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Energy Tidbits

July 30, 2023

Produced by: Dan Tsubouchi

Surely, It's a Question of When, Not If, Shell FIDs What CEO Sawan Says is a "Very Attractive" LNG Canada Phase 2

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. Surely, it's a question of when not if, Shell FIDs what CEO Sawan says is a "very attractive" LNG Canada brownfield 1.8 bcf/d Phase 2. (Click here)

2. A Shell FID of LNG Canada Phase 2 should set up a M&A push and valuation bump for BC/AB natural gas. (Click here)

3. UK PM Sunak pivoting to a "proportionate and pragmatic" path to Net Zero. (Click here)

4. Markets don't seem too worried about the impact of the Liberals framework to eliminate inefficient fossil fuel subsidies. (Click here)

5. Our reminder why EVs aren't displacing as much gasoline as hoped by #NetZero. (Click here)

6. Pease follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.

7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK].

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Natural Gas: +16 bcf build in US gas storage; now 573 bcf YoY surplus

US gas storage 573 bcf YoY surplus

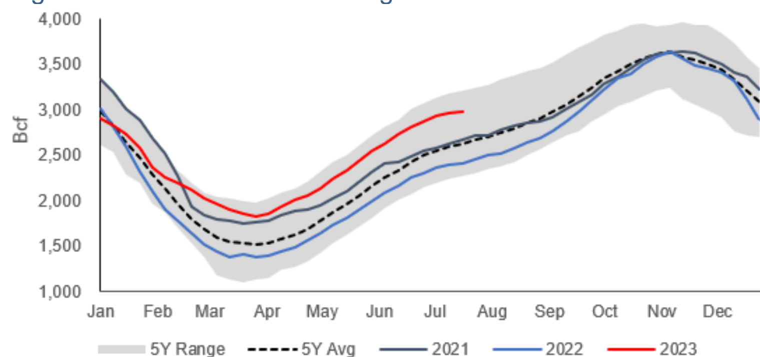
For the week of July 21, the EIA reported a +16 bcf build (just above the expectations of an +14 bcf build), and an increase compared to the +15 bcf build reported for the week of July 22 last year. This is a large decrease from last week's build of +49 bcf, and down vs the 5-year average build of +43 bcf. Total storage is now 2.987 tcf, representing a surplus of +573 bcf YoY compared to a surplus of +575 bcf last week. Total storage is +345 bcf above the 5-year average, down from the +360 bcf surplus last week. Below is the EIA's storage table from its Weekly Natural Gas Storage report [LINK].

Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Year ago (07/21/22)		5-year average (2018-22)	
Region	07/21/23	07/14/23	net change	implied flow	Bcf	% change	Bcf	% change
East	670	661	9	9	530	26.4	584	14.7
Midwest	757	741	16	16	623	21.5	663	14.2
Mountain	189	186	3	3	144	31.3	164	15.2
Pacific	232	232	0	0	253	-8.3	267	-13.1
South Central	1,139	1,150	-11	-11	864	31.8	964	18.2
Salt	310	321	-11	-11	197	57.4	251	23.5
Nonsalt	829	829	0	0	667	24.3	714	16.1
Total	**2,987**	**2,971**	**16**	**16**	**2,414**	**23.7**	**2,642**	**13.1**

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



Source: EIA, SAF

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

NOAA 8-14 day outlook

One of our reminders on the NOAA temperature probability maps is that 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, although yesterday sometime after 3pm MT. Yesterday, we tweeted [LINK] "*Continued temperature support for US #NatGas. Today's @NOAA 6-10 & 8-14 day temperature outlook covering Aug 4-12: continued above normal temps expected for most of the US. Note colder than normal for NE US, but for NYC that is forecast ~80F for daytime highs early Aug. #OOTT.*" When we saw the colder than normal temperatures for the NE US, we went to AccuWeather's forecast for daily highs for New York city in this period. AccuWeather also called for colder than normal temperatures, but it forecast daily highs everyday around 80F, which is still pretty hot in a

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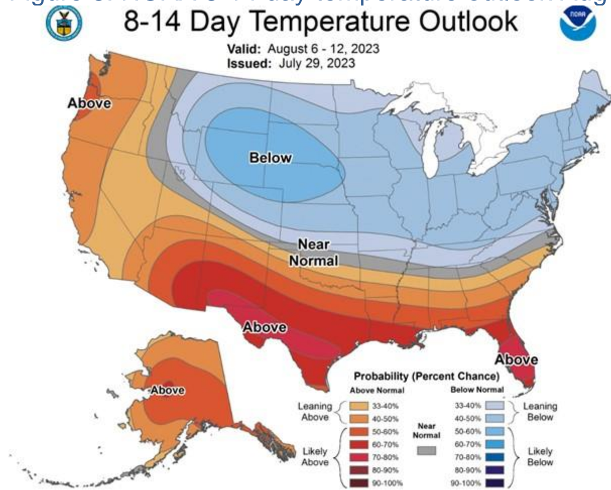
humid New York city. So that was the reason for the reminder in our tweet. Yesterday's NOAA 6-10 day [LINK] and 8-14 day outlook [LINK] is valid for Aug 4-12.

Figure 3: NOAA 8-14 day temperature outlook Aug 6-12



Source: NOAA

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

Normal warmest day of the year across the US

It was another week where you couldn't turn on the news and not hear about how hot it was in NYC and Washington. 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.*"

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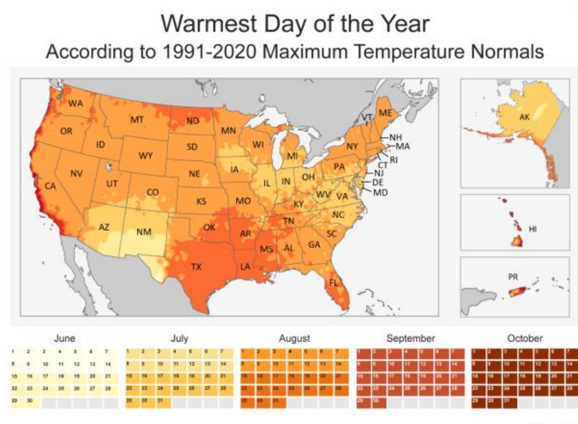
Figure 4: NOAA Warmest Day of the Year



Source: NOAA

Natural Gas: Surely Shell is going to FID "very attractive" LNG Canada Phase 2

LNG Canada Phase 2

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 do 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 bcfd 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 bcfd 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 "*cleanest, lowest carbon intensity LNG*" in the world, and then how Phase 2 is "*very attractiv*e" 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*

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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."

Last week's (July 23, 2023) Energy Tidbits memo on LNG Canada Phase 2 FID
Last week's (July 23, 2023) Energy Tidbits memo highlighted Baker Hughes CEO Simonelli's outlook for LNG on their Q2 call. Baker Hughes is probably the most plugged in of any company of what is coming down the pipe for LNG projects. They are involved in most existing LNG export projects and are called by most, if not all, LNG developers as they look to move to FID on a brownfield or greenfield project. So we believe it is always worth listening to what Baker Hughes CEO Simonelli says on what he expects for near term FIDs for new LNG export projects. He sees another 10 bcf/d of FIDs for LNG export projects in the next 18 months including 1.6 bcf/d in H2/23 and a further 8.6 bcf/d in 2024. On July 22, 2023, we tweeted [LINK] *">10 bcfd LNG FIDs in next 18 mths. $BKR CEO @simonelli_l : 7.0 bcfd #LNG FIDs so far in 2023. Expects another 1.6 bcfd FIDs in 2023 and a further 8.6 bcfd FIDs in 2024. Surely #LNGCanada brownfield 1.8 bcfd Phase 2 will be part of this >10 bcfd in next 18 mths. #OOTT #NatGas."* When we saw his expectation for new FIDs of 1.6 bcf/d in balance of 2023 and a further 8.6 bcf/d in 2024, here is what we wrote on LNG Canada in last week's (July 23, 2023) Energy Tidbits memo. "*Still waiting on LNG Canada brownfield 1.8 bcf/d Phase 2 FID. Our Baker Hughes tweet yesterday said "Surely #LNGCanada brownfield 1.8 bcfd Phase 2 will be part of this >10 bcfd in next 18 mths." It's been quiet on the LNG Canada Phase 2 FID front and it was surprisingly quiet in the recent Shell June investor day. We still expect an FID sooner than later especially as Phase 1 approaches its completion. We have to give LNG Canada credit as they seem to have put a pretty clear no official comment on Phase 2 from their contractors on Phase 1. But it does seem like some of them plan to be in Canada for more than the next year or two. We shall see. Here is what we wrote in our June 18, 2023 Energy Tidbits memo on the LNG Canada Phase 2 from the Shell Capital Markets Day 2023. "Natural Gas – No question to Shell on potential FID for LNG Canada 1.8 bcfd Phase 2. There were no comments from Shell nor questions from analysts on a potential FID for LNG Canada 1.8 bcf/d Phase 2. However, bulls for LNG Canada Phase 2 will be looking at Shell's growth expectations for LNG supply in the back half of the 2020s and believe LNG Canada Phase 2 has to be included in the growth assumptions. In their prepared comments, mgmt. said "We are the world leader in LNG. Supplying our customers with secure, reliable energy today and in the future. LNG is deeply integrated with our trading and optimization activities, which enable us to capture additional value from the scale and breadth of our global LNG portfolio. And we're growing that portfolio even more, with around 11 million tonnes per year of new LNG capacity under construction, which will*

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come on stream in the second half of the decade. This is almost a third of our current LNG portfolio." 11 million tonnes per year is 1.45 bcf/d per year."

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

LNG Canada Phase 2 = M&A

Yesterday, we tweeted [LINK] "*Here's why a Shell FID on #LNGCanada 1.8 bcfd 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 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's 3rd consecutive month natural gas production just above 5 bcf/d

Mexico natural gas above 5 bcf/d in June

On Friday, Pemex reported its Q2/23 results including its natural gas production data for June. [LINK] Pemex reported June 2023 natural gas production of 5.035, which was +6.1% YoY and flat MoM. The big picture story for Mexico natural gas is, at least for now, still unchanged – for the past six years, Mexico natural gas production has been stuck right around 5 bcf/d, and that means any increased domestic natural gas consumption has been

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met by US natural gas imports. To be fair, the last four months have been the first consecutive months slightly over 5 bcf/d since Dec 2019/Jan 2020. Pemex does not provide any commentary along with its production data. Below is our ongoing table of Pemex reported monthly natural gas production.

Figure 5: Mexico Natural Gas Production

Natural Gas Production bcf/d	2017	2018	2019	2020	2021	2022	22/21	2023	23/22
Jan	5.326	4.910	4.648	5.005	4.848	4.713	-2.8%	4.955	5.1%
Feb	5.299	4.853	4.869	4.942	4.854	4.646	-4.3%	4.979	7.2%
Mar	5.383	4.646	4.857	4.946	4.839	4.766	-1.5%	5.035	5.6%
Apr	5.334	4.869	4.816	4.827	4.671	4.740	1.5%	5.095	7.5%
May	5.299	4.827	4.841	4.460	4.730	4.702	-0.6%	5.034	7.1%
June	5.253	4.840	4.843	4.754	4.727	4.744	0.4%	5.035	6.1%
July	5.216	4.856	4.892	4.902	4.725	4.815	1.9%		
Aug	5.035	4.898	4.939	4.920	4.656	4.796	3.0%		
Sept	4.302	4.913	5.017	4.926	4.746	4.798	1.1%		
Oct	4.759	4.895	4.971	4.928	4.718	4.795	1.6%		
Nov	4.803	4.776	5.015	4.769	4.751	4.845	2.0%		
Dec	4.811	4.881	5.024	4.846	4.697	4.845	3.2%		

Source: Pemex, SAF

Natural Gas: BP and OMV sign long-term LNG deal for 0.13 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. This week, there was an agreement signed between BP and OMV. 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 Friday, BP (UK) and OMV (Austria) announced that they have signed a long-term LNG sale and purchase agreement [LINK]. The deal is set to begin in 2026 and end in 2036, with OMV LNG purchasing ~0.13 bcf/d per annum. The CEO of OMV, Alfred Stern, commented "*It is one of OMV's key priorities to drive forward our ongoing diversification of supply sources that encompasses gas from our own production and external sources from Norway, as well as additional LNG volumes. In tandem with the recent news regarding our additional gas transport capacities until 2028, our agreement with bp reflects our significant contribution to the security of supply to our customers in Austria and Europe. Our partnership with bp, spanning a 10-year period from 2026 is an important strategic step towards diversifying and safeguarding our supply sources in the long-term".* The shipments are to be received primarily at the LNG Terminal in Rotterdam and other parts of Europe where OMV holds regasification capacity. 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 16.67 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 16.67 bcf/d of long-term LNG deals since July 1, 2021. 67% of the deals have been by Asian LNG buyers, but we are now seeing rest of world locking up long term supply deals post Russia/Ukraine. Note in our non-Asian LNG deals will major LNG players (ie. Chevron, Shell, etc) buying for their LNG portfolio supply. China has been particularly active in this space, accounting for 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 6: 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	Unipec	Venture Global LNG	China / US	0.46	20.0	2023	2043
Nov 4, 2021	Sinopec	Venture Global LNG	China / US	0.53	20.0	2023	2043
Nov 5, 2021	Sinochem	Cheniere	China / US	0.12	17.5	2022	2040
Nov 22, 2021	Foran	Cheniere	China / US	0.04	20.0	2023	2043
Dec 6, 2021	Guangdong Energy	QatarEnergy	China / Qatar	0.13	10.0	2024	2034
Dec 8, 2021	S&T International	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 10, 2021	Suntien Green Energy	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 15, 2021	SPIC Guangdong	BP	China / US	0.03	10.0	2023	2033
Dec 20, 2021	CNOOC Gas & Power	Venture Global LNG	China / US	0.26	20.0	2023	2043
Dec 29, 2021	Foran	BP	China / US	0.01	10.0	2023	2032
Jan 11, 2022	ENN	Novatek	China / Russia	0.08	11.0	2024	2035
Jan 11, 2022	Zhejiang Energy	Novatek	China / Russia	0.13	15.0	2024	2039
Feb 4, 2022	CNPC	Gazprom	China / Russia	0.98	30.0	2023	2053
Mar 24, 2022	Guangdong Energy	NextDecade	China / US	0.20	20.0	2026	2046
Mar 29, 2022	ENN	Energy Transfer	China / US	0.36	20.0	2026	2046
Apr 1, 2022	Guangzhou Gas	Mexico Pacific Ltd	China / Mexico	0.26	20.0	n.a.	n.a.
Apr 6, 2022	ENN	NextDecade	China / US	0.26	20.0	2026	2026
Apr 22, 2022	Kogas	BP	Korea / US	0.20	18.0	2025	2043
May 2, 2022	Gunvor Singapore Pte	Energy Transfer LNG	Singapore / US	0.26	20.0	2026	2046
May 3, 2022	SK Gas Trading LLC	Energy Transfer LNG	Korea / US	0.05	18.0	2026	2042
May 10, 2022	Exxon Asia Pacific	Venture Global LNG	Singapore / US	0.26	n.a.	n.a.	n.a.
May 11, 2022	Petronas LNG	Venture Global LNG	Malaysia / US	0.13	20.0	n.a.	n.a.
May 24, 2022	Hanwha Energy	TotalEnergies	Korea / France	0.08	15.0	2024	2039
May 25, 2022	POSCO International	Cheniere	Korea / US	0.05	20.0	2026	2036
June 5, 2022	China Gas Holdings	Energy Transfer	China / US	0.09	25.0	2026	2051
Jul 5, 2022	China Gas Holdings	NextDecade	China / US	0.13	20.0	2027	2047
Jul 20, 2022	PetroChina	Cheniere	China / US	0.24	24.0	2026	2050
Jul 26, 2022	PTT Global	Cheniere	Thailand / US	0.13	20.0	2026	2046
Jul 27, 2022	Exxon Asia Pacific	NextDecade	Singapore / US	0.13	20.0	2026	2046
Sep 2, 2022	Woodside Singapore	Commonwealth	Singapore / US	0.33	20.0	2026	2046
Nov 21, 2022	Sinopec	QatarEnergy	China / Qatar	0.53	27.0	2026	2053
Dec 26, 2022	INPEX	Venture Global LNG	Japan/US	0.13	20.0	n.a.	n.a.
Dec 27, 2022	JERA	Oman LNG	Japan/Oman	0.11	10.0	2025	2035
Jan 19, 2023	ITOCHU	NextDecade	Japan / US	0.13	15.0	n.a.	n.a.
Feb 7, 2023	Exxon Asia Pacific	Mexico Pacific Ltd	Singapore / Mexico	0.26	20.0	n.a.	n.a.
Feb 23, 2023	China Gas Holdings	Venture Global LNG	China / US	0.26	20.0	n.a.	n.a.
Mar 6, 2023	Gunvor Singapore Pte	Chesapeake Energy	Singapore / US	0.26	15.0	2027	2042
Apr 28, 2023	JERA	Venture Global LNG	Japan/US	0.13	20.0	n.a.	n.a.
May 16, 2023	KOSPO	Cheniere	Korea/US	0.05	19.0	2027	2046
Jun 1, 2023	Bangladesh Oil	QatarEnergy	Bangladesh/Qatar	0.24	15.0	2026	2031
Jun 21, 2023	Petro Bangle	Oman	Bangledesh/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	Austira/UK	0.13	10.0	2026	2036
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				**5.78**			
Total New Long Term LNG Contracts since Jul/21				**16.67**			

Source: SAF

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Natural Gas: TotalEnergies hopes to make a Mozambique LNG restart by yr-end

Mozambique LNG

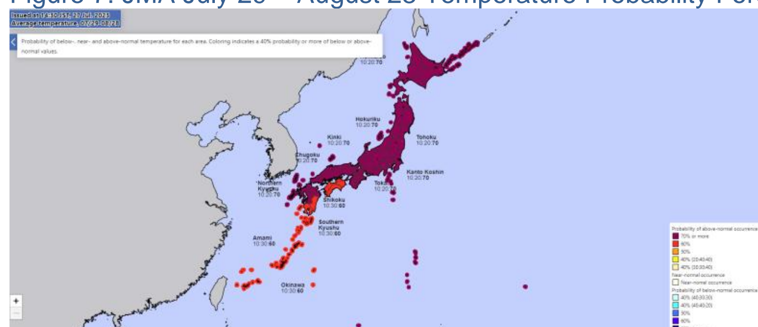
On Thursday, TotalEnergies held its Q2 call. Their objective is to have a restart decision before year end, but will wait if needed. In the Q&A, mgmt. replied "*Mozambique Energy, we are working on both parts. One is with the contractors and I expect that to be done in the second half of this year. So we'll have the answer and I hope it will be positive for them. And then we are working also like Jean-Pierre told you on the relaunching, de-freezing the financing. So I think my objective, the objective for us is to come to you and to have a before year end, I would say -- we should have a clarity on the way forward. But again, we need to know the costs before and make things, let's do it step by step properly. But that's, I would say, the objective we have, but if we need to wait a little more, we wait*". It sounds like they still haven't got the contractor pricing agreed, but are close to getting it done. There was no mention of some recent killings in Cabo Delgado province after a period of no killings.

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

Japan's 30-day temperature forecast

It has been really hot in Japan this summer and it looks like the hot weather will continue fro the month of August. Every Thursday, the Japan Meteorological Agency updates its 30-day outlook [LINK]. The July 27 update calls for much warmer than typical temperatures for the July 29-Aug 28 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 July 29 to August 28.

Figure 7: JMA July 29 – August 28 Temperature Probability Forecast



Source: Japan Meteorological Agency

Natural Gas: JMA expects above average temperatures in A/S/O in Japan

Japan's A/S/O temperature forecast

It looks like the warm weather in Japan will continue from the summer months into the fall. Hopefully this means there can some reasonable weather driven natural gas demand in September and even some in October. Normally warm weather to end September and in October is what we call "leave the windows open" time and not crank up the A/C time. On Tuesday, the Japan Meteorological Agency updated its 3-month outlook [LINK] which forecasted above average temperatures in August through October. The central and southern region is forecasted to be most affected, with northern Japan expected to see just slightly above average temperatures. Temperatures are forecasted to decrease as the months progress. Below is the JMA's temperature probability forecast for August-October.

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Figure 8: JMA August – October Temperature Probability Forecast

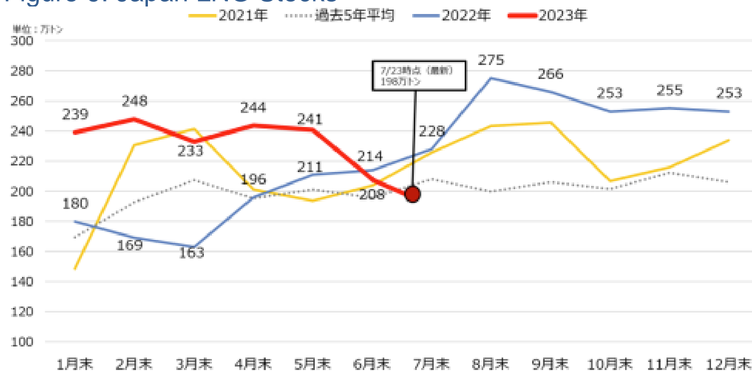
Source: Japan Meteorological Agency

Natural Gas: Japan's LNG stocks finally below 2022 and 5-year average levels

Japan LNG stocks down -5.7% WoW

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 LNG stocks have finally moved below 2022, 2021 and 5-yea average levels. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on July 23 were 95.1 bcf and are down -5.7% WoW from July 16 of 100.9 bcf, and fell just under the 5-year average of 99.9 bcf. Below is the LNG stocks graph from the METI weekly report.

Figure 9: Japan LNG Stocks



Source: METI

Natural Gas: Western Europe continues to get a break from the heat wave

Southern Europe break from heat wave

It looks like Europe will continue to get its break from the heat wave that trapped Europe for weeks that saw mid 40's temperatures 10 days ago. Last Saturday's ECMWF forecast moving to below normal temperatures for most of western Europe into August. The latest forecast from Friday forecasts that continuing for the for the next two weeks. Below are the ECMWF temperature probability maps, posted Friday, for July 31-Aug 7 and Aug 7-14. [LINK]

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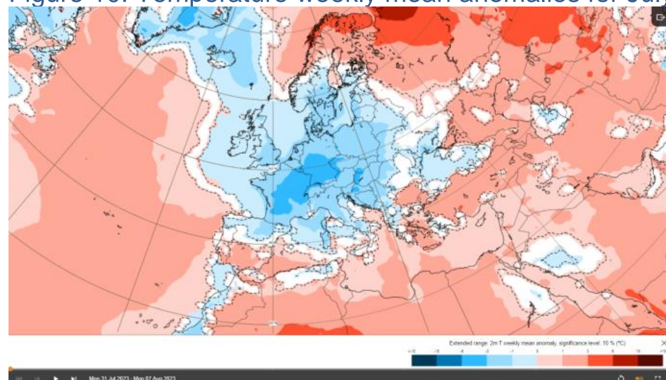
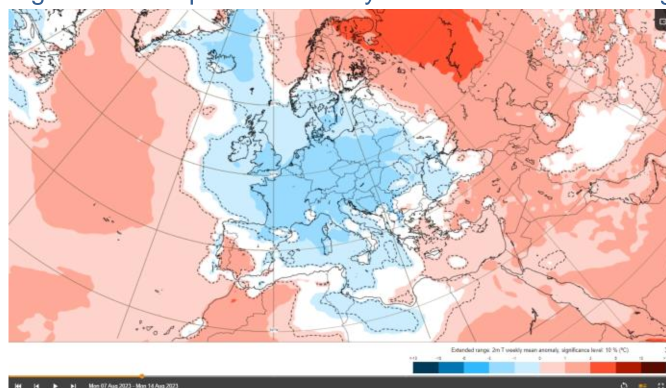
Figure 10: Temperature weekly mean anomalies for July 31-Aug 7



Source: ECMWF

Figure 11: Temperature weekly mean anomalies for Aug 7-14



Source: ECMWF

Natural Gas: Europe storage is now +15.02% vs 5-yr average, but within 5-yr range

Europe gas storage

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 steady 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 +1.94% WoW to 84.49% on July 26. Storage is now +16.86% greater than last year levels of 67.63% and is +15.02% above the 5-year average of 69.47%. Prior to this week's +16.86% vs last year, the prior four weeks starting with the most recent has seen the YoY surplus at +17.42%, +17.51%, +18.34%, and +19.12%. Prior to this week's +15.02 % above the 5-year average, the prior four weeks starting with the most recent has seen the surplus to the 5-year average were +15.04 %, +14.69%, +15.24%, and +15.86%. Last week was the first time we've seen a WoW increase in the difference between the current storage level vs the 5-year average in over 10 weeks, but we continue to see it fall again this week. The current storage is within the

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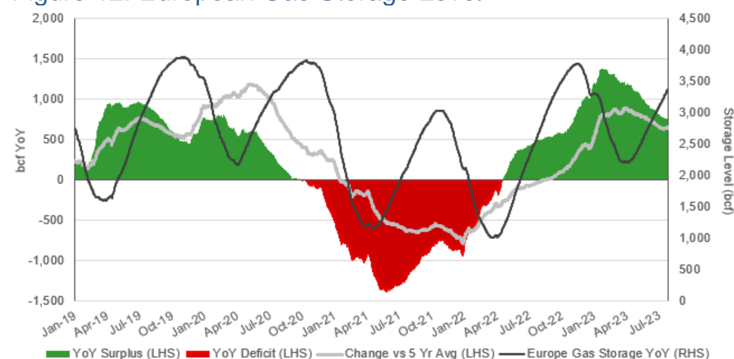
5-year range, albeit at the top end of the range. Below is our graph of Europe Gas Storage Level.

Figure 12: European Gas Storage Level



Source: Bloomberg, SAF

Oil: US oil rigs -1 WoW at 529 rigs on July 28, US gas rigs -3 WoW at 128 rigs

US oil rigs down WoW

Baker Hughes released its weekly North American drilling rig data on Friday. Total US oil rigs were down -1 rigs WoW to 529 total rigs, and -76 rigs YoY for the week of July 28. This is up +48 rigs from the 2022 low of 481 rigs in January, and +357 rigs since the 2020 low of 172 rigs on Aug 14. The decline this week is fitting to what we are seeing in the Q2 earnings calls from service companies who are expecting the trough in US rigs to come in Q3. It is important to note the strengthening in oil prices in the last week or two is expected to lead to a rebound in rigs. The Permian increased +1 rig WoW to 324 total rigs. The Eagle Ford, Barnett, and the Williston decreased this week by -2, -1 and -1 rigs WoW to a total of 55 rigs, 0 rigs, and 34 rigs, respectively. This Permian is now down -33 rigs from it's recent high of 357 rigs on April 28, 2023. Two weeks ago was the first time since April 1, 2022 the Permian had dipped under 330 rigs, and it continues to remain under that threshold. Gas rigs were down -3 rigs WoW to total of 128 rigs and have now decreased -29 rigs YoY. On a per basin basis, there were no increases in gas rigs WoW. In contrast, Marcellus and Utica both decreased by -1 rig WoW to a total of 33 rigs and 12 rigs, respectively. Below is our graph of total US oil rigs.

Figure 13: Baker Hughes Total US Oil Rigs

Source: Baker Hughes, SAF

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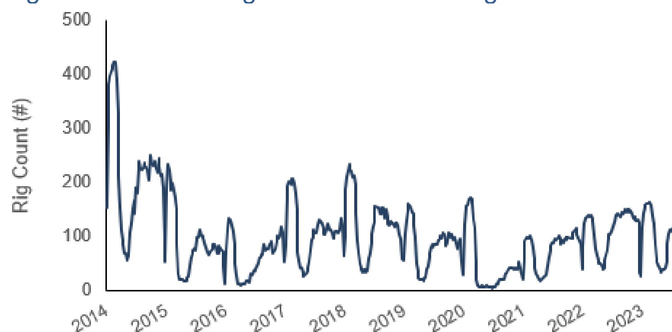
Oil: Total Cdn rigs up +6 rigs WoW to 193 total rigs

Cdn total rigs flat WoW

For the week of July 28, total Cdn rigs were up +6 rigs WoW at 193 rigs. This continues to be in-line with the typical post breakup trend. Wildfires don't seem to be having a big impact on Cdn rigs this week. And we saw rig increases of Alberta and BC both +2 this week even with higher number of wildfires. Cdn oil rigs were up +5 WoW to 121 rigs, and Cdn gas rigs increased +1 to 72 rigs. Cdn oil rigs are down -16 rigs YoY, while gas rigs are up +5 rigs YoY. Below is our graph of total Cdn oil rigs.

Figure 14: Baker Hughes Total US Oil Rigs



Source: Baker Hughes, SAF

Oil: US weekly oil production estimates down -0.100 mmb/d WoW to 12.2 mmb/d

US oil production down WoW

We don't make too much of a +/- change of 0.1 mmb/d to the weekly EIA oil production estimates, which was the case this week. EIA estimates US oil production was down -0.100 mmb/d WoW to 12.2 mmb/d for the week ended July 21 [LINK]. This below the post Covid high level of 12.4 mmb/d, which was reached three times in June. We have been highlighting how the EIA monthly "actuals" have been well above 12.4 mmb/d in Jan, Feb, March, and April so we have been expecting to see the weekly estimates remain at or above 12.4 mmb/d. The Lower 48 was also down -0.100 mmb/d WoW to 11.8 mmb/d, and Alaska was up +0.001 mmb/d to 0.407 mmb/d. Below is a table of the EIA's weekly oil production estimates.

Figure 15: EIA's Estimated Weekly US Field Oil Production

	Week 1		Week 2		Week 3		Week 4		Week 5	
Year-Month	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
2022-Jan	01/07	11,700	01/14	11,700	01/21	11,600	01/28	11,500		
2022-Feb	02/04	11,600	02/11	11,600	02/18	11,600	02/25	11,600		
2022-Mar	03/04	11,600	03/11	11,600	03/18	11,600	03/25	11,700		
2022-Apr	04/01	11,800	04/08	11,800	04/15	11,900	04/22	11,900	04/29	11,900
2022-May	05/06	11,800	05/13	11,900	05/20	11,900	05/27	11,900		
2022-Jun	06/03	11,900	06/10	12,000	06/17	12,000	06/24	12,100		
2022-Jul	07/01	12,100	07/08	12,000	07/15	11,900	07/22	12,100	07/29	12,100
2022-Aug	08/05	12,200	08/12	12,100	08/19	12,000	08/26	12,100		
2022-Sep	09/02	12,100	09/09	12,100	09/16	12,100	09/23	12,000	09/30	12,000
2022-Oct	10/07	11,900	10/14	12,000	10/21	12,000	10/28	11,900		
2022-Nov	11/04	12,100	11/11	12,100	11/18	12,100	11/25	12,100		
2022-Dec	12/02	12,200	12/09	12,100	12/16	12,100	12/23	12,000	12/30	12,100
2023-Jan	01/06	12,200	01/13	12,200	01/20	12,200	01/27	12,200		
2023-Feb	02/03	12,300	02/10	12,300	02/17	12,300	02/24	12,300		
2023-Mar	03/03	12,200	03/10	12,200	03/17	12,300	03/24	12,200	03/31	12,200
2023-Apr	04/07	12,300	04/14	12,300	04/21	12,200	04/28	12,300		
2023-May	05/05	12,300	05/12	12,200	05/19	12,300	05/26	12,200		
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				

Source: EIA

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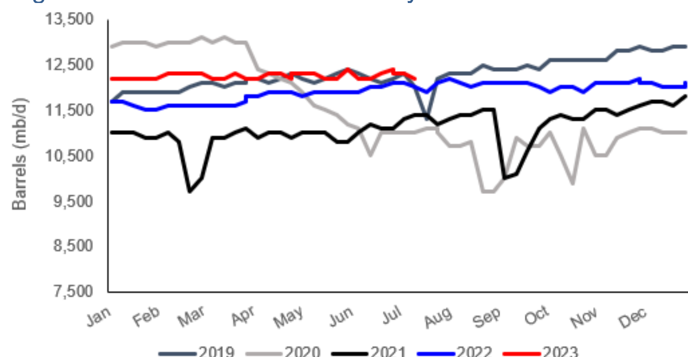
Figure 16: EIA's Estimated Weekly US Oil Production



Source: EIA, SAF

EIA Form 914: US Apr actuals 12.615 mmb/d, +398,000 b/d vs weekly estimates

In our July 2, 2023 Energy Tidbits memo we wrote *"As a reminder, the EIA's actuals for US oil production continue to be well above their weekly estimates. This the large difference between what the EIA looks at as "actuals" for US oil production vs the EIA's weekly estimates noted above. The actuals continue to be significantly higher than the weekly estimates. On Friday, the EIA released its Form 914 data [LINK], which is the EIA's "actuals" for April US oil and natural gas production. The Form 914 actuals for April have production at 12.615 mmb/d, which is +398,000 b/d vs the EIA weekly estimates of 12.217 mmb/d. And because of this significant difference, the Form 914 April production is +947,000 b/d YoY, just shy of 1 mmb/d YoY. The actuals paint a picture of much stronger than expected US oil production."*

Figure 17: 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	12,717	12,615								
2022	11,369	11,316	11,701	11,668	11,629	11,797	11,844	12,002	12,337	12,417	12,379	12,149
2021	11,124	9,925	11,326	11,305	11,356	11,356	11,347	11,277	10,918	11,569	11,790	11,634
2020	12,852	12,842	12,797	11,914	9,713	10,442	11,006	10,577	10,921	10,457	11,196	11,168
2019	11,869	11,673	11,913	12,149	12,154	12,218	11,902	12,486	12,590	12,809	13,000	12,978
2018	10,001	10,281	10,467	10,500	10,435	10,641	10,897	11,392	11,443	11,509	11,886	11,945
2017	8,875	9,110	9,166	9,101	9,185	9,111	9,247	9,250	9,517	9,669	10,085	9,983

Source: EIA

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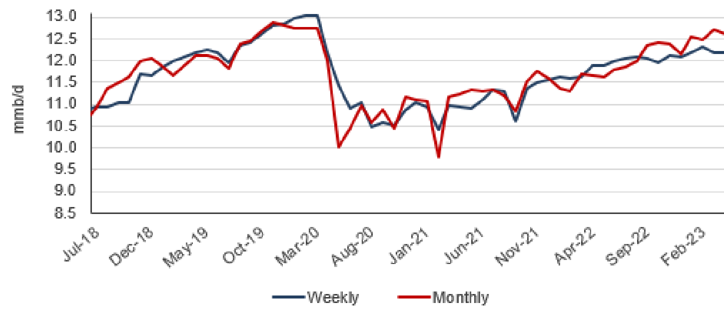
Figure 18: EIA Form 914 US Oil Production vs Weekly Estimates



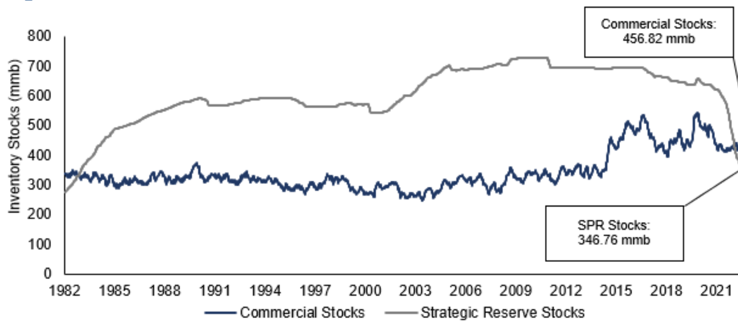
Source: EIA

Oil: US SPR reserves now -110.061 mmb lower than commercial crude oil reserves

US SPR 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 draw in commercial oil stocks of -0.60 mmb. The EIA's weekly oil data for July 21 [LINK] saw the SPR reserves flat WoW at 346.759 mmb, while commercial crude oil reserves decreased -0.600 mmb 456.820 mmb. There is now a -110.061 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles.

Figure 19: US Oil Inventories: Commercial & SPR



Source: EIA, SAF

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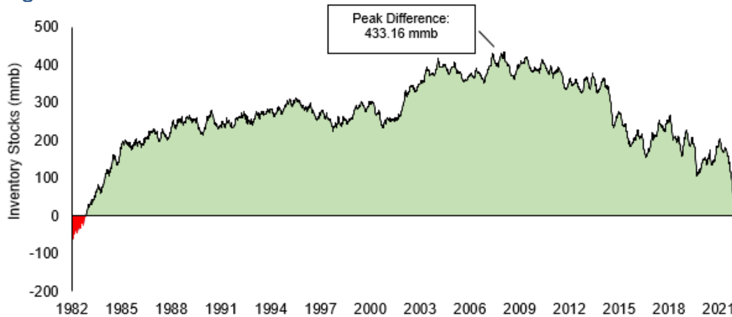
Figure 20: US Oil Inventories: SPR Less Commercial



Source: EIA, SAF

Oil: Cdn oil differentials widened +$1.40 to close at $15.40 on July 28

WCS less WTI differentials

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 and August. This has led to continued much narrower than normal WCS less WTI differentials for this time of year. WCS less WTI differentials widened by $1.40 to close at $15.40 on July 28. Even still 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 13.75 on May 26, narrowed in June to $11.25 on June 30, were $12.00 on July 14, widened last week to close at $14.00 on July 21 and a further 1.40 this week to close at $15.40 on July 28. 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 $21,00 on July 28, 2022. Below is Bloomberg's current WCS–WTI differential as of July 28, 2023 close.

Figure 21: WCS less WTI oil differentials including July 28 close

Source: Bloomberg

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Oil: Crack spreads at $41.47 so no reason for refiners to stop buying crude

Crack spreads up this week

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 increased by $3.12 to close at $41.47 on July 28. Over $40 is a very high crack spread and more than double the more normal range pre-Covid that was more like $15-$20. A $41.47 crack spread is a very big incentive for US refiners to run hard and process as much crude as possible.

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 22: Cushing Crude Oil 321 Crack Spread July 28, 2013-to July 28, 2023

Source: Bloomberg

Oil: Cdn crude by rail exports at 78,747 b/d in May, down -54.5% YoY

Cdn crude by rail down YoY in May

The Canadian Energy Regulator (successor to NEB) reported Canadian crude by rail exports were down -1,865 b/d MoM to 78,747 b/d in May vs the 80,612 b/d in April [LINK]. This puts export volumes at -94,375 b/d YoY (-54.5%) vs May 2022 of 173,122 b/d. CBR volumes are +39,880 b/d since the Covid low of 38,867 b/d in July 2020. The CER doesn’t provide any explanation for the MoM changes but there haven’t been the same level of export pipeline constraints as in prior years and it was a heavy oil sands/bitumen maintenance period in Q2/23. Below is our graph of Cdn crude by rail exports compared to the WCS–WTI differential.

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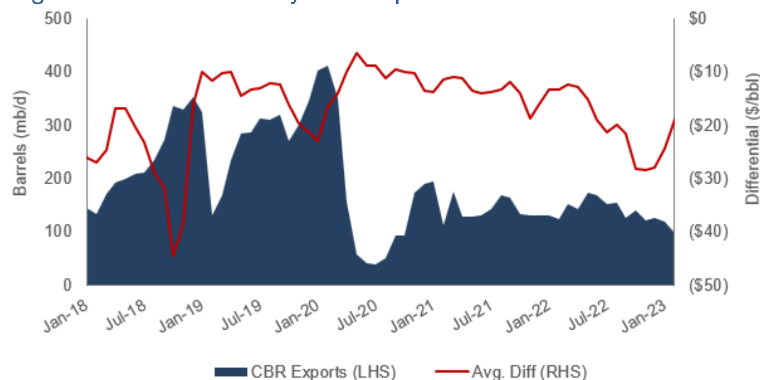
Figure 23: Cdn Crude By Rail Exports vs WCS Differential



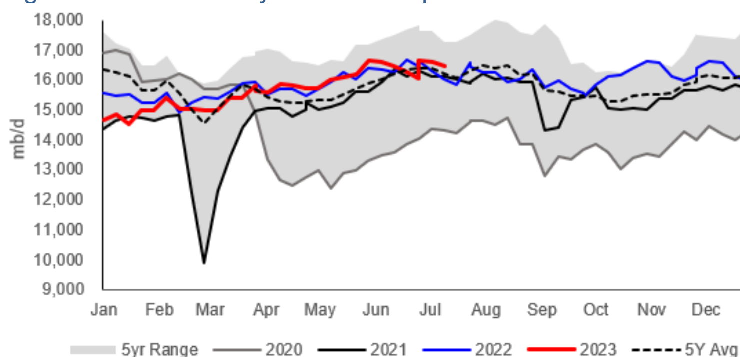
Source: Canadian Energy Regulator, Bloomberg

Oil: Refinery inputs down -0.107 mmb/d WoW to 16.478 mmb/d

Refinery inputs down -0.107 mmb/d WoW

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 21 [LINK]. The EIA reported crude inputs to refineries were down -0.107 mmb/d this week to 16.478 mmb/d and are up +0.451 mmb/d YoY. Refinery utilization was down -0.9% WoW to 93.4%, which is +1.2% YoY. Total products supplied (i.e., demand) increased WoW, up +0.509 mmb/d to 21.276 mmb/d, and Motor gasoline was up +0.084 mmb/d to 8.939 mmb/d from 8.855 mmb/d last week. The 4-week average for Motor Gasoline was down -0.920 mmb/d WoW to 9.037 mmb/d. The 4-week average of Total demand was up +0.243 mmb/d WoW to 20.495 mmb/d.

Figure 24: US Refinery Crude Oil Inputs



Source: EIA, SAF

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US net oil imports

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 its 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 in its monthly data but for reason not in these weekly estimates. (ii) US "NET" imports were down -1.584 mmb/d to 1.776 mmb/d for the July 21 week. US imports were down -0.807 mmb/d to 6.367 mmb/d. US exports were up +0.777 mmb/d to 4.591 mmb/d. The WoW increase in US oil imports was driven mostly by "Top 10". The Top 10 was down -0.620 mmb/d. Some items to note on the country data: (i) Canada was down -0.495 mmb/d to 3.203 mmb/d. (ii) Saudi Arabia was down -0.184 mmb/d to 0.242 mmb/d. (iii) Mexico was down -0.174 mmb/d to 0.830 mmb/d. (iv) Colombia was up +0.072 mmb/d to 0.287 mmb/d. (v) Iraq was up +0.014 mmb/d to 0.273 mmb/d. (vi) Ecuador was up +0.009 mmb/d to 0.216 mmb/d. (vii) Nigeria was up +0.138 mmb/d to 0.229 mmb/d.

Figure 25: US Weekly Preliminary Imports by Major Country

Canada	3,592	3,707	3,589	3,504	3,339	3,570	3,776	3,611	3,385	3,698	3,203	-495
Saudi Arabia	415	212	534	66	677	146	460	313	444	426	242	-184
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	676	657	913	647	845	808	758	882	526	1,004	830	-174
Colombia	339	214	286	127	184	148	222	287	153	215	287	72
Iraq	174	136	114	430	252	102	216	122	134	259	273	14
Ecuador	101	71	214	218	54	203	67	157	144	207	216	9
Nigeria	329	77	98	144	132	204	96	192	189	91	229	138
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	5,626	5,074	5,748	5,136	5,483	5,181	5,595	5,564	4,975	5,900	5,280	-620
Others	1,234	776	1,469	1,264	898	980	985	1,474	905	1,274	1,087	-187
Total US	6,860	5,850	7,217	6,400	6,381	6,161	6,580	7,038	5,880	7,174	6,367	-807

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*

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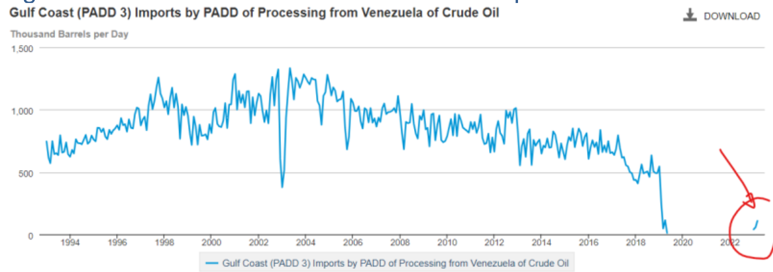
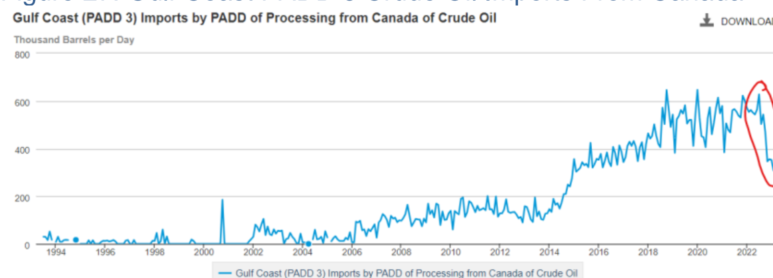
(Gulf Coast) because there was a need with declining Mexico and Venezuela crude oil. Conversely, if Venezuela increases, it will mean more Venezuela crude to the Gulf Coast and less need/increased pressure on Cdn differentials. It's hard to see form the graph but we pointed to the first Venezuela oil imports into the Gulf Coast in about 3 ½ years were 40,000 b/d in Jan and 58,000 b/d in Feb, and this will be higher in March."

Figure 26: Gulf Coast PADD 3 Crude Oil Imports From Venezuela



Source: EIA, SAF

Figure 27: Gulf Coast PADD 3 Crude Oil Imports From Canada



Source: EIA, SAF

Oil: Mexico oil production including partner volumes slightly above 1.6 mmb/d

Pemex June oil production

On Friday, Pemex reported its Q2/23 results, which included its data for June oil production. [LINK]. Pemex's June oil production, including partners, was 1.609 mmb/d, which was -5.5% YoY and flat MoM. Pemex production, excluding partners, was 1.586 mmb/d, which was -5.7% YoY from 1.682 mmb/d in June 2022, and flat MoM vs 1.591 mmb/d in May 2023. The story remains the same – Mexico (Pemex) oil production is stuck around 1.6 mmb/d. Pemex has been unable to grow Mexico oil production, which means that any increase in Pemex Mexico refineries will result in less Mexico oil for export including to the US Gulf Coast. And it also means that if Mexico has refinery issues in a month, there will be more Mexico oil for export in a month. Below is our table tracking Pemex oil production.

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Figure 28: Pemex (Incl Partners) Mexico Oil Production

Oil Production (thousand b/d	2016	2017	2018	2019	2020	2021	2022	2023	23/22
Jan	2,259	2,020	1,909	1,623	1,724	1,651	1,705	1,584	-7.1%
Feb	2,214	2,016	1,876	1,701	1,729	1,669	1,684	1,582	-6.1%
Mar	2,217	2,018	1,846	1,691	1,745	1,697	1,696	1,597	-5.8%
Apr	2,177	2,012	1,868	1,675	1,703	1,693	1,686	1,608	-4.6%
May	2,174	2,020	1,850	1,663	1,633	1,688	1,690	1,611	-4.7%
June	2,178	2,008	1,828	1,671	1,605	1,698	1,702		
July	2,157	1,986	1,823	1,671	1,595	1,701	1,707		
Aug	2,144	1,930	1,798	1,683	1,632	1,657	1,691		
Sept	2,113	1,730	1,808	1,705	1,643	1,709	1,685		
Oct	2,103	1,902	1,747	1,655	1,627	1,692	1,698		
Nov	2,072	1,867	1,697	1,696	1,633	1,691	1,706		
Dec	2,035	1,873	1,710	1,706	1,650	1,694	1,576		

Source: Pemex

Oil: Mexico exports 1.203 mmb/d of oil in June, +16.9% YoY and +10.7% MoM

Pemex June oil exports

Pemex continues to be hit by items impacting crude oil input into refineries that freed up more oil for export. Please note that we continue to expect Mexico oil exports to decline in H2/23 as they start up their new 340,000 b/d Olmeca (formerly known as Dos Bocas) refinery. On Friday, Pemex reported its Q2/23 results, which included its June data for oil exports. [LINK]. In June, Pemex exported 1.203 mmb/d of oil, which was +16.9% YoY vs 1.029 mmb/d in June 2022, and +10.7% MoM from 1.087 mmb/d in May 2023. This is the highest level of oil exports since Jan 2020 and was likely due to the offshore fires that would have disrupted crude oil flows to refineries and pushed some of that oil to export markets.. Below is our table of the Pemex oil export data.

Figure 29: Pemex Mexico Oil Exports

Oil Exports (thousand b/d)	2016	2017	2018	2019	2020	2021	2022	2023	23/22
Jan	1,119	1,085	1,107	1,071	1,260	979	832	980	17.8%
Feb	1,241	1,217	1,451	1,475	1,093	1,006	925	949	2.6%
Mar	1,062	1,001	1,176	1,150	1,144	925	905	971	7.3%
Apr	1,081	1,017	1,266	1,023	1,179	923	1,024	989	-3.4%
May	1,204	958	1,222	1,205	1,062	1,031	965	1,087	12.6%
June	1,098	1,157	1,110	995	1,114	1,106	1,029	1,203	16.9%
July	1,146	1,255	1,156	1,079	1,051	1,173	1,062		
Aug	1,261	1,114	1,181	1,082	1,190	1,099	915		
Sept	1,425	1,159	1,206	995	1,023	983	1,022		
Oct	1,312	1,342	1,027	963	908	935	971		
Nov	1,273	1,388	1,135	1,114	1,171	1,025	893		
Dec	1,115	1,401	1,198	1,115	1,243	1,037	900		

Source: Pemex

Oil: OPEC+ JMMC is on Aug 4

OPEC+ JMMC is Aug 4

It's been pretty quiet on the OPEC front ahead of the OPEC+ Joint Ministerial Monitoring Committee meeting on Friday Aug 4. We haven't heard any reports that the meeting would change to an in-person meeting or that there will be any change to the existing production quotas that run thru December 2024.

Oil: IS OPEC suggesting a global oil decline rate of only 2-3% per year?

Questions on OPEC's forecast

The most important fundamental that drives any view for strong oil prices for the 2020s is the global decline rate, which is the amount of oil produced every year and must be replaced by new production just to keep production flat. Every basin has a different decline rate, but this is an overall blended decline rate for the world including high decline US oil production of ~12 mmb/d. We have consistently referred to global decline rates used by Exxon around 7% but

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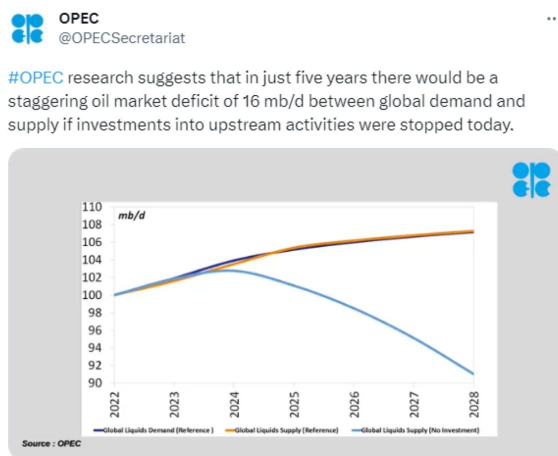
also ones lower like BP but we expect most would at least assume a 5% global oil decline rate. If so, then if the world stops investment in oil, the world's production base of approx. 100 mmb/d would be 95 mmb/d in a year. That's down 5 mmb/d in one year. (i) On Monday, OPEC Secretariat tweeted the below graph and said [LINK] that had the below graph and said *"#OPEC research suggests that in just five years there would be a staggering oil market deficit of 16 mb/d between global demand and supply if investments into upstream activities were stopped today.*" (ii) OPEC watchers and oil commentators focused on the conclusion that the there was a 16 mmb/d supply deficit. (iii) We had a different concern and one that was broader and has even bigger implications for the long term oil call. And as usual on any forecast, we get back to what were their assumptions. We tweeted [LINK] "*WOW! Is #OPEC suggesting that global #Oil supply would only decline by 2%-3% per year over the next five years if "investments into upstream activities were stopped TODAY? Seems impossible to believe. Surely there is a clarification coming? #OOTT."* (iii) Something looked off. OPEC says if investment in upstream were stopped TODAY. If that is what they meant, then this would reflect a true decline rate in oil production and OPEC's graph only shows it going down by ~11 mmb/d in five years, which would be a global oil decline of call it just over 2%. If so, that is hugely less than what most assume. Does anyone believe OPEC sees the global oil decline rate at >2% including themselves? If OPEC truly means >2% decline than the challenge to replace oil production hugely less than expected. (iv) But what makes sense is if OPEC means that new investment/new exploration doesn't happen and ongoing development is completed. Surely they can't assume that Guyana doesn't get developed. And perhaps also they mean new investment outside of OPEC stops. If these are two factor embedded in the graph then it probably puts the non-OPEC world, apart from existing developments, decline back to more normal levels. And it still makes the point – the world needs new investment to supply demand. (v) We didn't see any others concern on this question. But we have to hope that OPEC didn't mean to infer there is only a >2% global oil decline rate. We still think there are huge questions if anyone takes the OPEC words and graph at face value.

Figure 30: OPEC forecast potential supply deficit



Source: OPEC Secretariat

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Oil: Will Saudi extend its voluntary 1 mmb/d cuts past August?

Saudi voluntary 1 mmb/d cut

As of our 7am MT news cut off, we have not seen any confirmation if Saudi Arabia will or will not continue its one-month voluntary 1 mmb/d cut in July and August for another month or longer. We expect that we should hear a decision this week. It's been pretty silent, even from the OPEC watchers, on if they will extend or not. But if we had to bet, we would expect to see Saudi Arabia extend for another month. Part of the reason is that we think Saudi Arabia doesn't expect any public pushback from the US like they saw last fall when OPEC cut production.

Oil: Expect Biden to try to repair not antagonize relations with Saudi Arabia and MBS

Biden and Saudi Arabia

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 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.

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 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*

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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 onside 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: Will Erdogan's Iraq meeting lead to a restart of Kurdistan/Iraq oil via Turkey

Erdogan in Iraq this week

We have to believe markets should be prepared for the potential of a deal to restart Kurdistan oil via Turkey. Turkey President Erdogan is reportedly going to Iraq and we can't see him going to Iraq simply for a visit that doesn't result in some sort of announcements. President's typically don't just go places for a visit without some announcements for deals. On Thursday, the Iraqi News Agency reported that, following a meeting between Iraq PM Al-Sudani and Turkey's Ambassador to Iraq, Konae, Turkey President Erdogan was making a visit to Iraq for meetings that is expected to lead to a number of bilateral agreements. The INA report [LINK]. (i) The regional reporting all noted that Erdogan was going to Iraq to resolve the major outstanding issues. Mehr News Agency (Iran news) reported [LINK] "*The source, who wished to remain anonymous, told local Iraqi media Shafaq news agency that Erdogan, in his first visit to Iraq in many years, is set to hold meeting with high-ranking Iraqi officials and other officials. "Erdogan's visit to Baghdad aims to thrash out three pivotal matters with al-Sudani," the insider said. The subjects under discussion are believed to include combatting the PKK, the water row, and the resumption of oil exports from Iraq's Kurdistan Region through Turkey's Ceyhan port."* (ii) On Friday, we tweeted [LINK] *"Likely news on Kurdistan/Iraq #Oil resuming exports via Turkey next week. Surely #Erdogan wouldn't be going to Iraq unless there is some sort of package of economic items to announce including resumption of oil exports? #OOTT."* It sounds like Erdogan is going to resolve multiple issues including the resumption of Kurdistan oil via Turkey. If he is going, we have to believe the stage has been set for him to make announcements on resolved 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.

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*

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

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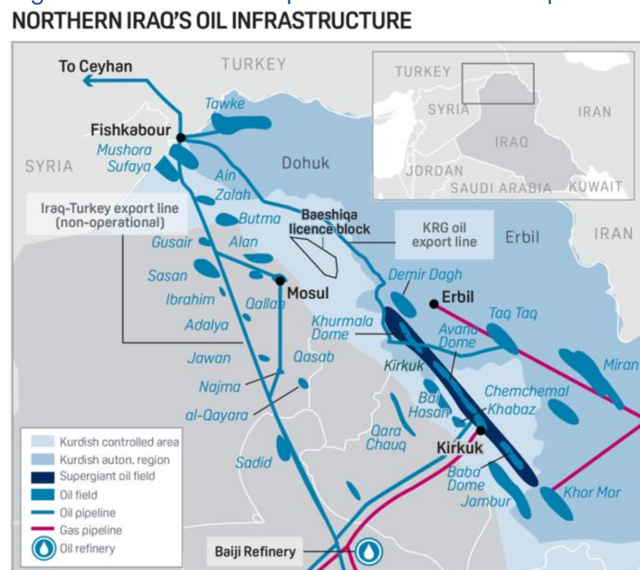
Figure 31: Northern Iraq's oi infrastructure map from 2020



Source: S&P Global Platts, PolGeoNow

Source: Platts

Oil: 1st Libya production update post Libya's El Feel and Sharara oil fields restart

El Feel Sharara oil fields restarted two weeks ago

We were a little surprised that we didn't see any Libya National Oil Corporation production last week as the they had restarted the Sharara and El Feel oilfields the prior week. We hve to wonder if the restart had some minor glitches because we have to believe they would have been out there right away if production was right back to normal. But, on Thursday, we saw the first NOC production update since the restart two weeks ago and, no surprise, the NOC reported production right in line with where it was prior to the Sharara and El Feel shutdown by protests. The NOC tweeted [LINK] "*Crude oil production reached 1.2 million barrels per day, and condensate production reached 49 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.

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 two 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 32: Libya oil production Starting July 1, 2010

Source: Bloomberg, OPEC

Oil: 5th consecutive WoW increase in China scheduled domestic flights

China scheduled domestic flights

On Monday, we tweeted [LINK] *"#Oil Positive China Scheduled domestic flights +1.3% WoW to 104,011 flights. 5th consecutive WoW increase. Chinese consumer didn't get Covid bonus money from govt like in West so spending their own savings/money in summer travel. Thx @BloombergNEF Claudio Lubis. #OOTT #JetFuel."* (i) BloombergNEF posted its Aviation Indicators Weekly on July 25 but it was released on July 24 in the evening MT when we saw it. (ii) Another week of a positive indicator for the Chinese consumer from China's scheduled domestic flights for the July 18-24 week, which were +1.3% WoW to 104,011 flights. Besides topping >100,000 b/d for the 2nd consecutive week post Covid crash, it was the 5th consecutive WoW increase. Recall domestic scheduled flights increased +3.4% WoW to 95,724 flights for June 20-26 week as expected for the 3-day national holiday Dragon Boat Festival on June 22/23/24. But, different than what happened after the 5-day May Day holiday, flights didn't drop right back down after Dragon Boat Festival. Rather, scheduled domestic flights were +1.9% WoW to 97,572 flights for June 27-July 3 week, then +2.4% WoW to 99,804 flights, then +2.8% WoW to 102,709 flights, and now this week +1.3% WoW to 104,011 flights. This is a positive. Domestic scheduled flights are still a long way to go to what was expected at the end of March but, five consecutive WoW increases seem to point to a steady trend happening, which would be an indication that that Chinese consumer is at least prepared to spend for domestic air travel this summer. Recall the Chinese consumer didn't get the big Covid bonuses from government that western consumers received, so this is them spending their money and savings. (iii) China scheduled domestic flights +1.3% WoW to 104,011 flights for July 18-24 week, vs 102,709 flights for July 11-17 week, vs 99,904 flights for Jul 4-10 week, 97,572 flights for June 27-July 3 week, and 95,724 flights for June 20-26 week. This is the 2nd consecutive week that scheduled domestic flights are over 100,000 since the Covid crash. Domestic flights are now up for the 5th consecutive week and didn't have a dip back down after the recent 3-day national holiday Dragon Boat Festiva on June 22/23/24. It looks like it there is a steady increase in motion. (iv) We don't have the data before Jan 5, 2022 but we assume the last two weeks being over 100,000 scheduled domestic flights have been over 100,000 since the Covid crash. Three weeks ago, we checked back on Bloomberg and it looks like the first Aviation Indicators Weekly report was Jan 5, 2022, but they didn't have separate China graph until months later. (v) So positive as there have been four consecutive up weeks following the Dragon Boat Festival up week. But still less than what was expected 4 months ago. Scheduled flights for July 18-24 week of

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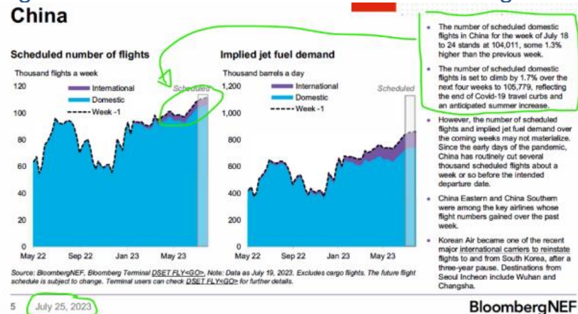
104,011 flights is still -12.7% vs what was scheduled on March 28 for the then next 4-weeks (ie. April) of 119,180 flights. But flights are at post Covid highs and well above the prior high of 97,087 flights for the May Day Holiday travel. (vi) Today's number of scheduled domestic flights for the next four weeks is set to increase by 1.7% "over" the next four weeks to reach 105,779 flights. Despite the scheduled domestic flights being up 11,443 flights over the past five up weeks, the lookahead is only slightly more than the last five weekly reports that had their respective 4-week lookahead flights 105,779 flights, 105,802 flights, 104,972 flights, 104,691 flights and 104,501 flights. This weeks 4-week lookahead of 105,779 flights is also still -11.2% 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. Our tweet included the BloombergNEF charts from July 25 and March 28, and our listing of WoW changes from the prior BloombergNEF reports.

Figure 33: China scheduled domestic flights from BNEF Aviation Indicators Weekly reports

July 18-24: +1.3% WoW to 104,011 flights
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 34: China scheduled domestic air flights as of July 25



Source: BloombergNEF

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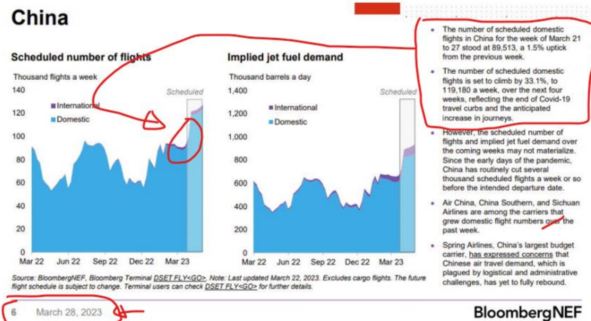
Figure 35: China scheduled domestic air flights as of March 28



Source: BloombergNEF

China city-level traffic congestion

Oil: Baidu China city-level road congestion impacted by summer holidays

The Baidu China city-level road congestion was down again WoW, but we think it is likely due to the start of the main summer holidays. (i) On Thursday, we tweeted [LINK] *"China Baidu city-level road congestion -8.3% WoW to 116% of Jan/2021 levels. BUT less city congestion from July start of summer holidays ie. 👇 07/24 tweet 5th consecutive WoW increase in domestic flights. Top 15 cities congestion July/ 2023 are up YoY to 115% of July/2021 levels. 12 of top 15 cities congestion up YoY. Thx @BloombergNEF #OOTT."* (ii) BloombergNEF posted its Global Road Traffic Indicators July 27 report, which includes the China Baidu city-level road congestion data for week ended July 26. (iii) BNEF's headline was "*China traffic levels continue their downward trend amid summer season*." (iv) For the week ended July 26, 2023, Baidu data for China city-level road congestion was -8.3% WoW to 116% of Jan 2021 levels. But we don't think it 's a negative because the July WoW decline is expected and we are seeing other indicators (the scheduled domestic flights are up WoW and people are flying domestically for summer holidays ie. why it makes sense there is less city-level congestion in July. And as noted previously in the memo, we see continued WoW increases in scheduled domestic air flights that saw the 5th consecutive week of WoW increases. So a seasonal decline is expected, but there is a continued modest positive reflecting a continued recovery in China given the city-level traffic congestion is up YoY and also up vs 2021. The top 15 cities July 2023 congestion to date are 112% of July 2021, whereas July 2022 was only 97% of July 2021. (v) BloombergNEF provided its specific by city numbers for July. For the top 15 cities in aggregate, July 2023 so far are 112% of July 2021 levels, whereas July 2022 was 97% of July 2021 levels. Of the top 15 cities, 12 are up YoY and only 3 are down YoY. Our tweet included the below graph and table from the BloombergNEF Global Road Traffic Indicators July 27 weekly report.

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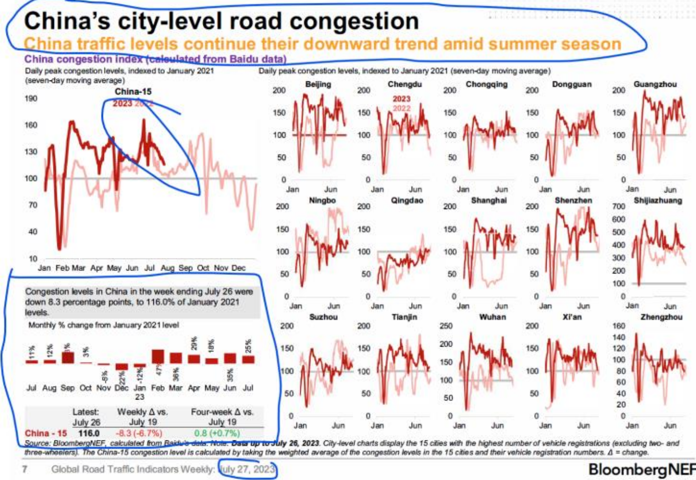
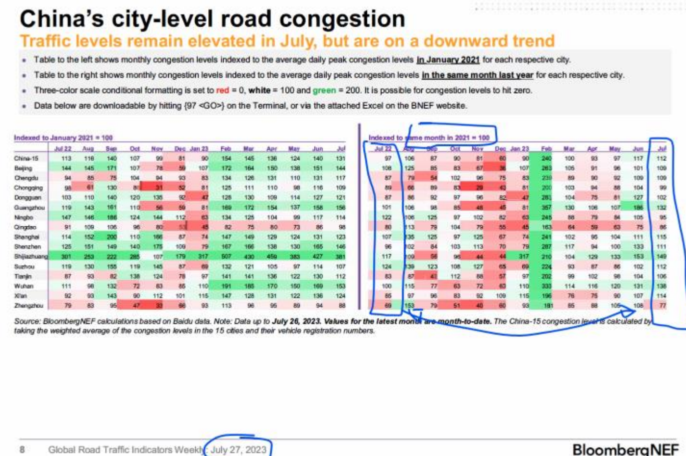
Figure 36: China city-level road congestion for the week ended July 26



Source: BloombergNEF

Figure 37: China city-level road congestion for the week ended July 26.



China's city-level road congestion

Traffic levels remain elevated in July, but are on a downward trend

- Table to the left shows monthly congestion levels indexed to the average daily peak congestion levels **in January 2021** for each respective city.
- Table to the right shows monthly congestion levels indexed to the average daily peak congestion levels **in the same month last year** for each respective city.
- Three-color scale conditional formatting is set to red = 0, **white** = 100 and green = 200. It is possible for congestion levels to hit zero.
- Data below are downloadable by hitting {97 <GO>} on the Terminal, or via the attached Excel on the BNEF website.

Indexed to January 2021 = 100

	Jul 22	Aug	Sep	Oct	Nov	Dec	Jan 23	Feb	Mar	Apr	May	Jun	Jul
China-15	113	116	140	107	99	81	90	154	145	136	124	140	131
Beijing	144	145	171	107	78	59	107	172	164	150	138	151	144
Chengdu	94	85	75	104	94	93	83	134	126	131	110	131	117
Chongqing	98	61	130	80	31	52	81	125	111	110	98	116	109
Dongguan	103	110	140	120	135	92	47	128	130	109	114	127	121
Guangzhou	119	143	161	110	56	59	81	169	172	154	137	158	156
Ningbo	147	146	186	124	144	112	63	134	125	104	99	117	114
Qingdao	91	109	106	96	80	53	45	82	75	80	73	86	98
Shanghai	114	152	200	110	166	87	74	147	149	129	124	131	123
Shenzhen	125	151	149	140	175	109	79	167	166	138	130	165	146
Shijiazhuang	301	253	222	285	107	179	317	507	430	459	383	427	381
Suzhou	119	130	155	119	145	87	69	132	121	105	97	114	107
Tianjin	87	93	82	138	124	78	97	141	141	136	122	130	112
Wuhan	111	98	132	72	83	85	110	191	185	170	150	169	153
Xi'an	92	93	143	90	112	101	115	147	128	131	122	136	124
Zhengzhou	79	83	95	47	33	66	93	113	96	95	89	94	88

Indexed to same month in 2021 = 100

	Jul 22	Aug	Sep	Oct	Nov	Dec	Jan 23	Feb	Mar	Apr	May	Jun	Jul
China-15	97	106	87	90	81	60	90	240	100	93	97	117	112
Beijing	108	125	85	83	67	36	107	263	105	91	96	101	109
Chengdu	87	79	54	102	96	75	83	239	89	90	92	109	109
Chongqing	89	66	89	83	29	43	81	200	103	94	88	104	99
Dongguan	87	86	92	97	96	82	47	281	104	75	81	127	102
Guangzhou	101	106	98	85	48	45	81	357	130	106	107	186	132
Ningbo	122	106	125	97	102	82	63	245	88	79	84	105	95
Qingdao	80	113	79	104	79	55	45	163	64	59	63	75	86
Shanghai	107	135	125	97	125	67	74	241	102	95	104	111	115
Shenzhen	96	102	84	103	113	70	79	287	117	94	100	133	111
Shijiazhuang	117	109	56	96	44	44	317	210	104	129	133	153	149
Suzhou	124	139	123	108	127	65	69	224	93	87	86	102	112
Tianjin	83	87	47	112	88	57	97	202	99	102	98	104	106
Wuhan	100	115	77	63	72	63	110	333	114	116	120	131	138
Xi'an	85	97	96	83	92	109	115	196	76	75	90	107	114
Zhengzhou	69	153	79	51	40	60	93	181	85	88	105	108	77

Source: BloombergNEF calculations based on Baidu data. Note: Data up to **July 26, 2023. Values for the latest month are month-to-date.** The China-15 congestion level is calculated by taking the weighted average of the congestion levels in the 15 cities and their vehicle registration numbers.

8 Global Road Traffic Indicators Weekly: July 27, 2023 BloombergNEF

Source: BloombergNEF

Oil: Return of Chinese consumer, at least the higher income consumers

LVMH and Prada on China

We recognize that luxury brands LVMH (Louis Vuitton) and Prada aren't great indicators for the Chinese consumer overall as opposed to increases in scheduled domestic flights. Rather we do like to look to see what these luxury brands indicate for their higher income Chinese consumers. And, as noted in the LVMH call, we also get an indicator on their Chinese consumers are travelling to places like Europe to shop. But the Q2 calls for LVMH and Prada this week gave support that the higher end Chinese consumer is coming back. Yesterday, we tweeted [LINK] *"Recovering China consumer, at least higher income consumers. #Prada Q2/23 also highlighted return of Chinese consumers, albeit from a low Q2/22. Note both*

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#LVMH and #Prada weakest region for YoY comps is US higher income consumer, who returned from Covid the quickest. #OOTT."

LVMH: Chinese spending more n China, but not travelling to spend

On Tuesday, we tweeted [LINK] "*Recovering China consumer spending within China, at least the higher income consumers. #LVMH H1 call today. But these Chinese customers still, to the most part, aren't travelling and spending abroad. #OOTT."* LVMH does not disclose China numbers separate from Asia excl Japan. But the Q2 call comments support the Chinese consumer is coming back and, interestingly, the Chinese consumer still isn't really travelling abroad to shop. Also the softer demand in the US. Mgmt said "T*his reflected softer demand in the US due to the inflationary economic environment and high inventory at distributors at the beginning of the year. This was offset in part by the recovery in China as COVID restrictions ease." "But all in all we are very satisfied with the level of business we do with the Chinese client base as it as it has been up compared to 2021, more than 40%." "The second factor, which is a bit more unusual is that if we look at the breakdown of our business where we got the highest growth, namely in China and in Japan is where we've seen the more currency pressure." "So the question is about Chinese nationals in Europe and Japan. In Europe, it's very small, It used to be a large, a big chunk of the business in in up to 2019, it's very, very small, I mean we have, we have no groups. We have only individual travelers and there are only a fraction of the total clients, we used to have in Europe. So it's very small and in Japan, it's about 50%. I'm talking Fashion and Leather obviously it's about 50% of the total business, which is pretty close to what we used to do in 2019. So the the rebalancing of the Japanese business".*

Prada: Double digit spending growth in China

Prada held its Q2 call on Thursday. Prada also doesn't split out China data from Asia Pacific. Similar to LVMH, their Q2/23 retail sales growth was driven by Japan +44% YoY, Asia Pacific +28% YoY, Europe +22% YoY, Middle East +12% YoY, and then Americas -6% YoY. On the Q2 call, mgmt. said Asia Pacific was "*thanks to the acceleration in mainland China, Hong Kong and Macau supported by the low basis of comparison of 2022*." But it seems like the mainland China growth isn't as great as Hong Kong and Macau. Prada seems to speak on China as mainland China. Growth looks to be double digit in mainland China. In the Q&A, mgmt. was asked about Q1 and Q2, and replied "*On a two-year stack, it's very consistent between the first quarter and the second quarter Chinese, but we're not going to quantify it just because we usually don't and we're not going to start now. I believe I said before it's in double digits."*

Oil: Vortexa crude oil floating storage at July 28 was 104.13 mmb, -3.57 mmb WoW

Vortexa floating storage

We are referencing the Vortexa crude oil floating storage data posted on the Bloomberg terminal as of 5am MT today and not our normal Saturday morning. We checked all Saturday and the updated July 28 data wasn't posted as of last night. 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 22 at 9am MT. (i) Floating oil storage continues to move higher and the last seven-week average is 115.57 mmb looks to be the

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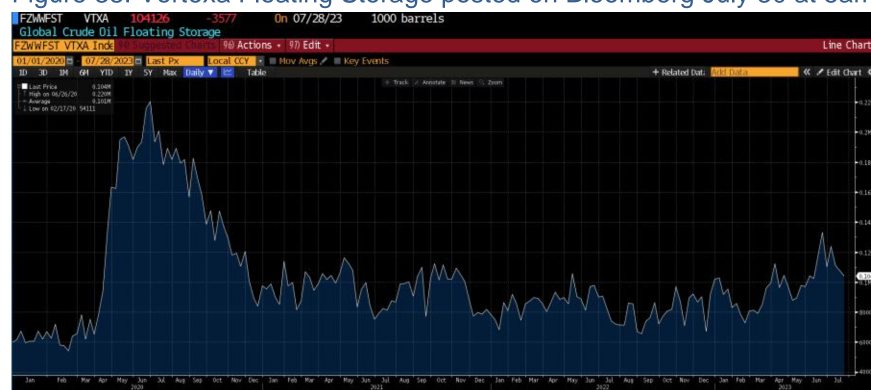
highest since the end of 2020. (ii) As of 5am MT today, Bloomberg posted Vortexa crude oil floating storage estimate for July 28 at 104.13 mmb, which is -3.57 mmb WoW vs upwardly revised July 21 of 107.70 mmb. Note July 21 of 107.70 mmb was revised +9.05 mmb vs 98.65 mmb originally posted on Bloomberg as of 9am MT on July 22. (iii) Almost all of the revisions over the past several weeks were upward revisions, but not as large as the +9.05 mmb for July 21. The revisions from the estimates posted today at 5am MT vs the estimates posted on Bloomberg at 9am MT on July 22 are as follows: July 21 revised +9.05 mmb. July 14 revised +4.65 mmb. July 7 revised +3.10 mmb. June 30 revised +1.78 mmb. June 23 revised +2.84 mmb. June 16 revised +2.78 mmb. June 9 revised -0.07 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 115.57 mmb vs last week's then seven-week average of 111.88 mmb. This looks to be the highest seven-week average since late 2020. (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 the Vortexa data for July 28 wasn't posted all of Saturday so we are using 5am MT posted data. (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) July 28 estimate of 104.13 mmb is -118.18 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (viii) July 28 estimate of 104.13 mmb is +38.52 mmb vs pre-Covid Feb 28, 2020 of 65.61 mmb. (ix) July 28 estimate of 104.13 mmb is +32.55 mmb YoY vs July 29, 2022 of 71.58 mmb. (x) Below are the last several weeks of estimates posted on Bloomberg as of 5am MT July 23, 9am MT July 22, and 9am MT July 15.

Figure 38: Vortexa Floating Storage posted on Bloomberg July 30 at 5am MT



Source: Bloomberg, Vortexa

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Figure 39: Vortexa Estimates Posted July 30 5am MT, July 22 9am MT, July 15 9am MT

Posted July 30, 5am MT

FZWWFST VTXA Inde 94) Su
01/01/2020 - 07/28/2023
1D 3D 1M 6M YTD 1Y

	Date	FZWWFST VT... Last Px
Fr	07/28/2023	104.126k
Fr	07/21/2023	107.703k
Fr	07/14/2023	111.066k
Fr	07/07/2023	123.918k
Fr	06/30/2023	110.308k
Fr	06/23/2023	133.236k
Fr	06/16/2023	118.616k
Fr	06/09/2023	102.426k
Fr	06/02/2023	104.266k
Fr	05/26/2023	96982
Fr	05/19/2023	97833

July 22, 9am MT

FZWWFST VTXA Inde 94) Suc
01/01/2020 - 07/21/2023
1D 3D 1M 6M YTD 1Y 5

	Date	FZWWFST VT... Last Px
Fr	07/21/2023	98651
Fr	07/14/2023	106.421k
Fr	07/07/2023	120.818k
Fr	06/30/2023	108.527k
Fr	06/23/2023	130.404k
Fr	06/16/2023	115.837k
Fr	06/09/2023	102.497k
Fr	06/02/2023	104.226k
Fr	05/26/2023	97254
Fr	05/19/2023	96551
Fr	05/12/2023	87834

July 15, 9am MT

FZWWFST VTXA Inde 94) Sug
01/01/2020 - 07/14/2023
1D 3D 1M 6M YTD 1Y 5

	Date	FZWWFST VT... Last Px
Fr	07/14/2023	91812
Fr	07/07/2023	120.116k
Fr	06/30/2023	108.96k
Fr	06/23/2023	131.36k
Fr	06/16/2023	117.121k
Fr	06/09/2023	103.513k
Fr	06/02/2023	104.661k
Fr	05/26/2023	96984
Fr	05/19/2023	97614
Fr	05/12/2023	88952
Fr	05/05/2023	87044

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

Vortexa floating storage by region

Bloomberg also posts the Vortexa crude oil floating storage in 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) As noted above, there was an upward revision to July 21 of +9.05 mmb. The major revisions were Other revised +3.53 mmb, and Asia revised +3.18 mmb. (ii) With the upward revision to July 21, the major WoW changes were Asia -8.81 mmb WoW, Europe +5.76 mmb WoW, and Middle East +3.13 mmb. Below is the table we created of the WoW changes by region posted on Bloomberg at of 5am MT today. Our table also includes the "Original Posted" regional data for July 21 that was posted on Bloomberg at 9am MT on July 22.

Figure 40: Vortexa crude oil floating by region

Vortexa Crude Oil Floating Storage by Region (mmb)				Original Posted	Recent Peak	
Region	July 28/23	July 21/23	WoW	July 21/23	June 23/23	July 28 vs June 23
Asia	45.77	54.58	-8.81	51.40	75.88	-30.11
Europe	12.84	7.08	5.76	7.96	6.35	6.49
Middle East	18.47	15.34	3.13	13.96	16.78	1.69
West Africa	14.71	15.73	-1.02	13.89	12.26	2.45
US Gulf Coast	0.79	0.79	0.00	0.79	1.21	-0.42
Other	11.55	14.18	-2.63	10.65	20.76	-9.21
Global Total	104.13	107.70	-3.57	98.65	133.24	-29.11
Vortexa crude oil floating storage posted on Bloomberg 5am MT on July 30						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

Oil: BNEF – global oil and product stocks surplus narrowed WoW to 59.2 mmb

Global oil and product stocks

Please note that the BloombergNEF global oil and products stocks estimate are for the week ending July 14, which is a week earlier than the EIA US oil inventory data that is for the week ending July 21. So the BloombergNEF global oil stocks data won't include the US crude oil inventory draw of 0.6 mmb for the week ending July 21. On Monday, BloombergNEF posted its "Oil Price Indicators" weekly, which provides good charts depicting near-term global oil

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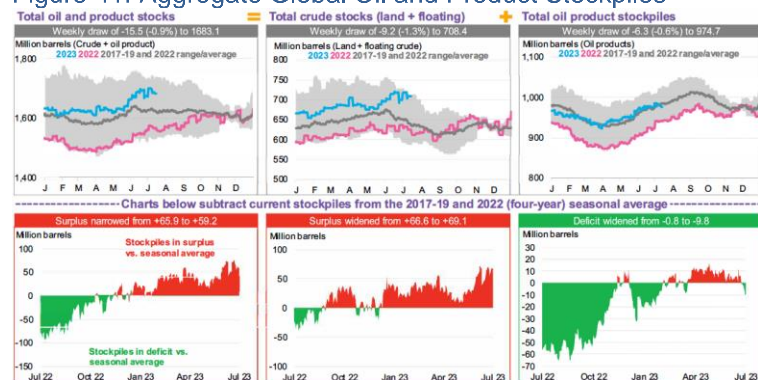
demand and supply indicators. The global stockpile for crude oil and products surplus narrowed from 65.9 mmb to 59.2 mmb for the week ending July 14. Land crude oil inventories increased by +3.9 mmb WoW to 599.0 mmb, flipping the deficit to a surplus of +6.6 mmb against the five-year average (2016-2019, 2022). Total crude inventories (incl. floating) decreased by -9.2 mmb WoW to 708.4 mmb, widening the surplus from +66.6 mmb to +69.1 mmb. Total product stocks were down by -6.3 mmb WoW to 974.7 mmb, widening the deficit from -0.8 to -9.8 mmb against the 4-year average (2017-2019,2022) for the July 14 week. The gas, oil, and middle distillate stocks decreased by -0.7 mmb WoW to 151.6 mmb/d, with the deficit against the four-year average widening to -18.8 mmb. Jet fuel consumption by international departures for the week of July 31 is set to increase by +4,200 b/d WoW, while consumption by domestic passenger departures is forecast to increase by +4,500 b/d WoW. Below is a snapshot of aggregate global stockpiles.

Figure 41: Aggregate Global Oil and Product Stockpiles



Source: BloombergNEF

Oil: Bloomberg Oil Demand Monitor "China Woes Cloud Outlook Despite Tightness"

Bloomberg oil demand monitor

We recommend reading the Bloomberg Terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. The recovery in Asia has slowed, with GDP growing at a slower rate than expected last quarter. Earlier this week, China's leaders had signalled for more support for the real-estate sector, paired with pledges to help boost consumption. But the pledges fell short from the previously announced large-scale stimulus. This has prompted economists to downgrade their projections moving forward in 2023. Output curbs from Saudi Arabia and other partners have concealed the true lack of demand recovery in China. Ed Morse from Citigroup commented "*The bulls got it all wrong; A real Chinese upsurge remains elusive, while Europe stutters and we still don't know if the US will have a hard*". India has also begun to show warning signs, with sales of road transport fuels falling in the first half of July, which was mostly blamed on the impacts of monsoons and flooding. Bloomberg wrote *"China's apparent oil demand rose 14% year-on-year in June, and gained 10% in the first six months, according to data compiled by Bloomberg. In its monthly oil market report for July, the Organization of Petroleum Exporting Countries saw the country's oil demand growing by 0.7 million barrels a day year-on-year in the third quarter, and 0.6 million in the fourth quarter, followed by about 0.6 million in the first quarter of next year. The Paris-based International Energy Agency sees China's oil demand growth averaging 1.6 million barrels a day this year, despite the country's economic headwinds, though slowing to*

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560,000 barrels a day in 2024". The recent increase in oil future prices reflects the expectation for the market to tighten in H2/23, where demand and constrained supply will have some effect. Estimates for global oil demand in 2023 continue to remain unchanged at the 102-103 mmb/d level. Commercial airline flights at the start of this week were ~24% higher YoY, and ~6.6% above 2019 levels (pre-Covid), according to a 7-day average tracked by Flightradar24. As of Monday morning, road congestion was not above pre-pandemic levels in any of the 13 major global cities tracked by TomTom mobility data, although China's traffic continuing to remain strong in major cities following the huge initial recovery seen after the country's zero-Covid policy was lifted. Refinery utilization as of July 7 was up +1.2% MoM to 93.4% and also up +1.2% YoY. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Oil: Asia Pacific Airlines June air traffic results show stalling air cargo volume

Asian Pacific air traffic in June

On Thursday, the Association of Asia Pacific Airlines released its April traffic results [LINK] which is comprised of aggregate data across a total of 40 Asia Pacific airline carriers. (ii) Air travel. International passenger air travel on the 40 airlines is up big YoY, but still well below 2019 levels. The AAPA reports preliminary June travel figures "*showed that the recovery in international passenger markets remains robust, as travel demand continued to grow despite inflationary pressures and the weakness in regional currencies. Asia Pacific airlines carried 23.2 million international passengers in the month of June, representing a 159.3% year-on-year increase compared to the same month last year".* (iii) Air cargo is stalling out, which is an indicator for the global economy. The AAPA wrote "*Meanwhile, global trade activity was muted with the ongoing declines in new export orders. The easing in container shipping rates relative to air freight rates further discouraged demand for air shipments. Against this background, air cargo demand, as measured in freight tonne kilometres (FTK), declined by 8.1% year-on-year in June. By comparison, offered capacity edged 0.7% higher, leading to a 5.9 percentage point fall in the average international freight load factor to 60.7% for the month."* Below is a snapshot of the APAA's traffic update.

Figure 42: APAA Preliminary International Air Traffic Data

International	Jun-23	Jun-22	% Change
Passengers (Thousand)	23,182	8,939	+ 159.3%
RPK (Million)	84,668	36,633	+ 131.1%
ASK (Million)	102,945	46,592	+ 120.9%
Passenger Load Factor	82.2%	78.6%	+ 3.6 pp
FTK (Million)	5,286	5,755	- 8.1%
FATK (Million)	8,704	8,647	+ 0.7%
Freight Load Factor	60.7%	66.6%	- 5.9 pp

Source: APAA

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

Global city road congestion

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 July 25, Asia Pacific (ex-China) city road congestion levels increase by +0.1% WoW, while Europe and North American city level congestion level

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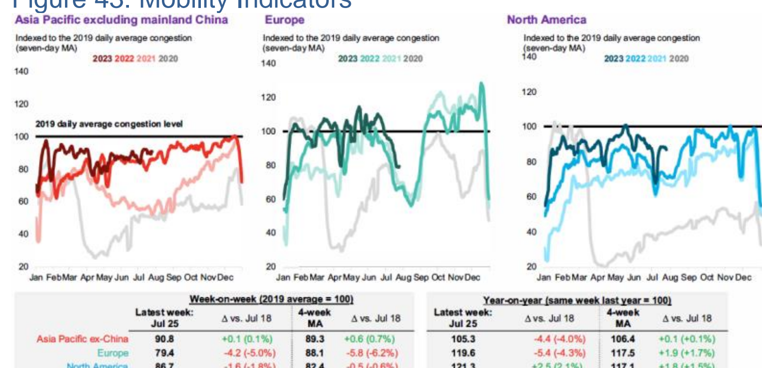
decreased -5.0% and -1.8% WoW, respectively. Note these are indicators of road congestion at the city level and tracks the major cities in each region. So, in theory, we would expect to see seasonal declines in July and Aug, before a return back up in Sept. City traffic levels in Europe, North America, and Asia Pacific (ex-China) traffic are -20.6%, -13.3% and -9.2% below the 2019 average and are +19.6%, +21.3% and +5.3%YoY, respectively. City traffic in Europe had steadily increased in June, but has significantly dropped off in July and continues to decrease. NA and Asia Pacific (ex-China) have been steadily increasing over the last few weeks, although Asia Pacific (ex-China) has begun to lose the positive momentum. 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.

Figure 43: Mobility Indicators



	Week-on-week (2019 average = 100)				Year-on-year (same week last year = 100)			
	Latest week: Jul 25	Δ vs. Jul 18	4-week MA	Δ vs. Jul 18	Latest week: Jul 25	Δ vs. Jul 18	4-week MA	Δ vs. Jul 18
Asia Pacific ex-China	90.8	+0.1 (0.1%)	89.3	+0.6 (0.7%)	105.3	-4.4 (-4.0%)	106.4	+0.1 (+0.1%)
Europe	79.4	-4.2 (-5.0%)	88.1	-5.8 (-6.2%)	119.6	-5.4 (-4.3%)	117.5	+1.9 (+1.7%)
North America	86.7	-1.6 (-1.8%)	82.4	-0.5 (-0.6%)	121.3	+2.5 (2.1%)	117.1	+1.8 (+1.5%)

Source: BloombergNEF's calculation based on TomTom data. Note: ***Data up to July 25, 2023.*** *Δ = change. MA = moving average.*

Source: BloombergNEF

Oil & Natural Gas: Service Co's point to stronger international oil & natural gas growth

Stronger long term oil and gas growth

Note that we just put the oil and gas service company comments that are linked to what we saw the biggest theme to emerge from their Q2 calls – they are seeing a broad based international capex recovery that points to higher than expected international oil and gas supply. The major oil and gas service companies don't necessarily come out and say there is going to be stronger than expected growth in international oil and natural gas but that seems to be where they are all pointing. They are speaking to their books and their books are all pointing to a multi-year growth in international oil and gas capex.

Core Labs: multi year international recovery in exploration & development

Core Labs reported Q2 on Wednesday night and held its call on Thursday morning and they had a pretty clear message on increased spending on exploration and development and across the globe. Hard not to take their clear comments as anything but pointing to stronger than expected international oil and gas supply growth. On Wednesday night, we tweeted [LINK] "*#CoreLabs Q2 "multi-yr international recovery .... increased spending on exploration .... across the globe & expanded development of existing fields ....continued improvement in international onshore & offshore activity, with on-going projects across the globe" Better than expected international #Oil #NatGas supply in 2020s?? #OOTT.*" Core Labs said

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"*Based on conversations with the Company's global client base, Core Lab maintains its constructive outlook on international upstream activity for the second half of 2023 and beyond, as a higher level of investment will be required to maintain and grow hydrocarbon production. The Company anticipates spending on long-cycle upstream projects in both onshore and offshore environments will continue to expand. In the near-term, the global crude-oil market may remain volatile due to global recession fears and uncertainty about the extent and timing of China's economic recovery. The recent OPEC+ crude-oil production cuts being implemented to support the current market are not expected to be maintained or required long-term. Additionally, production growth in areas outside of OPEC+ continue to face constraints due to prolonged underinvestment, as well as the loss of production due to natural declines from existing fields. Core continues to anticipate a multi-year international recovery supported by increased spending on exploration in many regions across the globe and expanded development of existing fields to fortify crude-oil and natural gas reserves. This underlies Core's outlook for continued improvement in international onshore and offshore activity, with on-going projects across the globe, most notably across the Middle East, South Atlantic Margin and West Africa*."

Nabors: Very little on international outlook

Nabors reported Q2 on Tuesday night and held its call on Wednesday morning. And it said the least about the international outlook. It was very little said and positive but not what anyone would call as enthusiastic. On the Q2 call, mgmt. said *"Turning to our international markets, several operators are planning increases in their activity levels. Beyond the five recent awards that we announced, we see the prospects for additional awards in our core markets in the Middle East and Latin America".* And then in the CEO's wrap up comments for the Q&A said "*with respect to our International segment we have visibility to growth in our major markets including the already plans commitments in Saudi Arabia ."*

NOV: "*more brownfield, tie-back focused*" international development projects"

NOV is a great example of why we read earnings call transcripts – mgmt. will say a lot more in the call than they write in their release/report. NOV is a great example and mgmt. directly says they will give more color. NOV is the former National Oilwell Varcoe and reported Q2 on Wednesday and held its Q2 call on Thursday. NOV's insights were the same on the big international capex ahead BUT their comments point to increasing international production in the short term. (i) On Wednesday night, we tweeted on the Q2 release [LINK] ""*substantial backlog of #Oil & #NatGas development projects across offshore and international land markets" #NOV CEO in Q2. Stronger than expected international oil & gas supply in 2020s?? #OOTT."* (ii) But they gave more insight in the Q2 call saying "I*'m going to also add a little more color. I think there's sort of two-parts to this wave early part. I think is going to be a little more brownfield, tie-back focused and following that though, I think you're going to see a lot more FIDs, I've seen estimates of 500 billion in offshore FIDs through 2026 which point the more greenfield developments and both brownfield as well as greenfield fit sort of our product offering And so one of he is prepared to really meet that demand. But looking at our situation."* Brownfield/Tie-backs means short term supply adds. Also note their comments on the capex -this is not capex that is down

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the road 5 years before there is oil production. This is brownfield, tie-back focused ie. within a year or two or three max. It reinforces the point that all this offshore activity will lead to higher than expected oil and natural gas supply from offshore. And the brownfield/tie-back focus means the impacts is sooner than later. (iii) It's not just near-term brownfield and tie-backs but also for medium and long-term supply with their bullish offshore outlook that is broad-based across the world. Mgmt said ""*Our customers are mobilizing for significant offshore and international drilling campaigns over the next few years, which will require support" "we expect international and offshore markets to overcome these near-term North American headwinds as most and offshore focused IOCs are pressing forward with aggressive campaigns. Specifically, we are pleased to see growing activity in West Africa, Asia, the North Sea and offshore Mexico and continued strength in the Middle-East, Guyana, Brazil and North Africa."* Our Supplemental Documents package includes excerpts from the NOV Q2 call transcript.

Schlumberger: a broad resurgence in offshore

Schlumberger kicked off the Q2 earnings for the service companies a week ago. Here is what we wrote on Schlumberger's Q2 call in last week's (July 23, 2023) Energy Tidbits memo. "*Schlumberger points to stronger growth from offshore for long term. We recommend reading the Schlumberger Q2 call transcript from the Friday call as it seemed like a significant change to its long term outlook for oi land natural gas. (i) On Friday morning before the Q2 call we compared the SLB outlook comments from the Q2 results vs the outlook from the Q1 results. We tweeted [LINK] "Positive but less bullish long term #Oil#NatGas outlook from #Schlumberger. 1st sentence of outlook. Q2: "We continue to see positive upstream investment momentum in the international and offshore markets" Q1: "Looking at the macro, we maintain our very constructive multiyear outlook as the upcycle attributes and key activity drivers continue to evolve very positively." #OOTT." There wasn't any statement as such, but we thought it was a big change in view towards the long term. (ii) Then when saw the Q2 call transcript, SLB didn't come out and specifically say that they see a big increase in offshore oil and natural gas supply but their comments certainly pointed to that. SLB had many bullish comments on offshore activity – how it was pickup broadly around the world, FIDs were working below $50 oil, new players are in, etc. Yesterday, we tweeted [LINK] " Stronger than expected #Oil #NatGas supply from offshore in long term? #Schlumberger may not specifically say it, but their Q2 call comments point to it. international "investment momentum of past few years is accelerating" "witness a broad resurgence in offshore" "operators all over the world are making large scale commitments to ascend discovery, accelerate development times and increase the productivity of their assets" "new projects in offshore basins across the world" "vast majority of the FID [Offshore] are below $50" And more. #OOTT." Our Supplemental Documents package includes excerpts from the SLB Q2 call transcript."*

Weatherford: deepwater offshore activity increasing in 2024 and 2025

Weatherford held its Q2 call on Wednesday and highlighted the growth in offshore deepwater activity in 2024 and 2025. (i) On Wednesday, we tweeted [LINK] "*Stronger than expected #Oil#NatGas supply in 2020s from resurgence of offshore?*

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#Weatherford "Broader indicators support the positive story we see unfolding for offshore. CapEx growth, a significant step up in project sanctions, tightening rig utilization, and rising activity validate our positive outlook for the next few years, especially for deepwater where we expect market activity to grow around 10% in 2024 and continue into 2025." (ii) See "pockets" of international growth outside Middle East and Latin America. Weatherford didn't speak as bullishly on an across the entire globe pickup as other service companies. Weatherford said "*Internationally, the activity outlook is robust in the near to mid-term, led by the Middle East and Latin America, with additional pockets of growth in Asia-Pacific, Mediterranean, and other regions. In the Middle East, continued field development investment in Saudi Arabia, UAE, Kuwait, and others, along with regional exploration projects, set the stage for robust rig and well count growth that should enable double-digit growth in 2024. In Latin America, rig and well activity are showing steady growth in the high single digits, led by a significant step up in offshore investment in Mexico, Guyana, Brazil, and in unconventionals in Argentina."*

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

Sector insights from Q3 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.

Core Labs: US fracs slightly down in H2 vs H1

Core Labs reported Q2 on Wednesday night and held its Q2 call on Thursday. (i) Earlier in the memo, we noted Core Labs bullish customer feedback for a multi year international exploration and development push. (ii) Sees US frac/completion activity to be slightly down in H2 vs H1. Core Labs "*Turning to the U.S., land activity for the first half of 2023 was lower than expected as reflected by the declining U.S. rig and frac spread counts throughout the second quarter. Core sees U.S. land completion activity for the second half of 2023 to be slightly down compared to the first half of 2023.*" (iii) Persian Gulf producers (Kuwait, Qatar, Saudi Arabia, UAE) increasing shale/tight focus. Core Labs "*During the second quarter of 2023, Core Lab's Technology Centers throughout the Middle East region experienced an increase in demand for reservoir rock and fluid testing. As the quarter unfolded, Core Lab was engaged to assist major National Oil Companies ("NOC's") across the Arabian Peninsula, with multiple reservoir characterization projects from Qatar, Saudi Arabia, Kuwait and United Arab Emirates. These long-term projects include characterization of both conventional and unconventional oil and gas reservoirs, as well as primary, secondary and enhanced oil recovery projects. Assessing and producing hydrocarbons from low-permeability unconventional reservoir targets has become a focus for several large NOC's in the region. To support the evaluation of unconventional hydrocarbon resources in the region, Core Lab is in the process of*

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introducing a suite of patented and proprietary unconventional laboratory technologies within key geographic markets in the region. The expansion of unconventional lab technologies in the region reflects Core." (iv) Core Labs doesn't see any other emerging major shale focus regions outside the Middle East. Mgmt said "*I don't think outside of the Middle East.There's many places where unconventionals are going to have a big sort of upside. There's too many difficult things that have to come together. You have to have the resource base, you have to have an accommodative government, that's going to allow Or land ownership thats going to allow for thousands and thousands of wells to be drilled and you're also going to need an incredible pipeline of people and material to support the high cadence that goes along with unconventional project. The operators in the Middle East can clearly get that done. They've got the expertise, the will, and the sort of accommodative thoughts towards drilling the wells. That will work, they've got the natural resource to do it. A lot of other places on the planet be tough to replicate that model. That's worked in the US right*".

Nabors: Its rigs count to bottom in Q3, some recovery in Q4

Nabors reported Q2 on Tuesday night and held its call on Wednesday morning. (i) On Tuesday, we tweeted [LINK] *"#Nabors expects its Lower 48 average rig count to bottom in Q3. Average in Q2 was 82 rigs, expect 74-76 in Q3, and "we believe that the worst should be behind us in the Lower 48 and we expect some recovery in the 4th quarter". #OOTT.*" (ii) On the Q2 call, Nabors said gave some color on how macro conditions led to reduced activity by smaller oil and gas companies and also led to some larger companies pulling back on expansion in the US. Mgmt said "*At the current level of oil prices, we would have expected to see increased drilling in oil basins, instead we saw reductions in oil rig count. Interest rate increases by the Fed and several bank failures during the quarter, resulted in increased cost of capital. The increase cost of financing led most of our smaller customers to curtail activity. But larger companies also cancel plans for expansion. These activity reductions were likely the result of concerns about potential recessions in the U.S., and in China, and their impact on future oil demand.*"

NOV: need to reactive offshore rigs ie. higher costs to oil and gas companies

NOV is the former National Oilwell Varcoe and reported Q2 on Wednesday and held its Q2 call on Thursday. (i) Earlier in the memo, we noted NOV's comments that we believe point to higher than expected international oil and gas supply in the years ahead. (ii) Capex costs have to go higher. NOV reminded that there is a shortage of equipment ie. there is a need for reactivations. And that means capital costs go up to oil and gas companies ie. no different than when a land rig has to be reactivated. NOV said *"Consequently, we have seen offshore drilling day rates continued to inflect higher with some of our key customers announcing drillship contracts north of $500,000 per day-in recent weeks. Expectations are for rates to continue to rise in order to incentivize additional rig reactivations as the low-hanging fruit has mostly been pulled out-of-the stack." "As we help our customers dig deeper into the stack of rigs to reactivate. We expect to see an increasing number of opportunities with larger scopes and expect projects to include a growing amount of associated capital equipment orders. While the outlook is promising, or aftermarket business is already*

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benefiting from growing rig reactivations and the continued normalization of maintenance capital spending by drilling contractors."

Patterson UTI: US frac spreads troughed in July, drilling rigs to bottom in Q3
Patterson UTI is an oil and gas service company operating in the US. Patterson UTI released its Q2 on Wednesday night and held its call on Thursday. (i) When we hear that US frac spreads and rigs are troughing in Q3, we can't help think that US oil production will stall in H2/23. (ii) On Wednesday, we tweeted [LINK] *"#PattersonUTI Q2. Its frac spreads troughed in July, increasing in Q4 & more in 2024. Its US drilling rigs to bottom in Q3, increasing in Q4 & more in 2024. Points to stalling US #Oil production in H2/23? #OOTT."* (iii) Expect drilling rigs to bottom in Q3, increasing in Q4 and more in 2024. This is for their drilling rigs and not their view of total US drilling rigs. Patterson UTI "*while we expect additional rig releases over the next few weeks. For the third quarter, we expect our average rig count in the United States will average approximately 119 rigs. With the recent strength in oil prices, along with natural gas futures prices in contango, we believe the industry rig count is near a bottom and both rig count and frac activity will improve later in the year and in 2024*." (iv) Frac spreads have troughed in July. This is for their frac spreads and not their view of US frack spreads. Patterson UTI ""*Commodity price volatility during June led to some customers deciding to release rigs and/or spreads. For us, the decrease in frac activity occurred much faster than the slight decrease in our second quarter rig count. As such, we believe our pressure pumping activity has already reached a trough in July*". "*For the third quarter, we plan to operate 11 spreads. We have had substantial whitespace in July, but we expect improving utilization through the remainder of the quarter. Maintaining enough crews for the increasing work will negatively impact margins in the third quarter. Accordingly, for the third quarter pressure pumping revenues are expected to be approximately $230 million with an adjusted gross margin of $37 million. We expect our pumping activity to increase in the fourth quarter to 12 spreads and our increasing number of dual fuel spreads better positions us to take advantage of what we expect to be even further increasing completion activity in 2024*."

Precision: Cdn demand for Super Triple & Super Single rigs to exceed supply
Precision Drilling released Q2 on Thursday. (i) Continued bullish outlook for Cdn rigs and expect demand for Super Triple and Super Single rigs to exceed supply. Precision wrote "*In Canada, Precision's activity is expected to continue to surpass 2022 levels, supported by imminent hydrocarbon export capacity increases with the Trans Mountain oil pipeline and the Coastal GasLink pipeline, each expected to begin operations in early 2024. Northwestern Alberta and northeastern British Columbia natural gas developments are prime beneficiaries of the LNG Canada project and the January 2023 agreement between the British Columbia government and the Blueberry River First Nation has facilitated a significant increase in 2023 drilling license approvals, which should lead to more drilling activity in the region. Large pad drilling programs are ideally suited for Super Triple drilling rigs, resulting in strong customer interest for these rigs for the next several years. Our Super Triple fleet is currently fully utilized and we expect customer demand to continue to exceed supply, driving higher daily operating margins and longer-term take-or-pay contracts.*

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On the heavy oil side, we expect activity levels to remain strong as Canadian producers are benefitting from a favorable U.S. exchange rate and a significantly reduced heavy oil differential. Precision's Super Single rigs are well suited for long-term conventional heavy oil development in the oil sands and Clearwater formation. Looking at the second half of the year, we expect our Super Single pad capable rigs to be fully utilized, driving higher day rates." (ii) Expect increased demand for US rigs. Precision said ""*In the U.S., drilling activity had been increasing since mid-2020 but began to weaken in early 2023 due to lower natural gas prices and uncertain oil prices. For the first six months of the year, the Baker Hughes' U.S. land rig count declined 14%. If oil prices remain stable around today's level, we expect demand to improve in the second half of the year as customers modestly increase rig counts to maintain production. Over the past few months, we have signed a number of contracts for rig reactivations later this year and into 2024*.""

Weatherford: US rigs bottoming in Q3, holding steady for Q4

Weatherford held its Q2 call on Wednesday. (i) Earlier in the memo, we noted Weatherford seeing increasing deepwater offshore activity in 2024 and 2025. (ii) US rigs was weaker than expected in Q2 but see US rigs bottoming in Q3, holding steady for Q4 and then increasing in 2024. A little different than Nabors who saw rigs increasing in Q4 and 2024. But Weatherford "*While the North America market activity was weaker than anticipated, and our business in Canada as impacted from the wildfire." " "In North America, rig count declines are poised to bottom near the levels we see today and we expect them to hold steady as we move through the remainder of the year. As noted previously, our North America land mix is much more production-oriented, with limited risk tied with reduced rig count activity. As oversupply for both oil and gas is consumed and demand recalibrates, we would expect a slow, steady improvement in both rig and well counts into 2024 as new E&P CapEx plans kick off and operators transition from maintenance-level production*."

Oil & Natural Gas: Big reduction in Out of Control wildfires in Alberta and BC

BC and Alberta Wildfires

There are still way too many wildfires in Alberta and in particular BC. But at least the wildfires were down in the last week with a big reduction in Out of Control wildfires. In speaking who have left BC for the moment, this has been a hugely draining summer for anyone close to or impacted by wildfires It's been a huge grind and the concern from these people is the strain that the firefighters and emergency services people have been on more or less non-stop for the past two months. But wildfires were down this week. As of 7pm MT last night, there were 118 Alberta wildfires including 7 Out of Control, which compares to a week ago at 118 wildfires and 14 Out of Control. As of 7pm MT last night, there were 366 BC wildfires including 195 Out of Control, which compares to a week ago at 468 wildfires and 280 Out of Control.

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.

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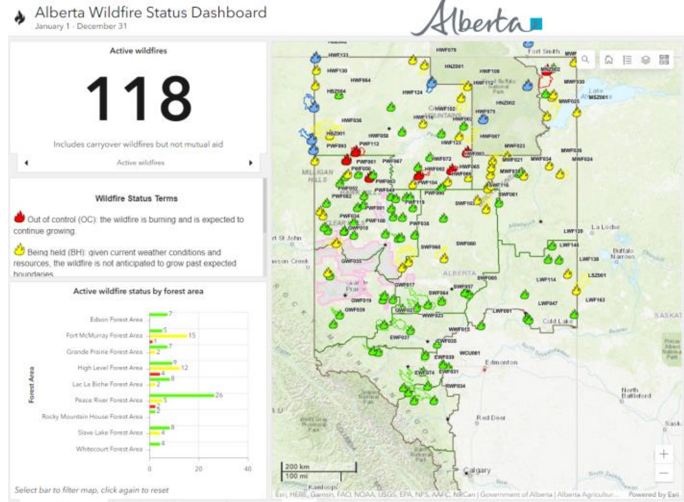
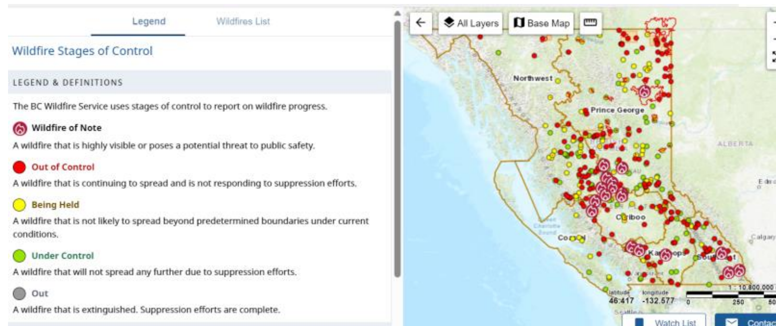
Figure 44: Alberta wildfire map as of 7pm MT on July 29



Source: Alberta Wildfire Status Dashboard

Figure 45: BC wildfire map as of 7pm MT on July 29



Source: BC Wildfire Service

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

Wildfire peak is normally July Aug

Unfortunately, we remind that this is 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

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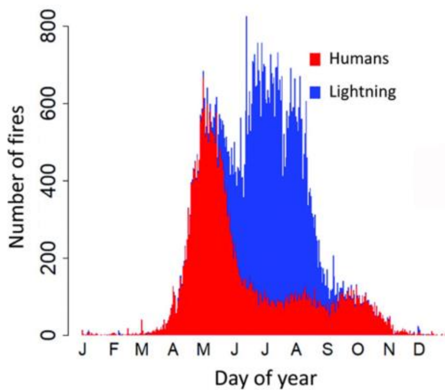
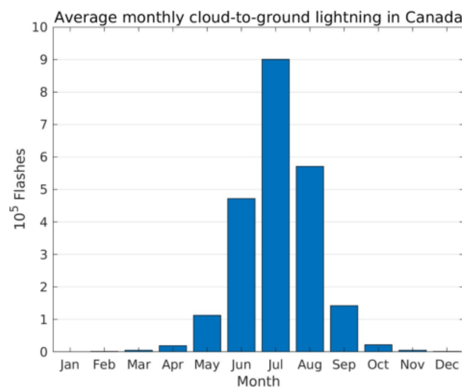
peak for Canada wildfires is July/Aug with a key reason being that is when lightning strikes normally peak. (ii) The problem that we have been warning is that it was extremely dry in the west this winter and in the spring. Our tweet also included the Alberta Environment maps of precipitation % of normal 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. 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.

Figure 46: Canada Wildfires Distribution Over Year



Source: Wildfire Today

Figure 47: Average monthly cloud-to-ground lightning in Canada



Source: Canada Environment and Natural Resources

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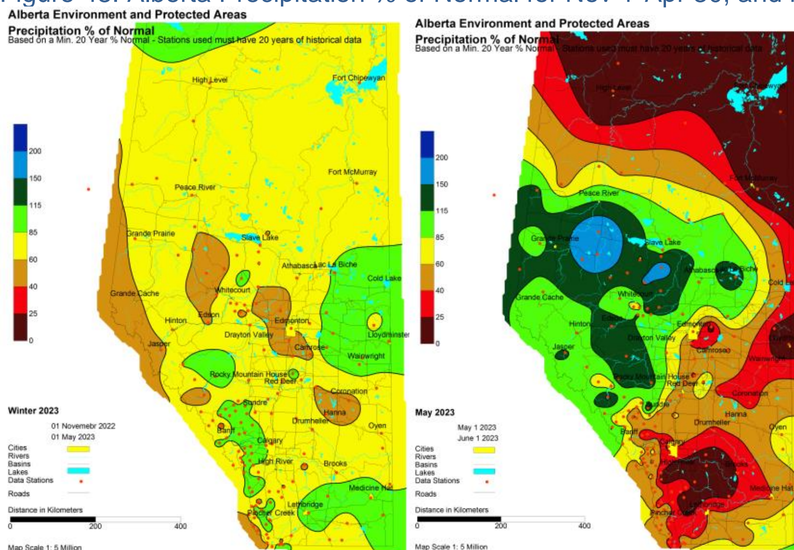
Figure 48: Alberta Precipitation % of Normal for Nov 1-Apr 30, and for May



Source: Alberta Environment

Oil & Natural Gas: Updated EIA Kuwait country brief

EIA's country brief on Kuwait

We continue to recommend adding the EIA's country analysis briefs to reference libraries as good quick references, in this case its new EIA country executive summary [LINK] on Kuwait. Kuwait is the third-largest crude oil producer in OPEC after Saudi Arabia. It holds the world's seventh largest proved crude oil reserves at 102 billion barrels. All known oilfields are onshore and offshore, with most major fields are producing or in development. From in 2022 Kuwait grew crude oil production by ~0.3 mmb/d to 2.7 mmb/d, which was back in-line with its 2019 average. Kuwait took part in the voluntary production cuts, where nine of the OPEC+ participants cut oil production by ~1.7 mmb/d from May to December 2023. Kuwait pledged to cut production by -0.128 mmb/d, which causes its 2023 production forecast to decline to 2.6 mmb/d. In June, OPEC+ agreed the extend the voluntary cuts through 2024, which holds Kuwait's production estimates at 2.6 mmb/d for 2024. Crude oil export revenues account for a large part of the country's economy. In 2019, crude oil revenue accounted for an estimated 57% of Kuwait's total government revenues, according to the International Monetary Fund (IMF). Due to strong oil prices in 2022, Kuwait's revenues rose to $98b from $68b the year prior. However, revenues are expected to decline in 2023 due to voluntary production cuts and weaker oil prices. Since 2018, Kuwait has launched ~300,000 b/d in additional oil projects and has announced additional projects to boost production by 2040. Notable projects include associated light oil from the Jurassic natural gas field which will be online in 2024, and new heavy oil additions at the Lower Fars phase 2 project which is estimated to be online by 2040. Kuwait consumed an estimated 1.6 quadrillion British thermal units of total primary energy in 2021. Natural gas (65%) accounted for most of the countries primary fuel consumption, followed by Petroleum and other liquids (35%), coal (0.2%), and renewables (<0.1%). As of December 2022, Kuwait has 63 tcf of proved natural gas reserves, which ranks it in the top 20 countries globally. In 2022, Kuwait and Saudi Arabia signed an agreement to develop the Dura natural gas field, which is located offshore near the neutral

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zone. The countries estimate production of 1 bcf/d of natural gas and 84,000 b/d of condensate, which would be split between the countries. Kuwait also intends to increase natural gas production by developing new fields which are not associated with crude oil production. As part of this, Kuwait is expanding the northern section of the Jurassic natural gas field by an estimated 110 bcf in 2024. Kuwait's net electricity generation grew by an annual average of about 8% annually between 2016 and 2021, reaching 71 Twh. Our Supplemental Documents package includes the EIA brief.

Oil & Natural Gas: TIPRO Texas oil natural and gas jobs up MoM in June

TIPRO June jobs update

It's interesting to contrast the US drilling rigs vs oil and gas employment in Texas. US rigs, including the Permian, responded to the softening oil and natural gas prices in Q2/23 and have been declining with an expected trough this quarter, Q3/23. But we haven't seen any pause in hiring for oil and gas in Texas. Last Friday, the Texas Independent Producers and Royalty Owners Association (TIPRO) updated their employment figures for the Texas upstream sector for June [LINK]. June saw a significant increase of ~2,500 jobs MoM, resulting in employment being up +13.5% YoY to 208,000 active jobs across direct oil and gas extraction and services. TIPRO wrote "*direct Texas upstream employment for June 2023 totaled 208,000, an increase of 2,500 jobs from adjusted May employment numbers. Texas upstream employment in June 2023 represented the addition of 24,800 positions compared to June 2022, including an increase of 3,900 jobs in oil and natural gas extraction and 20,900 jobs in the services sector; TIPRO's new employment data yet again indicated strong job postings for the Texas oil and natural gas industry during the month of June. According to the association, there were 13,696 active unique jobs postings for the Texas oil and natural gas industry in June, including 4,692 new job postings added during the month by companies. In comparison, the state of California had 4,655 unique job postings last month, followed by Louisiana (2,328), Oklahoma (1,982) and Pennsylvania (1,666). TIPRO reported a total of 62,700 unique job postings nationwide last month within the oil and natural gas sector; TIPRO reports that oil and natural gas output from Texas and the United States will continue to remain strong in the coming months, though is forecasted to fall in August for the first time this year. New data from the U.S. Energy Information Administration (EIA) projects that after peaking in July, U.S. crude oil production in the Lower 48 will total 9.397 million barrels per day (b/d) next month, a decline of 18,000 b/d from July. After a long-running streak of production gains in the Permian Basin, the most nation's most prolific shale oil basin, regional oil output is expected to drop by around 11,000 b/d to 5.764 million b/d in August, forecasts EIA experts, after reaching 5.775 million b/d in July. Domestic natural gas production in the United States also will slow in August and is expected to decrease by around 100 million cubic feet per day to 97.972 billion cubic feet per day (bcf/d) in August, according to the latest EIA estimates. Despite the overall reduction in natural gas production in the United States, the Permian Basin is still slated to see natural gas output increase to 23.389 bcf/d, with the highest growth in production of natural gas anywhere in the country"* Our Supplemental Documents package includes the TIPRO release.

Oil & Natural Gas: Sounds like a new round of UK North Sea licensing is coming

UK North Sea oil and gas licensing

It looks like UK PM Rishi Sunak's new "proportionate and pragmatic" path to #NetZero will include new rounds of oil and gas licensing in the UK North Sea. Earlier this morning, we tweeted [LINK] "*Reality of UK PM Sunak's "proportionate and pragmatic" path to #NetZero will include new #Oil#NatGas licensing in North Sea. @grantsshapps on Labour's plan to*

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stop #Oil#NatGas licensing "Basically that plan - reading between the lines - says just import a lot more oil and gas." "And if you're going to do that and prices spike, we could be looking at the danger of blackouts." Puts "security of our energy supply in danger" #OOTT." Grant Shapps is the UK cabinet minister, Secretary of State for the Department for Energy Security & Net Zero. Our tweet included his retweet this morning of The Sun's report "*Labour's eco plans could plunge Britain into blackouts, Energy Secretary Grant Shapps warns*." [LINK] Shapps and Sunak are reportedly meeting with the oil and gas sector this week. Shapps did not specifically say there was another new round of North Sea licensing but The Sun report was all about Shapps criticizing the Labour party's plan to stop licensing for oil and gas. Our tweet included some of his key quotes on how the Labour plan to stop licensing would put the UK energy security at risk, lead to more oil imports and increase risk to blackouts. Our Supplemental Documents package includes The Sun report.

Oil & Natural Gas: Markets not worried on Liberals phase out of fossil fuel subsidies

Liberals phase out fossil fuels subsidies

We were a little surprised that the big Liberal announcement on eliminating inefficient fossil fuels was viewed as no big deal by markets. (i) We think it is important to try to read the details and not just read a press release or write summaries based on other people's summaries who only read the press release. Our concern is that when you know that one of, if not the, primary objectives/aspirations of the Liberal government is to phase out fossil fuels as quickly as possible, we always worry there is something that isn't obvious but gives them the ability to do something that isn't obvious. And, as noted below, we worry about the details not in the press release on how a fossil fuel subsidy is determined to be inefficient. (ii) On Monday, the Liberals announced "*Government of Canada delivers on key climate commitment to phase out inefficient fossil fuel subsidies*". Note they call this "*the first transparently published methodology worldwide—will be used to determine which tax and non-tax measures constitute an inefficient fossil fuel subsidy. Subsidies will be considered inefficient unless they meet one or more of the following six criteria: 1.Enable significant net greenhouse gas emissions reductions in Canada or internationally in alignment with article 6 of the Paris Agreement. 2. Support clean energy, clean technology, or renewable energy. 3. Provide essential energy service to a remote community.4. Provide short-term support for emergency response. 5. Support Indigenous economic participation in fossil fuel activities. 6. Support abated production processes, such as carbon capture, utilization, and storage (CCUS), or projects that have a credible plan to achieve net-zero emissions by 2030."* These sound pretty clear and that was the market and industry takeaway from the press release. (iii) But in looking at the backup information, one of the details that gave industry comfort in their guideline was the green circled box "*Would the Initiative support Fossil Fuel Consumption or solely support Fossil Fuel Activities?*'. This is not like the old days of flow thru shares that were there to solely support fossil fuel activities. So we heard feedback from industry on the comfort of this clause. (iv) One of our concerns is that things aren't always black and white and there is some uncertainty. We mentioned to our industry contacts was that they may have missed the red circled box right below that gives a second independent test "*Would the Initiative provide a Disproportionate Benefit to the Fossil Fuel Sector?"* So there is some debate there. But when we mentioned our other concern, a little more doubt is raised. Note the lead-in to the boxes, it's up to the individual ministers and their staff to do the analysis and make this decision or recommendation. That's a wildcard. And anyone who knows how government works, knows that many things get killed or pushed up from the staff levels who do the analysis and recommendations to their minister. We think this is a wildcard

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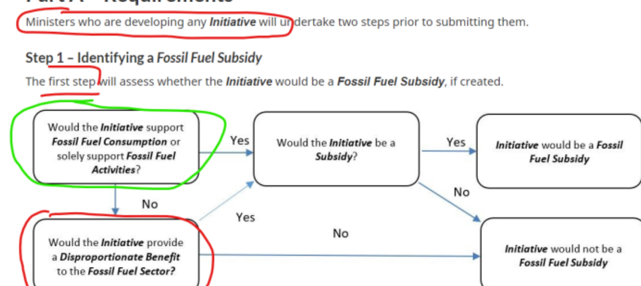
that is overlooked. (v) We hope markets and industry are right and this is clear. Our Supplemental Documents package includes the press release and also the backup guidelines.

Figure 49: Identifying a Fossil Fuel Subsidy



Source: Government of Canada

Energy Transition: Is Exxon looking at mini-nukes to power Cdn oil sand/bitumen?

Exxon looking at mini nukes to reduce emissions

Using mini-nukes to power the oil sands, instead of natural gas, is something continues to make sense and something that we have written about in our Energy Tidbits memo since the early 2000s. Note that we are referring to small modular nuclear reactors (SMR) but we have always called any small scale nuclear power generation "mini-nukes". The design may be different today, but designing and using smaller scale nuclear power plants has been there for well over 20 years. Twenty years ago, it was a decade before shale gas and the worry was on depleting conventional natural gas in Canada and the US. Earlier, we highlighted Kinder Morgan's view of future natural gas demand and the huge implications for Alberta/BC natural gas so using mini-nukes instead of natural gas for oil sands makes sense. Plus the reason for it re-emerging over the past few years is that it is a way to reduce emissions for the oil sands mining and SAGD producers. But it probably didn't mean much to most but for those of us who have followed the potential for using mini-nukes to power oil sands, Exxon CEO Darren Woods on CNBC Squawk Box on Friday morning were likely pointing to this potential for Exxon. On Friday morning, we tweeted [LINK] "*Oil Sands likely at top of list! #Exxon CEO Woods " … I think some of the small reactors [mini nukes] also have broad applicability even in our industry. In fact, we are looking at potential options to engage and employ those to reduce our emissions". See 👇 08/08/20 tweet & SAF Group Energy Tidbits 08/09/20 excerpt. Mini-nukes to power #OilSands has been discussed for 20 yrs and Alberta revived in 2020. Sorry @andrewrsorkin video cut off before your "I think that's the answer!" #OOTT #EnergyTransition."* Our tweet included a video clip of Woods on CNBC. Woods is saying they are looking at where they could employ to reduce emissions. Oil sands, mining and SAGD, has to be right at the top of the list for where Exxon might employ mini-nukes.

Oil sands would be a logical #1 location for Exxon to use mini-nukes

Exxon has a wide range of operations that it could deploy mini-nukes for power including major refineries, petrochemical plants and LNG export facilties that use fossil fuels, not electricity, for power source. However, we believe oil sands would be a logical #1 location for Exxon to use mini-nukes for power generation. One of the big

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challenges for any nuclear power is to get governments onside. Alberta and Saskatchewan started looking at mini-nukes a few years ago. Oil sands aren't as close to major population density areas. Canada is a major global uranium producer/exporter. Oil sands are not on or near any major water transit like is normally the case for refinery/petrochemical complexes. Those are just a few of the advantages.

Aug 2020, Alberta said they were looking at mini-nukes

Our Exxon tweet included an item from our Aug 9, 2020 Energy Tidbits memo on Alberta starting to look at mini-nukes. Here is what we wrote in our Aug 9, 2020 memo. "*Yesterday, we tweeted [LINK] "Alberta to look at mini-nukes. Specifically notes potential for #OilSands, exactly what @Kim_Goheen said Cameco pitched in early 2000s. Think this will have traction especially as world realizes mini nukes can help speed up transition to #CleanEnergy." Alberta announced it was had signed a letter of intent "to enter into a memorandum of understanding with Ontario, Saskatchewan and New Brunswick to support the development of versatile and scalable small modular reactors (SMRs). SMRs are smaller than traditional nuclear reactors and scalable to suit local needs, with lower upfront capital costs and enhanced safety features. This new and versatile technology could supply non-emitting, low-cost energy for on-grid and off-grid communities in Alberta, including remote and rural areas of the province, as well as industries with a significant need for steam, such as Alberta's oil sands." Our June 28, 2020 Energy Tidbits noted Saskatchewan's announcement that week to look into the potential of small nuclear reactors for power generation. Mini-nukes are not a new idea. Long term Energy Tidbits readers might remember we first wrote on using mini-nukes to power the oil sands in the early 2000's when the former Cameco CFO told me this was something they were trying to get people up in Fort McMurray to do to power the oil sands for electricity to run upgraders and to power steam generation at SAGD projecs. There was some interest, but there was more fear on nuclear at that time. Earlier this morning, Premier Kenney tweeted [LINK] "This could be a game changer in providing safe, zero-emitting, baseload power in many areas of the province - including in the oil sands where we could use the steam". Basically what Cameco suggested almost 20 years ago. Mini nukes make a lot of sense in various settings. Our Aug 19, 2018 Energy Tidbits had an item "Mini nukes for powering China's South China Sea islands makes sense". Our Nov 3, 2019 Energy Tidbits reviewed Saudi's plan to reduce emissions and we said "makes us wonder about nuclear power, especially mini nukes" for Saudi. The Alberta release said "A typical SMR would generate between two and 300 megawatts of electricity, which could provide power for a village or small city." We also see mini-nukes getting more traction in 2020 in the leadup to COP26 in Glasgow in Nov. As we have been highlighting, the world is behind in it capital allocation and progress to a clean energy transition, and we see mini-nukes as way to help it catch up. Our Supplemental Documents package includes the Alberta release."*

Reminder mini-nukes can be buried deep underground in cement bunkers

Our Exxon tweet also included another item from our Aug 9, 2020 Energy Tidbits memo, when we wrote "On June 26, we tweeted on the Sask mini nukes initiation

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and the June 25 Forbes story [LINK] "*The Small Canadian Province That Could Lead The Future Of Energy'*." The reason for our tweet was that we hadn't seen anyone mention one of the key reasons why we think mini-nukes have significant potential – they are small enough to be buried deep underground in cement bunkers. Our tweet [LINK] said "*Also key reason why mini-nuke power generation can be game changer not just for Sask. @Kim_Goheen exCameco reminds small 50MW modular reactor can be buried deep underground in cement bunker. Very small above ground footprint. Out of sight, out of mind".* Nuclear has many benefits, its clean energy and its provide the intense power needed to be able to power all industrial needs ie. make steel. Our Supplemental Documents package includes the Forbes story."

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

Why EVs aren't displacing more gasoline

There seemed to be many reports this week on how European gasoline demand is surprising and not displacing as much gasoline as should have been expected given the huge and continued ramp up in EV sales 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, on 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.

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*

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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 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

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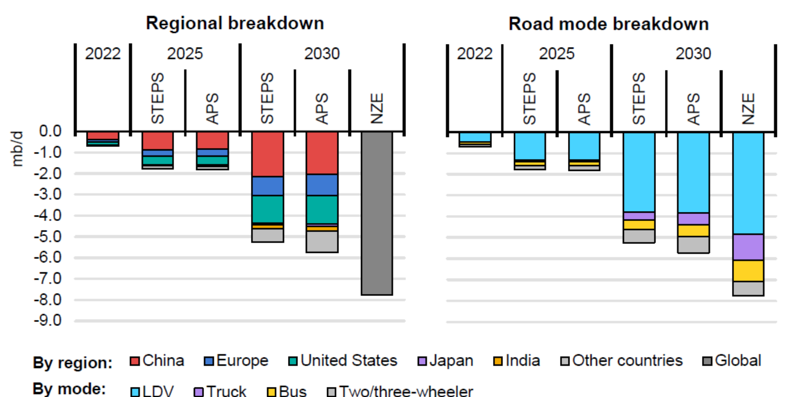
displacement. #Oil Bulls (Saudi Arabia) will love the IEA report and think this won't have much impact on @IEA forecast for peak oil demand around 103 mmbd in mid 2030s. #OOTT." (viii) EVs are having an impact on oil and energy, but it isn't a one-for-one replacement. Plus we wonder if it's just additive 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 50: Oil displacement by region and mode, 2022-2030

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



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

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 Wareness 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 @EWaerness. many other reality check energy transition views in his @FT interview [LINK] #OOTT." Waerness 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."*

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Energy Transition: UK backtracks to a "proportionate & pragmatic" #NetZero path

UK energy transition backtrack

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 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.

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Sunak says he is on the side of motorists in how they use their cars

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."*

Our #1 2022 Prediction – leaders like Sunak would 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" 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 is 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*

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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: Enphase Energy, US solar is in "a broad based slowdown"

Enphase US solar is in a broad based slowdown

Our concern on the energy transition hasn't change for years – it's happening but will take a lot longer, cost a lot more and will be a bumpy/rocky road. No one can deny that solar power has to play an increasing role in providing power generation around the world to help reduce emissions. We just don't think it will happen at the pace to per the #NetZero plans/aspirations. It's why we continue to believe oil and natural gas will be needed for way longer than per #NetZero aspirations and plans. (i) The reality is that #NetZero forecasts assume an increased solar adoption. And rightfully so given the acceleration of solar generation to date. Our concern isn't on the concept but on the forecasts but we doubt that NetZero forecasts assume any pause in their accelerated growth rate. Last week, the IEA wrote [LINK] "*Tripling renewable power capacity by 2030 is vital to keep the 1.5°C goal within reach*" and "Solar PV and wind power are the driving forces". (ii) It's a short blog but we did not see any indication that the IEA builds a pause in for adoption of solar generation. (iii) On Wednesday night, solar producer, Enphase Energy, reported its Q2 and held its Q2 call on Thursday. Note Enphase emphasizes it's healthy share of the US market and so its views are representative of the US market. We tweeted [LINK] ""*Overall US market [#Solar] is experiencing a big broad based downturn due to high interest rates" $ENPH in Q2 call. $ENPH -16% in pre-market. Wonder what is the all-in payback period? Thx @business transcripts. #OOTT."* On the Q2 call, mgmt. said "*Since we have a healthy share in the U.S., our statistics are a meaningful representation of business trends. The overall U.S. market is experiencing a broad based slowdown due to high interest rates.*" "*We have many tools at our disposal for installers and our partnerships go even deeper during the downturn." "We have many tools at our disposal for installers and our partnerships go even deeper during the downturn."*

Energy Transition: Renewable Natural Gas math works with huge govt incentives

RNG works because of huge incentives

We are believers that renewable natural gas (RNG) will continue to attract huge government incentives that will allow RNG to keep growing. (i) On Monday, Platts posted its report "*Renewable natural gas and hydrogen: fuels of the future for transportation decarbonization*" [LINK]. (ii) We tweeted [LINK] "*#RenewableNaturalGas is hugely expensive, but govt subsidies make the math work. #Platts "assessed the value of the NA Renewable Natural*

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Gas Premiums (California and Excl. California) at $30.45/MMBtu and $27.70/MMBtu, respectively, on July 18." vs HH spot $2.41/MMBtu YTD. BUT since RNG is only ~0.2 bcf/d (vs US #NatGas of >100 bcf/d), govts can afford to subsidize. Shale, GOM, etc #NatGas will be needed for a long time. #OOTT." (iii) Our view on RNG is unchanged - renewable natural gas works and RNG producers know how to make to successfully make RNG. It's just ridiculously expensive relative to natural gas prices, BUT the volumes are so small that governments can allocate subsidies to make the economics work. It works. But it's also a fact that it wouldn't work without big subsidies. However, the good news for RNG is that the volumes of RNG are small at 0.2 bcf/d vs US natural gas production of >100 bcf/d so its an item that the governments can afford to hugely subsidize so they can say they have RNG and know that the total dollars to subsidize are modest. (iv) Platts writes "*Although production capacity is ramping up, RNG production is still only a small fraction of total US natural gas production, and the cost of RNG far exceeds that of conventional natural gas. Platts, a part of S&P Global Commodity Insights, assessed the value of the North America Renewable Natural Gas Premiums (California and Excl. California) at $30.45/MMBtu and $27.70/MMBtu, respectively, on July 18. In comparison, spot physical Henry Hub has averaged $2.41/MMBtu year to date on July 18, according to data from S&P Global Commodity Insights*". (v) The Platts article links to a prior Platts article on Blackstone's view on RNG and how RNG is currently 220 mmcf/d total in the US. That is 0.22 bcf/d vs the EIA's forecast for total US dry gas production of 102.4 bcf/d. Our Supplemental Documents package incudes the Platts report.

Energy Transition: Freemantle Highway EV/ICE cargo fire still waiting to be towed

EV/ICE cargo ship fire

As of our 7am MT news cut off, the latest update on the burning ship carrying EV and ICE vehicles from the Rijkswaterstaat, the Netherlands coast guard, is as of 9:45pm local time last night. They have a running news update at [LINK]. They reported "*On 29 July, a second (spare) emergency tow connection was attached to the rear of the Fremantle Highway by the Multraship/Smit Salvage salvage combination. Due to the current southwest wind, it is now not possible to tow the ship. The smoke development of the fire and the current wind direction ensure that during the entire towing operation of the ship the smoke passes over the tugboat. So if the berger starts towing now, it is not without risks and the safety and health of the crew is always paramount. The wind will continue to come from the southwest in the coming days. The start of towing the Fremantle Highway to the new temporary location may therefore take a few more days. Until then, the ship will remain in its current position."* As far as we can find, there isn't yet a definitive cause for the fire that had 498 EVs among the 3,783 vehicles in its cargo. But, unfortunately for EVs, the blame will inevitably fall on EVs causing the fire until something to the contrary is proved.

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Figure 51 Freemantle Highway posted July 29

Source: Rijkswaterstaat

Capital Markets: IFIC Equity and balanced funds see more net redemptions in June

IFIC Cdn mutual fund data

One of the big Cdn equity stories in 2022 continues to play out in 2023 – the continued net redemptions from active managed Cdn balanced and equity mutual funds. This flipped in Q2/22 from massive net sales into balanced and equity mutual funds to massive net redemptions in balanced and equity mutual funds. The bleeding isn't as great as in 2022 but the net redemptions continue month after month. On Monday afternoon, IFIC (Investment Funds Institute of Canada) reported [LINK] mutual funds and ETF sales for June. IFIC reported net redemptions for mutual funds balanced funds were $4.439b in June (vs $3.807b in May and $3.941b in Apr). IFIC also reported net redemptions for mutual funds equity funds were $2.354b in June (vs net redemptions of $2.170b in May and $2.782b in Apr). This brought YTD June 2023 net redemptions to $31.23b out of balanced and equity mutual funds, a large increase compared to YTD June 2022 net redemptions of $2.02b for a YoY difference of $29.21b. Note that Q2/22 was when it flipped from net sales into the massive net redemptions to end 2022. Last year net redemptions in balanced and equity funds totalled $38.47b, which was a massive YoY crashing of $138.92b vs 2021 that saw net sales in balanced funds and equity funds of $100.45b. Our Supplemental Documents package includes the IFIC release.

Figure 52 Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual Fund Net Sales/Net Redemptions ($ Millions)

Asset Class	Jun. 2023	May 2023	Jun. 2022	YTD 2023	YTD 2022
Long-term Funds					
Balanced	(4,439)	(3,807)	(4,639)	(21,699)	(3,622)
Equity	(2,354)	(2,170)	(3,303)	(9,534)	4,200
Bond	910	639	(3,217)	8,726	(6,167)
Specialty	97	287	299	1,798	1,203
Total Long-term Funds	(5,786)	(5,051)	(10,860)	(20,709)	(4,386)
Total Money Market Funds	1,537	1,252	1,399	7,898	2,370
Total	(4,249)	(3,799)	(9,461)	(12,811)	(2,016)

Source: IFIC

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There were massive redemptions in Cdn active equity/balanced funds in 2022
It's been another bad year for net redemptions for Cdn balanced and equity funds, but 2022 was brutal. Here is what we wrote in our Jan 29, 2023 Energy Tidbits memo. "*One of the big Cdn equity stories in 2022 continued to play out in the final month of the year – the massive net redemptions from active Cdn equity fund manager's balanced and equity mutual funds in 2022, which is a huge change from the massive net sales into balanced and equity mutual funds in 2021. On Thursday, we tweeted [LINK] "WOW! @IFIC balanced & equity mutual funds net sales/redemptions data for 2022. YTD 12/31/22 net REDEMPTIONS of $38.5b. YTD 12/31/21 net SALES $100.4b. YoY diff is -$138.9b!! Makes #Oil #NatGas stocks big outperformance vs TSX and oil prices even more impressive. #OOTT." On Tuesday the IFIC (Investment Funds Institute of Canada) reported [LINK] mutual funds and ETF sales for Dec. IFIC reported net redemptions for mutual funds balanced funds were $4.97b (vs $5.07b in Nov and $5.66b in Oct) and YTD Dec 31 of $29.99b. IFIC reported net redemptions for mutual funds equity funds were $3.08b in Dec (vs $3.01b in Nov and $1.89b in Oct) and YTD Dec 31 of $8.48b. The change vs 2021 is huge and has widened since the Nov update. YTD Dec 31, net redemptions in balanced funds and equity funds was $38.47b, which is a YoY crashing of $138.92b vs YTD Dec 31, 2021 that saw net sales in balanced funds and equity funds of $100.45b.*"

Figure 53: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual Fund Net Sales/Net Redemptions ($ Millions)*

Asset Class	Dec. 2022	Nov. 2022	Dec. 2021	2022	2021
Long-term Funds					
Balanced	(4,969)	(5,066)	1,628	(29,999)	63,346
Equity	(3,080)	(3,014)	462	(8,480)	37,102
Bond	(2,254)	(1,104)	(1,276)	(13,790)	14,530
Specialty	(37)	(10)	415	1,166	6,010
Total Long-term Funds	(10,340)	(9,194)	1,229	(51,103)	120,988
Total Money Market Funds	1,642	551	185	7,026	(7,414)
Total	(8,698)	(8,643)	1,415	(44,077)	113,574

Source: IFIC

Capital Markets: USDA Consumer Price Index June for food +0.3% MoM, +3% YoY
On Thursday, the USDA posted its June Consumer Price Index for food [LINK], which reported the all=items Consumer Price Index (CPI) were +0.3% MoM and +3.0% YoY. The +3.0 YoY increase in the Consumer Price Index has a relative weighting for the various food categories. Some notable YoY index changes (compared to the 20-year average) in the March data were: fats/oils +8.7% YoY (+8.7% avg), poultry +1.4% YoY (+2.4% avg), fresh fruits +1.1% YoY (+0.6% avg), fresh vegetables +3.0% YoY 2.2% avg), eggs -7.9% YoY (13.7% avg), and dairy products +2.7% YoY (4.5% avg). It is important to note the USDA said that the "food-at-home (grocery store or supermarket food purchases) CPI" was -0.1% MoM but 4.7% higher YoY. The USDA wrote "*Food-at-home prices are predicted to increase 4.9 percent, with a prediction interval of 3.7 to 6.1 percent. Food-away-from-home prices are predicted to increase 7.5 percent, with a prediction interval of 7.0 to 7.9 percent*."

USDA CPI for food +3.0% YoY

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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 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.*"

US monthly car payments

Capital Markets: Average US monthly new car payments up $50/mth
Good graph in the WSJ's Wednesday report "*Why Car Dealers Are Losing Their Shine: Shortages supercharged profits and cut costs, aided by cheap loans, but now that is reversing*". [LINK]. The WSJ wrote "*Still, those profit streams are to some extent dependent on car sales. Higher rates and declining trade-in values are making that a financial stretch for many potential buyers. Last month, the monthly payment on new cars averaged $736, $50 higher than a year ago, according to Edmunds. Used-car monthly payments rose to $574, up $20. Consumers are clearly clamoring for more affordable cars: Inventory is tightest for lower-priced vehicles, whether new or used, according to a recent report from Cox Automotive. And lenders don't seem to be stretching terms much further to keep monthly payments flat: The average term of new-car financing was 68.5 months, two months shorter than a year earlier. All lenders have tightened credit access for auto loans, according to data from Cox Automotive. Dealers are still moving ahead, but deceleration seems inevitable.*"

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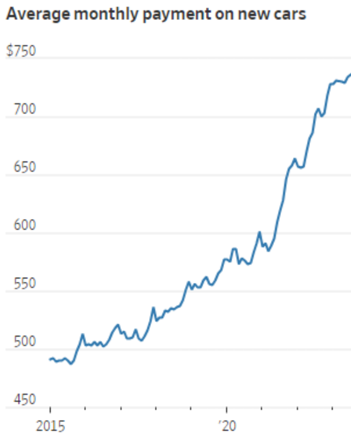
Figure 54 Average monthly payment on new cars in US



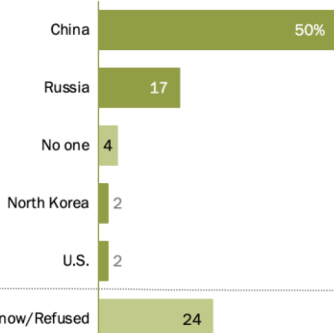
Source: WSJ, Edmunds

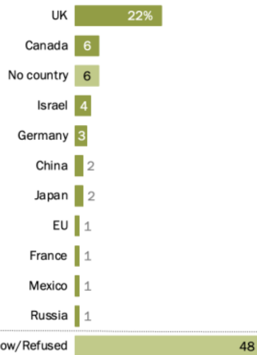
Demographics: 50% of Americans view China as greatest threat to US

Greatest threats to US

There is no question that having both Democrats and Republicans and their respective media friends hammering on China that Americans name China as the greatest threat to the US. That wasn't surprising nor was it surprising to see Russia a solid second at 17%. But the expression out of sight, out of mind with the lack of Democrats and Republican focus meant that Iran didn't even get an honorable mention of at least 1% as a threat Note this was an open-ended question and not a pick from a list. On Thursday, Pew Research posted "*Americans name China as the country posing the greatest threat to the U.S.*" [LINK] What was also interesting was who Americans see as their top ally. The ranking was UK 22%, Canada 6%, No country 6%, Israel 4%, Germany 3%, China 2%, Japan 2%. The ally question was also open ended ie. who do Americans think of as their top ally.

Figure 55 Americans ranking greatest threat/important ally to the US





Source: WSJ, Edmunds

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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.

Can't believe how few Fiat car sales in the US

On Tuesday, we were listening to CNBC on the radio and someone mentioned the unbelievably low Fiat car sales in the US. We checked a 2023 US Auto Sales by Brand Analysis [LINK] and they only sold 48 Fiat cars in the entire US in June and only 280 in H1/23. The only worse brand was Karma (never even heard of it) with 8 sales in June and 162 in H1/23. Then the next closest above Fiat were Lucid with 203 in June and 1,391 in H1/23, Alfa Romeo with 780 in June and 4,700 in H1/23 and then Jaguar with 803 in June and 4,369 in H1/23. On the high end were Ford with 168,732 in June and 965,232 in H1/23, Toyota with 157,767 in June and 878,195 in H1/23, and then Chevrolet with 152,852 in June and 849,796 in H1/23.

Dalvin Cook says Vikings QB Kirk Cousins nerdiness makes him cool

NFL fans have probably seen the recent Netflix series Quarterback that followed Kansas City Chiefs QB Patrick Mahomes, Minnesota Vikings QB Kirk Cousins and then Atlanta Falcons QB Marcus Mariota during last season. On Friday morning, free agent and former Minnesota Vikings running back, Dalvin Cook, was on Good Morning Football and was asked if what he thought of Cousins in Quarterback. Cook says "… *so just seeing him on the show, everybody getting to see who Kirk Cousins is behind the background. He's cool, Man. He's him."* GMFB's Kyle Brandt "*is he cool? Like people think he's the nerdiest guy ever. He's cool?"* Cook says "*That's his cool. That's his cool. That's who he is, man. Everyday, he wakes up the same person. I think that's what you want".*

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