at 105,779 flights, 105,802 flights, 104,972 flights, 104,691 flights and 104,501 flights. This week's lookahead of 106,170 flights is still 10.9% below the 4-week scheduled on March 28 for the end of April that was 119,180 domestic scheduled flights. The big jump up in April never happened. Below is our running WoW changes from the prior BloombergNEF reports and the BloombergNEF charts from August 1 nd March 28, and our listing of WoW changes from the prior BloombergNEF reports.

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Figure 40: China scheduled domestic flights from BNEF Aviation Indicators Weekly reports

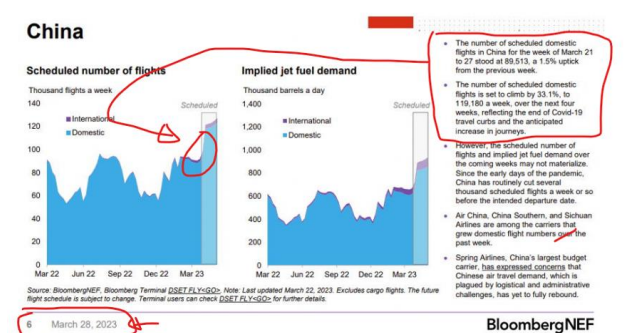
July 25-31: +0.4% WoW to 104,436 flights
 July 18-24: +1.3% WoW to 104,011
 July 11-17: +2.8% WoW to 102,709 flights
 Jul 4-10: +2.4% WoW to 99,904
 Jun 27-Jul 3: +1.9% WoW to 97,572
 Jun 20-26: +3.4% WoW to 95,724
 Jun 13-19: -0.9% WoW to 92,568
 June 6-12: -1.2% WoW to 93,328
 May 30-Jun 5: +0.2% WoW to 94,486
 May 23-29: -0.1% WoW to 94,321
 May 16-22: -2.8% WoW to 94,417
 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 to 88,166
 Mar 7-13 week: -0.8% WoW to 88,675
 Feb 27-Mar 3 week: -2.6% WoW to 89,430
 Feb 21-27 week: +0.0% WoW to 91,828
 Feb 14-20 week: -0.5% WoW to 91,561
 Feb 7-13 week: -0.7% WoW to 92,007
 Jan 31- Feb 6 week: +10.9% WoW
 Jan 24-30 week: -9.2% WoW to 83,500
 Jan 17-23 week: +7% WoW to 91,959
 Jan 10-16 week: +20% WoW to 85,910
 Jan 3-9 week: -5.3% WoW to 71,642
 Dec 27-Jan 2 week: -5.6% WoW to 75,652
 Source: BloombergNEF

Figure 41: China scheduled domestic air flights as of Aug 1



Source: BloombergNEF

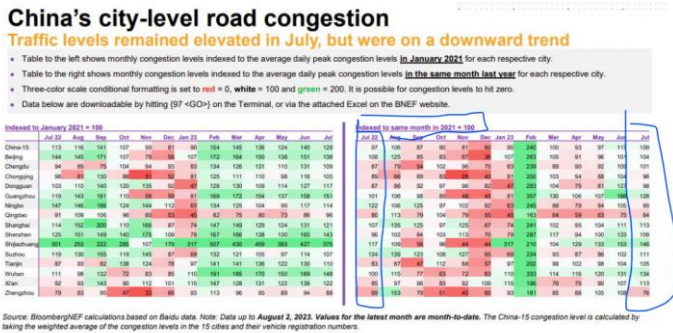
Figure 42: China scheduled domestic air flights as of March 28



Source: BloombergNEF

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Figure 44: China city-level road congestion for the week ended Aug 2.



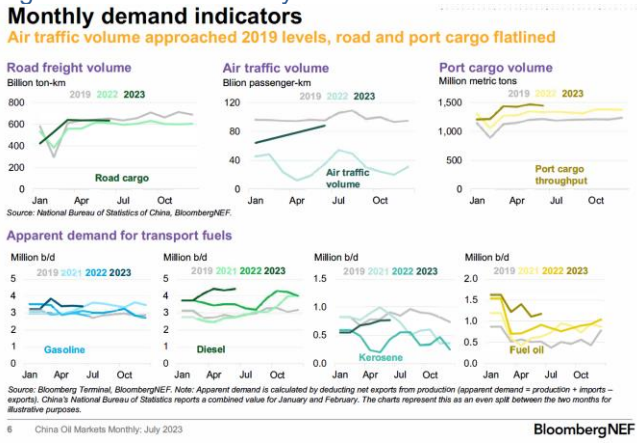
Global Road Traffic Indicators Weekly August 3, 2023 BloombergNEF
 Source: BloombergNEF

Oil: BloombergNEF China air traffic, road freight and port cargo oil demand indicators

On Wednesday, BloombergNEF posted its “China Oil Markets Monthly”, which is its monthly recap of major China oil data and indicators. It includes the above items on Baidu city-level road congestion and scheduled domestic flights that we report on weekly. But it also includes some other key oil demand indicators that reinforce China is still below pre-Covid levels. On Wednesday, we tweeted [LINK] “Good recap of range of China #Oil demand indicators. Baidu city-level road congestion down & scheduled domestic flights up with seasonal summer holidays. But also “air traffic volume approached 2019 levels, road and port cargo flatlined”. Thx @BloombergNEF Sisi Tang. #OOTT.” Our tweet included the below slide that shows road freight volume was just a little below 2019 levels, air traffic was below but approaching 2019, and port cargo volume was still well below 2019 levels.

China oil markets monthly

Figure 45: China Monthly Demand Indicators



Source: BloombergNEF

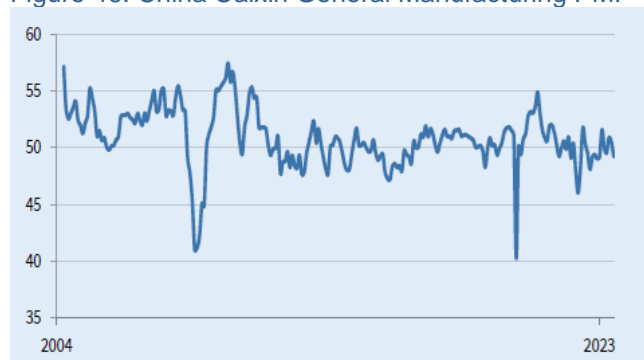
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Oil: Caixin Manufacturing PMI at 49.2 in July, back in contraction

On Monday, we tweeted [\[LINK\]](#), “Negative. China Caixin Manufacturing PMI July 49.2 vs Est 50.1, June 50.5, May 50.9, Apr 49.5, Mar 50.0, Feb 51.6, Jan 49.2. “Overall, manufacturing conditions contracted in July, with supply, demand, exports and employment all deteriorating.” Thx @SPGlobalPMI. #OOTT”. As a reminder, there are two China manufacturing PMI data from S&P Global that come out each month. The Official Manufacturing PMI that normally comes out the day before the Caixin Manufacturing PMI data that we track. We have focused on the Caixin PMI as we view 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. This is the first month of contraction since April. The Caixin Manufacturing PMI for June was released at 7:45pm MT on Monday night [\[LINK\]](#) and was negative at 49.2 in July, down MoM from 50.5 in June. Caixin wrote “Firms signalled a marginal fall in production amid a fresh decline in overall new business. Muted foreign demand was a key factor weighing on total sales, with new export orders down noticeably in July; Companies often commented that relatively sluggish market conditions both at home and overseas had impacted customer demand. Notably, new export business contracted at a solid pace that was the fastest since September 2022. Softer demand conditions led manufacturers to cut production for the first time since January, albeit marginally; Overall, manufacturing conditions contracted in July, with supply, demand, exports and employment all deteriorating. Prices continued to decline, inventories rose without companies adjusting them, and logistics times increased”. Our Supplemental Documents package includes the Caixin China Manufacturing PMI for July. Below is a snapshot of the Caixin general manufacturing PMI.

**China
Manufacturing
PMI Down MoM**

Figure 46: China Caixin General Manufacturing PMI



Source: S&P Global

Oil: Vortexa estimates China oil storage hit record 1.02 billion barrels at June 30

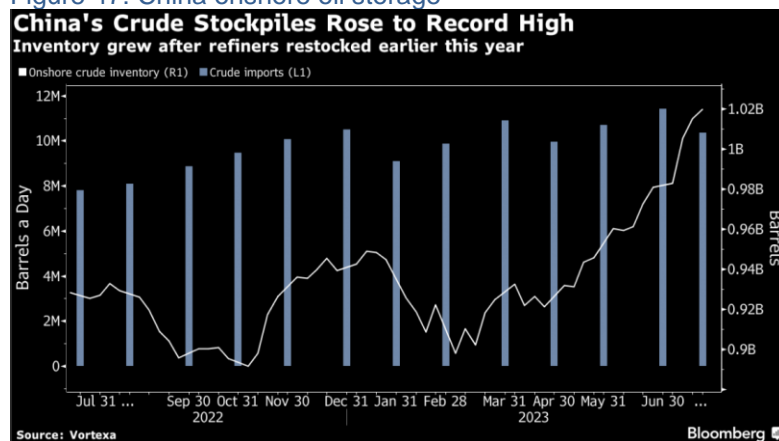
On Wednesday, Bloomberg reported “China’s Oil Demand May Have Peaked for 2023 in Blow to Bulls”. The focus of the report was how analysts think China oil demand may have peaked for the year in Q2. But the report also included Vortexa estimates of China onshore oil stocks reaching a new record of 1.02 billion barrels at June 30. Bloomberg wrote “China’s imports of crude exceeded 12 million barrels a day in May and reached a three-year high in June, prompting bullish optimism in the nation’s outlook. However, a lot of that oil has

**China adds
~110 mmb to oil
storage**

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been stockpiled as buyers took advantage of lower prices to replenish inventories and demand disappointed. Beijing doesn't publicly disclose the size of the nation's crude inventories but Vortexa Ltd. estimates onshore stockpiles have expanded to a record 1.02 billion barrels. That compares with the US strategic reserve, which currently holds almost 347 million barrels after a series of drawdowns." Our Supplemental Documents package includes

Figure 47: China onshore oil storage



Source: Bloomberg, Vortexa

China's adding to oil storage in 2023 has been a key oil theme

It's hard to tell from the above Vortexa graph how many barrels China added to its onshore oil storage, but an eyeball ballpark is that they probably added ~75 mmb in H1/23, and ~120 mmb since Feb 28. Here is what we wrote in our July 16, 2023 Energy Tidbits memo on China adding oil to its storage. "One of the big oil stories in 2023 has been how China has been ramping up its oil imports taking advantage of discounted Iran and Russian crude oil. And it looks like this means they have added almost 110 million barrels to oil storage levels. On Tuesday, we tweeted [\[LINK\]](#) "China ramps up #Oil in storage as imports exceed consumption. See 📌 SAF transcript. "based on official data about 714,000 b/d were put away" into storage in YTD May 31, Victor Yang to @sean_evers. Usual great @gulf_intel podcast. #OOTT." On the Gulf Intelligence daily podcast [\[LINK\]](#), Victor Yang (Senior Analyst JLC Network Technology) was in dialogue with Sean Evers (Founder, Managing Partner Gulf Intelligence), when Yang highlighted the buildup of China oil stocks based on official data. We made a transcript "At 8:05 min mark, Yang "... But the country's [China] oil demand, particularly crude oil demand, has actually been growing quite fast. Say in the first five months, it grew by about 6.2% and considering." Evers "year on year?" Yang "Yes. Considering its economic growth, it's quite fast. And the country actually still put away some crude in the first five months. Kind of reason was because the concerns about energy security among these geopolitical concerns. So but we are looking at" Evers "are you saying Victor the first half there was a lot of oil imports but not necessarily consumption. The oil imports were high but the oil was not consumed domestically?" Yang "Well, based on official data about 714,000 barrels per day were put away". Evers "put away,

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being put into storage?” Yang “Yes, storage. And so the country continued to store crude this year.”

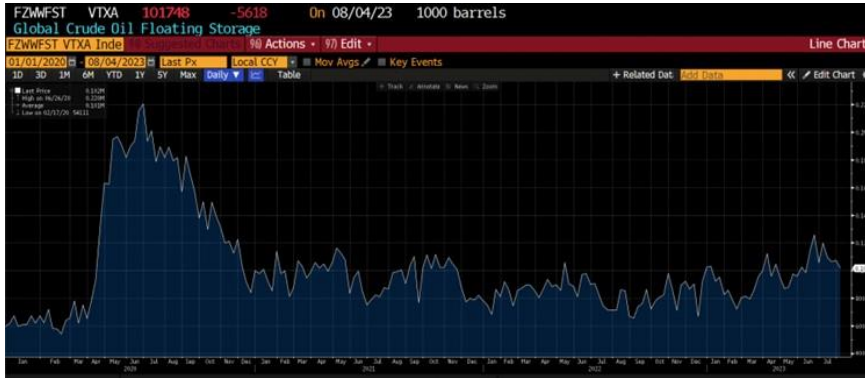
Oil: Vortexa crude oil floating storage at Aug 4 was 101.75 mmb, -5.62 mmb WoW

We are referencing the Vortexa crude oil floating storage data posted on the Bloomberg terminal as of 9am MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments on the new estimates are compared to the prior week's Vortexa estimates posted on Bloomberg on July 30 at 5am MT. (i) Note there were negative revisions to most prior weeks incl the recent high on June 23 that was revised down -7.46 mmb to 125.78 mmb from 133.24 mmb. Also note the following item on the big revisions to regional floating storage allocated to Middle East, West Africa and Other. (ii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Aug 4 at 101.75 mmb, which is -5.62 mmb WoW vs upwardly revised July 28 of 107.37 mmb. Note July 28 of 107.37 mmb was revised +3.24 mmb vs 104.13 mmb originally posted as of 5am MT on July 30. (iii) Other than the upward revision to July 28, all of the other several weeks revisions were negative with some large revisions such as the -7.46 mmb to June 23. The revisions from the estimates posted yesterday at 9am MT vs the estimates posted on Bloomberg at 5am MT on July 30 are as follows: July 28 revised +3.24 mmb. July 21 revised -1.27 mmb. July 14 revised -1.66 mmb. July 7 revised -4.27 mmb. June 30 revised -4.68 mmb. June 23 revised -7.46 mmb. June 16 revised -3.82 mmb. (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 110.86 mmb vs last week's then seven-week average of 115.57 mmb. (v) Also remember Vortexa revises these weekly storage estimates on a regular basis. For example, when most report on the Vortexa data on Monday morning, they will be reporting on different estimates. We do not track the revisions through the week. Rather we try to compare the first posted storage estimates on a consistent week over week timing comparison. Normally we report as of Saturday mornings around 9am MT but last week's Vortexa data for July 28 wasn't posted until early Sunday morning. (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) Aug 4 estimate of 101.75 mmb is -118.56 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (viii) Aug 4 estimate of 101.75 mmb is +36.14 mmb vs pre-Covid Feb 28, 2020 of 65.61 mmb. (ix) Aug 4 estimate of 101.75 mmb is +30.27 mmb YoY vs Aug 5, 2022 of 71.48 mmb. (x) Below are the last several weeks of estimates posted on Bloomberg as of 9am MT Aug 5, 5am MT July 23, and 9am MT July 22.

Vortexa floating storage

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Figure 48: Vortexa Floating Storage posted on Bloomberg Aug 5 at 9am MT



Source: Bloomberg, Vortexa

Figure 49: Vortexa Estimates Posted Aug 5 9am MT, July 30 5am MT, July 22 9am MT

Posted Aug 5, 9am MT						July 30, 5am MT						July 22, 9am MT					
FZWWFST VTXA Inde						FZWWFST VTXA Inde						FZWWFST VTXA Inde					
01/01/2020 - 08/04/2023						01/01/2020 - 07/28/2023						01/01/2020 - 07/21/2023					
1D	3D	1M	6M	YTD	1Y	1D	3D	1M	6M	YTD	1Y	1D	3D	1M	6M	YTD	1Y
Date						Date						Date					
Last Px						Last Px						Last Px					
Fr 08/04/2023						Fr 07/28/2023						Fr 07/21/2023					
101.748k						104.126k						98651					
Fr 07/28/2023						Fr 07/21/2023						Fr 07/14/2023					
107.366k						107.703k						106.421k					
Fr 07/21/2023						Fr 07/14/2023						Fr 07/07/2023					
106.429k						111.066k						120.818k					
Fr 07/14/2023						Fr 07/07/2023						Fr 06/30/2023					
109.407k						123.918k						108.527k					
Fr 07/07/2023						Fr 06/30/2023						Fr 06/23/2023					
119.648k						110.308k						130.404k					
Fr 06/30/2023						Fr 06/23/2023						Fr 06/16/2023					
105.631k						133.236k						115.837k					
Fr 06/23/2023						Fr 06/16/2023						Fr 06/09/2023					
125.781k						118.616k						102.497k					
Fr 06/16/2023						Fr 06/09/2023						Fr 06/02/2023					
114.804k						102.426k						104.226k					
Fr 06/09/2023						Fr 06/02/2023						Fr 05/26/2023					
98560						104.266k						97254					
Fr 06/02/2023						Fr 05/26/2023						Fr 05/19/2023					
102.284k						96982						96551					
Fr 05/26/2023						Fr 05/19/2023						Fr 05/12/2023					
95875						97833						87834					

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

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. (i) One item that doesn’t come out in looking at the global totals is that there were massive revisions to the by region estimates, in particular Middle East, West Africa and Others. Middle East and West Africa were revised down and the those barrels look to have been allocated to Other. The big global revision was to the recent June 23 peak that was revised down to 125.78 mmb from 133.24 mmb. And there were huge regional swings. The new Middle East for June 23 of 9.06 mmb was revised -7.72 mmb from last week’s estimate of 16.78 mmb. The new West Africa for June 23 of 3.84 mmb was revised -8.42 mmb from last week’s estimate of 12.26 mmb. The new Other for June 23 of 36.52 mmb was revised +15.76 mmb from last week’s estimate of 20.76 mmb. (ii) With the upward revision to July 28, the major WoW revisions to July 28

Vortexa floating storage by region

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were Other revised +15.12 mmb, West Africa revised -7.26 mmb, and Middle East revised -6.21 mmb. 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 July 28 that was posted on Bloomberg at 5am MT on July 30.

Figure 50: Vortexa crude oil floating by region

Vortexa Crude Oil Floating Storage by Region (mmb)			Original Posted	Recent Peak		
Region	Aug 4/23	July 28/23	WoW	July 28/23	June 23/23	aug 4 vs June 23
Asia	44.07	47.18	-3.11	45.77	68.81	-24.74
Europe	8.69	13.02	-4.33	12.84	6.34	2.35
Middle East	10.11	12.26	-2.15	18.47	9.06	1.05
West Africa	10.36	7.45	2.91	14.71	3.84	6.52
US Gulf Coast	1.50	0.79	0.71	0.79	1.21	0.29
Other	27.02	26.67	0.35	11.55	36.52	-9.50
Global Total	101.75	107.37	-5.62	104.13	125.78	-24.03

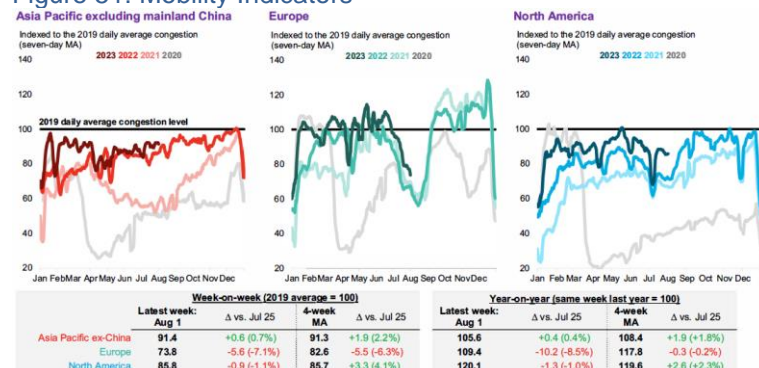
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Aug 5
 Source: Vortexa, Bloomberg
 Source: Bloomberg, Vortexa

Oil: TomTom city road congestion – Asia Pacific increases, while EU and NA decrease

On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly report, which recaps traffic indicators in all the major economic regions of the world i.e., mobility indicators like TomTom. For the week ending August 1, Asia Pacific (ex-China) city road congestion levels increase by +0.7% WoW, while Europe and North American city level congestion level decreased -7.1% and -1.1% WoW, respectively. Note these are indicators of road congestion at the city level and tracks the major cities in each region. So, in theory, we would expect to see seasonal declines in July and Aug, before a return back up in Sept. City traffic levels in Europe, North America, and Asia Pacific (ex-China) traffic are -26.2%, -14.2% and -8.6% below the 2019 average and are +9.4%, +20.1% and +5.6%YoY, respectively. City traffic in Europe significantly dropped in July but is inline with it’s historical trend. NA and Asia Pacific (ex-China) have fluctuated over the last few weeks, but overall remain relatively unchanged throughout July. It its worth noting that TomTom data on city road congestion levels now reflects daily average congestion compared to peak congestion previously. The change in methodology took effect from January 19.

Global city road congestion

Figure 51: Mobility Indicators



Source: BloombergNEF's calculation based on TomTom data. Note: Data up to August 1, 2023. Δ = change. MA = moving average.
 Source: BloombergNEF

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Oil: Maersk sees no sign of significant rebound in container volumes in H2

A.P. Moller-Maersk released its Q2 report on Friday. We tweeted [LINK](#) “Good thing for #Oil that Saudi Energy Minister Abdulaziz is in control. @Maersk Q2: no sign of significant rebound in volumes in H2. China re-opening recovery “lost steam & the local property sector shows no sign of a rebound” “material risk of recession” in US & EU. #OOTT.” Maersk’s release title included “in difficult market conditions”. Maersk noted the difficult market conditions, they don’t see any “significant” recovery in container volumes in H2/23. And they are negative on the overall economic outlook. Maersk wrote “Global economic growth is projected to hover around 2% in 2023. Despite the improvement in Q1, cracks began to appear in the economic outlook in Q2. In China, the re-opening recovery that followed the end of the zero-COVID policy lost steam, and the local property sector shows no signs of a rebound. In the US and Europe, the rapid increase in interest rates created stress in the banking sector in H1 2023 and concerns have emerged about potential spill-overs to other financial institutions. Survey indicators point to flat growth, at best, in Europe and the US in H2 of 2023 and the start of 2024, with a material risk of recession in both regions. The manufacturing sector continues to struggle, and the Global Purchasing Managers Index has remained in contractionary territory since September 2022. Final demand has started to weaken, with investment spending, both capital expenditure and housing, suffering from the rapid increase in interest rates.” Our Supplemental Documents package includes excerpts from the Maersk Q2.

Maersk’s economic outlook**Maersk uses the same indicators we track in our Energy Tidbits memos**

When we read the Maersk Market Insights, it was good to see their market and economic outlook rely upon many of the same indicators we track and write up on a regular basis in our Energy Tidbits memos. Maersk’s comment on the global air passenger and cargo market were based on the IATA (International Air Transport Association) monthly data. Maersk’s US road freight comments were based on the ATA Truck Tonnage Index. This is the American Trucking Association.

Oil & Natural Gas – sector/play/market insights from Q2 calls

It was a busy week of Q2 reporting. This is our favorite time each time of each quarter as it is quarterly reporting and this is when we get the best insights into a range of oil and gas themes/trends, sectors and plays. As a reminder, our Energy Tidbits memo does not get into the quarterly results, forecasts, or valuation. Rather the purpose of highlighting a company is to note themes/trends and plays that will help shape a reader’s investment thesis to the energy sector. In the conference calls, we also tend to find the best insights from the Q&A portion as opposed to the prepared remarks. Plus, we tend to get the best E&P sector insights from services, pipelines, refineries, and utilities. And as noted above in our NOV comment, mgmt. teams give way more color than what is in the written release or slide deck.

Sector insights from Q3 calls**STEP: Tight Cdn frack sand market, frack crews getting booked early for Q1**

STEP held its Q2 call on Friday. (i) Earlier in the memo, we noted STEP’s expectation for LNG Canada to FID Phase 2. (ii) Q1/24 frack calendar is filling up earlier than normal. We expect it’s the big companies who are booking up frack crews early for Q1. In the Q&A, mgmt. said “Yeah. I can share a little bit, Cole. We’re definitely seeing an increase in kind of client calls for getting calendar space for Q1. I would say, it’s probably earlier than we’ve ever seen today. So currently, our plan is

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to stay with our five frac crews in Canada, we don't plan to add any until the market comes to a very under-supplied position. And I would say today we're kind of 50% already booked, maybe even higher for Q1 of next year.” (iii) A tight frack sand market for Canada. STEP doesn't say there is a sand shortage but kind of implies it. But highlighted how they are doing more big fracks (like in the US) but notes Canada doesn't have the advantage the Permian has with regional frack sand mines with 100 miles. Plus link in the big picture of being active for LNG Canada. In the Q&A, mgmt. said *“And so that has really transferred into the Montney where we're seeing more intensity, higher proppant loadings per stage, more stages on a horizontal length. I think in the U.S., what the -- in particularly in the Permian, they have regional mines that are within, call it a 100-mile radius of where the work is. And so that's a big advantage for them down there to be able to keep their costs low. Of course, in the Montney, not a lot of richer mines in that area. We have a totally different surface geography with rocks and not beaches. So that's a lot different in northern Alberta than it is in West Texas. So -- but I think, in the U.S., what we're seeing is more stability from an activity standpoint, a lot more rigs that are active, where there's 300-plus drilling rigs working in the Permian today. And I see Montney obviously, not getting to that type of scale. But it's very, very early stages of the Montney, when you look at it from an overall depletion standpoint. I think you're going to see a lot more activity there in the coming future.”* (iv) Expect less US frack activity in Q3, possible also in Q4. In their prepared remarks, mgmt. said *“In the U.S., for the second half of the year, we have chosen to align with larger E&P companies with very active fraction programs to retain high utilization, but we've made a modest sacrifice in pricing to accomplish this. As our U.S. competitors have noted in their recent conference calls, the 15 plus percent pullback in U.S. land drilling levels will reduce the pace of industry completions in the third and perhaps fourth quarter. So, we think our alignment with active and predictable clients is the right business strategy in the near term. Having said that, stronger oil prices and a modest uptick in U.S. natural gas prices should lead to a more constructive 2024 fracturing market.”* Our Supplemental Documents package includes excerpts from the STEP Q2 call transcript.

Trican: Also seems to warn on a tight frack sand market in Canada in 2024

Trican held its Q2 call on Wednesday. (i) We did not listen to the call and, unfortunately, are relying on a what is a brutal transcript. (ii) In their prepared remarks, mgmt. warned that the industry is running out of capacity for frack sand. Mgmt said *“We are seeing just as the amount of tons -- the tons of sand per well is growing and we have some -- some big numbers in the Montney, in particular, we are seeing what we will believe our current and future constraints within the logistics of sand. We think the whole transloading system, rail system, trucking industry is basically running at capacity and we've already seen instances where there is a chance and some shortage in certain areas of Western Canada. We don't think this will get anything but worse frankly, third party trucks and just logistic system, in general, is offered -- is very tight. It's not that well built out as we expand into Northeast BC. There's less and less Class 1 drivers who want to drive in the oilfield today. So this, of course, we see as an opportunity. We're looking at lots of different stuff. We want to invest in sand logistics and making sure that the last mile -- last*

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mile logistics is as low as possible, which has a drastic impact on costs (Technical Difficulty) our product offerings. Again, we're very bullish on Western Canada." (iii) LNG Canada and TMX bring length to a period of strong activity in western Canada. Trican did not make any comment on the likelihood of LNG Canada Phase 2 FID. But, on a couple of occasions, stressed how LNG Canada gives visibility to a long term period of increased activity. Our Supplemental Documents package includes excerpts from the Trican Q2 call transcript.

Oil & Natural Gas: Big reduction in wildfires in Alberta, basically no change in BC

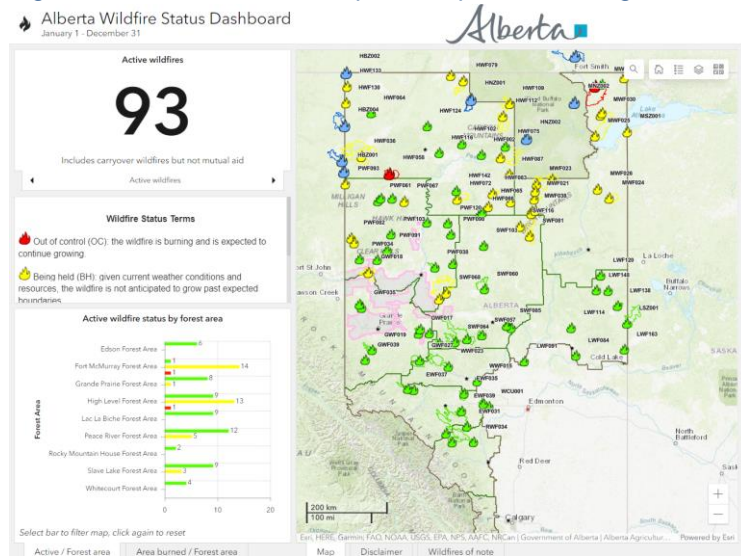
There are still way too many wildfires in Alberta and in particular BC. Alberta wildfires are on the decline but BC wildfires were about the same as a week ago. As of 7pm MT last night, there were 93 Alberta wildfires including 2 Out of Control, which compares to a week ago at 118 wildfires and 7 Out of Control. As of 7pm MT last night, there were 368 BC wildfires including 189 Out of Control, which compares to a week ago at 366 wildfires and 195 Out of Control.

BC and Alberta Wildfires

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 7pm MT last night.

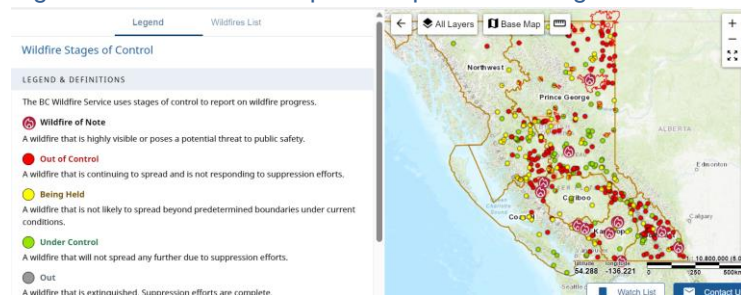
Figure 52: Alberta wildfire map as of 7pm MT on Aug 5



Source: Alberta Wildfire Status Dashboard

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Figure 53: BC wildfire map as of 7pm MT on Aug 5



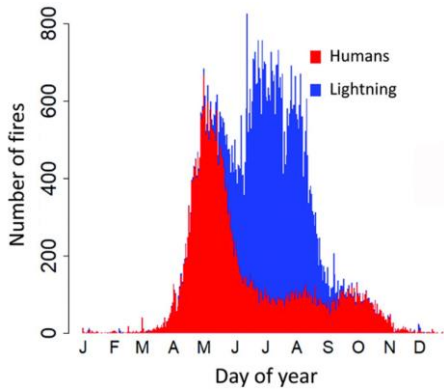
Source: BC Wildfire Service

Oil & Natural Gas: Peak Cdn wildfire season is normally Jul/Aug & lightning is #1

Unfortunately, we remind that this is still the peak wildfire season right now in Canada. In peak wildfires season (right now) lightning strikes are the major cause of wildfires. We don't track wildfires data outside Alberta/BC as our focus is on the oil and gas sector but, the big Canada story this year has been wildfires in eastern Canada because of the smoke drifting into the US. It's a reminder that wildfires are not just a western Canada. It's always better to see less wildfires. And we 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) The problem that we have been warning is that it was extremely dry in the west this winter and in the spring. 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. Note we have updated the precipitation maps for the end of May. It's another week and there is still something wrong with accessing the data for the month of June that should have been available a few weeks ago. Once again, we checked last night again and we haven't been able to access the June data as it we still get a message "Server Error. 404 – File or directory not found. The resources you are looking for might have been removed, had its name changed, or is temporarily unavailable." So we don't have the June precipitation maps. Below are Nov 1 thru Apr 30 and for the month of May maps showing precipitation % of normal. It's been dry.

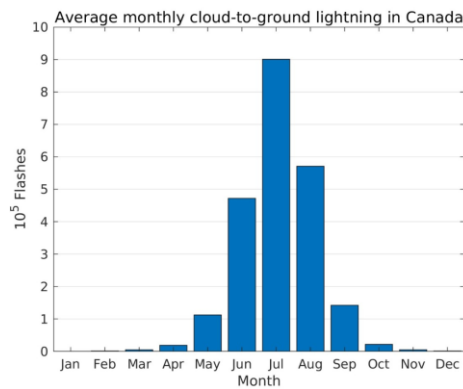
Wildfire peak is normally July Aug

Figure 54: Canada Wildfires Distribution Over Year



Source: Wildfire Today

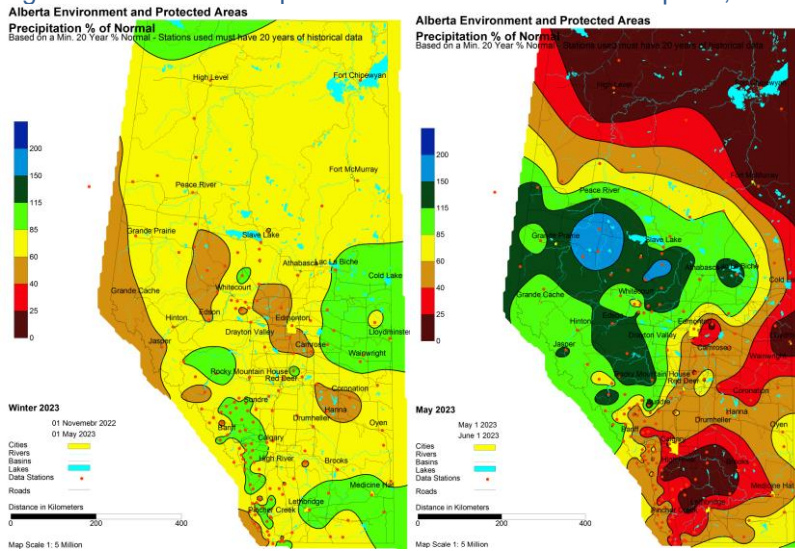
Figure 55: Average monthly cloud-to-ground lightning in Canada



Source: Canada Environment and Natural Resources

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Figure 56: Alberta Precipitation % of Normal for Nov 1-Apr 30, and for May



Source: Alberta Environment

Oil & Natural Gas: Still expecting an above average Atlantic hurricane season

Two of the major hurricane forecasters released updated forecasts for the 2023 Atlantic hurricane season and both continue to forecast an above average hurricane season. (i) On Wednesday, Accuweather updated it's Atlantic hurricane forecast [\[LINK\]](#) still calling for an above-average hurricane season. Accuweather increased their estimate of total named storms to 13-17 this year, a total increase of +2 storms compared to their initial estimate of 11-15 storms. Forecasts for an above average hurricane season is a reminder to be prepared for supply interruptions in the Gulf Coast. Accuweather wrote *"There have already been five storms so far this year, including an unnamed subtropical storm in January, three tropical storms in June and a hurricane in July. The season is pacing ahead of the historical average for the number of named storms to date, and the average date for the fifth storm of the season to form is Aug. 22. Also, the average first date of hurricane development is Aug. 11, so the first hurricane also developed ahead of the average"*. Accuweather also reminded of correlation between active hurricane seasons and La Nina/Neutral conditions, Accuweather wrote *"El Niño developed in early June, and while it is related to warm water in the Pacific Ocean, it can have a ripple effect in the atmosphere that results in more disruptive winds across the Atlantic Ocean. Typically, El Niño results in fewer tropical systems in the Atlantic compared to La Niña, but the full effect of the pattern shift can be delayed"*. (ii) On Thursday, Philip Klotzbach and his team at Colorado State University issued their updated Atlantic Hurricane season forecast [\[LINK\]](#). They haven't made any changes from their July 6 forecast and are calling for another above-average year. Their July forecast had called for an above-average season, and this month they decreased their forecast slightly. The CSU forecasters wrote *"We maintain our forecast for an above-average 2023 Atlantic hurricane season. While a robust El Niño has developed and is likely to persist for the peak of the Atlantic hurricane season, most of the tropical and subtropical Atlantic has record warm sea surface temperatures for this time of year. El Niño increases vertical wind shear in the Caribbean and*

**Above average
hurricane
forecast**

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tropical Atlantic, but the extreme anomalous warmth in the tropical and subtropical Atlantic is anticipated to 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 above the long-period average. As is the case with all hurricane seasons, coastal residents are reminded that it only takes one hurricane making landfall to make it an active season for them. They should prepare the same for every season, regardless of how much activity is predicted". Our Supplemental Documents package includes excerpts from the AccuWeather and Klotzbach forecasts.

Figure 57: Accuweather Atlantic Hurricane Season Forecast

	Named Storms	Hurricanes	Major Hurricanes	Direct US Impacts
2022	14	8	2	4
2023 Forecast	13-17	4-8	1-3	2-4
30-Year Average	14	7	3	4

Source: Accuweather

Figure 58: CSU 2023 Atlantic Hurricane Forecast

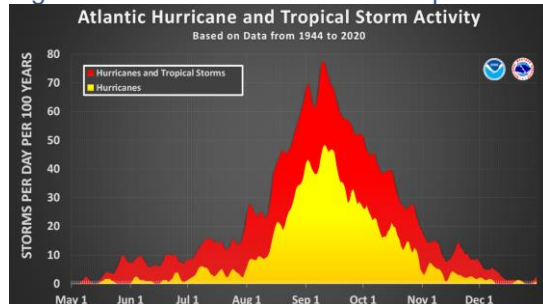
Forecast Parameter and 1991-2020 Average (in parentheses)	Issue Date 13 April 2023	Issue Date 1 June 2023	Issue Date 6 July 2023	Issue Date 3 August 2023	Observed Thru 2 August 2023	Remainder of Season Forecast
Named Storms (NS) (14.4)	13	15	18	18*	5	13
Named Storm Days (NSD) (69.4)	55	60	90	90	19.50	70.50
Hurricanes (H) (7.2)	6	7	9	9	1	8
Hurricane Days (HD) (27.0)	25	30	35	35	0.5	34.50
Major Hurricanes (MH) (3.2)	2	3	4	4	0	4
Major Hurricane Days (MHD) (7.4)	5	7	9	9	0	9
Accumulated Cyclone Energy (ACE) (123)	100	125	160	160	16	144
ACE West of 60°W (73)	55	70	82	82	4	78
Net Tropical Cyclone Activity (NTC) (135%)	105	135	170	170	18	152

Source: Colorado State University

90% of Atlantic hurricanes come after Aug 1, peak is normally mid-Sept

It may already be the hottest time of the year, but we always remind that 90% of Atlantic hurricanes typically come after Aug 1. And August normally marks the start of the ramp up of hurricane season with high hurricane activity typically from mid-Aug thru mid-Oct with a normal peak in mid-Sept. Below is NOAA’s graph showing the distribution of Atlantic hurricanes and tropical storms based on data from 1944 to 2020. [\[LINK\]](#)

Figure 59: Atlantic hurricane and tropical storm activity by month



Source: NOAA

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Energy Transition: 11% of US federal interventions/subsidies to coal/natural gas/liquid

On Tuesday, the EIA released “Federal Financial Interventions and Subsidies in Energy in Fiscal Years 2016–2022” [\[LINK\]](#), which is the EIA’s estimate of “direct federal financial interventions and subsidies.” We tweeted [\[LINK\]](#) “Will Biden admin be happy or mad #Coal, #NatGas, #PetroleumLiquids had 11% or \$3.177b of US Fed expenditures/subsidies in 2022? Vs clean energy, smart grid, transmission, conservation, etc getting 89% or \$26.186b. #EnergyTransition will be very costly. Thx @EIAgov #OTT.” It will be difficult for the Biden Administration to say the numbers are biased given they are a government agency estimate. We have to believe they are somewhat happy with the only 11% of the federal allocation going to coal, natural gas and petroleum liquids. The EIA estimates federal government “direct” financial interventions and subsidies by type of energy in 2022 saw 3% to coal, 8% to natural gas/petroleum liquids and the balance to clean energy, conservations and fuel use. Or, in dollar terms, \$3.177b to coal, natural gas and petroleum liquids out of the total \$26.186b. Our Supplemental Documents package includes excerpts from the EIA report.

US federal direct interventions and subsidies

Energy Transition – bp only has to put 10% down on its German offshore wind price

We hadn’t realized the big economic advantage Germany was giving to the bidders of its recent big offshore wind rights sale – the winning bid only had to put 10% down. This is huge that, in this case, bp had a €678 million bid and only had to put 10% down. And then the remaining 90% was payable over a 20-year period but only when the project became operational. What a huge win to the math in calculating IRR and payouts. We tweeted [\[LINK\]](#) “Here’s how the math works. @bp_plc highlights German offshore wind bid meets 6-8% unlevered returns pre-integration benefits. BP “structure of bid payments limits our financial exposure, with €678 million, or 10% of the bid amount, paid by July 2024, and the remaining 90% paid over a 20-year period when the projects become operational in the next decade”. Big advantage to running economics vs #Oil #NatGas that sees bid amounts paid up front. #OTT #NatGas.” bp was criticized for how much they paid for the German offshore wind rights. But bp made a point of highlighting how the German offshore wind projects still fit their target 6-8% unlevered returns, pre-integration benefits. bp CEO Looney was on on BloombergTV and insisted the German offshore wind will meet their hurdle rates of 6-8% unlevered returns, pre-integration benefits. And in the Q2 call, mgmt. said “we will pursue a capital-light delivery approach, bringing in a partner through farm down around the point of financial investment decision. And we expect to leverage the project with financing. We are confident in achieving 6-8% unlevered returns, pre-integration benefits. And we will enhance these returns through integrating across the energy value chain, leveraging our Trading & Shipping business to optimize value.” Our Supplemental Documents package includes the bp Q2 transcript and slides on German offshore wind.

Bp’s German offshore wind

Reminder BP’s 8-10% returns are levered returns and incl trading profits

bp’s comments on its offshore wind returns are consistent with how bp CEO Looney outlined its targeted renewable returns in its BP day in September 2020 on how it gets to its 8-10% returns on renewables. On Sept 14, 2020, we tweeted [\[LINK\]](#) “Many good #Oil #NatGas #EnergyTransition insights \$BP Day 1 ie. can get 8-10% #Renewable returns by adding value thru applying our processes, integrate with rest of BP like trading. 8-10% is good, but thought these would be upside items and not part of how to get to base return”. In that Sept 2020 presentation, CEO Looney

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noted they start with 5-6% on an equity basis for a competitive wind auction and then work up to 8-10% with adding value thru their processes, trading, etc. Our Supplemental Documents package includes the CEO Looney step thru getting to 8-10% starting with the 5-6% equity return.

Energy Transition – bp’s offshore wind must integrate with other operations

There was one other key disclosure in the bp Q2 call. In the Q&A, mgmt. was clear that they plan to focus their offshore wind where there is a need for their operations for green electricity as opposed to what they have done previously in joining projects that aren’t linked to their operations. Mgmt replied *“What I can tell you categorically is that our returns threshold are sacrosanct, meaning we will not develop projects that don't meet our returns threshold, which is why we are in the midst of renegotiating those PPA contracts in the East Coast with our partner Equinor. Added to that, I would say that it points to why our strategy going forward is to do offshore wind only where we see an integration benefit, i.e. we don't want to generate electrons just for electrons sick or to ultimately put into a 20 or PPA, we want to generate electrons where we can do something with the electron add value to the electron like we do today with an oil and gas molecule. So our expectation is that we do offshore when just as you've seen in Germany where there is a direct integrated link to our business, where we can take the electron, we can high-grade it converted into a molecule, converted into a power in somebody's car, give it to our trading business whatever. That's the evolution of the offshore wind strategy and it is in part based on the learnings of the last two or three years.”*

bp’s offshore wind strategy

Energy Transition: Vattenfall stops UK offshore wind project with 40% cost increases

Offshore wind is facing a big pause year in 2023 and the question will be how long will the pause last? The pause is caused by wind developers being hit by cost increases so not being able to see the economics in the project. As a result, many projects are either being stopped, cancelled or being renegotiated. On Monday, we tweeted [\[LINK\]](#) *“Not just US #OffshoreWind needs renegotiation. ~40% cost increases = @VattenfallGroup stop Norfolk Boreas offshore wind "in its current form" & also Vanguard East & West in Norfolk Zone. NZ is 3,600 MW & 68% of its key EU projects. #NatGas will be needed for longer. #OOTT.”* This is another clear example of offshore wind not happening as expected. Vattenfall (Sweden) reported Q2 on July 20, which included its announcement that it is stopping development of its biggest wind project in Europe – their Norfolk Zone offshore wind project offshore UK. They have been hit with cost increases up to 40%. Higher inflation capital costs affect entire energy sector *“but the geopolitical situation has made offshore wind and its supply chain particularly vulnerable”*. In the Q2, Vattenfall wrote *“Higher costs, especially in offshore wind power. Although demand for fossil-free electricity is greater than ever, the market for offshore wind power is challenging. Higher inflation and capital costs are affecting the entire energy sector, but the geopolitical situation has made offshore wind and its supply chain particularly vulnerable. Overall, we see cost increases up to 40%. This development affects future profitability and means that Vattenfall makes an impairment for wind power in Norfolk, UK, with a total impact on earnings of SEK 5.5 billion. We have decided to stop the development of Norfolk Boreas in its current form and not take an investment decision now due to mentioned factors, which triggers the impairment. We will examine the best way forward for the entire Norfolk Zone, which in addition to Boreas also includes the Vanguard East and West projects.”* Note Vattenfall says it is stopping it *“in its current form”*, which looks

UK offshore wind needs renegotiation

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like political talk for the project won't go ahead unless there is a renegotiation. Also note this is basically stopping its entire Norfolk Zone and not just the Norfolk Boreas project that is part of the Norfolk zone. The Norfolk Zone is their biggest wind project in Europe that is 3,600 MW or 68% of its main projects in Europe total of 5,330 MW. Below is the slide from their March 29, 2023 Corporate Factbook. Our Supplemental Documents includes an excerpt from the Vattenfall Q2.

Figure 60: Vattenfall "Main projects in our 5 core countries"

Main projects in our 5 core countries

Country Name	Capacity (MW)	Support scheme	Awarded	Duration of support	Ownership (%)	Commissioning	Current status	
NL	Hollandse Kust Zuid 1-4	1,520	-	X	-	51	2023	Under construction, Partnering with BASF
DK	Vesterhav	344	FIT	X	50,000hrs	100	2023/2024	Under construction
UK	South Kyle	240	-	N/A	-	100	2023	Under construction
NL	Windplan Blauw	77	SDE+	X	15 yrs	100	2023	Under construction
UK	Battersea Ray	20	-	-	-	100	2023	Under construction
In construction								
		2,201						
UK	Norfolk projects	3,600	CID	-	15 yrs	100	2027-2029	Norfolk Boreas received CID in AR4, Norfolk Vanguard is preparing for CID bid in AR5
UK	ScotWind	750	CID	-	-	50	2030	Under development with consenting and permitting progressing to ensure participation in the CID bid, JV with Fred Olsen
GE	N-7.2 (Global Tech II)	980	-	-	-	100	2027	Development rights received in September 2022, FID planned for 2023
In development (in mature stage)		5,330						

* The project has been sold but Vattenfall will build and operate the wind farm. VATTENFALL

Source: Vattenfall March 29, 2023 Corporate Factbook

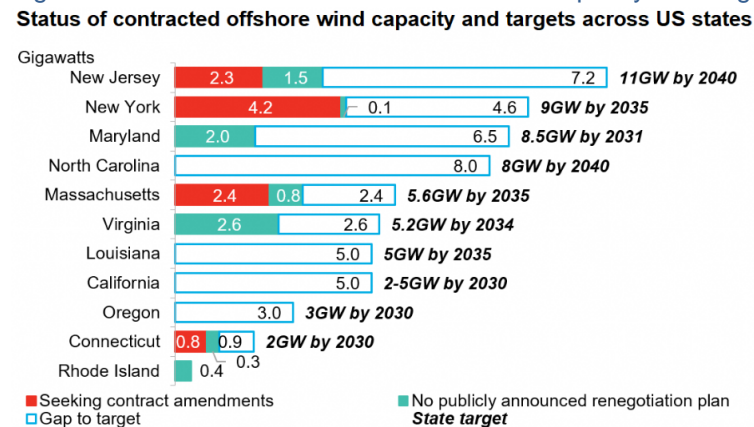
Over 1/2 of US offshore wind projects face delays

Here is what we wrote in our July 16, 2023 Energy Tidbits memo. "Over 1/2 of US offshore wind projects face delays. Wind generation and the big offshore wind projects are key to the Energy Transition. And no question, over the past few years there have been a number of major offshore wind projects announced including offshore the US east coast. But it isn't enough to have a project announced, the project has to get done and done on time. There have been some offshore wind project cancellations and project developers leaving projects. And there are also many offshore projects in delay limbo as the project developers seek to renegotiate the deals to get satisfactory returns due to big cost increases. These projects are in limbo. We have been reporting on this lack of returns to OEMs and project developers. In the, BloombergNEF estimates that more than half of all offshore wind projects are now delayed and there could be more projects delays on top of that. On Monday, we tweeted [LINK](#) "Over 1/2 of US #OffshoreWind face delays as "developers such as Avangrid, Shell-Ocean Winds, BP-Equinor & Orsted-Eversource have cited deteriorating economics due to rising costs in trying to renegotiate or cancel contracts" reports @atinjai. #NatGas power will be needed for longer. #OOTT." Our tweet included the below BloombergNEF graph and wrote "New York state has a target to add 9 gigawatts of cumulative offshore wind capacity by 2035 and contracted 4.36GW of projects in its two concluded solicitations. But renegotiation attempts mean that 95% of the contracted capacity is at risk of delays. Neighboring Massachusetts sees 75% of contracted capacities being delayed by renegotiation attempts. In Connecticut it's 73%. New Jersey, which is targeting of 11GW, risks delays to 60% of its contracted pipeline. About 9.7GW of US offshore

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wind projects, or just over half of the 17.8GW total contracted, face delays, and more projects may soon face the same fate. Developers such as Avangrid, Shell-Ocean Winds, BP-Equinor and Orsted-Eversource have cited deteriorating economics due to rising costs in trying to renegotiate or cancel contracts.” Our Supplemental Documents package includes the BloombergNEF report.”

Figure 61: Status of contracted offshore wind capacity and targets across US states



Source: BloombergNEF, news reports, company petitions

Source: BloombergNEF

bp confirmed it is renegotiating its NE US offshore wind projects

bp partners with Equinor on offshore wind projects offshore Massachusetts and New York, noted in the above BloombergNEF chart. In its Q2 call this week, bp confirmed it is renegotiating its NE US offshore wind projects due to insufficient returns. Mgmt said ““Then on offshore wind, clearly inflation has impacted offshore wind projects and in an area where the PPAs are not inflation linked or index linked and where we don't see an integration benefit per se, then obviously those projects are challenged and that's the case in the East Coast of the United States. What I can tell you categorically is that our returns threshold are sacrosanct, meaning we will not develop projects that don't meet our returns threshold, which is why we are in the midst of renegotiating those PPA contracts in the East Coast with our partner Equinor. Added to that, I would say that it points to why our strategy going forward is to do offshore wind only where we see an integration benefit, i.e. we don't want to generate electrons just for electrons sick or to ultimately put into a 20 or PPA, we want to generate electrons where we can do something with the electron add value to the electron like we do today with an oil and gas molecule. So our expectation is that we do offshore when just as you've seen in Germany where there is a direct integrated link to our business, where we can take the electron, we can high-grade it converted into a molecule, converted into a power in somebody's car, give it to our trading business whatever. That's the evolution of the offshore wind strategy and it is in part based on the learnings of the last two or three years.”

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Energy Transition – Slow ship steaming saves fuels and cuts emissions

Back prior to IMO 2020, it seemed like a regular update item was on how shipping companies were going to deal with IMO 2020 – with the two primary discussion actions were they going to install scrubbers or switch from HSFO to LSFO. And there was always the fallback option to go to slower steaming. We were reminded of slower steaming in Maersk Q2 report, although they were referencing it for the purpose reducing emissions. Rather it was used in the context of not seeing any significant recovery in container volumes. Maersk wrote “*Seaintel data shows that the share of the Global container fleet absorbed by delays decreased from a peak in January 2022 of almost 14% to a post-pandemic low of 3.6% in May 2023. Some of the available capacity is being absorbed by slower steaming and cancelled sailings.*” But going back to the IMO writeups, the advantage of slower steaming is a significant reduction in fuel consumption and also emissions. Here is what we wrote in our October 28, 2018 Energy Tidbits memo on fuel savings. “*Slow steaming can reduce fuel consumption by over 50%. Here is what Wikipedia wrote about the fuel saving from slow steaming* [\[LINK\]](#). “*Rationale & History. Slow steaming was adopted in 2007 in the face of rapidly rising fuel oil costs (July 2007 to July 2008: 350 to 700 USD/tonne).*[4] *According to Maersk Line, who introduced the practice in 2009–2010,*[5][6] *slow steaming is conducted at 18 knots (33 km/h; 21 mph).*[1][not in citation given] *Speeds of 14 to 16 kn (26 to 30 km/h; 16 to 18 mph) were used on Asia-Europe backhaul routes in 2010.*[7] *Speeds under 18 kn (33 km/h; 21 mph) are called super slow steaming.*[1][not in citation given] *Marine engine manufacturer Wärtsilä calculates that fuel consumption can be reduced by 59% by reducing cargo ship speed from 27 knots to 18 kn (33 km/h; 21 mph), at the cost of an additional week’s sailing time on Asia-Europe routes.*[8] *It adds a comparable 4-7 days to trans-Pacific voyages.*[7] *The large container ship Emma Maersk can save 4,000 metric tons of fuel oil on a Europe-Singapore voyage by slow steaming.*[5] *At a typical 2008 price of USD 600-700 per tonne,*[4] *this works out to USD 2.4-2.8 million fuel savings on a typical one-way voyage. Maersk’s Triple E class of ships was designed for slow steaming, with hulls optimized for lower speeds. Because of this, it has less powerful engines than its predecessors.*[5]”

Slow steaming

Energy Transition: Why EVs aren’t displacing as much gasoline as hoped by #NetZero

It was another week where people are surprised by the strength of European gasoline and diesel demand for vehicles given the huge penetration of EVs in Europe. The head scratching remains why aren’t EVs displacing as much gasoline as most expected in Europe. No one, and certainly not us, disputes that EV sales in Europe have been very strong and continue to ramp up. Those are data points. But we have clearly stated previously that we don’t believe other data is supporting the assumptions as to why EVs are supposed to displace gasoline as per the #NetZero forecasts. All forecasts including how fast EVs are supposed to displace gasoline are based on assumptions. Based on those assumptions, we don’t believe anyone should be surprised EVs aren’t displacing as much gasoline as hoped. We did not do any updated work. Rather, last Thursday, we tweeted [\[LINK\]](#) a thread of our prior work from three months ago. We tweeted “*Here’s why huge EV sales aren’t displacing #Oil #Gasoline consumption as expected. See 3/7 of 📌 04/26 thread. #IEA assumes a new #EV displaces the miles driven by an ICE ie. an ICE is effectively junked. Norway, the EV leader, shows that assumption is wrong. #Oil is needed for longer. #OOTT.*” Below is what we wrote in our May 7, 2023 Energy Tidbits on that thread on the key assumption for why no one should be surprised that EVs aren’t displacing as much gasoline as per #NetZero forecasts.

Why EVs aren’t displacing more gasoline

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Will EVs displace ~6 mmb/d of oil demand by 2030 as IEA forecast

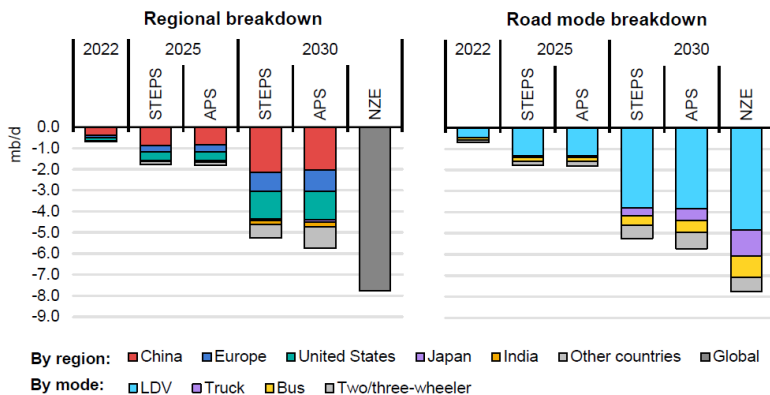
Here is what we wrote in our May 7, 2023 Energy Tidbits. *“Will EVs displace ~6 mmb/d of oil demand by 2030 as IEA forecast. We continue to be surprised by the reporting on then IEA’s Global EVs Outlook 2023 and how it seems that no one cares about the key assumption used in their forecast that EVs would displace nearly 6 mmb/d of oil demand by 2030. There is no question it is a good report and one with a lot data/insights on EVs. No question about that. But it just seems that people focus on the summary in the front and didn’t bother to go back to Pg 132 to review the key assumptions. Here is what we wrote in last week’s (Apr 30, 2023) Energy Tidbits memo. “The most important assumption on when peak oil demand hits is how quickly the accelerating share that EVs have of all new car sales leads to a big decline in oil consumption. The IEA forecasts EVs will displace nearly 6 mmb/d of oil demand by 2030 if governments deliver on their stated policies. And says that EVs displaced 700,000 b/d of oil demand in 2022. We had a 7-tweet Twitter thread that reminded that the displacement is all about forecast assumptions. We agree that EVs have to displace some oil demand, but we question the primary assumption and therefore believe this nearly 6 mmb/d displacement is too optimistic. (i) On Wed, the IEA released its major report “Global EV Outlook 2023: Catching up with climate ambitions”. [\[LINK\]](#). There is no question it is an excellent report with a lot of data and global EV insights. We recommend adding to reference libraries. (ii) We tweeted [\[LINK\]](#) “1/7. @IEA Global EVs Outlook 2023. #Oil Bears and Bulls will both love it! Oil Bears and western leaders like headline, EVs to be 60% of total car sales in 2030, EVs to displace nearly 6 mmbd of oil by 2030, already displaced 0.7 mmbd in 2022. #OOTT.” We expect western leaders will just run with the nearly 6 mmb/d displacement and not worry about the key assumption. (ii) Oil bears assume this nearly 6 mmb/d means the IEA expects oil demand to be down ~6 mmb/d by 2030. But we reminded in our tweet [\[LINK\]](#) “2/7. Oil bulls remember @IEA World Energy Outlook Oct/22 incl EVs to be 50% of total car sales in 2030, and IEA forecast #Oil demand to increase 0.8%/yr this decade to peak around 103 mmbd n mid 2030s.” The IEA’s flagship annual report World Energy Outlook in Oct 2022 assumed EVs would be 50% of total car sales in 2030, so less than its new forecast of 60% in 2030. But even including a 50% assumption, the IEA WEO forecast oil demand to keep increasing in the 2020s and not peak until the mid 2030s at ~103 mmb/d. (iii) Here is the key assumption to displacing ~6 mmb/d that most probably didn’t read. We are big believers that it is important to look at the key forecast assumption on pg 132. We tweeted [\[LINK\]](#) “Oil bulls also note KEY assumption to @IEA #EVs replacing 6 mmbd is that distance travelled by EVs basically replaces the distance an ICE or hybrid would have driven. ie. infers a new EV is added to fleet, an ICE is effectively retired from fleet. #OOTT.” The IEA wrote “How much oil really gets displaced by electric vehicles? Oil displacement through the use of EVs can be estimated by assuming that the distance (total kilometres) travelled by EVs by segment each year would have otherwise been travelled by ICE vehicles or hybrid electric vehicles (HEVs) (based on the stock shares of each).” Basically, the IEA assumes the EV effectively replaces the distance driven by an ICE vehicle. (iv) We don’t believe this effective one-for-one replacement in terms of distance driven has proved out so far. We tweeted [\[LINK\]](#) “4/7. But for many, an EV is a 2nd or 3rd car. Norway is recognized leader in terms of EVs penetration. 03/22 tweet. Yet #EVs distance driven*

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22.6% in 2022. EVs were >80% of new car sales in 2022, been 60% for ~4 years. [\[LINK\]](#) #OOTT". (v) On March 25, Equinor highlighted this EVs are 2nd or 3rd cars in Norway. We tweeted [\[LINK\]](#) "5/7. In Norway, EVs are 2nd or 3rd cars! 03/25 Equinor explains why Norwegians #EV mileage is low relative to new car sales. "We've bought an EV instead of taking the bus, or it becomes the second or the third car" says @EWaerness [\[LINK\]](#) #OOTT." (vi) Absent governments mandating ICE vehicles get junked, the other key factor is that ICE vehicles are lasting longer. We tweeted [\[LINK\]](#) "6/7. A concept everyone has experienced - ICE vehicles are lasting longer. 03/31. @BloombergNEF. at least in China, ICE vehicles retirements are at a very low level even in the face of increasing EV and ICE sales. #OOTT." (vii) It is important to remember that the IEA forecasting a 60% EV share of total car sales means a displacement of nearly 6 mmb/d in 2030 is not an IEA forecast that says its oil demand forecast will be reduced by 6 mmb/d. It's WEO Oct 2022 assumed EVs were 50% of total car sales in 2030 and didn't see peak oil demand until the mid 2030s. So the incremental 10% EV sales penetration, by itself, isn't likely to move its peak oil demand closer by very much. Our last tweet [\[LINK\]](#) "7/7. #Oil Bears and western leaders will love @IEA EVs headlines on increasing EV sales and oil displacement. #Oil Bulls (Saudi Arabia) will love the IEA report and think this won't have much impact on @IEA forecast for peak oil demand around 103 mmbd in mid 2030s. #OOTT." (viii) EVs are having an impact on oil and energy, but it isn't a one-for-one replacement. Plus we wonder if it's just additive on an "energy" basis in what it does to the demand for natural gas and other forms of reliable electricity to power the new EV ecosystem. Our Supplemental Documents package includes excerpts from the IEA Global EVs Outlook report."

Figure 62: Oil displacement by region and mode, 2022-2030

Figure 3.13. Oil displacement by region and mode, 2022-2030



IEA. CC BY 4.0.

Notes: STEPS = Stated Policies Scenario; APS = Announced Pledges Scenario; NZE = Net Zero Emissions by 2050 Scenario; LDV = light-duty vehicle. Oil displacement based on internal combustion engine (ICE) vehicle fuel consumption to cover the same mileage as the EV fleet.

Source: IEA

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Equinor chief economist says Norwegians bought EVs as 2nd or 3rd cars

Here is what we wrote in our March 26, 2023 Energy Tidbits memo. *“The Equinor Chief Economist Wærness comment to the FT also supported the above item on how Norwegians aren’t using their EVs as much as would be expected given the massive penetration of new car sales over the past several years. Yesterday, we tweeted [\[LINK\]](#) “Here’s why Norwegians #EV mileage is low relative to new car sales. “We’ve bought an EV instead of taking the bus, or it becomes the second or the third car” says @EWærness. many other reality check energy transition views in his @FT interview [\[LINK\]](#) #OOTT.” Wærness says that Norwegians really have bought EVs as their 2nd or 3rd cars and not the principal car. Whereas historically car buyers buy new cars as a principal car other than the wealthy who have more than a couple cars. The FT wrote “Norway’s experience with electric vehicles provides an example, Wærness suggested. Subsidies to buy battery-powered cars had rapidly increased their number, and Norway has been repeatedly cited as an example of how quickly customers could switch to EVs. But the overall car fleet had swollen too, Wærness said. “We’ve kept a lot of the diesel cars and gasoline cars, and we’ve added EVs, and it took 10 years before gasoline demand went down,” he said. “We’ve bought an EV instead of taking the bus, or it becomes the second or the third car.”*

Energy Transition: UK Sunak approves oil & gas licenses, reviewing anti-car schemes

The next UK general election has to be held no later than Jan 28, 2025 and there shouldn’t be any doubt that a major part of UK PM Rishi Sunak plans to fight this election is his push to stop the decline in UK oil and natural gas production and to get rid of some anti-ICE vehicle schemes. Here are some clear actions and statements from Sunak this week. (i) Last week’s (July 30, 2023) Energy Tidbits memo wrote *“We have to give The Telegraph credit as they have had good Saturday night interview on the UK backtrack to move to what UK PM Sunak describes as a “proportionate and pragmatic” path to #NetZero. Last night, The Telegraph [\[LINK\]](#) posted a report “I am on motorists’ side, says Rishi Sunak as he orders review of anti-car schemes”, which is all about Sunak saying he is on the side of motorists and knows they need their cars for their everyday lives. Just remember being on the side of motorists is a bit of a way of saying being on the side of ICE vehicles. The Telegraph wrote “Rishi Sunak promised drivers that he is “on their side” as he ordered a review of controversial anti-car schemes being rolled out across Britain. In an interview with The Telegraph, the Prime Minister said the vast majority of people “are dependent on their cars” and that “anti-motorist” policies fail to take account of how “families live their lives”. And “Mr Sunak said: “The vast majority of people in the country use their cars to get around and are dependent on their cars. When I’m lucky enough to get home to North Yorkshire, it’s more representative of how most of the country is living, where cars are important. “I just want to make sure people know that I’m on their side in supporting them to use their cars to do all the things that matter to them.” Note Sunak use the word car to represent ICE vehicles. Last Sunday, he tweeted a picture of him in Margaret Thatcher’s old Rover [\[LINK\]](#) “Talking about freedom, sat in Margaret Thatcher’s old Rover. Earlier I spoke to @Telegraph about how important cars are for families to live their lives. It’s something anti-motorist Labour just don’t seem to get. And it’s why I’m reviewing anti-car schemes across the country.”* (ii) As expected, Sunak approved new UK North Sea oil and natural gas licenses and committed to future licenses. On Monday, Sunak tweeted [\[LINK\]](#) *“Putin has weaponised global energy supplies, causing household bills to soar & slowing economic growth around the world. So I’m taking action to:*

**Sunak
proportionate &
pragmatic path to
Net Zero**

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⚡ Power Britain from Britain 🇬🇧 Become more energy independent ⬇️ Drive down energy prices 🇬🇧 Grow our economy Here's my plan 🇬🇧.” And [\[LINK\]](#) “First, I'm committing to future oil and gas licensing rounds in the North Sea. This will boost domestic gas productions, which means British homes and businesses will have access to cleaner and cheaper energy. And it means we won't be as reliant on foreign imports.” (iii) Backing carbon capture & sequestration. Sunak tweeted [\[LINK\]](#) “Second, I'll back a whole new British industry of green tech to capture and store carbon - starting with new sites in the Humber and Aberdeenshire. These two sites alone are expected to support up to 25,000 jobs and generate over £10 billion of new investment in our economy.” (iv) Sunak knows reality is that UK will be needed oil and gas for decades. Sunak tweeted [\[LINK\]](#) “Even when we've reached net zero in 2050, a quarter of our energy needs will come from oil & gas. Rather than keep importing it from hostile states, this plan ensures we get it from here at home It'll protect British jobs, lower bills and grow the economy.” (v) There are many other Sunak statements and tweets this week, but they are being wrapped around the theme of energy security as the priority, which fits what he calls a “proportionate and pragmatic” path to Net Zero.

Figure 63: UK PM Sunak's July 31 tweet



Source: Rishi Sunak

UK PM Sunak's “proportionate & pragmatic” path to Net Zero

Here is what we wrote in last week's (July 30, 2023) Energy Tidbits memo. “It looks like UK PM Sunak has had a reality check on the energy transition and is going to back away on the UK's green pledges. He was pretty clear that he wants to take a proportionate and pragmatic way to get to Net Zero. We expect to see elements of this new approach over the coming weeks. (i) Last week's (July 23, 2023) Energy Tidbits memo highlighted the UK Cabinet Minister Michael Gove's big interview on July 22 and wondered if he was signaling the UK is no longer just give into the climate side. Early last Sunday morning, we tweeted [\[LINK\]](#) “Hmmm! was @michaelgove's interview a preview the UK is going to back away from expensive #NetZero policies? worth reading Telegraph interview. [\[LINK\]](#) Momentum seems to be building for shift to energy security, availability & affordability. #NatGas will be needed for longer. #OOTT.” Here is what we wrote in last week's (July 23, 2023) Energy Tidbits memo. “Yesterday, UK Housing Secretary Michael Gove had an interview with the Telegraph. [\[LINK\]](#) Here is what the Telegraph wrote “On Natural

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England's foray into attempting to limit air pollution, though, Gove is less sympathetic. "I think – how can I put this – that is unwise," he says. "I'm all in favour of encouraging people to walk and cycle more. But there are some car journeys which are absolutely vital, and low-traffic neighbourhoods are a crude and sometimes counterproductive tool. We've seen in the Netherlands how the inflexible application of tight EU-derived rules leads to a backlash. "One of the dangers – I don't think Labour are alive to this at all – is that if people think that you are treating the cause of the environment as a religious crusade, in which you're dividing the world into goodies and baddies, then you alienate the support that you need for thoughtful environmentalism." Should Natural England pause its work in this area? "Yes," he says. "Some of the recommendations that the Climate Change Committee make about what it is that we have to do run so far ahead of where people are, particularly during a cost-of-living crisis, that you risk ending up creating a backlash rather than a consensus." Asked about the Government's own targets, such as the planned 2030 ban on the sale of petrol cars, Gove is curiously equivocal." And "In his own policy area, Gove wants to relax the current rules that will ban landlords from renting out their homes unless they pay to increase the Energy Performance Certificate rating of their properties by 2028, which could include spending thousands on fitting a heat pump, insulation or solar panels. "My own strong view is that we're asking too much too quickly. We do want to move towards greater energy efficiency, but just at this point, when landlords face so much, I think that we should relax the pace that's been set for people in the private rented sector, particularly because many of them are currently facing a big capital outlay in order to improve that efficiency." (ii) We didn't have to wait long to hear PM Sunak come out on this same change. On Monday, we tweeted [LINK](#) "UK #NetZero backtrack! "So, yes, we're going to make progress towards net zero, but we're going to do that in a proportionate and pragmatic way that doesn't unnecessarily give people more hassle and more costs in their lives – that's not what I'm interested in and prepared to do." Rishi Sunak. @michaelgove 📌 07/23 Telegraph interview was the warmup act. #Oil #NatGas will be needed for longer. @ADNOCGroup Dr. Sultan al Jaber must be smiling! #OOTT." [LINK](#)." Sunak was pretty clear, that he wants to shift to a proportionate and pragmatic plan to Net Zero. Our tweet noted COP28 President delegate al Jaber must be smiling as his approach is that there must be a realistic energy transition. Our Supplemental Documents package includes the Worcester News reporting of Sunak's comments.

Our #1 2022 Prediction – leaders like Sunak back off & change green plans

We expected western leaders to come out in 2022 admitting that the energy transition plan wasn't working. This seemed obvious prior to Russia invading Ukraine and even moreso post the invasion. We didn't expect them to come out and junk the energy transition and net zero, but to acknowledge that changes had to be made to the plan. Here is what we wrote in our Dec 26, 2021 Energy Tidbits memo. "Our Dec 12, 2021 Energy Tidbits highlighted our #1 2022 prediction that more Energy Transition leaders (politicians and capital providers) will come out of the closet and admit (most indirectly) that they need to change their energy transition plans as the energy transition is taking longer, be bumpy and will cost more. On Dec 9, we tweeted [LINK](#) "Time for #2022Predictions. My #1 is more #EnergyTransition #NetZero leaders come out of closet, have a #MacronMoment ie. have "transition"

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not self inflicted shortage so 2021 energy crisis isn't every year. A return to #EnergySecurity = #Oil #NatGas #LNG strong thru 2030. #OOTT." A #MacronMoment can take three forms. (i) A direct #MacronMoment clearly saying it isn't working as planned. We aren't picking on Macron, but he recently said it the clearest when he warned the energy transition aspiration has to be modified/reduced or else there will be years of an energy crisis. The day before COP26 started, we tweeted [\[LINK\]](#) on Macron's comments to the FT [\[LINK\]](#) that was a clear view on higher fossil fuel prices for the foreseeable future. Macron said "on demand for fossil fuels isn't going away for the foreseeable future. Macron said "What is happening now is ironic, because we are building a system where in the medium and long term fossil energy will cost more and more, that's what we want [to fight climate change]." he said." Japan is another calling for a pragmatic time frame ie a change in the plan. (ii) Japan now says must have a "pragmatic time frame" for decarbonization. No one should be surprised to see how Japan says their #MacronMoment. They use Japan-speak for the energy transition aspirations plan isn't working and needs to be changed. On Nov 9, we tweeted [\[LINK\]](#) on Japan's release [\[LINK\]](#) on its conference with IEA Executive Director Faith Birol. Japan wrote "The two sides also exchanged views on acceleration of decarbonization efforts following COP26, and shared the importance on measures with pragmatic time frame based on individual circumstances that each countries face including its renewable energy potentials". A pragmatic time frame or a go slow process, whatever you want to call it, it means the same thing – Japan doesn't want to get rid of fossil fuels too quickly. (iii) The US doesn't say its isn't work, just that there will be higher energy costs for years to come. US Energy Secretary Granholm has shown the third way of admitting the energy transition plan isn't working. She avoids saying the plan isn't working or needs to be changed, just that she puts on the record that high energy costs are here for years. We tweeted on her comments on MSNBC Morning Joe and created a transcript of her saying "So the long term strategy is that. and yes we have a short term cost issue because the economy is still coming back on. we have a supply, demand that does not, the supply doesn't meet the demand. that is an issue we are going through. The president is all over this both in the short term and in the long term."

Energy Transition: Germany sees 5 tough years, need power subsidy to keep industry

Last Sunday night, we tweeted [\[LINK\]](#) "#Habeck: power subsidies to German industry "will put a burden on people". Recall 📌 05/23/23 tweet, DE needs \$4.4 billion PER YEAR to subsidize power. Will power subsidies UNTIL 2030 be enough for industry to make investment decisions & stay post 2030 IF have to get off fossil fuels & rely on "green energies like hydrogen"? Energy costs in Germany are going to be higher for longer. Thx @vonderburchard #OOTT #NatGas." Last Thursday, Politico reported [\[LINK\]](#) on comments by Roberta Habeck (German Vice Chancellor and head of the Green party) and he seemed even more negative on Germany's economic outlook with specific concerns on the cost of energy and that that Germany needs to give industry a break on power costs to keep industry in Germany. Habeck has been working to get a power subsidy since May but hasn't been able to get approval so far. Politico reported "Germany faces five difficult years of green industrial transition that "will put a burden" on people, Economy Minister Robert Habeck warned — while urging his government to approve fresh subsidies to safeguard the country's industrial base. Habeck argued that this downturn could be explained by high energy prices,

Germany warns tough times ahead

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which Germany felt more intensely than other countries because it relied on cheap Russian gas. High interest rates are also slowing down investments and global trade, he added, which particularly affects Germany as an export-dependent nation." "I also don't want to ignore the fact that this will put a burden on people," Habeck said. "We have a major transformational period ahead of us until 2030," during which time Germany would move from a traditional, fossil fuel-dependent industrial base to green energies like hydrogen, he said. He advocated state support in the form of a cap on electricity prices for energy-intensive companies in international competition, "so that they can withstand the challenges of the transformation and have enough money to invest." "The question is: Do we borrow money or do we no longer have industry?" Habeck said. He added: "We don't have much time left, otherwise companies will say: We'll invest, but no longer in Germany." Our Supplemental documents package includes the Politico report.

05/23/23: Habeck, need to subsidize electricity to keep industry from leaving

Here is what we wrote in our May 28, 2023 Energy Tidbits memo on Habeck's view that need to subsidize power for industry to keep them from leaving. "Germany to subsidize electricity to keep industry from leaving. Germany is the largest economy in Europe and it is feeling the pain from high energy costs. We have to believe German Vice Chancellor Habeck's Tuesday announcement of electricity subsidies was to dampen the reaction to the German GDP numbers that came out on Thursday. wonder if G On Thursday, the data was out and, no surprise, Germany fell into a recession with another quarter of negative growth. To be fair, the sky-high electricity costs in the fall of 2021, before Russia invaded Ukraine, had already caused some energy-intensive industries to cut back. So high electricity prices back in 2021 and continuing are impacting industry. No surprise to see the Reuters Tuesday report [\[LINK\]](#) "Germany plans to earmark around 4 billion euros (\$4.40 billion) annually to subsidize electricity prices for energy-intensive industries, to support an industrial move away from fossil fuels and discourage firms from moving offshore." That's \$4.4 billion per year. On Tuesday, we tweeted [\[LINK\]](#) "Is it the #EnergyTransition or cost of replacing cheap RUS #NatGas via pipeline with #LNG or both? Regardless, Germany needs to provide \$4.4b PER YEAR to help subsidize high electricity price to try to keep industry from going elsewhere. Thx @RihamKousa. #OOTT." We don't know the proportions linked to the cost of the energy transition vs Russia, but there is no question that a big factor is the decision to stop imports of cheap Russian pipeline natural gas via Nord Stream and replace it with multiples higher priced LNG. But the reality is clear – Germany is worried about losing industry unless it can get to a lower electricity price for industry and that means it must subsidize electricity for industry. Our Supplemental Documents package include the Reuters report.

Germany has remained steadfast in its cutting off cheap Russian natural gas

Natural gas is different from oil for Germany and others supplied by Russian pipeline natural gas – as a rule, if they cut off pipeline natural gas, there aren't other pipeline natural gas that is available and easy to connect, which means they are forced to buy much higher priced LNG and then set up new infrastructure to import and deliver domestically the LNG/natural gas. We had thought Germany would be the weak link and break solidarity to give in to some degree on Putin for this very reason – the cost of cutting out Russian pipeline natural gas would hammer the economy. But instead

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of cracking, Germany is hanging tight with the west and will try to keep industry by subsidizing more of the cost of electricity for industry.

Energy Transition: New UN IPCC head Jim Skea

New UN IPCC head

It will be interesting to learn more about how Jim Skea, the new appointed head of the UN's Intergovernmental Panel on Climate Change (IPCC), plans to lead the IPCC in this period where the energy transition isn't on track and more supporters are backing off their plans. We thought he made a good first impression as someone who is less focused on finding out who to blame and focused on getting everyone focused on taking measures to reduce emissions. If anything, he seemed to be warning others on the climate change side to tone down their fear approach of the world facing an existential crisis and focus on getting things done. Jim Skea, spoke to two major German news outlets over the weekend, soon after his appointment. Last Sunday night, we tweeted [\[LINK\]](#) *"Finally! @JimSkeaIPCC, new head of UN IPCC climate panel, priority seems to be attack the problem to reduce emissions and get as many people to take as many actions as possible to do so. And not the existing priority to make people scared 1.5C is an existential threat and who is to blame for it. Thx @DeutscheWelle [\[LINK\]](#)."* It was nice to see Skea wasn't as focused on created the fear of extinction but more on trying to get as many people focused on taking action to reduce emissions. DW wrote *"We should not despair and fall into a state of shock" if global temperatures were to increase by this amount, he said. In a separate discussion with German news agency DPA, Skea expanded on why. "If you constantly communicate the message that we are all doomed to extinction, then that paralyzes people and prevents them from taking the necessary steps to get a grip on climate change," he said. "The world won't end if it warms by more than 1.5 degrees," Skea told Der Spiegel. "It will however be a more dangerous world." DW also wrote *"Every measure we take to weaken climate change helps," he said, adding that measures were also becoming "ever more cost-effective." Skea said that one short-term focus should remain expanding renewable electricity to reduce emissions from fossil fuel electricity generation and from internal combustion engine vehicles. "Longer term, we probably will not be able to do without technological solutions like the underground capture of CO2," he said, referring to the greenhouse gas carbon dioxide. Individual abstinence is good, but new infrastructure required Skea predicted that one difficult area might prove to be changing people's lifestyles. He said that no scientist could tell people how to live or what to eat. "Individual abstinence is good, but it alone will not bring about the change to the extent it will be necessary," Skea said. "If we are to live more climate consciously, we need entirely new infrastructure. People will not get on bikes if there are no cycle paths."* Our Supplemental Documents package includes the DW report.*

Couldn't help think of Michael Douglas's line in the American President 1994

We couldn't help thing that Skea's messaging was just as much directed at the climate change side to tone down the rhetoric that the world was facing an existential crisis and who was to blame for it. Our Nov 6, 2022 Energy Tidbits memo wrote *"When we hear Biden talk about Big Oil, we can't help wonder why some Big Oil CEOs haven't used Michael Douglas's classic line as he played Democrat President Andrew Shepherd in the American President movie in 1994. We don't think many believe Amos Hochstein saying that CNBC's Hadley Gamble's comment that CEOs say Biden doesn't meet with them was flatly not true. But it just seems like the Biden priority is to make sure Americans know who to blame instead of trying to meet with*

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them to figure out what can be done. It is the perfect line. On June 21, 2022, we tweeted on Michael Douglas speech from his ending press conference going after Richard Dreyfuss's character Senator Bob Rumson. Rumson was the Republican nominee in the Presidential election fight against Shepherd. At that time, we tweeted [\[LINK\]](#) "Too bad @Chevron CEO Wirth letter didn't channel some KDouglasMichael American President & say your Administration "is interested in two things, & two things only. making you afraid of it, & telling you who's to blame for it. That ladies & gentlemen is how you win elections" #OOTT". Our tweet included an excerpt from his speech ""I've known Bob Rumson for years. And I've been operating under the assumption that the reason Bob devotes so much time and energy to shouting at the rain was that he simply didn't get it. Well, I was wrong. Bob's problem isn't that he doesn't get it. Bob's problem is that he can't sell it! We have serious problems to solve, and we need serious people to solve them. And whatever your particular problem is, I promise you Bob Rumson is not the least bit interested in solving it. He is interested in two things, and two things only: making you afraid of it, and telling you who's to blame for it. That, ladies and gentlemen, is how you win elections."

Figure 64: Michael Douglas as President Shepherd in American President 1994



Source: YouTube

Energy Transition: IATA says air fares are going higher under Net Zero

Earlier, we noted how we reference the IATA (International Air Transport Association) monthly international air passenger and air cargo data. Earlier today, The Telegraph posted its "Willie Walsh interview: "The transition to net zero is going to cost holidaymakers: Fuel price rises and the switch to green alternatives mean the glory days of super-cheap air travel are over, says IATA boss". [\[LINK\]](#) No one should be surprised that the fuel for jets will be a lot more expensive than current jet fuel/kerosene. The Energy Transition is happening, but it is going to lead to higher energy costs. Earlier this morning, we tweeted [\[LINK\]](#) "Higher air fares! "Anybody who thinks that the #EnergyTransition to net zero isn't going to cost is misled" "Prices will have to go up... and that cost is something that ultimately will get passed through to consumers" @IATA's Willie Walsh to @mattotele." Those were a couple of Walsh's quotes on the increased costs to holidaymakers under the Energy Transition. Our Supplemental Documents package includes the Willie Wash interview.

Air fares going higher

Capital Markets: Japan govt pension fund hits new high thanks to Warren Buffett

Q2/23 was a record quarter for Japan's Government Pension Investment Fund. That wasn't a surprise given how Japanese stocks had a great Q2 or at least a great Q2 following the CNBC April 12 interview with Warren Buffett that led to excellent stock performance in key

Japan's govt pension fund

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Japanese stocks. On Friday, Nikkei Asia reported [\[LINK\]](#) “Japan pension giant GPIF hits record profit of \$133bn. Highest-ever quarterly surplus fueled by bullish stocks and cheap yen. Japan’s Government Pension Investment Fund, one of the world’s largest institutional investors, said on Friday that its profit in the first quarter ended in June hit a record high of 18.98 trillion yen (\$133 billion), buoyed by sound performance in stock investment. This is the fund’s highest-ever surplus for a quarter, surpassing the 12.48 trillion yen recorded in the April-June quarter of 2020. The return ratio was 9.49%. Gains by asset were 7.08 trillion yen on domestic stocks, 7.81 trillion yen on foreign stocks, 3.89 trillion yen on foreign bonds, and 176 billion yen on domestic bonds. Assets under management under the pension fund reached a record high of 219.17 trillion yen at the end of June. The surplus was led by rises of both domestic and foreign stocks. The Nikkei Stock Average rose by more than 5,000 points in the three months ending in June, and experienced a post-bubble high in the same period.”

Japanese stocks had a big rally post Warren Buffett’s CNBC Apr 11 interview

We have highlighted the CNBC April 11 interview with Warren Buffett and how that was clearly a catalyst for Japanese stocks and the inflow of international capital into Japanese stocks. Here is what we wrote in our May 21, 2023 Energy Tidbits memo. “We aren’t in the category of the Warren Buffett fanatics who think everything he says is gospel and he touches turns to gold. But we really respect what he has accomplished and continues to accomplish over the decades. It’s amazing when someone can be considered to be on the top of his game over many decades. So we couldn’t help tweet a Warren Buffett shout-out on Thursday, when we saw the below Bloomberg TV chart on how foreigners are loving Japanese stocks. We tweeted [\[LINK\]](#) “The #WarrenBuffett effect is still working. @business “foreigners loving Japanese stocks. positive flows into equities for 7th straight week”. Last 5 weeks were since #WarrenBuffett made his positive comments on Japanese trading houses in his @BeckyQuick Apr 12 interview in Japan. #OOTT.” Buffett was in Japan in early April and there was big investor attention to the CNBC Becky Quick interview with Buffett and Greg Abel on April 12, where he made positive comments about the Japanese trading houses. We have to believe this got a lot of attention from investors around the world. Was it coincidental or did people follow? Given his following, we suspect a good portion of this was people following Warren Buffett into Japanese stocks.” (ii) On Monday night, we tweeted [\[LINK\]](#) “The #WarrenBuffett effect at work in Japan. @business Japanese stocks at all-time high. Dividend-adjusted Nikkei 225 above pre-bubble burst peak. Nikkei +4.9% in 2021 post Covid. -9.4% in 2022. +7.0% 01/01/23 to Buffet 04/12 @BeckyQuick interview. +12.0% 04/12 to 05/23. #OOTT.”

Japanese stocks +18.9% Apr 11-June 30, outperformed Nasdaq +14.67%

Japanese stocks have a great run post the CNBC April 11 interview with Warren Buffett, when he made his positive comments on the Japanese trading houses. The Nikkei was 28,041 on Mar 31, 27,923 on Apr 11, and then 33,189 on June 30 so, it was basically flat to start Apr before being +18.9% from Apr 11 to June 30. In that same Apr 11-June 30 period, the Dow was +1.1% and Nasdaq +14.6%. Below is the Nikkei for the last year with the yellow line marking Apr 11.

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Figure 65: Nikkei 12 months to Aug 4 close ptions (\$ Millions)



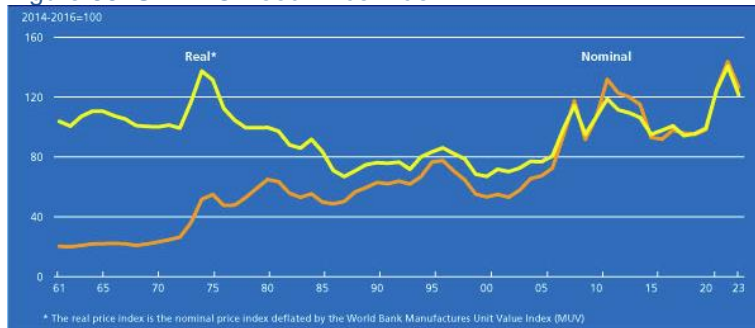
Source: Bloomberg

Capital Markets: UN FAO Food Price Index increases MoM in June but is down YoY

Other than a small blip in April 2023, the UN Food Price Index had declined for 12 months in a row prior to July 2023. But a decline in commodity food prices really hasn't translated into a proportional decline in grocery food prices, or anywhere near that as the UN FAO Food Price index is a commodities measure and not a grocery store price measure. But it's good news that food commodity prices seem to be easing and hopefully these will ultimately work their way thru the added costs in the supply chain before they get to grocery stores prices. The UN global food price index increased in July 2023, the second increase seen over the last 12 months. On Friday, the UN posted its monthly update of its FAO Food Price Index [LINK](#) titled "FAO Food Price Index rebounds slightly in July". Note that the index is calculated on a Real price basis. The FFPI averaged 123.9 points in July, which was an increase of +1.3% MoM from 122.4 in June, and is down -11.8% YoY. The FFPI also reported MoM declines for most of its sub-indices in July. The Vegetable Oil Index was up +12.1% MoM and is now -23.1% YoY. In contrast, the Meat, Dairy, Sugar, and Cereal Price Indices were all down from last month by 0.3% (-5.1% YoY), -0.3% (-20.6% YoY), -3.9% (+29.7% YoY), and -0.6% (-14.5% YoY), respectively. Below is the all time FFPI graph.

UN food price index up MoM

Figure 66: UN FAO Food Price Index



Source: UN

Q2/23 call, Loblaw on why grocery prices go up higher than commodity prices

We have been highlighting Loblaw mgmt. Q1/23 call explaining why grocery store prices keep going up more than commodity food prices. Loblaw held its Q2/23 call

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on Wednesday and took time to explain this same concept – there are a lot of costs increases that get passed on to them before they priced something for the grocery stores. The bottom line is that grocery store prices are going up when food commodity prices are going down. Here is what Loblaw said in the Q2/23 call. “As we battle inflation, we remain highly concerned about ongoing cost increases, and I wanted to offer some facts. This year suppliers have raised the price we pay for products by more than CAD1 billion. This is double what we would expect normally. We have received double-digit increases from the same suppliers who gave us double-digit increases last year. That’s why you see products that are noticeably more expensive than they were just a couple of years ago. While cost increases are coming in from all peers of our supplier base, the largest global brand stand out. Let me give you an example. Since inflation began, one of our largest vendors submitted price increases totaling 50% or CAD0.25 billion[ph], that’s just one supplier. Here’s another good illustration In Q2, the average price for meat, fruit and vegetable purchase in our stores were up in the mid-single digits. But the average purchase in the center of store where you find the biggest brands was up in the double digits. At the same time, our Food project – food profit margins have declined as our costs have grown faster than our prices. The math is very simple. Cost increases from big brands were well above -- and as its food inflation and our Food margin decline, suggesting of grocery profiteering just don’t add up. Food inflation is a global problem. The causes range from climate change to -- We know that some cost increases are justified but many are not. The price of transportation, wheat, flour, paper and plastic all well off 2022 high. Our teams are actively reaching out to our largest suppliers pressing for cause decreases based on these facts. With lowered costs, we will lower prices.”

Capital Markets: Chinese and Canadian buyers pay up for US residential real estate

On Thursday, we tweeted [LINK](#) “China will take the lion’s share of blame for driving up US home prices. Ave price paid by top 5 foreign buyers of US residential property was \$639,900 but average driven up by China \$1,234,500 and Canada \$779,300. No surprise, Cdns buy the most in Florida 55% driven by Ont/Quebec, and Arizona 14% driven by Alberta. Lots more in the @NAR_Research report. [LINK](#)” The National Association of REALTORS® (NAR) posted its “The 2023 Profile of International Transactions in U.S. Residential Real Estate presents information regarding REALTOR® transactions with international clients who purchased and sold U.S. residential property during the 12-month period of April 2022–March 2023.” It is a good look at international buyers of US residential real estate. We were a little surprised that the top 5 international countries (China, Canada, Mexico, India and Colombia) were only 19% of total dollars spent by international buyers spend of \$53.3b. Our tweet referenced the average purchase price of the top 5 foreign buyers was China \$1,234,500, Canada \$779,300, India \$576,500, Mexico \$448,800 and Colombia \$355,400. Note the average price for Chinese buyers topped \$1 mm in 2022. The average purchase price for all foreign buyers deals was \$639,900. There are many other good tidbits in the report such as “\$396,400 – Foreign buyer median purchase price (compared to \$384,200 for all U.S. existing homes sold)”, “42% – Foreign buyers who paid all-cash (compared to 26% among all existing-home buyers)” “560% – Foreign buyers who purchased a property for use as a vacation home, rental, or both (compared to 16% among all existing-home buyers)”, and “76% – Foreign buyers who purchased a detached single-family home or townhome

Foreign buyers of
US residential
real estate

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(compared to 89% of all existing-home buyers).” Our Supplemental Documents package includes excerpts from the NAR report.

Figure 67 Average Purchase Price of top 5 Foreign Buyers

	China*	Mexico	Canada	India	Colombia	All Foreign Buyers
2009	\$342,308	\$240,341	\$298,780	\$401,282	\$342,308	247,100
2010	\$412,200	\$214,700	\$247,300	\$333,300	\$175,000	\$311,400
2011	\$370,900	\$283,000	\$269,100	\$346,400	\$277,500	\$315,000
2012	\$484,000	\$396,200	\$321,700	\$419,000	\$269,400	\$400,000
2013	\$555,900	\$225,500	\$269,100	\$372,700	\$330,000	\$354,200
2014	\$590,800	\$224,100	\$314,700	\$459,000	\$220,800	\$396,200
2015	\$831,800	\$274,800	\$380,300	\$460,200	\$307,100	\$499,600
2016	\$936,600	\$266,200	\$332,100	\$420,400	\$341,500	\$477,500
2017	\$781,800	\$326,800	\$560,800	\$522,440	\$293,100	\$536,900
2018	\$752,600	\$208,800	\$383,900	\$547,700	\$267,600	\$454,400
2019	\$674,900	\$233,700	\$400,000	\$431,500	\$336,300	\$426,100
2020	\$622,300	\$403,500	\$517,200	\$561,800	\$227,500	\$480,870
2021	\$710,400	\$407,500	\$473,600	\$662,600	\$672,200	\$508,400
2022	\$1,005,700	\$365,700	\$485,000	\$702,600	\$334,300	\$598,200
2023	\$1,234,500	\$448,800	\$779,300	\$576,500	\$355,400	\$639,900

Source: National Association of Realtors

Toronto higher home prices metrics than San Francisco

The NAR report had a good comparison of home prices among global cities vs US metros. The global list is not inclusive of all the more expensive cities in the world as it didn't include Vancouver. But it was interesting to see the ranking of price per square meter. No one should be surprised to see the most expensive being Hong Kong \$28,570/sq meter, London \$26,262/sq meter, and New York \$17,191/sq meter. But we were surprised to see Tel Aviv #4 at \$17,149/sq meter ahead of Geneva \$16,467/sq meter, Tokyo at 16,322/sq meter and Paris at \$15,867/sq meter. The other surprise was to see Singapore down at #8 at \$14,373/sq meter as we had expected Singapore much higher. Lastly, Toronto was #11 at 10,947/sq meter, and then San Francisco was #20 at \$8,250/sq meter. .

Figure 68 Home price comparison among global cities and US metros

Global Cities	Price Per Sq. Meter	U.S. Metros	Median Home Price in 2022 Q1 (in '000)	Price Per Sq. Meter
Hong Kong, Hong Kong Island	\$28,570	San Francisco-Oakland-Hayward, CA	\$1,380	\$8,250
UK, London	\$26,262	San Diego-Carlsbad, CA	\$905	\$5,40
US, New York	\$17,191	Los Angeles-Long Beach-Glendale, CA	\$793	\$4,740
Israel, Tel Aviv	\$17,149	Seattle-Tacoma-Bellevue, WA	\$746	\$4,460
Switzerland, Geneva	\$16,467	Denver-Aurora-Lakewood, CO	\$662	\$3,960
Japan, Tokyo	\$16,322	Boston-Cambridge-Newton, MA-NH	\$639	\$3,820
France, Paris	\$15,867	New York-Newark-Jersey City, NY-NJ-PA	\$578	\$3,460
Singapore	\$14,373	Portland-Vancouver-Hillsboro, OR-WA	\$571	\$3,40
Austria, Vienna	\$11,915	Salt Lake City, UT	\$557	\$3,330
China, Beijing	\$11,829	NY-Jersey City-White Plains, NY-NJ	\$553	\$3,310
Canada, Toronto	\$10,947	Wash-Arlington-Alexandria, DC-VA-MD-WV	\$553	\$3,310
India, Mumbai	\$10,932	Austin-Round Rock, TX	\$54	\$3,230
Finland, Helsinki	\$10,386	Miami-Ft. Lauderdale-W Palm Beach, FL	\$530	\$3,170
Taiwan, Taipei	\$10,373	Boise City-Nampa, ID	\$491	\$2,940
Norway, Oslo	\$10,268	North Port-Sarasota-Bradenton, FL	\$480	\$2,870
Australia, Sydney	\$8,783	Phoenix-Mesa-Scottsdale, AZ	\$475	\$2,840
Sweden, Stockholm	\$8,669	Las Vegas-Henderson-Paradise, NV	\$461	\$2,760
Netherlands, Amsterdam	\$8,558	Colorado Springs, CO	\$455	\$2,720
Czech Republic, Prague	\$8,293	Raleigh, NC	\$439	\$2,630

Source: National Association of Realtors/UN

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

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.

**@Energy_Tidbits
on Twitter**

LinkedIn: Look for quick energy items from me on LinkedIn

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

**Look for energy
items on LinkedIn**

Misc Facts and Figures

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

US nuclear bombs were on Aug 6 Hiroshima and Aug 9 Nagasaki

Everyone has their own views on war and who is in the wrong and who is in the right. But one part of a potential war that worries us is the potential use of nuclear bombs and who has the bomb. It's been 78 years since the last, and only, nuclear bombs were used as a weapon. The only two nuclear bombs used as weapons were the nuclear bombs the US dropped on Hiroshima on August 6, 1945 and on Nagasaki on August 9, 1945. The death toll wasn't all immediate, but general estimates were over 125,000 killed in Hiroshima and over 225,000 in Nagasaki. As a result, there was a real fear of nuclear bombs certainly thru the 60s. Baby boomers can recall having nuclear bomb drills in grade schools in the early 60s. And in hindsight, it was kind of silly for the teacher to tell first graders to hide under their desk.

Hiroshima's Genbaku Dome is a must see

I had the opportunity decades ago to be in a very small group to be with a Japanese businessman who grew up 50 km from Hiroshima and go see the Hiroshima Prefectural Industrial Promotion Hall. The hall is now referred to as the Genbaku Dome. Google Translate is the Atomic Bomb Dome. It brought a moving personal perspective to what happened in the aftermath of the bomb and Japan's surrender. The dome was the only surviving structure around the bomb. It was quite a moving experience to take the dome and museum in and realize it was right on the site of the first nuclear bomb. Now, the Hiroshima Peace Memorial Park has been built around the Genbaku Dome. Google Translate is the Atomic Bomb Dome. The dome was the only surviving structure around the bomb.

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Figure 69: Genbaku Dome in Hiroshima

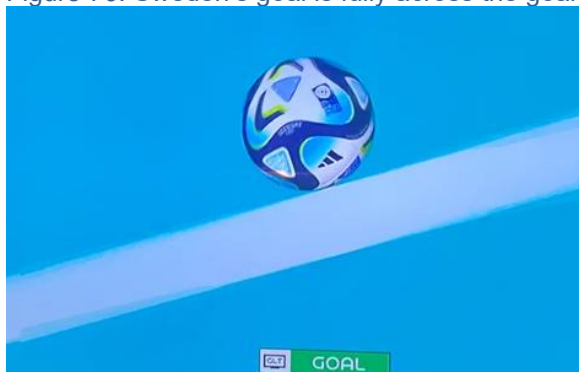


Source: New York Times, RTF

Sweden beats US by the slimmest of margins at Women's World Cup

It will be curious to see the viewership of this morning's World Cup round of 16 match between US and Sweden. Normally our early Sunday morning Energy Tidbits memo crunch has news on in the background but not this morning. We turned on the match at the 20 min mark and it was a great match. And what a finish. We tweeted [\[LINK\]](#) "Game of millimeters, not inches. Note the 📍 confirming picture that Sweden's @Linahurtig17. winning penalty kick was completely over the goal line for Sweden to beats US at @FIFAWWC in round of 16. US played its best game but @ZeciraMusovic was outstanding." They had to wait for the electronic confirmation to show that Hurtig's penalty kick was fully across the goal line. It was but only by millimeters not centimeters or inches. If you the missed the match, the US has been criticized for their play but played their best match and would have won if not for the outstanding play by Swedish keeper Musovic. After watching her play, its hard to believe she is the backup for Chelsea in WSL.

Figure 70: Sweden's goal is fully across the goal line



Source: TSN

Don't normally see black bears talking golf bags

We have seen black bears walking across the fairways at golf courses in Canmore, Alberta. But normally people see them. We suspect it's kind of like when people in Florida see an alligator walk across the fairway, it's not a reason to panic. Rather

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you hope the black bear keeps going so it doesn't hold up the game. Normally, the black bears just kind of mind their own business and walk away. Sometimes you will see them 50 yards away or so, make a little noise and the black bears walk away. But we haven't seen a situation like happened at the Westwood Plateau golf club in Coquitlam, BC, where the black bear goes to the golf cart and pulls off one of the golf bags. He has pulled his haul down a hill back into some bush as the golfer approaches. The Global News report is at [\[LINK\]](#).

Figure 71: Black bear takes golf bag at Westwood Plateau golf club



Source: Global News