

Energy Tidbits

August 27, 2023

Produced by: Dan Tsubouchi

LNG Canada Will Inevitably Drive Multi-Year M&A for Cdn Natural Gas

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. LNG export projects in the US supplied by tight/shale need to keep natural gas supply for decades and drive multi-year drilling and M&A so why would LNG Canada be different? ([Click here](#))
2. Seems like added costs and delays are inevitable given TMX has run into "*significant technical challenges with micro-tunnelling*" in a section. ([Click here](#))
3. Iran's expected add of 0.6 mmb/d in next couple months to production and exports is finally getting market attention. ([Click here](#))
4. Near term risk to LNG and natural gas is that Japan, along with US and Europe, is forecast to have a warm start to winter. ([Click here](#))
5. Nothing but questions following the UN's changed position on pushing Libya towards holding the long delayed national elections. ([Click here](#))
6. Please follow us on Twitter at [\[LINK\]](#) for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [\[LINK\]](#).

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Natural Gas: +18 bcf build in US gas storage; now 513 bcf YoY surplus

US gas storage 513 bcf YoY surplus

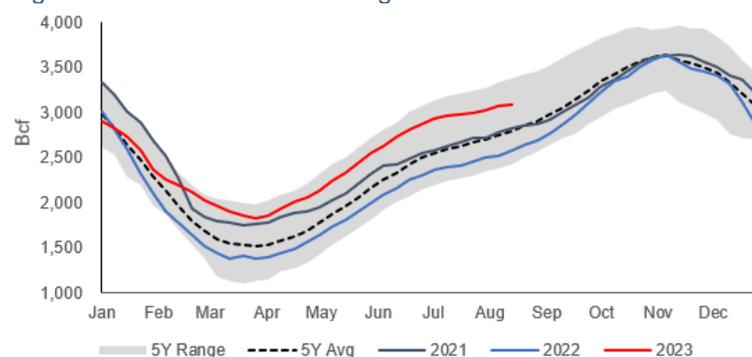
For the week of August 18 with the hot weather, the EIA reported a +18 bcf build (under the expectations of a +31 bcf build), and a big YoY decrease compared to the +60 bcf build reported for the week of August 19, 2022. This is down from last week’s build of +35 bcf, and down vs the 5-year average build of +49 bcf. Total storage is now 3.083 tcf, representing a surplus of +513 bcf YoY compared to a surplus of +549 bcf last week. Total storage is +268 bcf above the 5-year average, down from the +299 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

Region	Stocks billion cubic feet (Bcf)				Year ago (08/18/22)		5-year average (2018-22)	
	08/18/23	08/11/23	net change	implied flow	Bcf	% change	Bcf	% change
East	731	717	14	14	594	23.1	659	10.9
Midwest	831	812	19	19	710	17.0	759	9.5
Mountain	206	202	4	4	153	34.6	175	17.7
Pacific	242	240	2	2	244	-0.8	261	-7.3
South Central	1,072	1,093	-21	-21	870	23.2	960	11.7
Salt	260	272	-12	-12	184	41.3	229	13.5
Nonsalt	813	821	-8	-8	686	18.5	732	11.1
Total	3,083	3,065	18	18	2,570	20.0	2,815	9.5

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



Source: EIA, SAF

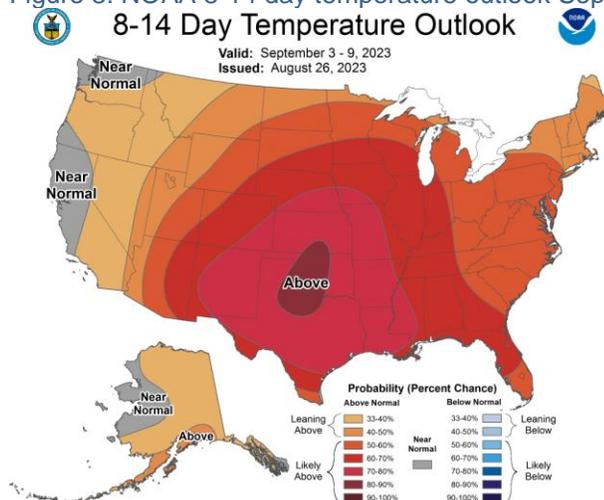
Natural Gas: NOAA 8-14 day temperature outlook staying hot across most of Lower 48

NOAA 8-14 day outlook

NOAA posts daily, around 1pm MT, an updated 6-10 day and 8-14 day temperature probability outlook. Yesterday, we tweeted [\[LINK\]](#) “Today’s @NOAA updated 6-10 & 8-14 day temperature outlook covering Sept 1-9. Going to stay hot across almost all of the Lower 48. Should provide support for #NatGas this week. #OOTT.” NOAA expects it to be hot across almost all of the Lower 48 over the next 10 days. Yesterday’s NOAA 6-10 day [\[LINK\]](#) and 8-14 day outlook [\[LINK\]](#) are for the period Sept 1-9.

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Figure 3: NOAA 8-14 day temperature outlook Sept 3-9



Source: NOAA

Natural Gas: Farmers' Almanac says BRRR is back, a cold and snowy winter 2023/24

Our normal comment at this time of year is that it's still early so long-term winter forecasts don't have much of an impact on natural gas markets going into Labor Day. And that forecasts out a few months are far from 100% success. On Aug 1, Farmers' Almanac issued their 2023-24 Winter Outlook. [\[LINK\]](#). The Farmers' Almanac describes the winter as 'The BRRR Is Back! Winter weather is making a comeback. After a warm winter anomaly last year, traditional cool temperatures and snowy weather conditions will return to the contiguous United States.' Farmers' Almanac's calls for "for below-average temperatures and lots of snowstorms, sleet, ice, rain for much of the Great Lakes and Midwest areas of the country, as well as central and northern New England, especially in January and February. (Brrr...)"

When will the first snowfall of the season be? An unusually snowy and wet winter is also predicted for the Pacific Northwest. Should an El Niño materialize, it could direct the subtropical jet stream into California, translating into copious amounts of rain and snow across the entire Southwest. Winter in the Great Plains and Rockies will usher in plenty of cold temperatures and occasional bouts of storminess, bringing widespread rains and snows. Texans will need to bundle up, as unseasonably cold weather is forecast throughout January and February, with a possible major winter storm in mid-January. The Southeast and Florida will see a wetter-than-normal winter, with average winter temperatures overall, but a few frosts may send many shivers to snowbirds trying to avoid the cold and snow back home. For those of you living along the I-95 corridor from Washington to Boston, who saw a lack of wintry precipitation last winter, you should experience quite the opposite, with lots of rain/sleet and snowstorms to contend with." Our Supplemental Documents package includes the Farmers' Almanac 2023-24 Winter Outlook.

Farmers' Almanac calls for cold winter

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Figure 4: Farmer's Almanac 2023-24 Winter Outlook



Source: Farmer's Almanac

Farmers' uses a "mathematical and astronomical formula"

Something jumped out at us when we read the Farmers' Almanac 2023-24 Winter Outlook, who wrote "Our extended weather forecast, which is based on a mathematical and astronomical formula". We checked last year's winter outlook and this was not included, and we have never seen others say this about their winter forecasts. But it also explains why Farmers' Almanac issues its winter outlook well before others. Farmers' Almanac explained it [\[LINK\]](#) as "The editors of the Farmers' Almanac firmly deny using any type of computer satellite tracking equipment, weather lore, or groundhogs. What they will admit to is using a specific and reliable set of rules that were developed back in 1818 by astronomer and mathematician, David Young, the Almanac's first editor. These rules have been altered slightly and turned into a formula that is both mathematical and astronomical. The Formula. The Farmers' Almanac weather prognosticator, known as Caleb Weatherbee, possesses an exclusive formula that incorporates various elements such as sunspot activity, tidal action of the Moon, the position of the planets, and more. To safeguard this valuable formula, the editors of the Farmers' Almanac keep both Caleb's true identity and the formula as closely guarded secrets."

Last year, Farmers' Almanac called for early start to a cold winter 2022/23

Here is what we wrote in our Aug 28, 2022 Energy Tidbits memo on Farmers' Almanac 2022/23 Winter Outlook. "Farmer's Almanac calls for early start to a cold winter. Our normal comment at this time of year is that it's still early so long term winter forecasts don't have much of an impact on natural gas markets going into Labor Day. And that's even moreso this year given the global shortage of natural gas and LNG post Russia/Ukraine. Plus, normally, the only time early winter forecasts tend to have an impact is when there is a clear view of an El Nino winter. On Aug 4, Farmer's Almanac issued their long-term weather forecast for 2023 [\[LINK\]](#). The Farmer's Almanac doesn't provide an overall commentary for the US, but goes thru a regional recap. Looking at the regional assessments, it looks like a below normal temperature forecast for the US. They specifically warned about cold Dec and Jan in

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the East and South. The Farmer's Almanac wrote "A cold December and a very cold January might make readers in the Northeast shake and shiver. But February will bring milder temperatures that should make winter seem more bearable. The Southeast will experience some shivers, especially during the month of January. Fortunately, for the snowbirds, February will likewise warm the region to near-normal winter season temperatures overall. Extra Flannels Necessary In Other States! Winter will feel unreasonably cold for readers in the Great Lakes region, especially in January."

Figure 5: Farmers' Almanac Winter 2022-2023 Forecast

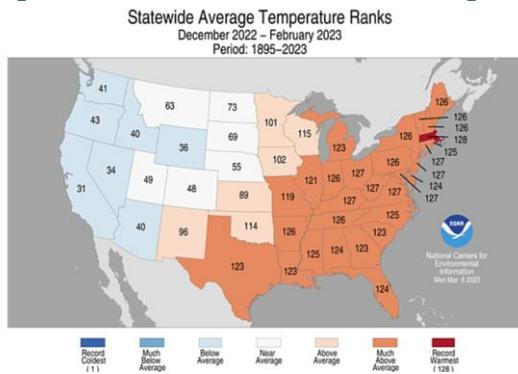


Source: Farmers' Almanac

Winter 2022/23 was very hot

At least as of now, NOAA is expecting a warmer than normal Dec/Jan/Feb, but the current forecast will not likely be close to winter 2022/23 (Dec/Jan/Feb) that was the 17th hottest in the last 128 years. Below is NOAA's statewide average temperature map for Dec/Jan/Feb 2022/23.

Figure 6: US 2022 JAS Statewide Average Temperature Map



Source: NOAA

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Natural Gas: LNG 101, LNG Canada will drive multi-year M&A for Cdn natural gas

We were a little surprised that no one has focused on the reality of supplying natural gas for LNG projects –natural gas supply for LNG projects decline over time and there has to be a constant addition of new natural gas supply from drilling and/or acquisitions to keep the LNG plant full for 30 or 40 years. It's an obvious LNG 101. (i) We saw a good example of this on Monday and we tweeted [\[LINK\]](#) “Overlooked Cdn #NatGas upside > 2025. 📢 #Total reminds #LNG needs ONGOING drilling AND M&A to offset #NatGas supply declines to keep delivering LNG capacity. #LNGCanada has 40 yr license. Phase 1 is 1.8 bcf/d. Phase 2 would add 1.8 bcf/d. Cdn NatGas M&A inevitable for yrs? #OTT” (ii) Our tweet included the Aug 21 TotalEnergies announcement “Australia: TotalEnergies acquires a 26% interest in the Cash-Maple gas discoveries for the long-term supply of Ichthys LNG.” [\[LINK\]](#) TotalEnergies was buying permits that can be developed to provide natural gas for its Ichthys LNG project. TotalEnergies also wrote ““Thanks to this joint acquisition together with our partner INPEX, we are pleased to secure additional resources for the future supply of the Ichthys LNG plant. These resources will help us to meet the long-term demand of our customers in the Asia-Pacific region for LNG.” (iii) LNG Canada has a 40-year export license. Its under construction Phase 1 is 1.8 bcf/d and is going to be supplied by relatively high decline Montney and other similar natural gas zones. We have already highlighted that we expect to see acquisitions of supply or tying up of gas supply via contract for Phase 1 startup. But then, there is the ongoing supply challenge. The TotalEnergies deal is a reminder that LNG Canada will be having ongoing acquisitions for decades. Then throw on top of that the potential (we still think likely) FID of Phase 2 of 1.8 bcf/d and it sets up the likelihood of a multi-year M&A need for natural gas to supply LNG Canada. Based on some of the comments on our tweet, we weren't surprised to see some of the dealers out speaking on this M&A likelihood this week. Our Supplemental Documents package includes the TotalEnergies announcement.

**Multi-year M&A
for Cdn natural
gas**

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

On Friday, Pemex posted its natural gas production data for July. [\[LINK\]](#). Pemex does not provide any commentary on the data but reported July 2023 natural gas production of 4.936 bcf/d, which was +2.5% YoY and -2.0% 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 met by US natural gas imports. Prior to July, the prior four months were all just over 5 bcf/d, which was the first time since o be fair, the last four months have been the first consecutive months slightly over 5 bcf/d since Nov/Dec 2019/Jan 2020. Below is our ongoing table of Pemex reported monthly natural gas production.

**Mexico natural gas
just below 5 bcf/d**

Figure 7: 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%	4.936	2.5%
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: Cheniere and BASF sign long-term LNG deal for 0.10 bcf/d

Long-term LNG deal

Last week's (Aug 20, 2023) Energy Tidbits memo highlighted two shorter term LNG deals (4, 5 yrs) with quality buyers and we highlighted that we will want to watch this space to see if these two shorter-term LNG deals might be the leading indicator for more of these shorter-term LNG deals over the next few months and that the big rush to long-term LNG deals is ending. But this week, we saw another long-term LNG deal, which we expect has been in the works for some time ie. not impacted by last week's two shorter-term LNG deals. On Tuesday, Cheniere (US) announced they have entered a sale and purchase agreement with BASF (Germany) [LINK](#). The deal is set to begin in 2026 upon completion and commencement of operations of Cheniere's first train at Sabine Pass, with BASF purchasing ~0.10 bcf/d. The term of the SPA extends through 2043. Cheniere's CCO and Executive VP, Anatol Feygin, commented "*This SPA demonstrates the critical role US natural gas plays in providing long-term secure, sustainable and affordable energy for Europe. With this agreement, we are supporting the objectives of one of Europe's key industrial end-use consumers to ensure stability of its supply chain*". BASF's CFO, Dr. Dirk Elvermann commented "*By establishing our own dedicated LNG supply chain with Cheniere, we are diversifying our energy and raw materials portfolio at a time of critical changes in the European gas market, which is marked by increased demand and volatile prices for LNG; While we are reducing our dependence on fossil fuels to reach our goal of net zero CO2 emissions by 2050, this agreement will ensure reliable supply of natural gas at competitive terms*". The SPL project will have a capacity of approximately 2.63 bcf/d upon completion. Our supplement document package contains the Cheniere press release.

Two shorter-term LNG deals last week, is rush to long-term LNG deals ending?

Last week's (Aug 20, 2023) Energy Tidbits memo highlighted the two shorter-term LNG deals last week. Here is what we wrote "*We don't want to look at a couple of shorter-term LNG deals and say that represents a sea change in perhaps the most important LNG global market trend in the last 2+ years – the abrupt shift from Asian LNG buyers in July 2021 to move from spot/short-term to long-term contracts following TotalEnergies force majeure at its Mozambique LNG that indefinitely backed up 5 bcf/d of LNG in Mozambique that was supposed to start come on stream over a five year period starting in 2024. (i) But there were two shorter-term LNG deals this week, which don't fit our longstanding thesis so it jumped out at us. Do they represent the start of a move by buyers and sellers away from long-term*

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LNG contracts? Do they point to less concern on LNG supply shortage towards the end of the 2020s. There have been 17.08 bcf/d of long-term LNG deals since July 2021. And, TotalEnergies is expected to lift the force majeure at its Mozambique LNG, which will set in motion 5 bcf/d of LNG in Mozambique to probably start up in 2027. So maybe the start of a pivot. of a pivot. If it's a pivot, it points to an outlook of strong but not necessarily crazy LNG prices. Definitely something we will want to watch. (ii) On Monday we tweeted [\[LINK\]](#) "One off? or is rush to tie up late 2020s #LNG ending? ie. buyers expect restart #TotalEnergies Mozambique LNG leads to 5 bcf/d of MZ LNG post 2026? #OmanLNG to supply 0.4 mtpa to Germany's SEFE starting 2026. BUT on a 4-yr term. NOT the 10+ yr term common post Total Apr 2021 MZ force majeure. 17.08 bcf/d long-term LNG deals since 07/01/21, see SAF Group 08/13/23 Energy Tidbits [\[LINK\]](#) #OOTT." Oman LNG announced a LNG supply deal of 0.4 mtpa starting from 2026 but it was only for a 4-year term. The 4-year term surprised us. We know German buyers have been looking for short-term LNG deals, but the major LNG suppliers have been holding out for traditional long-term LNG deals. So this deal jumped out at us. (iii) Yesterday, we tweeted [\[LINK\]](#) "Item to watch! Another shorter term #LNG deal: ADNOC 5-yr deal with JAPEX. Follows 🟡 OmanLNG 4-yr deal with DEU's SEFE. is the rush to tie up late 2020s LNG ending? ie. buyers expect restart #TotalEnergies Mozambique LNG leads to 5 bcf/d of MZ LNG post 2026? #OOTT #NatGas." On Thursday, ADNOC Gas (UAE) signed a 5-yr LNG supply deal with Japan Petroleum Exploration starting in 2026. There was no disclosure anywhere of the volumes but they did say the agreement was valued at \$450-\$550mm. Our Supplemental Documents package includes ADNOC release and the Times of Oman reporting. The reason we did not include the Oman LNG release is that it didn't include the deal was only for a 4-year term."

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 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](#)

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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 17.18 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 17.18 bcf/d of long-term LNG deals since July 1, 2021. 64% of the deals have been by Asian LNG buyers, but we are now seeing rest of world locking up long term supply deals post Russia/Ukraine. Note in our non-Asian LNG deals will major LNG players (ie. Chevron, Shell, etc) buying for their LNG portfolio supply. China has been particularly active in this space, accounting for 65% of all Asian LNG buyers in long term contracts since July 1, 2021. Below is our updated table of Asian and Europe LNG buyers new long-term supply deals since July 1, 2021.

Figure 8: 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	(bcfd)	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	Unipet	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	0.88	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	Bangladesh/Oman	0.20	10.0	2026	2036
Jun 21, 2023	CNPC	QatarEnergy	China/Quatar	0.53	27.0	2027	2054
Jun 26, 2023	ENN LNG	Cheniere	Singapore / US	0.24	20.0	2026	2046
Jul 5, 2023	Zhejiang Energy	Mexico Pacific Ltd	China / Mexico	0.13	20.0	2027	2047
Aug 6, 2023	LNG Japan	Woodside	Japan / Australia	0.12	10.0	2026	2036
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				11.02			
Non-Asian LNG Deals							
Jul 26, 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	Cherone	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	IOCI	Adnoc	India/UAE	0.16	14.0	2026	2040
Jul 28, 2023	OMV	BP	Austria/UK	0.13	10.0	2026	2036
Aug 4, 2023	ConocoPhillips	Mexico Pacific Ltd	US/Mexico	0.29	20.0	2025	2045
Aug 22, 2023	BASF	Cheniere	Germany / US	0.10	17.0	2026	2043
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				6.17			
Total New Long Term LNG Contracts since Jul/21				17.18			

Source: SAF

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Natural Gas: Does Woodside/union LNG deal set the bar for Chevron AUS LNG?

On Wednesday night, we tweeted [LINK](#) on the news that Woodside and the Offshore Alliance union reached an agreement in principle (subsequently approved by the members) and how that should send Europe TTF natural gas prices lower on Thursday. There is still no deal with Chevron. The interesting item was the Offshore Alliance post on Saturday in that they posted the details of their deal with Woodside. The headlines were all on the high salaries, but there looks to be much more in the deal including “*Job Security to prevent jobs being contracted out to labour hire*”. Yesterday, we tweeted [LINK](#) “*Hmmm! Did Woodside union deal set the bar for #Chevron to avoid strike on its LNG? See 🙌 Offshore Alliance union lists details of its deal to avoid strike on #Woodside LNG platforms. It's not just that salaries look good but also job security, cyclone, etc. #OOTT #NatGas.*” Our first thought on seeing the details was that it would seem to set the bar for Chevron to avoid the union striking on its LNG. It would seem to be very difficult for the Offshore Alliance union workers at Chevron to take less than their Offshore Alliance union brothers just got from Woodside. Our Supplemental Documents package includes the Offshore Alliance Facebook post of the Woodside deal.

Chevron LNG strike potential?

Natural Gas: India July natural gas production up +3.8% MoM to 3.56 bcf/d

India domestic natural gas production peaked in 2010 at 4.6 bcf/d, and then ultimately declined to average 2.8 bcf/d in 2020-2021. India returned to modest growth in 2021/2022. There was a several months of basically flat production but modest production growth has returned in 2023. On Tuesday, India’s Petroleum Planning and Analysis Cell released their monthly report for July’s natural gas and oil statistics [LINK](#). India’s domestic natural gas production for July was 3.56 bcf/d, which was up +3.8% MoM from 3.43 bcf/d in June. On a YoY basis, natural gas production was up +8.3% from 3.28 bcf/d in July 2022. Our Supplemental Documents package includes excerpts from the PPAC monthly.

Natural Gas: India LNG imports down -2.6% MoM to 2.54 bcf/d in July

For the past several years, India has increased LNG imports whenever domestic natural gas production was flat or decreased. But the overriding factor in 2022 was the high LNG prices. India is always viewed as an extremely price sensitive buyer in terms of its LNG imports. We saw this in periods of low LNG prices such as June to Oct 2020 when India had a big ramp up in LNG imports. But with the sky-high LNG prices in 2022, India did their best to minimize LNG imports. However, now with the pull back in LNG prices, we have been seeing some India LNG imports move up or down in line with domestic production moving down or up. On Tuesday, India’s Petroleum Planning and Analysis Cell released their monthly report for July’s natural gas and oil statistics [LINK](#). Over the past 3 years, India’s LNG imports declined from a 2020-2021 peak of 3.84 bcf/d in Oct 2020 to just 2.85 bcf/d in Jan 2021 and lower in 2022. Additionally, July’s LNG imports were 2.54 bcf/d, which is down small from June’s 2.61 bcf/d, but relatively flat. LNG imports are now down -13.11% YoY from 2.93 bcf/d in July 2022. Our Supplemental Documents package includes excerpts from the PPAC monthly.

India LNG imports down YoY

Natural Gas: JMA forecasts a warm start to winter

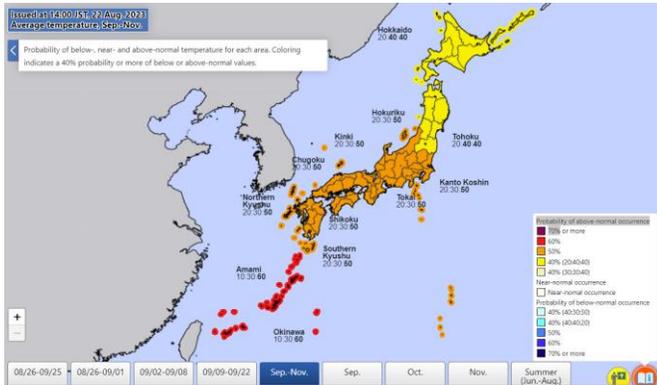
The most important factor to natural gas and LNG prices is winter weather. As seen last winter, it was warmer than normal in Asia, Europe and the US and that led to weaker natural gas prices in 2023. Absent some unusual item, it’s very difficult for natural gas prices to

Forecasts a warm starts to winter in Japan

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recover from a hot winter. Last week’s (Aug 20, 2023) Energy Tidbits noted the NOAA’s forecast for a warm start to, and a warmer than normal, winter for the US and the ECMWF’s similar forecast for a warm start to, and a warmer than normal winter for Europe. On Tuesday, the Japan Meteorological Agency posted its Sept/Oct/Nov forecast [LINK](#) and the JMA forecasts a continuation of the warm weather and a warmer than normal start to winter in the Sept/Oct/Nov period. The JMA did not provide an updated Dec/Jan/Feb forecast.

Figure 9: JMA Temperature Probabilities Sept/Oct/Nov 2022



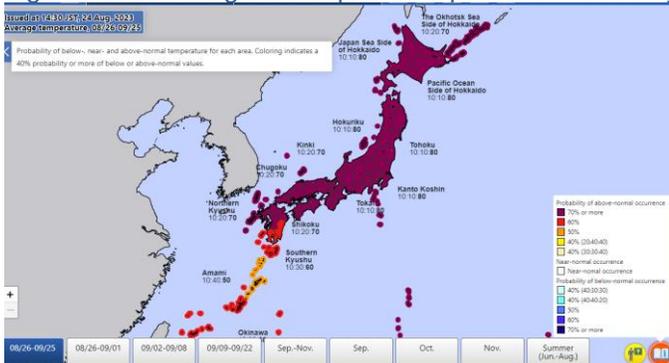
Source: Japan Meteorological Agency

Natural Gas: Forecast well above normal temperatures to end Aug and Sept in Japan

It has been really hot in Japan this summer and it looks like the hot weather will continue to end August and the end of September. Every Thursday, the Japan Meteorological Agency updates its 30-day outlook [LINK](#). The August 24 update calls for much warmer than typical temperatures for the Aug 26 – Sep 25 period. The well above average temperatures are forecasted through the whole country, with the northern and central regions being most affected. The hot weather should keep demand on electricity for air conditioning and continue to pull on LNG stocks. Below is the JMA’s 30-day temperature probability forecast for Aug 26 to Sep 25.

Japan’s 30-day temperature forecast

Figure 10: JMA Aug 26 – Sep 25 Temperature Probability Forecast



Source: Japan Meteorological Agency

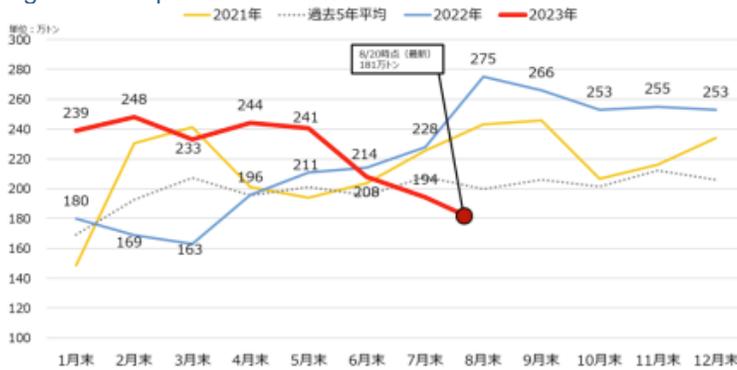
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Natural Gas: Japan's LNG stocks remain below 2022 and 5-year average levels

It's been hot in Japan, and Japan has been drawing on its LNG stocks for power generation for the past few weeks. Which means that Japan LNG stocks are now below 2022, 2021 and 5-year average levels. On Wednesdays, Japan's METI releases its weekly LNG stocks data [\[LINK\]](#). LNG stocks on August 20 were 86.9 bcf and are down -6.6% WoW from August 13 of 93.1 bcf, and under the 5-year average of 96.1 bcf. METI did not comment on the MoM increase. Below is the Japanese LNG stocks graph from the METI weekly report.

Japan LNG stocks down -6.6% WoW

Figure 11: Japan LNG Stocks



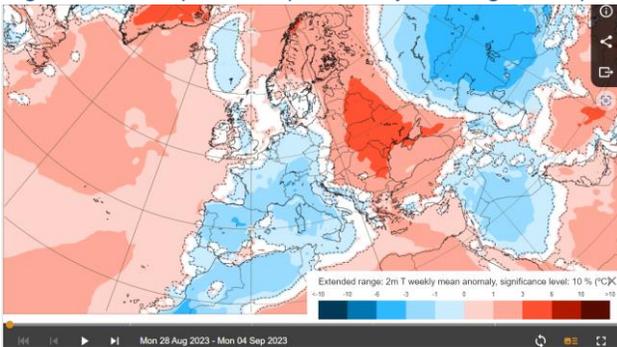
Source: METI

Natural Gas: Looks like leave the windows open temperatures in Europe this week

It looks like the next two weeks in Europe will be mostly what we call leave the windows open temperatures in a fair amount of western Europe. Yesterday, the ECMWF posted its near term temperature forecasts that call for cooler than normal temperatures for most of western Europe. Yesterday, we checked AccuWeather's daily highs for Berlin and Paris for this week and they were in the low 20C. Below are the ECMWF forecast temperature probability maps for Aug 28-Sept 4 [\[LINK\]](#) and Sept 4-11 [\[LINK\]](#).

Mild summer temps in Europe

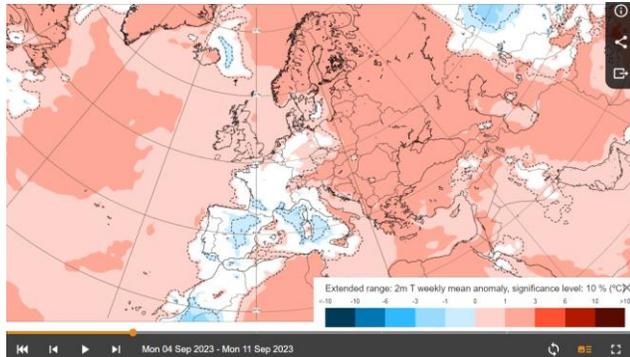
Figure 12: Temperature probability for Aug 28-Sept 4



Source: ECMWF

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Figure 13: Temperature probability for Sept 4-11

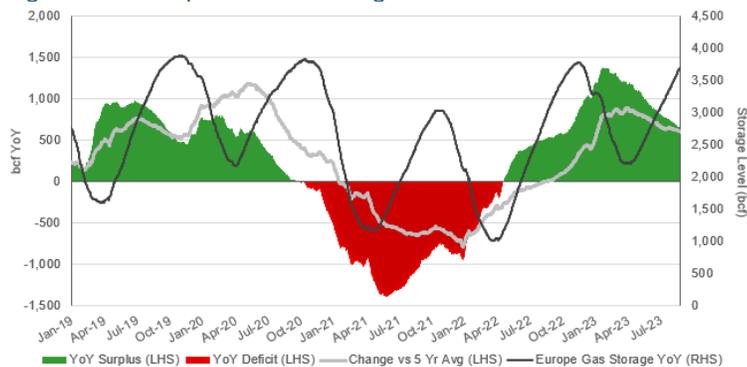


Source: ECMWF

Natural Gas: Europe storage 92% full, so should go into winter full or close to full
 Europe storage hit the 90% full level last week, and continues to increase this week. So, Europe should be able to go into winter at full or close to full levels. Over the past several weeks, the hot weather and relatively low natural gas prices have led to a modest narrowing of the gas storage surplus relative to last year and the 5-year average. Although not putting risk to Europe storage being full or near full for the start of winter. This week, Europe storage increased by +1.72% WoW to 91.86% on August 23. Storage is now +13.82% greater than last year levels of 78.04% and is +13.01% above the 5-year average of 78.85%. The current storage is within the 5-year range, albeit at the top end of the range. Below is our graph of Europe Gas Storage Level.

Europe gas storage

Figure 14: European Gas Storage Level



Source: Bloomberg, SAF

Oil: US oil rigs -8 WoW to 512 rigs on August 25, US gas rigs -2 WoW to 115 rigs

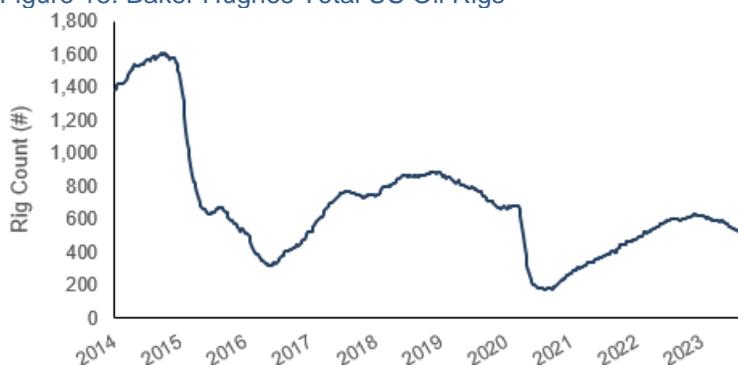
On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Total US oil rigs were down -8 rigs WoW to 512 total rigs, and are -93 rigs YoY for the week of August 25. This is up +31 rigs from the 2022 low of 481 rigs in January, and +340 rigs since the 2020 low of 172 rigs on Aug 14. On a per basin basis, there were no WoW increases in oil rigs for the week of August 25. The Permian was down -6 rigs WoW to 317 rigs, Cana Woodford was -2 rigs WoW to 16 rigs, and Eagle Ford decreased -1 rigs WoW to a total of 50 rigs. The

US oil rigs down WoW

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Permian is now at its lowest level since March 18, 2022 and is down -40 rigs from its recent high of 357 rigs on April 28, 2023. (ii) Gas rigs were down -2 rigs WoW at total of 115 rigs and have now decreased -43 rigs YoY. On a per basin basis, Marcellus increased +1 rig WoW to 31 rigs. In contrast, Haynesville decreased by -2 rigs WoW to 41 rigs, and the Permian is down -1 rig WoW to a total of 3 rigs. Below is our graph of total US oil rigs.

Figure 15: Baker Hughes Total US Oil Rigs



Source: Baker Hughes, SAF

Oil: US frac spreads -10 to 246 frac spreads for the week ending Aug 25

It was a pleasant surprise to see on Friday night that Mark Rossano (C6 Capital Holdings) weekly US frac spread recap for the week ending Aug 25 on the Primary Vision network was publicly available. YouTube video is at [LINK](#). For the week ending Aug 25, US frac spreads at the high point in the week were -10 WoW to 246 spreads. For perspective a year ago, Rossano noted that US frac spreads were 287 for the week ending Aug 26, 2022. Here are some of Rossano's comments on this week's frac spreads. Part of the reduction is due to the hot weather in Texas that impacts operating equipment and this led to spreads down in the Permian and West Texas. He had expected spreads to end the summer relatively flat before recovering seasonally in Sept and Oct. Has seen some moves from dry gas into Texas but expects that to slow down as it looks like natural gas has found a floor and perhaps see some minor increases. There were frac spread increases in the Anadarko and Appalachia. There were some seasonal decreases in the smaller basins.

Frac spreads -10 to 246

Consolidation leads to efficiencies & means less spreads and rigs are needed

On Friday, we tweeted [LINK](#) "Good reminder from Mark that, when a Permian player consolidates within core area, drilling & fracking becomes more of a manufacturing process so there are increased efficiencies and that means less DUCs, rigs & spreads are needed. See 1:30 min mark. #OOTT." Mark Rossano (C6 Capital Holdings) also reminded of the big advantage for industry in its consolidation because the consolidation is happening where buyers are generally adding more lands within their core areas – drilling and fracking becomes more of a manufacturing process so there are increased efficiencies and that means less spreads and rigs are needed to accomplish the same results. So in this manufacturing mode, Rossano says "where you don't need the same amount DUCs, you don't need the same amount of rigs and spreads because you're starting to see things move in a fairly

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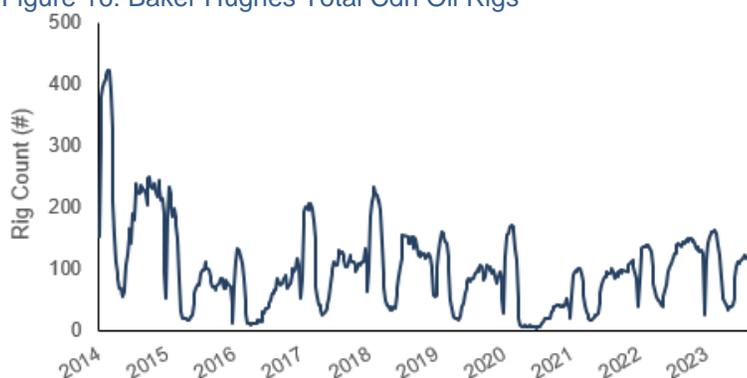
steady clip. In the past, you'd have to lay down your stuff here, put it onto trucks, move it to the next location. But a lot of companies have now purchased in specific locations so they can run in straight lines, they can create those efficiencies."

Oil: Total Cdn rigs up +1 rig WoW to 190 total rigs

For the week of August 25, total Cdn rigs were up +1 rig WoW to 190 rigs. BC increased +2 rigs WoW, to a total of 19 rigs, after a modest reduction in wildfires this week. In contrast, Saskatchewan decreased -1 rig WoW for a total of 35 rigs. Cdn oil rigs were down -3 WoW to 116 rigs, and Cdn gas rigs increased +4 rigs to 74 rigs. Cdn oil rigs are down -20 rigs YoY, while gas rigs are up +9 rigs YoY. Below is our graph of total Cdn oil rigs.

**Cdn total rigs up
WoW**

Figure 16: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes, SAF

Oil: US weekly oil production estimates up +0.1 mmb/d WoW to 12.8 mmb/d

Our Aug 13, 2023 Energy Tidbits memo highlighted the EIA increasing their weekly US oil production estimates by +0.4 mmb/d and how we had been expecting such a big increase to the weekly estimates. For months, we highlighted how the US weekly estimates were well below the EIA's actuals as per its monthly Form 914. As a result the weekly estimates now seem more or less in line with the monthly actuals. The production estimates have continued to increase in August and has reached another post-pandemic high. This week, the EIA increased its weekly US oil production estimates, up +0.1 mmb/d to 12.8 mmb/d for the week ended August 18 [LINK](#). The Lower 48 was also up +0.1 mmb/d WoW at 12.4 mmb/d, and Alaska was up +0.018 mmb/d to 0.402 mmb/d. Below is a table of the EIA's weekly oil production estimates.

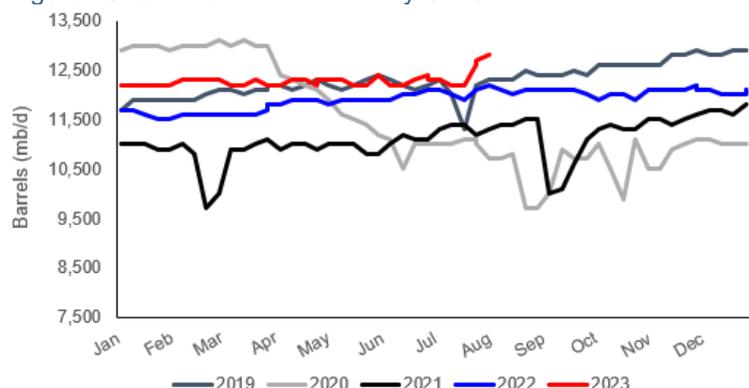
**US oil production
up WoW**

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

Year-Month	Week 1		Week 2		Week 3		Week 4		Week 5	
	End Date	Value								
2022-Jan	01/07	11,700	01/14	11,700	01/21	11,600	01/28	11,500		
2022-Feb	02/04	11,600	02/11	11,600	02/18	11,600	02/25	11,600		
2022-Mar	03/04	11,600	03/11	11,600	03/18	11,600	03/25	11,700		
2022-Apr	04/01	11,800	04/08	11,800	04/15	11,900	04/22	11,900	04/29	11,900
2022-May	05/06	11,800	05/13	11,900	05/20	11,900	05/27	11,900		
2022-Jun	06/03	11,900	06/10	12,000	06/17	12,000	06/24	12,100		
2022-Jul	07/01	12,100	07/08	12,000	07/15	11,900	07/22	12,100	07/29	12,100
2022-Aug	08/05	12,200	08/12	12,100	08/19	12,000	08/26	12,100		
2022-Sep	09/02	12,100	09/09	12,100	09/16	12,100	09/23	12,000	09/30	12,000
2022-Oct	10/07	11,900	10/14	12,000	10/21	12,000	10/28	11,900		
2022-Nov	11/04	12,100	11/11	12,100	11/18	12,100	11/25	12,100		
2022-Dec	12/02	12,200	12/09	12,100	12/16	12,100	12/23	12,000	12/30	12,100
2023-Jan	01/06	12,200	01/13	12,200	01/20	12,200	01/27	12,200		
2023-Feb	02/03	12,300	02/10	12,300	02/17	12,300	02/24	12,300		
2023-Mar	03/03	12,200	03/10	12,200	03/17	12,300	03/24	12,200	03/31	12,200
2023-Apr	04/07	12,300	04/14	12,300	04/21	12,200	04/28	12,300		
2023-May	05/05	12,300	05/12	12,200	05/19	12,300	05/26	12,200		
2023-Jun	06/02	12,400	06/09	12,400	06/16	12,200	06/23	12,200	06/30	12,400
2023-Jul	07/07	12,300	07/14	12,300	07/21	12,200	07/28	12,200		
2023-Aug	08/04	12,600	08/11	12,700	08/18	12,800				

Source: EIA

Figure 18: EIA's Estimated Weekly US Oil Production



Source: EIA, SAF

Oil: Dallas Fed, lower productivity Permian 2022 wells than 2021 and 2020 wells

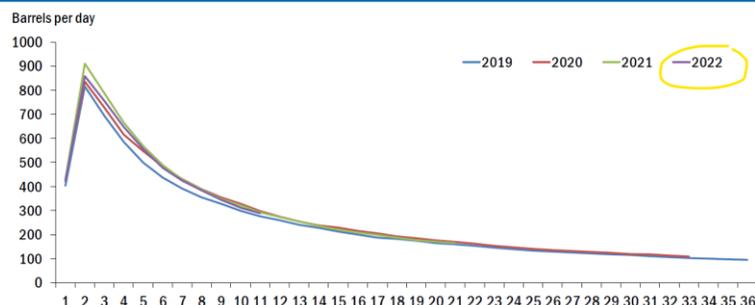
On Friday, we tweeted [\[LINK\]](#) "ICYMI. @DallasFed Permian #Oil decline curve updated 07/28. Fits maturing Permian thesis ie. industry generally drilled their best wells in 2020/21 when cash flows were squeezed. 2022 wells. Less than 2021 wells. Start little higher vs 2020 but cross over lower ~6 mths. #OOTT." The Dallas Fed posts an Energy Slideshow, and the current release was on August 18. [\[LINK\]](#). One fo the key charts is their "Permian Basin Crude Oil Decline Curve", which has data updated as of July 28. The data is updated on a semi-annual basis and the prior data update was Feb 21, 2023. The graph plots the Permian Basin wells from 2019, 2020, 2021 and 2022. The takeaway and narrative is unchanged from the last data update. The best Permian wells were drilled in 2021 when cash flows and capital access were squeezed. The 2022 wells are less than the 2021 wells. The 2022 wells start a little higher vs the 2020 wells, but they converge around 6 months and then 2022 wells are slightly lesser than 2020 wells. There is no data on 2023 wells.

Lower productivity Permian wells

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Figure 19: Permian Basin Crude Oil Decline Curve

Permian Basin Crude Oil Decline Curve



Federal Reserve Bank of Dallas

NOTES: Depicts average crude oil production per well and is based off first production date. Last updated 7/26/23; chart is updated semi-annually. SOURCE: WellStack

Source: Dallas Fed

More Raymond James data supporting a maturing Permian Delaware Basin

Here is what we wrote in our June 25, 2023 Energy Tidbits memo. “Yesterday, we tweeted [\[LINK\]](#) “Must read #Permian#DelawareBasin report by @RaymondJames John Freeman. “remaining core inventory (~8 yrs) continues to fall at a rapid rate” “Well productivity finally rolled over last year (down 6%), after improving at a 9% CAGR the prior 5 years” Combined with 📌 06/05/23 Midland Basin report, “Permian Basin well productivity declined 3% overall last year (first decline for the basin” Maturing Permian Basin = less US supply growth potential = positive for 2020s #Oil outlook. #OOTT.” (i) On Thursday, Raymond James posted a big report “Delaware Basin Deep Dive: Well Productivity & Remaining Core Inventory”, where they “focus on two important topics within the Delaware Basin: 1) How much core acreage remains and 2) What are the well productivity trends in the basin.” This is the follow up report to its June 5 report “Midland Basin Deep Dive: Well Productivity & Remaining Core Inventory”. (ii) This was a “deep dive” and the data takeaways were clear – core inventory “continues to fall at a rapid rate”, and “well productivity finally rolled over last year (down 6%), after improving at a 9% CAGR the prior 5 years.” (iv) RJ concludes “The Delaware Basin deep-dive reveals that remaining core inventory (~8 yrs.) continues to fall at a rapid rate and robust M&A recently leaves public operators with few remaining opportunities to acquire meaningful core inventory. The gap between public (~9 yrs.) and private (~3 yrs.) operators when it comes to remaining core inventory is considerable. Going forward, we anticipate an increasing interest in non-core acreage (Tier 1 and Tier 2 inventory) that can be acquired cheaply today, but will be worth considerably more in the future when core inventory exhaustion has been reached. We anticipate private equity being the main acquirer of that non-core acreage. Well productivity finally rolled over last year (down 6%), after improving at a 9% CAGR the prior 5 years. The declining well productivity was driven primarily by a shift in well mix as the industry moved more towards full-stack development (i.e. less Wolfcamp) and secondarily a jump in the percentage of

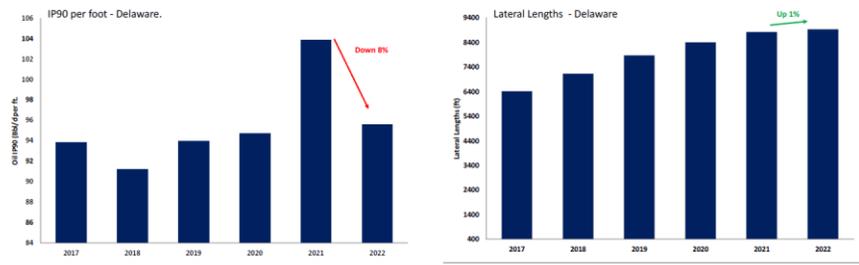
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child wells (33%) drilled last year.” This is a must-read report that will have to be accessed via Raymond James.”

Figure 20: Delaware Basin posts first decline in well productivity

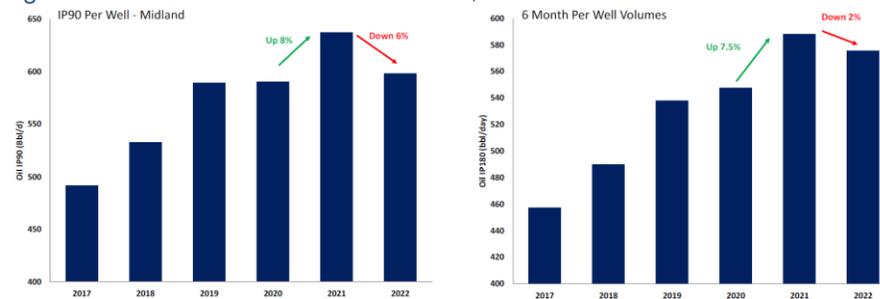
Delaware Basin Posts First Decline in Well Productivity

Similar to our approach in the Midland, we are choosing to focus on per well 6 month production volumes. We are doing this even though there seems to be fewer constraints around high initial production rates, with both IP90 and 6 month volumes falling a similar amount year-over-year. We still believe 6-month volumes provides a cleaner picture and based on that data the Delaware Basin saw its first decline (6%) in well productivity occur last year. The prior 5 years the basin increased well productivity at a -9% CAGR.



Source: Enverus, Raymond James Research
Source: Raymond James

Figure 21: Midland Basin: IP90 Per Well, 6 Month Per Well Volumes



Source: Enverus, Raymond James
Source: Raymond James

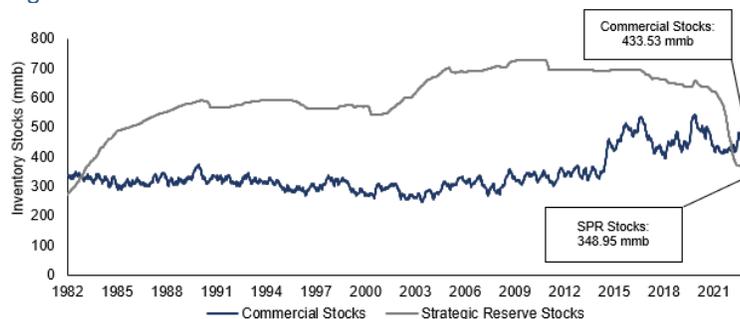
Oil: US SPR reserves now -84.308 mmb lower than commercial crude oil reserves

US SPR reserves

Oil in the US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sept 16, 2022 week. This deficit narrowed this week after a big draw in commercial oil stocks of -6.134 mmb, which puts commercial stocks at their lowest level since January. The EIA’s weekly oil data for August 18 [LINK] saw the SPR reserves up +0.594 mmb WoW with the US DOE repurchases that increased SPR reserves to 348.948 mmb, while commercial crude oil reserves decreased -6.134 mmb to 433.528 mmb. There is now a -84.580 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles.

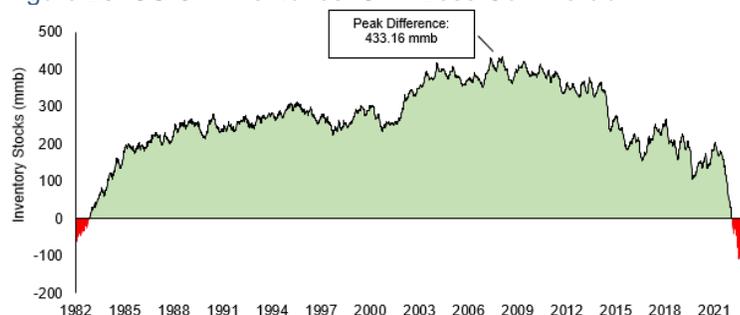
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Figure 22: US Oil Inventories: Commercial & SPR



Source: EIA, SAF

Figure 23: US Oil Inventories: SPR Less Commercial



Source: EIA, SAF

Oil: US gasoline prices at \$3.82, \$0.05 higher YoY

AAA reported that US national average gasoline prices were \$3.82 yesterday, which was down \$0.05 WoW from \$3.87 on Aug 19 and also down \$0.05 YoY from \$3.87 on Aug 26, 2022. There is no question that the last thing Biden wants is US gasoline prices going higher, especially above the \$4 mark in 2024, the election year. Remember the panic in March 2022 when, eight months before the mid-term elections, US gasoline prices first went over \$4, and then over \$5 by the end of June before easing back before \$4 in Aug. Biden told Americans in Feb 2022 he was working to get gas prices down, and on March 30, announced they were going to release 180 million barrels from the SPR. It worked as a key factor for US gasoline prices going lower. It's now less than 15 months until the 2024 US elections. And US gasoline prices haven't been on a big ramp but moved higher this summer. And, as noted above, US gasoline prices are \$3.82 and only \$0.05 below year ago levels.

US gasoline prices**Oil: Looks like added costs/delays at Trans Mountain's TMX expansion**

On Aug 17, Trans Mountain filed with the CER that it has run into "significant technical challenges with micro-tunnelling" in a small portion of their construction. Trans Mountain hasn't disclosed how this will impact costs and timing for the TMX expansion, but it's hard to see how this will not have some impact on timing and costs unless there was slack built into costs and timeline. We just don't know by how much. (i) On Wednesday, we tweeted [\[LINK\]](#) "Looks like more Trans Mountain #TMX delays & higher capital costs. @CER_REC filing."

Added costs & delays at TMX

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"encountering significant technical challenges with micro-tunnelling " ". made several unsuccessful, costly attempts ... " ". only feasible option is to change the construction .." #OOTT". Our tweet included excerpts from the Trans Mountain Aug 17 filing with the CER. (ii) Here are the more complete sentences of the excerpts from the CER filing. "Trans Mountain is encountering significant technical challenges with micro-tunnelling along an approximately 1.3-kilometre-long portion of the approved route, specifically with the micro-tunnel drive between pads 1 and 2." "Trans Mountain has made several unsuccessful, costly attempts to address the problem of upward RCJP migration to date." "jacking forces to move the tunnel forward. This may create significant delays in restarting tunnelling. • If the construction of the new shaft is successful and the tunnel commences forward progression, there remains approximately 800 metres of tunnel length to be constructed in medium to hard rock formations (with the potential to encounter other unfavourable construction conditions), which has its own material risk to the project and schedule. • Trans Mountain has determined that the only feasible option is to change the construction methodology for an approximately 1.3-kilometre-long segment to a combination of horizontal directional drilling (HDD) and conventional open trench." Our Supplemental Documents package includes the CER filing.

Oil: Cdn WCS less WTI differentials widened \$2.25 to close at \$19.50 on Aug 25

It was a great May thru mid Aug for WCS less WTI differentials that were much narrower than normal. Normally WCS less WTI differentials start to seasonally widen in mid-May. But that didn't happen this year. WCS less WTI differentials were \$14.15 on March 31, which was the Friday before the Sun Apr 2 reports that OPEC+ was going to cut production effective May 1. The WCS less WTI differential was up and down but closed at \$14.65 on Apr 28, then narrowed in May to 13.50 on May 31, narrowed in June to \$11.25 on June 30, widened in July to \$13.75 on July 31. But that changed in August, widening to \$15.50 on Aug 11, then last week to \$17.25 on Aug 18, and then widening \$2.25 this week to close at \$19.50 on Aug 25. WCS less WTI differentials have now moved back to more normal seasonal wider differentials. 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 \$20.00 on Aug 25, 2022. Below is Bloomberg's current WCS–WTI differential as of Aug 25, 2023 close.

WCS less WTI differentials

Figure 24: WCS less WTI oil differentials including Aug 25 close



Source: Bloomberg

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Oil: Crack spreads at \$39.39. still no reason for US refiners to stop buying crude

We remind that oil demand is driven by refiners and their ability to make money by processing oil and selling petroleum products. So crack spreads are a good indicator if refiners will be looking to buy more or less oil. This week, the US 321 crack spreads decreased by \$3.39 to close at \$39.39 on Aug 25. Crack spreads ~\$40 are very high crack spreads and more than a double vs the more normal range pre-Covid that was more like \$15-\$20. A \$39.39 crack spread is a big incentive for US refiners to run hard and process as much crude as possible.

**Crack spreads
down this week**

Explaining 321 crack spread

People often just say “cracks”, which refers to the 321 crack spread. This is the spread or margin that refiners make from buying crude at a certain price and then selling the finished petroleum products at their respective prices. The 321 crack spread is meant to represent what a typical US refinery produces. It assumes that for every three barrels of crude oil, the refinery will produce two barrels of gasoline and one barrel of distillates. So the crack spread is based on that formula and worked back to a crack spread per barrel. Below is the current 321 crack spread, which was \$39.39 as of the Friday Aug 25, 2023 close.

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



Source: Bloomberg

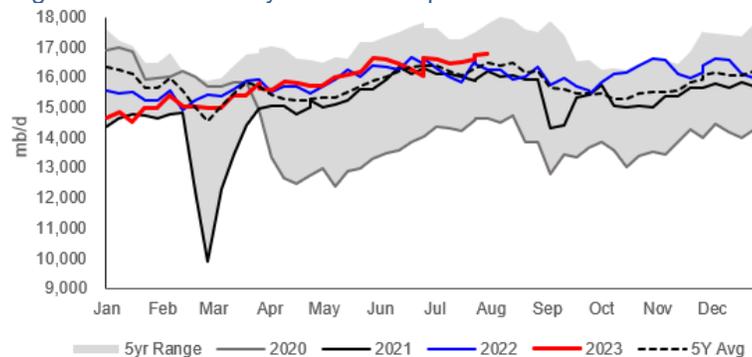
Oil: Refinery inputs up +0.030 mmb/d WoW to 16.776 mmb/d

There are always unplanned issues that impact crude oil inputs into refineries, but refineries around the world follow seasonal patterns for their maintenance. We'll normally see refineries come out of turnarounds in late March/early April to start their ramp up in refining of summer blend fuels, which typically peaks in Aug/early Sept. And given the strong crack spreads noted above, refineries are incentivized to process as much crude as possible. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended August 18 [\[LINK\]](#). The EIA reported crude inputs to refineries were up +0.030 mmb/d this week to 16.776 mmb/d and are up +0.531 mmb/d YoY. Refinery utilization was down -0.2% WoW to 94.5%, which is +0.7% YoY. We are likely hitting the seasonal peak in refining in the next few weeks.

**Refinery inputs
up +0.030 mmb/d
WoW**

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Figure 26: US Refinery Crude Oil Inputs



Source: EIA, SAF

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

The reason why we continue to highlight this error is that no one can tell if it's only the EIA allocating imports incorrectly by country or if the EIA is understating oil imports. But it's the same commentary as the last few months 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 starting in Jan. What we don't know if the EIA has just allocated to some other country. We have been highlighting how Chevron has steadily increasing US Gulf Coast (PADD 3) imports from Venezuela every month in 2023. And the EIA reports oil imports from Venezuela in its monthly data but for reason not in these weekly estimates. (ii) US "NET" imports were up +0.116 mmb/d to 2.675 mmb/d for the August 18 week. US imports were down -0.225 mmb/d to 6.933 mmb/d. US exports were down -0.341 mmb/d to 4.258 mmb/d. The WoW increase in US net imports was driven mostly by "Top 10". The Top 10 was down -0.053 mmb/d. Some items to note on the country data: (i) Canada was up +0.327 mmb/d to 3.832 mmb/d. (ii) Saudi Arabia was down -0.064 mmb/d to 0.221 mmb/d. (iii) Mexico was down -0.121 mmb/d to 0.780 mmb/d. (iv) Colombia was up +0.215 mmb/d to 0.290 mmb/d. (v) Iraq was down -0.021 mmb/d to 0.283 mmb/d. (vi) Ecuador was down -0.171 mmb/d to 0.192 mmb/d. (vii) Nigeria was down -0.218 mmb/d to 0.089 mmb/d.

US net oil imports

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Figure 27: US Weekly Preliminary Imports by Major Country

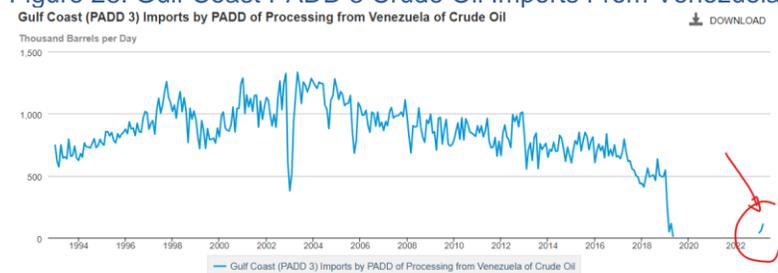
(thousand b/d)	Jun 2/23	Jun 9/23	Jun 16/23	Jun 23/23	Jun 30/23	Jul 7/23	Jul 14/23	Jul 21/23	Jul 28/23	Aug 4/23	Aug 11/23	Aug 18/23	WoW
Canada	3,504	3,339	3,570	3,776	3,611	3,385	3,698	3,203	3,691	3,466	3,505	3,832	327
Saudi Arabia	66	677	146	460	313	444	426	242	427	330	285	221	-64
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	647	845	808	758	882	526	1,004	830	760	667	901	780	-121
Colombia	127	184	148	222	287	153	215	287	290	296	75	290	215
Iraq	430	252	102	216	122	134	259	273	235	305	304	283	-21
Ecuador	218	54	203	67	157	144	207	216	175	142	363	192	-171
Nigeria	144	132	204	96	192	189	91	229	94	237	307	89	-218
Kuwait	0	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	0
Top 10	5,136	5,483	5,181	5,595	5,564	4,975	5,900	5,280	5,672	5,443	5,740	5,687	-53
Others	1,264	898	980	985	1,474	905	1,274	1,087	996	1,239	1,418	1,246	-172
Total US	6,400	6,381	6,161	6,580	7,038	5,880	7,174	6,367	6,668	6,682	7,158	6,933	-225

Source: EIA, SAF

EIA shows imports from Venezuela in its monthly import data.

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

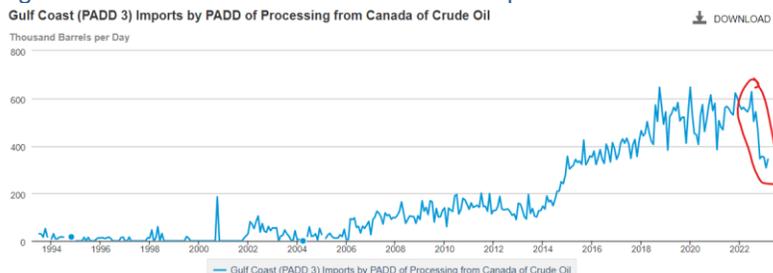
Figure 28: Gulf Coast PADD 3 Crude Oil Imports From Venezuela



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

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



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

Oil: Mexico oil production including partner volumes back below 1.6 mmb/d

On Friday, Pemex posted its July 2023 oil production data. [LINK](#) Pemex does not provide any commentary on the data, but reported July oil production, including partners, was 1.573 mmb/d, which was -7.9% YoY and -2.2% MoM. The big picture story remains the same - Mexico (Pemex) oil production is stuck around 1.6 mmb/d for the last three years. 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.

Pemex July oil production

Figure 30: 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	1,609	-5.5%
July	2,157	1,986	1,823	1,671	1,595	1,701	1,707	1,573	-7.9%
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 1.052 mmb/d of oil in July, -12.6% MoM but unchanged to US

On Friday, Pemex posted its oil exports for July. [LINK](#) Pemex does not provide any commentary on the data but reported July oil exports were 1.052 mmb/d, which was -0.9% YoY and -12.6% MoM vs 1.203 mmb/d in June. June was high likely due to the offshore fires that would have disrupted crude oil flows to refineries and pushed some of that oil to export markets. Pemex oil exports were down 0.151 mmb/d MoM overall but its exports to the US was unchanged in July at 0.809 mmb/d vs 0.805 mmb/d in June. The US tends to be a higher margin market so Pemex typically prioritizes oil exports to the US. Please noted that we continue to expect Mexico oil exports to decline later in H2/23 as they start up their new 340,000 b/d Olmeca (formerly known as Dos Bocas) refinery. Below is our table of the Pemex oil export data.

Pemex July oil exports

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Figure 31: 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	1,052	-0.9%
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: Risk to more Venezuela oil hitting market in 2024 if US/Venezuela talks work

Oil markets should be prepared for the risk that there is addition oil supply coming from Venezuela in 2024. No one should be surprised to see the Bloomberg Wednesday report “The Biden administration is in talks with Venezuela to explore a temporary lifting of crippling sanctions in exchange for allowing fair elections next year. The preliminary discussions involve senior officials from both nations, including Venezuela’s head of congress Jorge Rodríguez, according to people familiar with the process, who asked not to be identified. Washington has floated the idea of sanctions relief to persuade the regime of President Nicolás Maduro to hold a competitive presidential vote in 2024, and free political prisoners. Sanctions have aggravated Venezuela’s economic and humanitarian crisis by hindering oil sales, though failed in their original objective of ousting Maduro. If a deal is reached, the US would grant a license to lift some or all of Venezuela’s sanctions temporarily.” And “Should Venezuela take concrete actions toward restoring democracy, leading to free and fair elections, we are prepared to provide corresponding sanctions relief,” said Adrienne Watson, a spokeswoman for the White House’s National Security Council, in a written response to questions.” This fits the thesis (we share) that Biden is looking ahead to the 2024 election and looking for items to help him lower oil prices to flow thru to lower US gasoline prices given he used up his SPR help to lower US gasoline prices for the 2022 mid-terms. It’s preliminary and there is no guarantee that it will happen. However, it makes sense that they are having discussions now to have the chance of any deal for 2024. What isn’t clear is what is corresponding sanctions relief? The number one issue that Biden has wanted is free and fair elections so we would assume that would lead to lifting oil sanctions. The other interesting part is that the US says “taking concrete actions toward...”, which means this could happen before any elections. This is why we highlight this item, the inference is that some sort of preliminary deal could see lifting of sanctions on Venezuela oil in early 2024. Our Supplemental Documents package includes the Bloomberg report.

**Risk for
Venezuela oil on
markets**

Remember Chevron is on a go-slow Venezuela plan for now

The key factor for any potential lifting of oil sanctions on Venezuela will be what does the Biden Administration do with respect to its license to Chevron. It is important to remember that Chevron has been on a go-slow plan in Venezuela. It’s licence is for six months but renewable every month so Chevron never has more than six months visibility that it can work here. And that without visibility to longer than six months, it hasn’t committed to drill wells and make big infra capex spending. If Biden gives

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Chevron the green light for a longer period (ie. 2 years or so) it will open up the potential for big production and exports increases for Venezuela. Here is what we wrote in our Dec 25, 2022 Energy Tidbits memo. "There was an overlooked Argus report on Wed [\[LINK\]](#) "High hurdles to grow Chevron's Venezuela oil output." It was likely overlooked for the title of the report. (i) But, yesterday, we tweeted [\[LINK\]](#) "Tip of the Iceberg! Chevron VEN Nov production is ~90,000 b/d, 1,400 wells, ~65 b/d ave well. Note 📌 category 2: ~8,700 wells need ~\$0.5 mm/well to become operational. At 65 b/d ave = ~550,000 b/d capacity add without drilling one well. Thx @ArgusMedia Carlos Camacho! #OOTT." (ii) The Argus report reminds of the huge near term upside For Chevron to add production in Venezuela without drilling one well. (iii) Recall that the US only gave a waiver for six months. It s a rolling six-month waiver as the current month ends so it's basically saying to Chevron you have six months from today, but no guarantee for longer. This lack of visibility beyond the six-month window is why Chevron CEO said they aren't planning to do any drilling within six months. Rather working to move the existing oil in inventory and do some well reworking. (iv) Chevron's go-slow plan looks to add >110,000 b/d in the next six months in the Occidente basin. I think most refer to it as the Oriente Basin. Production was 150,000 b/d early this year and is down to 90,000 b/d in Nov. Argus reports "An internal Chevron plan to increase Venezuelan oil production to 200,000 b/d by mid-2023 relies on efforts to rehabilitate some 18,000 wells in various states of disrepair in the country's once-prolific Occidente region". This addition makes sense given the rolling six-month term and what we call the go-slow plan. (v) Adding >110,000 b/d by mid-203 is the Tip of the Iceberg. (vi) We believe Chevron could crank up to add another 200,000 b/d by end of 2023, and a further 200,000 b/d or likely a lot more in 2024. We don't think it's unreasonable to see this up at 500,000 b/d to 1,000,000 b/d in two years if Chevron moves from a go-slow to a get-at-it plan. And this is without drilling one new well. This Argus report shows these elements. (vii) There is so much low-hanging fruit to Chevron to grow Venezuela oil production without drilling any wells. It's all existing wells that need some sort of work or power. (viii) Remember, this is apart from the previously reported 1.79 mmb of oil in storage ready for export. (ix) Argus reporting on an internal Chevron plan. Says "Occidente" region was 150,000 b/d earlier in 2022, but is now down to 90,000 b/d in Nov. Says there are 18,000 wells in total. But only 1,400 producing wells, that is ~65 bpd per well on average. Remember, this is in an industry starved for capital, equipment and basic operating efforts. The question is how much would these 1,400 producing wells be producing with proper maintenance, etc? we suspect a lot more than 65 bpd, would guess something over 100 bpd on average. Category 1 is producing wells. ~7% or 1,400 wells producing oil "but many at decline rates". As noted, these are on average producing 65 bpd. They don't say it, but these heavy oil wells are all likely now or soon to be candidates to reworking so we would expect also some upside here to effectively hold production if not increase. Category 2 is the huge low hanging fruit with "About 8,700 wells fall into Category 2, which includes non-operating wells that may just need minor work to become operational. These wells may need around \$500, 000 each in new investment to be viable, according to sources familiar with the field." If we use the current producing average of 65 bpd, that is ~550,000 b/d of incremental production capacity for \$4.35 billion. That assumes the 65 b/d average. Is it reasonable to assume the average as these are

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wells that down for some reason? If Chevron is prepared to spend \$500,000 per well, it's safe to say these aren't stripper wells that produce a very low amount of production. Rather, we can't believe Chevron would put in this category any wells that aren't capable of a decent level of production and we suspect much more than the average well of 65 b/d. Again, this is not drilling, rather we expect well cleanouts, reworking, etc. If use 100 bpd, that is 870,000 bpd of incremental production capacity. Category 3 "are more than 7,900 wells that need between \$5mn-\$6mn of investment each to be commercially viable". We are not clear what is required here. Plus upside from wells that don't fit in to category, 1, 2 or 3. Argus notes "Hundreds of wells in the PdV report are reportedly shut down just for a lack of reliable electricity, which plagues many parts of the country". This is where something like diesel power generation comes into play. The reality is that reliable power is something that is also involved in the above categories. Our Supplemental Documents package includes the Argus report."

03/22/22. Chevron said could double Venezuela's 800,000 b/d within months

Here is what we wrote in our March 27, 2022 Energy Tidbits memo. "On Tuesday, we tweeted [\[LINK\]](#) on the WSJ report "Chevron, Waiting It Out in Venezuela, Tells U.S. Now Is the Time to Pump Oil Company pledges to make up for fall in Russian exports". [\[LINK\]](#). Chevron reportedly is telling the administration they can double Venezuela's oil production within months. The WSJ wrote "For months, Biden administration officials snubbed top executives and lobbyists for Chevron Corp. who had pressed officials in Washington to ease sanctions so the company could boost production in Venezuela, where the U.S. has banned such activities since 2019. Then Vladimir Putin invaded Ukraine. Now the Biden administration is listening closely to Chevron, say people familiar with the conversations, which says it can help double Venezuela's 800,000 barrels-a-day production within months. That could replace the loss of roughly 700,000 barrels a day the U.S. was importing from Russia before it attacked Ukraine. And it could help lower gasoline prices—a major concern for the Biden administration in a tough election year." Our Supplemental Documents package includes the WSJ report.

Oil: Norway July oil production of 1.82 mmb/d, up +0.6% MoM

On Tuesday, the Norwegian Petroleum Directorate released its July production figures [\[LINK\]](#). It reported oil production of 1.828 mmb/d, up +0.6% MoM from 1.818 mmb/d in June and +11.5% YoY from 1.639 mmb/d in July 2022. June's production actuals came in -0.6% (0.012 mmb/d) under the forecast volumes of 1.840 mmb/d. The NPD does not provide any explanations for the MoM changes. The theme for Norway through 2022 was that Norway oil production returned to growth because of the Johan Sverdrup oil field, and tax breaks from the government allowing increased capex in the energy sector. Norway oil production is expected to be up modestly in 2023. Our Supplemental Documents package includes the NPD release.

Norway July oil production

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Figure 32: Norway July 2023 Production

		Oil mill bbl/day	Sum liquid mill bbl/day	Gas MSm ³ /day	Total MSm ³ o.e./day
Production	July 2023	1.828	2.037	321.4	0.645
Forecast for	July 2023	1.840	2.065	359.3	0.688
Deviation from forecast		-0.012	-0.028	-37.9	-0.043
Deviation from forecast in %		-0.7 %	-1.4 %	-10.5 %	-6.2 %
Production	June 2023	1.818	2.016	250.7	0.571
Deviation from	June 2023	0.010	0.021	70.7	0.074
Deviation in % from	June 2023	0.6 %	1 %	28.2 %	13 %
Production	July 2022	1.639	1.869	350.6	0.648
Deviation from	July 2022	0.189	0.168	-29.3	-0.003
Deviation in % from	July 2022	11.5 %	9 %	-8.4 %	-0.5 %

Source: Norwegian Petroleum Directorate

Oil: Crude oil shipments hit at Russia's Black Sea oil export terminal Novorossiysk

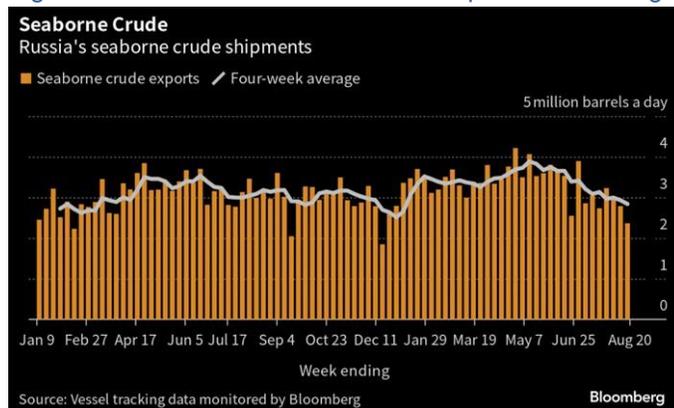
Russia crude oil shipments were down last week and it looks like it was due to last week's explosion/fire that impacted Russia crude oil shipments from its major Black Sea oil export port at Novorossiysk. (i) Last week's (Aug 20, 2023) Energy Tidbits highlighted of the fire/explosion at Russia's major Black Sea oil export terminal, Novorossiysk on Thursday. Here is what we wrote last week "We tweeted [\[LINK\]](#) "Reminder Novorossiysk is Russia's major Black Sea #Oil export terminal at ~0.4 mmb/d. See 📌 Aug 5 tweet. Not clear yet what damage has been done to the port. But thick black smoke seen in all videos often signifies fuel or oil was hit. [\[LINK\]](#) #OOTT." We don't know the extent of the damage, but our initial thoughts were that the thick black smoke normally signifies there is oil or fuel oil on fire. This is normally what you see when an oil or products tank gets on fire. And there would be a lot of tankage at Novorossiysk given this is the major oil and products export terminal on the Black Sea. On Friday, The Guardian reported [\[LINK\]](#) "fire broke out in the port of Novorossiysk on Friday, Russian officials said. Footage shared by local media and emergency services showed a huge blaze engulfing the cargo area of the Black Sea port. The Caspian Pipeline Consortium said a nearby oil terminal, Russia's main oil export hub in the region, was working as normal." It isn't clear how much tankage was hit or much of the loading infrastructure was hit, but fires have to impact the near term export capacity. And more importantly raises the risk to Russian oil and products exports from the Black Sea." (ii) It looks like the fire did have an impact. (ii) IT looks like the fire caused a near halt to crude oil shipments. On Wednesday we tweeted [\[LINK\]](#) "Lower loadings at Novorossiysk led to RUS seaborne crude flows down to lowest level since Jan. @JLeeEnergy weekly recap. Loadings down at end of week at Novorossiysk lines up with 📌 08/18 tweet on fire at port. What isn't clear if the fire damage has longer impact? #OOTT." Bloomberg didn't say the fire was an impact, but it appears to be logical reason why loadings crashed the same time as the fire. Bloomberg wrote "Shipments of Russian crude from Novorossiysk slumped to their lowest since December, with just one tanker loading Russian crude. Shipments were running in line with the loading program for the port at the start of the week, but had fallen

**Russia
seaborne crude
flows down**

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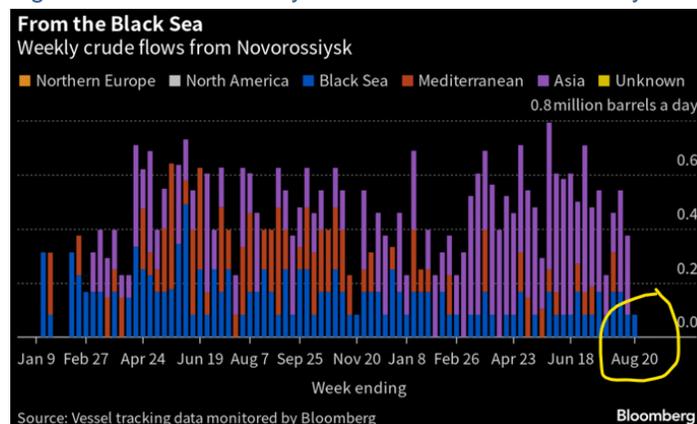
several days behind by the end.”. And “Russia’s seaborne crude flows fell to their lowest since January after an unexplained slowdown at the Black Sea port of Novorossiysk, while the nation pledges to restrict its oil exports. Average nationwide shipments in the four weeks to Aug. 20 dropped to 2.84 million barrels a day, tanker-tracking data compiled by Bloomberg show. That’s about about 1.05 million barrels a day below the peak in mid-May.” (iii) We still haven’t seen the reason for the explosion/fire at Novorossiysk. Our Supplemental Documents package includes Bloomberg’s weekly Russian seaborne crude flows report.

Figure 33: Russia’s seaborne crude shipments thru Aug 20 week



Source: Bloomberg

Figure 34: Russia weekly crude flows from Novorossiysk thru Aug 20 week



Source: Bloomberg

08/05/23: Ukraine warned Russia Black Sea oil port now “war risk area”

We haven’t seen the cause of the fire/explosion at Novorossiysk that impacted Russian oil shipments last week. But we remind that Ukraine warned, on Aug 5, that Novorossiysk and other major Russian Black Sea ports were now “war risk areas”. Here is what we wrote in our Aug 6, 2023 Energy Tidbits memo. “Big development in the Russia/Ukraine war yesterday morning that should impact commodities, including

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oil, when markets open on Monday. Early yesterday morning, we tweeted [LINK](#) "Buckle up! Ukraine hits Russian #Oil tanker & warns 6 Russian ports are now in "war risk area". @business. Including major RUS Black Sea #Oil export port Novorossiysk. See great 📌 @JLeeEnergy graph, still loading ~0.4 million b/d. #OOTT." There were two big developments yesterday morning. First, a Ukraine drone attack on a Russia oil tanker, which is the first case of any ship/tanker carrying commodities being attacked in the war. Second, and even more significantly, Ukraine declare the water area around six Russian Black Sea ports are now in a "war risk zone". And these six ports include Russia's Black Sea oil port at Novorossiysk. The six ports are Anapa, Novorossiysk, Gelendzhik, Tuapse, Sochi, Taman. Our tweet included Bloomberg's Aug 1 update of Russian seaborne oil shipments, which included the below graph that shows crude oil shipments from Novorossiysk have been about 400,000 b/d. It's not just crude oil that is at risk. Ukraine isn't necessarily saying exactly what will be attacked but we have to believe that the Ukraine declaration has to impact the volume of ships and also the cost of insurance, if available, for any ships."

Oil: Can or will anyone stop Iran from adding ~0.6 mmb/d to oil markets in H2/23?

It took 10 days but oil markets started to recognize Iran is ramping up its oil production in August and September. On Tuesday, we tweeted [LINK](#) "Iran's ramping up its #Oil production and exports is getting more attention. See 📌 SAF Group Aug 13, 2023 Energy Tidbits memo for more on how they see adding ~600,000 b/d in the next couple months. Available at news/insights section of SAF website [LINK](#) #OOTT." Our tweet included a link to our Aug 13, 2023 Energy Tidbits memo that was titled "Can or Will Anyone Stop Iran Adding ~600,000 b/d to Oil Markets in Next Few Months?" Here is what we wrote in that memo. "We still believe one of the major oil risks over the coming months is Iran increasing supply and exports. Here is what we wrote in last week's (Aug 13, 2023) Energy Tidbits memo. "Iran looks to be an overlooked risk to oil prices in H2/23 and not because of sanctions removal. Rather because they are adding oil production capacity and we don't know who will or can stop them from adding the new oil capacity to oil markets. (i) Earlier this morning, we tweeted [LINK](#) "Near term Oil hold back. Another Iran reminder today that at 3.2 mmb/d & to exceed 3.3 mmb/d by late Aug. Vs #OPEC MOMR Secondary Sources had Iran at 2.828 mmb/d in July. Who can or will stop Iran from adding up 0.6 mmb/d to #Oil markets in next few mths? #OOTT." It follows our tweet yesterday [LINK](#) "Who can or will stop Iran from adding up to 0.6 mmbd to #Oil markets over coming mths? Iran not subject to #OPEC quota. US negotiating with Iran on prisoners & releases of Iranian funds. See 📌 08/09/23 thread - Iran is #oil supply risk in H2. #OOTT @DanialRahmat12." Our Aug 8, 2023 tweet was [LINK](#) "Iran near term #Oil supply adds! Given #Biden doesn't have any stroke over #MBS & tapped SPR, wonder if he effectively turns a blind eye as he sees this as a replacement for an SPR release to try to help keep a lid on oil/#Gasoline prices for 2024. Thx @DanialRahmat12! #OOTT. " (ii) On Wednesday, Tehran-based analyst, Danial Rahmat, tweeted [LINK](#) "CEO of #NIOC: Iran's crude prod. to increase by 150 k b/d in a week. By the end of Sep. 100k b/d will be added and output will reach 3.5 mil. b/d. In H2, about \$8 b deals will be signed to develop 2 joint fields. #OOTT @Energy_Tidbits @sean_evers @FrankKaneDubai @imannasseri." Rahmat was reporting on comments by National Iranian Oil Company managing director, Khojasteh mehr, at a press conference in Tehran on Aug 9.

**Iran adding
600,000 b/d to
oil markets**

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(iii) Later PressTV (Iran state media) reported on Khojasteh mehr's comments on the press conference. [\[LINK\]](#) "Iran will reach a milestone oil production figure of 3.5 million barrels per day (bpd) in late September, according to the CEO of state oil company NIOC, despite sanctions imposed on the country by the US. Mohsen Khojasteh Mehr said on Wednesday that Iran's oil output will increase by 150,000 bpd within the next week and by another 100,000 bpd by the end of the month to September 22 to reach a total of 3.5 million bpd. The figure would be a major increase from 2.2 million bpd of oil production reported in August 2021 when the current administrative government led by President Raeisi took office, said Khojasteh Mehr. He said the growth in oil output will entirely serve Iran's plans to increase its oil exports." Earlier this morning, our tweet attached the Irna (state media) reporting [\[LINK\]](#) on Iran oil minister saying today that oil production was 3.2 mmb/d and to surpass 3.3 mmb/d by the end of August. (iv) Iran is saying they can hit 3.5 mmb/d in late Sept. Based on this week's OPEC Aug MOMR Secondary Sources production for Iran of 2.828 mmb/d in July, this is an add of >600,000 b/d. We think this is a significant item as we don't see who will or can block Iran from adding these barrels to global markets. Iran is one of three countries not subject to OPEC+ quotas so isn't held back by OPEC+ in increasing production and exports. (v) In theory, Iran is under sanctions but US has turned a blind eye to stopping Iran oil exports. And given the late week breaking news of a potential US/Iran prisoner swap and release of Iran's blocked funds in South Korea, it's hard to see the US stepping up to enforce sanctions. Plus there is the political reality that it's only 15 months to the US 2024 Presidential election. Our Aug 9 tweet said "Given #Biden doesn't have any stroke over #MBS & tapped SPR, wonder if he effectively turns a blind eye as he sees this as a replacement for an SPR release to try to help keep a lid on oil/#Gasoline prices for 2024." US gasoline prices keep inching up. Biden used the SPR to keep a lid on prices in the run up to the 2022 mid-term elections. He doesn't have that cushion now so he can look at Iran's new capacity as a bit of SPR replacement to keep a lid on oil prices. Our Supplemental Documents package include the PressTV report."

Bloomberg: US officials privately acknowledge relaxing sanctions on Iran oil

Our only surprise from Bloomberg's Friday reporting was that Biden Administration officials privately acknowledge to Bloomberg that they have been relaxing the sanctions on Iran's oil. Everyone knows it's happening based on the increasing Iran oil production and exports but it is still surprising to see the officials acknowledge so to Bloomberg. On Friday, Bloomberg reported "While Iran and the US make wary diplomatic overtures, a return to their lapsed nuclear agreement remains a distant prospect. But for world oil markets, a pact is already taking effect. Months of secretive diplomacy between the two nations have yielded progress on prisoner exchanges, the unblocking of frozen assets and possibly even Iran's enrichment of uranium. They also seem to have produced an informal arrangement on oil flows. US officials privately acknowledge they've gradually relaxed some enforcement of sanctions on Iranian oil sales. Tehran has restored production to the highest level since the ban kicked in five years ago and is shipping its most crude to China in a decade. Iranian officials are confident they'll pump even more soon."

Oil: Will Kurdistan/Iraq agree to Turkey's terms to restart oil exports?

Up until Friday, we haven't seen any specifics on what Turkey wants to allow the restart of Kurdistan/Iraq oil via Ceyhan. But on Friday morning, we saw the first report albeit without

**Kurdistan oil
still shut in**

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naming the Turkish officials, of what Turkey wants in any deal. (i) We tweeted [LINK](#) “Best reporting what Turkey wants to resume Kurd #Oil export via Ceyhan. Won't pay \$1.5b damages, wants Kurd to pay Baghdad. Contracts to help build out of power plant & other infra. Iraq/Kurd resolve their % oil splits. Exports could resume quickly. Reminder shouldn't be big hit to Oil markets ASSUMING Iraq keeps complying with #OPEC quota. Thx @SelcanHacaoglu @TurkWonk #OOTT.” (ii) Our tweet included the Bloomberg report “Turkey Seeks Iraq Revenue-Sharing Deal to Restart Oil Exports.” (iii) We noted that a deal to restart shouldn't have any big impact on oil exports to world markets assuming Iraq complies with its OPEC quota as it has been producing close to its quota. (iv) Note that Bloomberg says Turkish officials says oil exports could resume quickly once a deal in place. “The pipeline running from Kirkuk to Turkey's Mediterranean port of Ceyhan remains operational and Iraqi crude exports could start quickly once there is a deal in place, the Turkish officials said, adding that Turkey aims to resolve the conflict as soon as possible.” (v) Big one for Turkey. It wants Kurdistan to pay the \$1.5b that Turkey was ordered to pay Iraq. we have been assuming this \$1.5b payment would somehow be reduced in the negotiations with Iraq. But Bloomberg reports it's not a reduction, any payment is a non-issue. Bloomberg writes ““Turkey halted flows through a twin-pipeline in March after an arbitration court ordered it to pay about \$1.5 billion in damages to Iraq for transporting oil without Baghdad's approval. Ankara has no intention of paying the fine and is asking the Kurds to pay it to Baghdad as they were the benefactors, the officials said.” (vi) Not a Turkey holdup but a separate issue between Iraq and Kurdistan to resolve is that Turkey wants Iraq and Kurdistan to agree who gets what of the oil revenues split. Bloomberg writes “Baghdad has asked Turkey to collect the money from oil exports and transfer it to Iraq after deducting 12.6% of the share allocated to the KRG, said the officials, speaking on condition of anonymity. The KRG, however, has told Turkey that it wants to claim the entire revenue from exports via its territory, arguing that it has been unable to collect funds from separate Iraqi oil exports, they said.” (vii) One other Turkey negotiating point. It isn't called a negotiating point but Turkey has been wanting a comprehensive agreement on issues with Iraq and that oil was part of their issues. So we have been assuming the oil deal would be wrapped into other negotiating items. Or the other negotiating items wrapped around the oil deal. One item that comes out of Bloomberg is that “Ankara is offering the Kurdistan Regional Government, or KRG, as well as the central government in Baghdad help in building power plants and other infrastructure.” The offer sounds like Turkey wants some big contracts for its companies. Our Supplemental Documents package includes the Bloomberg report.

No specifics from Iraq/Turkey FM and Oil Minister meetings on Tues

The Bloomberg report was the first report we have seen with specifics. And earlier this week, we saw more Iraqi New Agency reporting of senior minister meetings with Turkey but no specifics on what Turkey wanted to let the restart of the oil exports via Ceyhan. (i) On Tuesday, we tweeted [LINK](#) “Separate Iraq/Turkey FM & oil minister meetings. Based on Iraqi New Agency reports, restart Iraq/Kurd #Oil exports via Turkey feels like a matter of months and not a handful of weeks. Turkey wants “comprehensive” deal ie. oil would be one of the files under discussion. #OOTT” After reading the Iraqi News Agency (official state media) reports, we didn't see the likelihood of a restart in Aug or Sept. (ii) Iraqi News Agency (state media) reported on the two separate Turkey/Iraq meetings on Tues. Foreign ministers in Baghdad, and the oil ministers in Ankara.(iii) Foreign ministers. It's hard to see how the FMs are

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pointing to any quick deal for the resumption of the Kurdistan/Iraq oil via Turkey because Turkey wants a comprehensive agreement on all the major Iraq/Turkey issues, not just the oil resumption. This fits with our prior comments that the oil deal is only one part of multiple items Turkey wants resolved. The item that jumped out at us is the Iraq FM *"He pointed out that "the Turkish minister expressed his hope to conclude a permanent and comprehensive agreement that enhances common interests and links the files under discussion between the ministerial authorities in the two countries and in various fields."* Turkey is saying they want to have a comprehensive agreement. This has been one of the concerns on the time to get to a deal. Turkey wants a comprehensive agreement on all the key Iraq/Turkey issues and the resumption of oil is just one of them. Oil is just one of the items so the question will be what does Turkey get to reopen the pipeline. (iv) Oil ministers. Also hard to see a quick return to resumption of oil exports. Partly because, as noted above, Turkey is saying they want a comprehensive agreement on all the key Iraq/Turkey issues. Interestingly, it looks like Turkey also brought back up the qualifier they still have to do rehab and examination of the pipeline post the Feb earthquake. Iraqi news agency wrote *"The statement added, "The two ministers discussed a number of bilateral and regional issues of common concern and stressed the importance of the crude oil pipeline between Iraq and Turkey, and the resumption of crude oil flows, after the completion of the necessary rehabilitation and examination processes that require their implementation after the earthquake incident last February."* Our Supplemental Documents package includes the two Iraqi News Agency reports.

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

On Wednesday, the NOC posted an update on Facebook in Arabic [\[LINK\]](#). The Google Translate was *"The crown of crude oil amounted to one million and 208 thousand barrels per day, and the production of condensate reached 53 thousand barrels per day during the past 24 hours. #Libya #National_Oil_Corporation."* The update is right in line with the ~1.2 million barrels per day stable level of production Libya has had for the past several months.

Libya oil stable at 1.205 mmb/d

Oil: Has the UN given up pushing for Libya elections?

All we have is questions and increased uncertainty on what plays out in Libya given the UN's changed position this week, and what drove the UN's position change i.e. do they think the Dbeibah led government really has no intention of holding national elections? We have to wonder if there is increasing risk in the near term for Libya to return to east vs west tensions/fighting. United Nations Libya envoy Abdoulaye Bathily said on Tuesday that "a unified government, agreed upon by the major players, is an imperative for leading the country to elections", an apparent shift from an earlier position that elections should come first. (i) UN has shifted its position. The UN push on Libya has been to hold the long delayed national elections that the UN hopes will put an end to the risk of a return to East vs West fighting. We can debate on if that would be the result, but that has been the UN's push. The UN has been unable to push the internationally recognised Government of National Unity (GNU) in Tripoli led by Prime Minister Abdulhamid al-Dbeibah to move to national elections. The elections were supposed to be held on Dec 24, 2021. And Dbeibah and his team have continued to be the interim govt when they were supposed to be replaced by an elected government. This week, the UN indicated a shift in their position. They didn't come out and

Has UN given up on Libya elections?

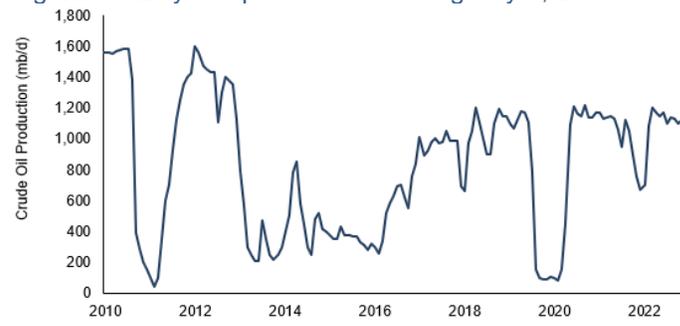
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say they have given up on their priority to hold the long delayed national elections but Reuters reported “United Nations Libya envoy Abdoulaye Bathily said on Tuesday that “a unified government, agreed upon by the major players, is an imperative for leading the country to elections”, an apparent shift from an earlier position that elections should come first.” (ii) The UN is saying let’s get a new GNU government in Tripoli before elections, one that is unified ie. one that won’t be run by Dbeibah and his team. So how will Dbeibah and his team take that, will they smoothly give up control? (iii) And, assuming they can form a unified government, will the UN then consider their job is done and there will be less push from them or the unified government to get to elections ie. does this put elections on the backburner for years? (iv) So we don’t know how this changed UN position plays out but have to believe it likely increases the risk for east vs west conflict. We don’t know if Dbeibah will easily go? We don’t know what the UN does if Dbeibah doesn’t go? We don’t know who any unified government will be and will that makeup increase the risk for conflict? We don’t know if a new unified government means an indefinite timeline to national elections. We don’t know if the UN will think they have done their job with a new unified government. We don’t know if an indefinite timeline to national elections will set off conflict. We were surprised by this changed UN position and only have questions as to what plays out over the coming weeks/months.

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

The fighting this week looks to have been limited to some parts of Tripoli. But the fighting, along with the recent shut in and return of the El Feel and Sharara oil fields in July, are reminders 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.

Figure 35: Libya oil production Starting July 1, 2010



Source: Bloomberg, OPEC

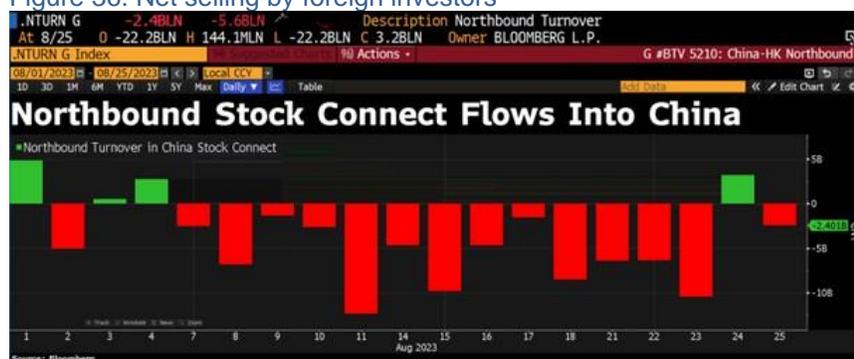
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Oil: As expected, another bad for China capital flows and stock prices

Another week and another week that one of the major global market stories is the weak China economy and markets. On Friday, we tweeted [\[LINK\]](#) “Another bad week for capital flows to China and relative stock performance. See 📌 @business graphs #OOTT.” We had other tweets earlier this week on this same theme, in particular how foreign investors continue to be net sellers of Chinese stocks that Bloomberg described as “record streak of net selling by foreign investors”. Our tweet also included Bloomberg graphs of “China ETF Flows: iShares, Kranshares show combined outflows”, “New Mortgage Lending in China: Net new loans contracts” that shows net negatives, and “China Underperforms Global Peers” showing the CSI 300 and Hang Seng underperformance. There were many more negative economic and market stories on China this week. Our Supplemental Documents package includes the BloombergTV graphs attached to our tweet.

A bad week for China capital flows

Figure 36: Net selling by foreign investors



Source: Bloomberg

Oil: China scheduled domestic flights -0.1% WoW

On Tuesday, we tweeted [\[LINK\]](#) ““end of the peak summer travel season” in China. China scheduled domestic flights -0.1% WoW to 104,716. How much will air travel dip in Sept/Oct with weaker China economy and consumer? Thx @BloombergNEF Claudio Lubis #OOTT #JetFuel.” (i) On Tuesday, BloombergNEF posted its Aviation Indicators Weekly Aug 22, 2023. (ii) The peak of summer holiday travel is now over so the key concern for Chinese scheduled domestic flights is what happens to air travel in Sept and Oct ie how much does it decline given all the negative China economic and capital flows news in the past few weeks. The Chinese consumer may have stepped up this summer to travel but the last couple weeks continues to put pressure on Chinese consumer #1 asset – its real estate. And Chinese businesses continue to be hit. China domestic scheduled flights were -0.1% WoW to 104,716 flights and have been fairly flat for the past few weeks. But the scheduled domestic flights over the next four weeks are down -0,6% to 104,067 flights “reflecting the end of the peak summer travel season.” (iii) China scheduled domestic flights -0.1% WoW to 104,716 flights for Aug 15-21 week compared to 104,823 flights for Aug 8-14, 104,000 flights in Aug 1-7 week, and 104,436 flights in July 25-31 week. Domestic flights have leveled off over the past few weeks, which reflects the peak of summer holiday travel season is coming to an end in Aug. At 104,716 flights for Aug 15-21 week, that is still 12.1% below what was expected at the end of March for April of 119,180 flights. (iv) BloombergNEF’s updated schedule domestic

China scheduled domestic flights

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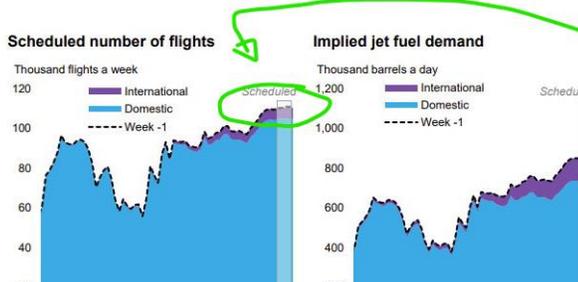
flights over the next four week is expected to drop -0.6% to 104,067 flights “reflecting the end of the peak summer travel season”. The peak summer holiday travel season is ending. The 104,067 flights over the next four weeks is below last week’s then 4-week lookahead of 105.862 scheduled domestic flights. The next 4-weeks of 104,067 scheduled domestic flights is 12.7% below what was expected at the end of March for April. (v) Also note how it was clear that the outlook tipped negative right after the March 28 -Feb 3 week with lesser China recovery and the then worries about a new Covid peak to hit China at the end of June. The BloombergNEF March 28 report reported that the March 21-27 weeks flights were 89,513 flights and they forecast massive jump to 119,180 flights over the then next 4-weeks. Then the next week, March 28-Apr 3 week had made a huge WoW jump from 89,513 flights to 95,624 flights, but then the following week was down to 91,567 flights. And scheduled domestic flights didn’t get back to March 21-27 until the end of June.. Below is our running WoW changes from the prior BloombergNEF reports and the BloombergNEF charts from August 22 and March 28, and our listing of WoW changes from the prior BloombergNEF reports.

Figure 37: China scheduled domestic flights from BNEF Aviation Indicators Weekly reports

Aug 15-21: -0.1% WoW to 104,716 flights
 Aug 8-14: +0.8% WoW to 104,823
 Aug 1-7: -0.4% WoW to 104,000
 July 25-31: +0.4% WoW to 104,436
 July 18-24: +1.3% WoW to 104,011
 July 11-17: +2.8% WoW to 102,709
 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

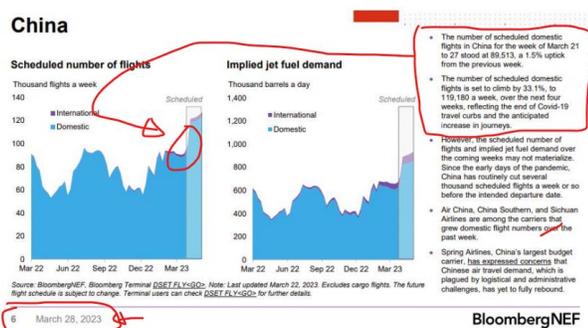
Source: BloombergNEF

Figure 38: China scheduled domestic air flights as of Aug 22



Source: BloombergNEF

Figure 39: China scheduled domestic air flights as of March 28



Source: BloombergNEF

Oil: Baidu China city-level road congestion bounced back up with end of holidays
 BloombergNEF describes it as “China traffic bounced back after lingering low” and “traffic levels start to recover, but remain subdued.” (i) On Thursday, we tweeted [LINK](#) “China summer holidays ending so city-level road congestion “bounces back after lingering low” but still “remain subdued”. China Baidu city-level road congestion +13.5% WoW to 125.4% of Jan/21 levels. Still waiting on Sep/Oct expected big ramp up. Thx @BloombergNEF #OOTT.” (ii) BloombergNEF posted its Global Road Traffic Indicators Aug 24 report, which includes the China Baidu city-level road congestion data for week ended Aug 23. (iii) For the week ended Aug 23, 2023, Baidu data for China city-level road congestion +13.5% to 125.4% of Jan 2021 levels. It’s the 3rd consecutive weekly increase, but the largest by far, of increasing city-level road congestion that is supporting summer holiday season is ending and people are returning to cities and back to work. The key question remains how much of a jump will there be in Sept/Oct city-level road congestion. The top 15 cities in Aug thru Aug 23 are 112% of Aug 2021 levels, which is better YoY than Aug 2022 that was 106% of Aug 2021 levels. (iv) BloombergNEF provided its specific by city numbers for Aug, but this is for only the first 23 days of Aug. For the top 15 cities in aggregate, Aug 2023 so far are 112% of Aug 2021 levels, whereas Aug 2022 was 106% of Aug 2021 levels. Of the top 15 cities, 8 are up YoY and 7 are down YoY. Our tweet included the below graph and table from the BloombergNEF Global Road Traffic Indicators Aug 24 weekly report.

China city-level traffic congestion

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Figure 40: China city-level road congestion for the week ended Aug 23



Source: BloombergNEF

Figure 41: China city-level road congestion for the week ended Aug 23.

China's city-level road congestion
 Traffic levels start to recover, but remain subdued

- Table to the left shows monthly congestion levels indexed to the average daily peak congestion levels **in January 2**
- Table to the right shows monthly congestion levels indexed to the average daily peak congestion levels **in the same**
- Three-color scale conditional formatting is set to red = 0, white = 100 and green = 200. It is possible for congestion
- 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												Indexed to same month				
	Aug 22	Sep	Oct	Nov	Dec	Jan 21	Feb	Mar	Apr	May	Jun	Jul	Aug	Aug 22	Sep	Nov	
China-15	116	141	107	99	81	90	154	145	136	124	140	126	122	106	87	90	81
Beijing	145	171	107	78	59	107	172	164	150	138	151	138	132	125	85	83	87
Chengdu	85	75	104	94	93	83	134	126	131	110	131	109	108	79	94	102	96
Chongqing	81	130	86	71	52	81	125	111	110	98	116	105	85	66	89	83	89
Dongguan	110	140	120	135	92	87	129	130	109	114	127	117	101	86	92	87	96
Guangzhou	143	181	110	96	96	81	169	172	154	137	168	151	147	106	96	102	98
Ningbo	146	188	124	144	112	63	134	125	104	99	117	114	115	106	125	97	102
Qingdao	109	105	96	80	53	45	82	75	80	73	86	96	106	113	79	104	70
Shanghai	152	200	110	166	87	74	147	149	129	124	131	121	118	135	125	97	125
Shenzhen	151	149	140	175	100	79	167	166	138	130	185	143	142	102	84	103	113
Shijiazhuang	253	222	285	107	179	317	507	430	469	383	427	376	418	106	98	96	94
Suzhou	130	155	110	145	87	66	132	121	105	97	114	107	106	139	123	106	127
Tianjin	93	82	138	124	78	97	141	141	136	122	130	110	111	82	82	112	88
Wuhan	96	132	72	83	85	110	191	185	170	150	169	148	130	115	77	63	72
Xian	93	143	90	112	101	115	147	128	131	122	136	122	107	97	96	83	92
Zhengzhou	83	95	47	33	66	93	113	96	95	89	94	88	88	153	79	51	80

Source: BloombergNEF

Oil: China says "China not due for major COVID outbreak, but caution advised"

We recognize that no one is worried about Covid including in China, but we still like to monitor the weekly reporting by state media on Covid primarily to see if the messaging is changing given the starting point is to downplay any Covid worries. It's hard to tell what the story is but we are starting to see more state media reports on Covid. We have been surprised that Covid wasn't a big China story in July given the spring reports that China was forecasting a wave to hit and peak in late June. We have seen a pickup in Covid reporting on state media in August. (i) Last week's (Aug 20, 2027) Energy Tidbits memo highlighted the Aug 14 story by Global Times (China state media) [\[LINK\]](#) titled 'No need to panic' over third COVID-19 infections, overall situation stable." And "Along with EG.5, a sublineage of the Omicron variant, being classified as a "variant of interest" by the World Health Organization (WHO), the topic of a third COVID-19 wave has triggered discussions among Chinese

China Covid update

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netizens in recent days with many sharing their infection experiences. Experts noted that the COVID-19 situation in China is still stable and that there is no need to panic. Some netizens on Monday who said on social media that they had been reinfected a third time noted that their symptoms were lighter than previous infections. However, some shared different experiences. The current COVID-19 infections are more hidden, but generally still at a relatively stable level. There isn't an obvious seasonal pattern for COVID-19 transmission, but usually it will show a small infection peak every five to six months. Generally, "the infection peak is decreasing, with no impact on the country's overall prevention work," Lu Hongzhou, head of the Third People's Hospital of Shenzhen, told the Global Times on Monday." (ii) This week's messaging was "China not due for major COVID outbreak, but caution advised: experts" on Xinhua (state media). [\[LINK\]](#) And "With the prevalence of coronavirus variant EG.5 rising globally and becoming predominant in China, experts have said the country will not see a large-scale COVID-19 outbreak in the near future, but advised precautions against infections in the coming autumn and winter." And "Autumn and winter are traditionally high seasons for influenza and respiratory diseases. Experts have warned about the possibility of insufficient medical resources resulting from potential COVID-19 infections." Our Supplemental Documents package includes the Xinhua and Global Times Covid reporting.

Oil: Vortexa crude oil floating storage at Aug 25 was 80.31 mmb, -24.91 mmb WoW

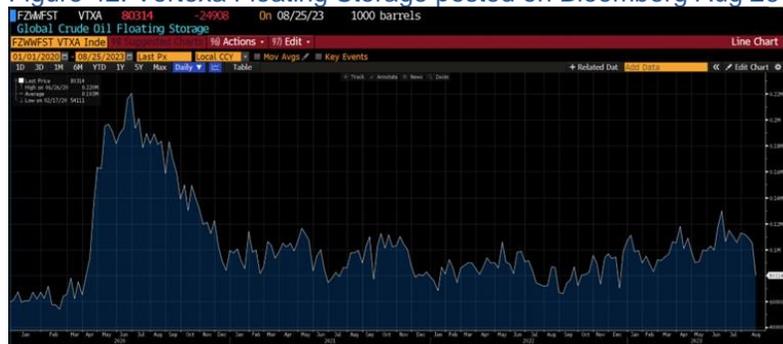
We are referencing the Vortexa crude oil floating storage data posted on the Bloomberg terminal as of 9am MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments on the new estimates are compared to the prior week's Vortexa estimates posted on Bloomberg on Aug 19 at 9am MT. (i) There was a big -24.91 mmb WoW drop in oil floating storage for the Aug 25 week to 80.31 mmb and this is down a whopping -49.50 mmb vs the recent June 23, 2023 peak of 129.81 mmb. (ii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Aug 25 at 80.31 mmb, which is -24.91 mmb WoW vs upwardly revised Aug 18 of 105.22 mmb. Note Aug 18 of 105.22 mmb was revised +9.90 mmb vs 95.32 mmb originally posted at 9am MT on Aug 19. (iii) Revisions. Big upward revision to Aug 18 and then most of the prior weeks were revised up by ~2 mmb. The revisions from the estimates posted yesterday at 9am MT vs the estimates posted on Bloomberg at 9am MT on Aug 19 are as follows: Aug 18 revised +9.90 mmb. Aug 11 revised -0.95 mmb. Aug 4 revised +2.28 mmb. July 28 revised +2.11 mmb. July 21 revised +2.91 mmb. July 14 revised +2.01 mmb. July 7 revised +0.19 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 105.96 mmb vs last week's then seven-week average of 107/.28 mmb. (v) Also remember Vortexa revises these weekly storage estimates on a regular basis. For example, when most report on the Vortexa data on Monday morning, they will be reporting on different estimates. We do not track the revisions through the week. Rather we try to compare the first posted storage estimates on a consistent week over week timing comparison. Normally we download the Vortexa data as of Saturday mornings around 9am MT. (vi) Note the below graph now goes back to Jan 1, 2020 and not just three years as floating storage in Apr 2020 had started to reflect the Covid impact. (vii) Aug 25 estimate of 80.31 mmb is -140.00 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (viii) Aug 25 estimate of 80.31 mmb is +14.70 mmb vs pre-Covid Feb 28, 2020 of 65.61 mmb. (ix) Aug 25 estimate of 80.31 mmb is +12.97 mmb YoY vs Aug 26, 2022 of 67.34 mmb. (x) Below are the last several weeks of

Vortexa floating storage

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estimates posted on Bloomberg as of 9am MT Aug 26, 9am MT Aug 19, and 9am MT Aug 12.

Figure 42: Vortexa Floating Storage posted on Bloomberg Aug 26 at 9am MT



Source: Bloomberg, Vortexa

Figure 43: Vortexa Estimates Posted Aug 26 9am MT, Aug 19 9am MT, Aug 12 9am MT

Posted Aug 26, 9am MT		Aug 19, 9am MT		Aug 12, 9am MT	
ID	Last Px	ID	Last Px	ID	Last Px
01/01/2020	80314	01/01/2020	95321	01/01/2020	102.926k
08/25/2023	80314	08/18/2023	95321	08/11/2023	102.926k
08/18/2023	105.222k	08/11/2023	110.233k	08/04/2023	105.335k
08/11/2023	109.279k	08/04/2023	109.534k	07/28/2023	107.492k
08/04/2023	111.806k	07/28/2023	110.553k	07/21/2023	101.807k
07/28/2023	112.657k	07/21/2023	102.657k	07/14/2023	107.016k
07/21/2023	105.57k	07/14/2023	107.813k	07/07/2023	113.739k
07/14/2023	109.817k	07/07/2023	114.87k	06/30/2023	104.561k
07/07/2023	115.064k	06/30/2023	104.206k	06/23/2023	125.059k
06/30/2023	106.307k	06/23/2023	127.016k	06/16/2023	114.605k
06/23/2023	129.814k	06/16/2023	115.986k	06/09/2023	98183
06/16/2023	117.33k	06/09/2023	98412	06/02/2023	101.73k

Source: Bloomberg, Vortexa
Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

Bloomberg also posts the Vortexa crude oil floating storage in the key regions, but not all regions of the world. The regions covered are Asia, Europe, Middle East, West Africa and US Gulf Coast. We then back into the “Other” or rest of world. (i) As noted above, Aug 18, in total, was revised +9.90 mmb. The main revisions in a region vs the originally posted (as of 9am Aug 19) floating oil storage for Aug 18 were Asia +8.43 mmb and Other revised +2.31 mmb. (ii) Total floating storage was -24.91 mmb WoW. The major WoW changes by region were Asia -12.95 mmb, Other -12.57 mmb, and Middle East -2.72 mmb. (iii) With the massive WoW reduction, Aug 25 of 80.31 mmb, in total, is down 49.50 mmb from the recent June 23, 2023 peak of 129.81 mmb. The major changes by region vs the recent June 23 peak are Asia -34.06 mmb and Other -19.54 mmb. (iv) Below is the table we created of the WoW changes by region posted on Bloomberg at of 9am MT yesterday. Our table also includes

Vortexa floating storage by region

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the “Original Posted” regional data for Aug 18 that was posted on Bloomberg at 9am MT on Aug 19.

Figure 44: Vortexa crude oil floating by region

Vortexa Crude Oil Floating Storage by Region (mmb)				Original Posted	Recent Peak	
Region	Aug 25/23	Aug 18/23	WoW	Aug 18/23	June 23/23	Aug 25 vs June 23
Asia	37.87	50.82	-12.95	42.39	71.93	-34.06
Europe	7.79	6.22	1.57	8.11	6.51	1.28
Middle East	6.84	9.56	-2.72	8.75	9.07	-2.23
West Africa	8.17	7.69	0.48	7.64	3.96	4.21
US Gulf Coast	2.26	0.98	1.28	0.79	1.42	0.84
Other	17.38	29.95	-12.57	27.64	36.92	-19.54
Global Total	80.31	105.22	-24.91	95.32	129.81	-49.50

Vortexa crude oil floating storage posted on Bloomberg 9am MT on Aug 26
 Source: Vortexa, Bloomberg

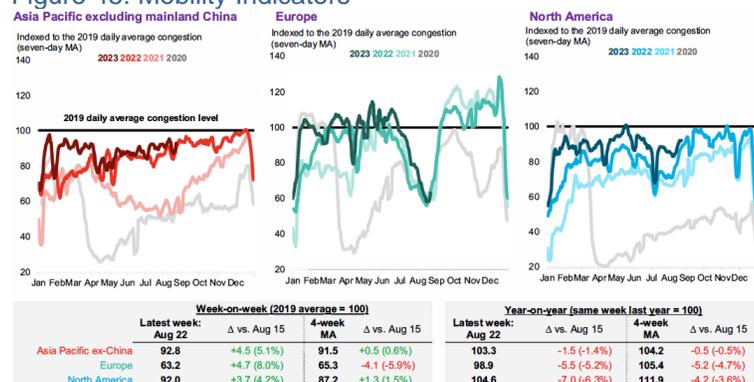
Source: Bloomberg, Vortexa

Oil: TomTom city road congestion – NA, EU, and Asia Pacific increase

On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly report, which recaps traffic indicators in all the major economic regions of the world i.e., mobility indicators like TomTom. For the week ending August 22, North American, European, and Asia Pacific (ex-China) city road congestion levels increased WoW by +4.2%, +8.0%, and +5.1%, 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 August, but the start of a return back sometime in August. City traffic levels in, North America, Europe, and Asia Pacific (ex-China) traffic are -8.0%, -36.8% and -7.2% below the 2019 average and are +4.6%, -1.1% and +3.3% YoY, respectively. City traffic in Europe saw a strong increase WoW, which is inline with its historical trend. NA and Asia Pacific (ex-China) have fluctuated over the last few weeks, but overall remain relatively unchanged throughout July and to midway through August. It its worth noting that TomTom data on city road congestion levels now reflects daily average congestion compared to peak congestion previously. The change in methodology took effect from January 19.

Global city road congestion

Figure 45: Mobility Indicators



Source: BloombergNEF's calculation based on TomTom data. Note: Data up to August 22, 2023. Δ = change. MA = moving average.

Source: BloombergNEF

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Oil: Truck tonnage index in July is down -3.5% YoY

We look to items like truck tonnage for indicators on the US economy, and the July truck tonnage is in line with the expectations for a slowing US economy. Truck tonnage decreased -0.8% MoM, but is down -3.5% YoY from July 2022, resulting in a total YTD decline of -3.5% since the start of 2023. This is under 2022's cumulative growth of 3.4% which was the largest single year increase observed since 2018. The American Trucking Association released its seasonally adjusted Truck Tonnage Index for July on Tuesday [\[LINK\]](#). Chief Economist Bob Costello noted, "As has been the case for several months, a multitude of factors have caused a recession in freight, including sluggish spending on goods by households as consumers traveled more and went to concerts this summer. Less home construction, falling factory output and shippers consolidating freight into fewer shipments compared with the frenzy during the goods buying spree at the height of the pandemic are also significant drags on tonnage." Trucking serves as a barometer of the U.S. economy, representing 72.6% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 11.46 billion tons of freight in 2022. Motor carriers collected \$940.8 billion, or 80.7% of total revenue earned by all transport modes. Our Supplemental Documents package includes the ATA release.

Truck tonnage index -3.5% YoY MoM in July

Figure 46: Truck Tonnage Index



Source: ATA

Oil & Natural Gas: Updated EIA Ecuador country brief

Ecuador is in the news with the election run off on Oct 15 and the country's vote to cease oil exploration in one area. 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 Ecuador. It held 0.5% of the global crude reserves in 2022, meaning Ecuador has the fourth-largest crude oil reserves in Latin America and the Caribbean at approximately 8.27 billion barrels. The majority of its reserves are held in the Amazon region, specifically the Oriente Basin. Ecuador has struggled to maintain production due to aging fields, environmental concerns, and unreliability of its pipelines. Ecuador's top producer is Petroecuador, a state-owned enterprise that oversees all exploration, production, refining, and marketing for the country. Petroecuador accounts for ~80% of the country's output. Ecuador has two primary crude oil pipelines, the Trans Ecuadorian Pipeline (SOTE) and the Heavy Crude Oil Pipeline (OCP). The SOTE pipeline is operated by Petroecuador, while the

EIA's country brief on Ecuador

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OCP is operated by a private consortium. In 2022, the pipelines carried a combined average of 470,000 b/d, with the SOTE carrying an average of 320,000 b/d. In recent years, the government has made efforts to strengthen its hydrocarbon industry. In 2021, President Guillermo Lasso signed an executive decree to privatize the country's oil sector. The goal was to sell state-run fields to the private sector, in efforts to continuously improve Petroecuador's operations. Over the last few years, Ecuador has faced many pipeline disruptions, the most notable of which have been caused by natural disasters, with others caused by protests. Ecuador had 385 bcf of proven natural gas reserves in 2022, which accounted for a total of 0.14% of the total South American Reserve. Natural gas products accounts for less than 1% of the country's total energy production, primary due to the lack of investment in infrastructure. Because of the miniscule production, Ecuador consumes all of the natural gas it produces, primarily for electricity generation and industrial processes. Ecuador has heavily cut its reliance on fossil fuels for energy generation, now produces the majority of it's electricity from hydropower (79%), followed by Petroleum and other liquids (16%), natural gas (4%), and other renewables (2%). Ecuador is a net exporter of electricity, exporting to Peru and Columbia during times of an electricity surplus. Our supplemental documents package includes the EIA's Country Analysis Brief.

Oil & Natural Gas: GoM "Rice's Whale Areas" add more costs to oil & gas

The oil and natural gas sector continue to get more regulatory actions that add costs to industry. On Tuesday, we tweeted [\[LINK\]](#) "*New #Biden regulatory rule to impact #Oil #natgas leases in GoM. BOEM 08/17 new conditions & expanded Rice's whale map that should impact any vessels going to/from all GoM deepwater platforms and drilling rigs to onshore facilities. #OOTT.*" Last Thursday, the US Bureau of Ocean Energy Management posted its BOEM NTL No. 2023-G01 on "*Expanded Rice's Whale Protection Efforts During Reinstated Consultations with NMS*". NMS is National Marine Fisheries Services. This notice only went to oil, gas and sulphur lease operators in the GoM Outer Continental Shelf. It looks like it will impact some of the deepwater GoM oil and gas activity. And basically puts restrictions on how the oil and gas and services companies operate their vessels (ie. speed limits) and it will add costs and time to operations. It did not go to other vessels that traverse thru this expanded Rice's Whale areas. We don't know what other species of whales are in the GoM, but the order is that, if the oil and gas vessel operator can't determine from 500 m that it is a Rice's whale, they are to act as if it was a Rice's whale. Here is an excerpt from the notice [\[LINK\]](#) "*Use trained visual observers to monitor the vessel strike avoidance zone (500 m). Such observers may be either third-party observers or crew members but crew members responsible for these duties should be provided with sufficient training to distinguish aquatic protected species to broad taxonomic groups. b. If transiting within the Expanded Rice's Whale Area (as described in this NTL), document and retain records for three years on details of transit, including what port is used for mobilization and demobilization. c. Observe on all vessels, regardless of size, at all times a 10-knot or less, year-round speed restriction in the Expanded Rice's Whale Area (as described in this NTL and Figure 1). This recommendation would not apply when compliance would place the safety of the vessel or crew, or the safety of life at sea, in doubt. To the maximum extent practicable, lessees and operators should avoid transit through the Expanded Rice's Whale Area after dusk and before dawn, and during other times of low visibility to further reduce the risk of vessel strike of Rice's whales. d. Maintain on all vessels a minimum separation distance of 500 m from Rice's whales. If a whale is observed but cannot be confirmed as a species other*

**Added costs to
GoM oil and gas**

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than a Rice's whale, the vessel operator should assume that the whale is a Rice's whale and take appropriate action. e. Include a functioning Automatic Identification System (AIS) onboard all vessels 65 feet or greater associated with oil and gas activity (e.g., source vessels, chase vessels, supply vessels) that is operating at all times, as required by the U.S. Coast Guard. If the vessel does not require AIS, it is strongly encouraged that the operator document and retain records of the transit, including trackline (e.g., time and speed) data and visual marine mammal sightings."

Figure 47: Expanded Rice's Whale Areas

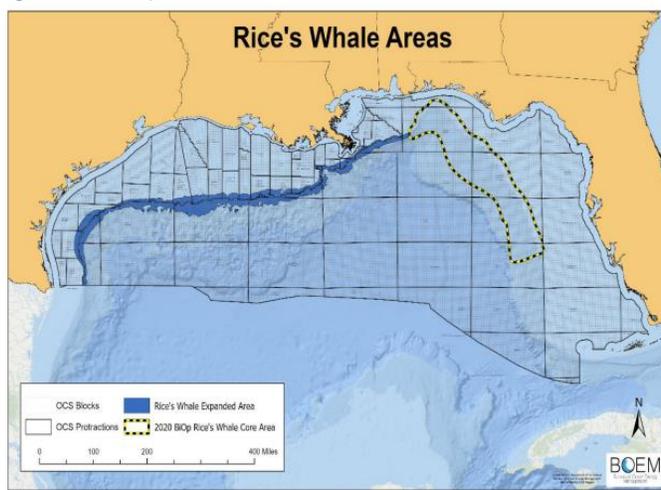


Figure 1: Expanded Rice's Whale Area.

Source: US Bureau of Ocean Energy Management

North Dakota warns Biden regulations a “significant downside” to oil & gas

We don't think the Rice's Whale restrictions provide significant downside to oil and gas. Rather, we see it as another example of how the Biden Administration is hitting the oil and gas sector with added costs and restrictions, some of which do provide significant downside. Here is what we wrote in last week's (Aug 20, 2023) Energy Tidbits memo on North Dakota's warning on the regulatory hit to oil and gas. “*There was a big warning to the US oil and gas industry from North Dakota in their monthly press conference. North Dakota's Lynn Helms call it a risk to North Dakota oil and natural gas but their warnings are applicable to all oil and gas – there are multiple Biden administration regulatory changes in different agencies that will hit oil and gas. And that was reaffirmed by the below item noting the API's warning on one of the regulatory changes. On Wednesday, we tweeted [\[LINK\]](#) “North Dakota warns on multiple #Biden regulatory rule revisions. “All of these have significant downside for #Oil and #NatGas production. so a major concern there” says NDIC's Lynn Helms. #OOTT.” Biden is doing the normal playbook to use regulations where he can so that they can hit the oil and gas sector. We say normal because regulatory changes are generally not picked up by media compared to if Biden worked with congress to get a law passed. So regulatory changes normally fly below the radar. And the other advantage of Biden doing regulatory changes is that they aren't necessarily restricted*”

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in what they can do. That is evident in what the PHMSA is doing – they are basically stepping outside of their mandate. Moving to do things by regulatory changes lets Biden step out further and faster against oil and gas. But Helms highlighted there were multiple regulatory changes in multiple agencies and each of these regulatory changes pose significant downside to oil and gas. Here is the transcript we created of Helms comments. At 7 min mark, Helms “... so we are facing Bureau of Land Management leasing rule modification. The CEQ is out with a new NEPA rule. The EPA is out with their greenhouse gas rule. PHMSA is getting into the act. They’re the Pipeline and Hazardous Materials Agency so they are supposed to look at pipeline safety, but they’ve written a rule that involves LDAR and methane emissions. So even the pipeline safety organization is in the act. And now, US Fish & Wildlife is modifying the endangered species act. So in terms of oil and gas, we’re working on the list of five active rule revisions and trying to get comments put in and looking at what we can do. All of these have significant downside for oil and gas production. So a major concern there.”

Oil & Natural Gas: TIPRO Texas oil natural and gas jobs down MoM in July

July was the first decrease in jobs in the Texas oil and gas industry. Last Friday, the Texas Independent Producers and Royalty Owners Association (TIPRO) updated their employment figures for the Texas upstream sector for July [\[LINK\]](#). July saw a decrease of ~2,100 jobs MoM, however, employment is still up +9.8% YoY to 206,600 active jobs across direct oil and gas extraction and services. TIPRO wrote “*direct Texas upstream employment for July 2023 totaled 206,600, a decrease of 2,100 jobs from adjusted June employment numbers. Texas upstream employment in July 2023 represented the addition of 18,600 positions compared to July 2022, including an increase of 2,800 jobs in oil and natural gas extraction and 15,800 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 July. According to the association, there were 13,557 active unique jobs postings for the Texas oil and natural gas industry in July, including 5,095 new job postings added during the month by companies. In comparison, the state of California had 4,365 unique job postings last month, followed by Louisiana (2,224), Oklahoma (1,905) and Pennsylvania (1,687). TIPRO reported a total of 62,318 unique job postings nationwide last month within the oil and natural gas sector.*” Our Supplemental Documents package includes the TIPRO release.

TIPRO July jobs update

Oil & Natural Gas: No damage to California refineries from Tropical Storm Hilary

Tropical Storm Hilary hit California last Sunday as advertised – a fast moving Tropical Storm. There was flooding but not to the extent that many feared and we believe that was due to Hilary being a fast moving storm at over 20 mph. In the past, we have seen the big hurricane or tropical storm damage come when the storms are slow moving and dump a lot of water. So the good news is that there were no reports of any significant damage at California refineries. Last Sunday morning, our tweet on Hilary approach California [\[LINK\]](#) was how there was 726,500 b/d of California refinery capacity in the impact area of Hilary. Our tweet included the EIA’s refinery capacity as of Jan 1, 2023 for California that highlighted there is 726,500 b/d of refinery capacity in the Long Beach/LA region that is in the Tropical Storm impact area. California has 1,827,400 b/d of total refinery capacity.

No damage to California refineries

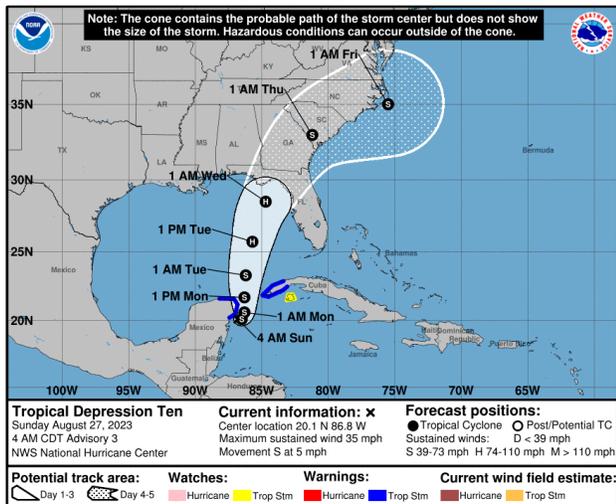
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Hurricane potential into GoM

Oil & Natural Gas: Potential hurricane to move into eastern GOM on Tues

Earlier this morning, we tweeted [LINK](#) "Potential hurricane into eastern GoM in next few days @NOAA. Excellent @EIAgov mapping system shows projected path is east of GoM offshore wells and major LA, MS, TX refineries, export terminals. #Oil #NatGas #LNG #OOTT." At 5am MT today, NOAA's updated forecast for Tropical Depression Ten calls for it to develop into Tropical Storm status today and reach Hurricane status on Tuesday as it moves thru the eastern GoM towards Florida. Note that, at least for now, it is slow moving at 5 mph. Our tweet included the EIA's interactive mapping of storm paths with energy infrastructure, which shows how the projected path is east of the offshore oil and gas wells, and all the major Louisiana, Mississippi, and Texas refineries, export terminals, LNG export facilities. Below are the NOAA Tropical Depression Ten forecast and EIA tracking vs energy infrastructure maps with our tweet this morning.

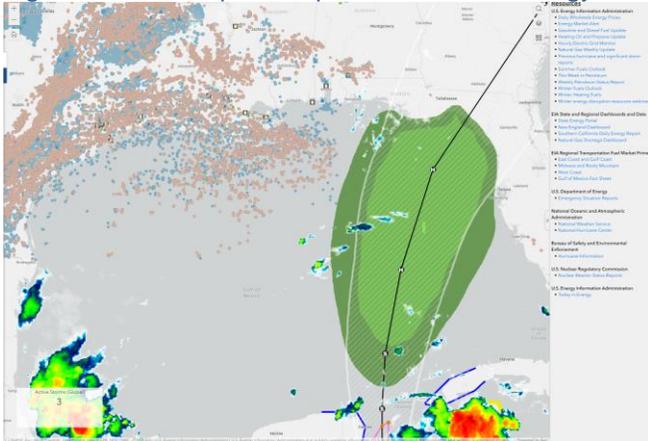
Figure 48: NOAA Tropical Depression Ten



Source: NOAA

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Figure 49: EIA Tropical Depression Ten vs Energy Infrastructure

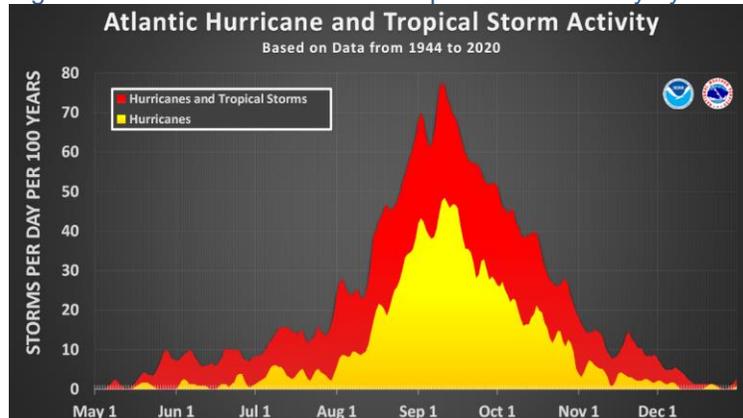


Source: NOAA

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

No two hurricane seasons are identical and there will always be items that make a hurricane season not the norm. But, our Aug 6, 2023 Energy Tidbits memo reminded that 90% of Atlantic hurricanes come after Aug 1, and the peak is normally mid-Sept. We reminded that July and early Aug may well be the hottest time of the year, but 90% of Atlantic hurricanes typically come after Aug 1. So August normally marks the start of the ramp up of hurricane season with high hurricane activity typically from mid-Aug thru mid-Oct with a normal peak in mid-Sept. Below is NOAA’s graph showing the distribution of Atlantic hurricanes and tropical storms based on data from 1944 to 2020. [\[LINK\]](#)

Figure 50: Atlantic hurricane and tropical storm activity by month



Source: NOAA

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Oil & Natural Gas: Small decline in Alberta and BC wildfires

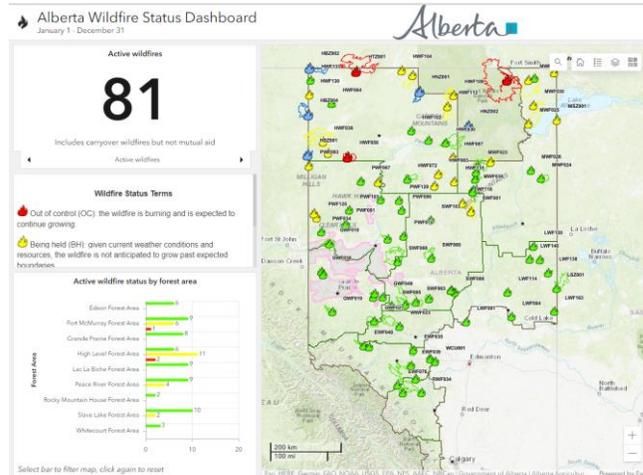
Alberta wildfires continue to decline but BC wildfires were up again this week. As of 7pm MT last night, there were 81 Alberta wildfires including only 1 Out of Control, which compares to a week ago at 84 Alberta wildfires included 1 Out of Control. In BC, there was a small decline in number of wildfires but it doesn't seem like it with all the people being forced out of their homes. As of 7pm MT last night, there were 371 BC wildfires including 155 Out of Control, which compares to a week ago at 384 BC wildfires included 162 Out of Control.

BC and Alberta Wildfires

Links to Alberta and BC wildfire status maps

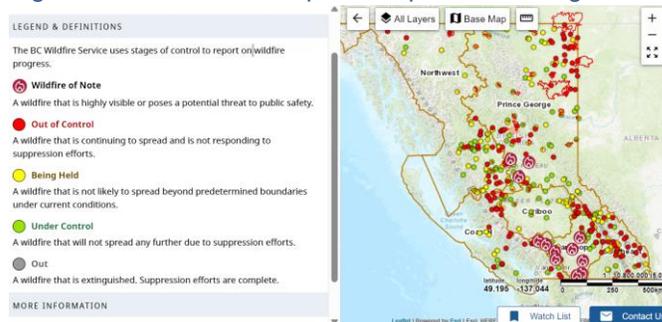
We recommend bookmarking the starting points for wildfire information are the Alberta Wildfire Status interactive map [\[LINK\]](#) and the BC Active Wildfires interactive map [\[LINK\]](#). Please note these links have changed over the past few years. Both maps are interactive and open up for the information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

Figure 51: Alberta wildfire map as of 7pm MT on Aug 26



Source: Alberta Wildfire Status Dashboard

Figure 52: BC wildfire map as of 7pm MT on Aug 26



Source: BC Wildfire Service

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Energy Transition: UN's warning on Aramco will creep to impact capital to oil and gas

Yesterday we tweeted [\[LINK\]](#) "*Less future capital to #Oil #NatGas? UN warns banks on #SaudiAramco likely not to impact dominant global oil co. BUT concept trickle down aided by pressure on boards will give excuse for capital providers & govts who prefer to not give capital or "subsidies" to oil & gas. #OOTT.*" (i) On Friday, the FT reported [\[LINK\]](#) "*UN warns banks that fund Saudi Aramco about possible human rights breach.*" "*The UN has told banks including Citi, Goldman Sachs and BNP Paribas that their financing of Saudi Aramco may be in violation of global human rights rules because of the state-run oil company's contribution to climate change.*" "*The UN letter warns the banks that if they are aware of a human rights issue but fail to take "reasonable steps" to prevent or mitigate the impact, "it can be viewed as enabling the situation". "Businesses should avoid infringing on human rights by taking proactive steps to identify, prevent, mitigate and address adverse impacts with which they are involved, including impacts resulting from climate change," said the letter.*" "*It is the first time the UN has taken action against the oil industry and its financial backers in relation to the human rights implications of climate change.*" (ii) Think of the concept of creep like what happened post the 2015 Paris Agreement when there was the real step up in green pressure on pension plans and capital providers to stop providing oil and gas. It crept up slowly at first but then increased. This was aided by the strong initial returns on areas like wind and solar. But the concept was one of creep. (iii) So when we see reports like this, it's another reminder of likely creep for less capital to oil and gas companies. We suspect it won't impact banks financing Saudi Arabia, who is the dominant global oil company. But what typically happens is that these type of things will first hit the smaller oil and gas companies first as these concepts/principles/risks trickle down. Especially as the climate change side will pressure boards of capital providers to address this, and also pressure governments. These type of pressures put capital providers and governments on the defensive. And it also gives capital providers and governments who want to get rid of fossil fuels, another reason to stop providing capital or "subsidies" to oil and gas. This is apparently the first time the UN has done this in relation to human rights implications of climate change. So maybe it doesn't impact Saudi Aramco, but the reality is that it gives an excuse for capital providers and governments who are looking for an out on providing capital and "subsidies" to oil and gas companies, especially smaller ones. And it will be another reason for why oil and gas companies will be increasingly looking for private capital in the coming decade. (iv) Our Supplemental Documents package includes the FT report.

UN warns on financing Aramco

Energy Transition: Liberals \$74 mm funding for SaskPower's mini-nuke development

Even before the energy transition, we have been very long term supporters and believers that small modular reactors for nuclear power generation can and will play a key role in the energy mix. We didn't see this press release as it was released at 5pm ET last Saturday. It wasn't a bad release so we don't understand why the Liberals didn't want to get more credit than given releasing on a late Sat afternoon in the summer. But the Liberals announced "*that the Government of Canada has approved up to \$74 million in federal funding for SMR development in Saskatchewan, led by SaskPower. This funding will support pre-engineering work and technical studies, environmental assessments, regulatory studies and community and Indigenous engagement to help advance this important project. SaskPower has selected the GE-Hitachi BWRX-300 for potential deployment in Saskatchewan in the mid-2030s,*

Mini-nuke development in Sask

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subject to a decision to build that is expected in 2029.” SMR is Small Modular Reactor or as we have called them for years – mini-nukes. We continue to believe that mini-nukes would be a perfect fit for energy intensive industrial needs like oil sands or mining for potash or other minerals. The release also said ‘SaskPower anticipates construction of its first SMR could begin as early as 2030, with a targeted in-service date of 2034. Additional facilities could begin construction as early as 2034.’ Our Supplemental Documents package includes the Canada release. [\[LINK\]](#)

06/24/20: Sask puts mini nuclear reactors on its potential power generation list

Here is what we wrote in our June 28, 2020 Energy Tidbits memo. *“On Wed, Saskatchewan announced that they are setting up an office to look into the potential of small nuclear reactors for power generation. Mini-nukes are not a new idea. Long term 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. There was some interest, but there was more fear on nuclear at that time. 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 Sask release [\[LINK\]](#) said “Small modular reactors are nuclear power reactors that can produce electricity in the range of 50 to 300 megawatts, as compared to current nuclear power plants that range between 600 and 1,600 megawatts. Small modular reactors are low emitting technology that can provide baseload power within an electrical grid.”*

06/25/20: Reminder mini-nukes can be buried underground in cement bunkers

Here is another item from our June 28, 2020 Energy Tidbits memo. *“We hadn’t planned on tweeting on the Sask mini nukes until we started seeing some press on the announcement including the Thurs Forbes story [\[LINK\]](#) “The Small Canadian Province That Could Lead The Future Of Energy’.” But 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. We tweeted [\[LINK\]](#) “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.”*

08/09/20: Alberta then Premier Kenney said they were looking at mini-nukes

Here is an item from our Aug 9, 2020 Energy Tidbits memo on Alberta starting to look at mini-nukes. *“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*

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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 projects. 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 its 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.”

07/28/23: Is Exxon looking at mini-nukes to power Cdn oil sand/bitumen?

Here is what we wrote in our July 30, 2023 Energy Tidbits memo. “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

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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 @andrewsorkin 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

Here is another item from our July 30, 2023 Energy Tidbits memo. “Exxon has a wide range of operations that it could deploy mini-nukes for power including major refineries, petrochemical plants and LNG export facilities 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 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.

Energy Transition: bp CEO that an orderly transition needs oil and gas investment

Yesterday, bp CEO Bernard Looney spoke on a panel at B20 Summit India and his message was simple – if it isn't a just energy transition, there won't be a transition. Fortunately, we were able to find a YouTube clip of the panel discussion. Looney's comments weren't a surprise as it was all linked to bp's it's “And Not Or” with respect to the energy transition.

Earlier this morning, we tweeted [\[LINK\]](#) “See 12:25 min 📌 bp CEO Looney on reality to have a rapid AND orderly transition. “if it's not just, there won't be a transition” “gas prices went up 7-fold” “countries to fuel their economy turned to the next cheapest alternative, which is what? Coal” “typically in an OECD economy, between 10-12% of the GDP is spent on energy. Last year, that numbers to 20%” “must invest like crazy in accelerating the energy transition ... And Not Or, we must at the same time continue to invest responsibly in today's energy system which is a hydrocarbon system” #Oil #NatGas will be needed for a long time. #OOTT[\[LINK\]](#).” If natural gas is too expensive, countries turn to coal especially if energy costs are up to 20% of GDP. Below is the transcript we created of Looney's comments.

bp CEO on a rapidly and orderly transition

bp CEO Looney on the energy transition

SAF Group created transcript of comments by bp CEO Bernard Looney on a panel hosted by Lynn Forester (CEO of EI Rothschild) at B20 Summit India 2023 on Aug 26, 2023. [\[LINK\]](#). Items in “*italics*” are SAF Group created transcript. At 12:25 min mark, Looney “.... *A rapid and an orderly transition, what does that mean? I think in many ways the case for a rapid transition is relatively straightforward. Emissions have risen every year since Paris with the exception of the pandemic. And then during the pandemic, emissions fell by 5.6% when the world essentially ground to a halt. So that is not a strategy that we wish to employ. But the reality is that emissions are continuing to rise and, therefore, with each day that that is happening, the*

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urgency around the pace and the speed of the transition simply grows. So in many ways the case for a rapid transition is relatively straightforward. The case for the orderly transition is something I think we need to spend a little bit more time talking about. Now, an orderly transition is one where today's energy system needs continued investment. And today's energy system, some people don't like this fact but it is a fact, it's 55% oil and gas. It was 57% in 2012. And it needs continued investment. Why? We need to make sure that we continue to match supply with demand. Why is this important of today's energy system? It's important because of the following. Last year, the world lost 3% of the world's gas supply. Demand didn't change because nothing was done to change demand but supply was lost. 3%. Prices went up seven-fold. Not 7%, not 70%, 700%. Now what happened when gas prices rose seven-fold? Two things happened. The first is that countries to fuel their economy turned to the next cheapest alternative, which is what? Coal. Coal usage reached a record. German coal consumption went up 25%. South Korea's coal consumption went up. Japan's coal consumption went up. I think coal consumption went up here [India], the same in China. That's not what we're trying to achieve with the transition. So that's the first thing that happens when we don't match supply with demand. And the second thing that happens is that typically in an OECD economy, between 10 and 12% of the GDP is spent on energy. Last year, that number went to 20%. 20% of GDP being spent on energy, that is not sustainable economically. Nor does it leave any room to invest the necessary dollars into the transition. So we need a rapid transition but we also need to make sure the transition is orderly, that the transition is just. If it's not just, there won't be a transition. Now how do we do that? Well we do that, in our language at bp, in what we call a very simple strategy description which is And Not Or. We must invest like crazy you would argue in accelerating the energy transition, period. And, Not Or, we must at the same time continue to invest responsibly in today's energy system which is a hydrocarbon system. It is an And strategy, Not an Or strategy. [Note Looney then goes on to speak on bp is doing on its And Not Or actions in India] Lynn, that's what we're trying to do. That's why this conversation is so important because if ever we focus on just one aspect of the equation, I worry that we won't achieve the goal we all want."

Energy Transition: Low German wind output = big need for natural gas/coal to fill in

We recognize the energy transition is going ahead but our call for the past few years has been right in that the energy transition will take longer, cost a lot more and be a bumpy/rocky road. This was obvious given the aspiration was sold to consumers with unrealistic or hidden assumptions. One such assumption was how wind and solar would replace the need for fossil fuel in the baseload energy mix, whereas the reality is that the interruptible nature has always meant that there has to be at least equal capacity of fossil fuels or battery storage capacity to fill in when the sun doesn't shine or wind doesn't blow. And until battery storage can send out for extended periods of days, not a handful of hours, the responsibility for filling in for solar and wind will continue to be natural gas or coal. (i) On Wednesday, we tweeted [\[LINK\]](#) "#NatGas #Coal #BatteryStorage generation capacity in DEU greater than #Wind capacity is needed for when wind doesn't blow And like now when wind is low for weeks, the must have is #NatGas #Coal as battery storage send-out is limited to hours not days! Thx @BloombergNEF #OOTT." (ii) We wouldn't have posted the tweet if it was just the normal variability in wind over a day or two, but our tweet included the below Bloomberg graph that

Low German wind output

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noted Germany was going thru a 10-day period of low wind. And that reinforced the concept that it has to be natural gas and coal to fill in because there isn't battery storage with extended multi-day send-out capacity. It's not just battery storage filling in for a the dinner peak, it's being able to fill in for days on end. (iii) Bloomberg reported "German Power Prices Double in August as Wind Output Slumps: BNEF." Bloomberg highlighted a 10-day period of low wind generation output and wrote "Germany's power prices have doubled since the beginning of the month, to €147 per megawatt-hour. Falling wind generation, and the consequent rise in thermal output, are the main drivers behind the power price increase. On August 22, the share of wind in total generation fell to 15%, from 50% in the beginning of the month. The gap left by wind has been filled by coal and gas, as their share in generation rose to 52% from 20% over the same period." Our Supplemental Documents report includes the Bloomberg report.

Figure 53: German power prices spike as wind output slumps



Source: Bloomberg

Energy Transition: Fortum CEO, need baseload to support intermittent renewable

We really hope that western leaders are listening to clean energy leaders like Fortum that you can't build a 24/7 energy system today on wind and solar. Last night, we tweeted [\[LINK\]](#) "#Fortum CEO Rauramo. wind/solar can be competitive IF you just look at cost of megawatt hour produced. BUT problem is intermittency and "you just can't have intermittent energy, we need the baseload and the flexibility also". #NatGas is needed for baseload. #OTT @bbcaaron." We happened to watch and PVR Rauramo on BBC's Talking Business yesterday and he highlighted that you have to have baseload power to go with intermittent wind and solar. He also was specific that some wind and solar can compete with gas and coal IF you only look at the cost of megawatt produced and don't take into account the need to fill in for the intermittent nature of wind and solar. That is our big concern with western leaders who trump the cost to produce a megawatt using wind or solar – they only address the marginal power cost for when the wind is blowing and the sun is shining and don't address how the world is powered the rest of the time. Here is the transcript we made of comments by Fortum CEO Markus Rauramo with BBC's Aaron Heslehurst on BBC's Talking Business on August 26, 2023. Items in *"italics"* are SAF Group created transcript. Heslehurst *"the criticism of renewable energy is that it is expensive and difficult to store, unlike gas or coal. Those critics, they have a point, Markus, I am just wondering how do you fix that?"* Rauramo *"in many places actually, renewables if you look at just the cost of megawatt hour*

Need baseload to support wind and solar

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produced, actually it is very competitive. That's the case in the Nordics, for wind especially. It is the case for sunny areas for solar. You get low cost megawatt hours. But the problem is intermittency and the profile. So how do you deal with that issue, you need the flexibility. You need a system that will bring in also baseload into the system. Again, if we go further into for example offshore wind, yes it is more expensive but it is not prohibitively expensive. But again, the question is that you just can't have intermittent energy, we need the baseload and the flexibility also. “

Capital Markets: Powell didn't mention cuts, just potential to hold or increase rates

We, like pretty well all market followers, were watching Fed Chair Powell's Jackson Hole speech but, even more than that, reading the download before he finished speaking. Early on he was clear in that he was looking at either holding or increasing rates and didn't mention the potential of rate cuts. As he was about halfway thru his speech, we tweeted out excerpts from the transcript [\[LINK\]](#) *“In case you aren't watching. here is Powell's opening. #OOTT”*. Powell's opening said *“It is the Fed's job to bring inflation down to our 2 percent goal, and we will do so. We have tightened policy significantly over the past year. Although inflation has moved down from its peak—a welcome development—it remains too high. We are prepared to raise rates further if appropriate, and intend to hold policy at a restrictive level until we are confident that inflation is moving sustainably down toward our objective.”* Powell's conclusion was similarly clear *“Based on this assessment, we will proceed carefully as we decide whether to tighten further or, instead, to hold the policy rate constant and await further data. Restoring price stability is essential to achieving both sides of our dual mandate. We will need price stability to achieve a sustained period of strong labor market conditions that benefit all. We will keep at it until the job is done.”* Our Supplemental Documents package includes the Powell speech.

Powell's Jackson Hole speech

Capital Markets: Lots of earning calls on the weakening and stealing US consumer

It seemed like the CNBC coverage this week was on two items – Jackson Hole and comments from retailers on the weaker consumer and increasing theft. We have all seen the video clips on of how a gang of people just go into a store and clear out garbage bags of goods. This organized crime was brought up by all the retailers. One theme that didn't get much interest was Foot Locker's concern on lower income customers. (i) Macy's. On Tuesday morning, we tweeted [\[LINK\]](#) a clip of Macy's CEO on CNBC *“Just now Macy's CEO to @CourtReagan @SquawkStreet. "record shortage [theft] in 2022, going to be higher in 2023". "bulk of that is the change in organized theft". "digital component of this [theft] has really opened up a revenue stream for a lot of these elements" #OOTT #inflation”*. (ii) Dick's Sporting Goods was also featured on CNBC on Tuesday morning. And they highlighted shrink and organized crime on theft and that this was becoming a national problem. In their Q2 call, some of mgmt's statements were *“Organized retail crime and theft in general is an increasingly serious issue impacting many retailers. “Yes, John, as you know, shrink is an industry-level problem. It's actually a problem for our entire country. And it's something that we all need to work together on with our partners, with our trade organizations, and with our government, honestly, to continue to address the shrink issue. We've all seen the stories, and it's quite alarming what's going on.” “the biggest surprise against our expectation was the elevated levels of shrink that became apparent to us when we physical inventoried the store.”* (iii) Foot Locker held its call on Wed. One theme that didn't get much traction were their warner that lower income customers are just starting to get weaker. Mgmt said *“we're*

US retail consumer

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coming off a strong holiday and had not yet seen the full weight of the macro environment on our lower income consumer. This became much more evident through the second quarter, including a weaker start to back to school. The store traffic and conversion challenges we began to see in late Q1, persisted through the second quarter as our customers remain cautious with their discretionary dollars.” In the release, Foot Locker wrote “However, we did see a softening in trends in July and are adjusting our 2023 outlook to allow us to best compete for price-sensitive consumers”. Foot Locker also saw higher shrink but that didn’t come up in the Q&A of the call.

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

One of the big Cdn equity stories in 2022 continues to play out in 2023 – the continued net redemptions from active managed Cdn equity and balanced mutual funds. This flipped in Q2/22 from massive net sales into balanced and equity mutual funds to massive net redemptions in equity and balanced mutual funds. On Tuesday, IFIC (Investment Funds Institute of Canada) reported [LINK](#) mutual funds and ETF sales for July. IFIC reported net redemptions for balanced mutual funds were \$4.571b in July vs \$4.439b in June and \$3.807b in May. IFIC also reported net redemptions for equity mutual funds were \$1.850b in July vs net redemptions of \$2.354b in June and \$2.170b in May. This brought YTD July 2023 net redemptions to \$37.65b out of balanced and equity mutual funds, a large increase compared to YTD July 2022 net redemptions of \$4.07b for a YoY difference of \$33.58b. 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.

IFIC Cdn mutual fund data

Figure 54: Cdn Mutual Fund Net Sales/Net Redemptions (\$ Millions)

Asset class	July 2023	June 2023	July 2022	YTD 2023	YTD 2022
Long-term funds					
Balanced	(4,571)	(4,439)	(3,275)	(26,270)	(6,897)
Equity	(1,850)	(2,354)	(1,378)	(11,384)	2,823
Bond	396	910	(387)	9,122	(6,554)
Specialty	292	127	(80)	2,168	1,123
Total long-term funds	(5,733)	(5,755)	(5,119)	(26,364)	(9,505)
Total money market funds	895	1,537	500	8,793	2,870
Total	(4,837)	(4,219)	(4,620)	(17,570)	(6,635)

Source: IFIC

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

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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 55: 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 July for food +0.3% MoM, +4.9% YoY

On Friday, the USDA posted its July Consumer Price Index for food [LINK](#), which reported the all-items Consumer Price Index (CPI) were +0.3% MoM and +4.9% YoY. The +4.9% 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 July data were: fats/oils +6.3% YoY (+8.7% avg), poultry -0.2% YoY (+2.4% avg), fresh fruits +2.9% YoY (+2.3% avg), fresh vegetables +1.2% YoY 0.7% avg), eggs -13.7% YoY (10.1% avg), and dairy products +1.3% YoY (4.4% avg). It is important to note the USDA said that the “food-at-home (grocery store or supermarket food purchases) CPI” was +0.4% MoM and +3.6% YoY. The USDA wrote “Food-at-home prices are predicted to increase 5.2 percent, with a prediction interval of 4.4 to 6.1 percent. Food-away-from-home prices are predicted to increase 7.1 percent, with a prediction interval of 6.8 to 7.5 percent.”

USDA CPI for food +4.9% YoY

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

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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.”

Demographics: Martin Luther King Jr “I have a dream” speech was Aug 28, 1963

Perhaps one of, if not the most famous speech in history was 60 years ago tomorrow when Martin Luther King Jr. made his “I have a dream” speech on the steps of the Lincoln Memorial in Washington. If you have never listened to it, it's worth a listen to hear King's voice especially near the end in his five “I have a dream” statements that were “*I have a dream that one day on the red hills of Georgia, the sons of former slaves and the sons of former slave owners will be able to sit down together at the table of brotherhood. I have a dream that one day even the state of Mississippi, a state sweltering with the heat of injustice, sweltering with the heat of oppression will be transformed into an oasis of freedom and justice. I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin but by the content of their character. I have a dream today. I have a dream that one day down in Alabama with its vicious racists, with its governor having his lips dripping with the words of interposition and nullification, one day right down in Alabama little Black boys and Black girls will be able to join hands with little white boys and white girls as sisters and brothers. I have a dream today. I have a dream that one day every valley shall be exalted, every hill and mountain shall be made low, the rough places will be made plain, and the crooked places will be made straight, and the glory of the Lord shall be revealed, and all flesh shall see it together.* A recording and a full transcript is available at [\[LINK\]](#). Our Supplemental Documents package includes the transcript.

**“I have a dream”
speech**

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**

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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

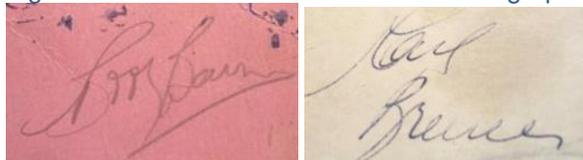
Misc Facts and Figures

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.

Former Toronto Maple Leafs Bob Baun and Carl Brewer

Last week's (Aug 20, 2023) Energy Tidbits memo recognized how former Toronto Maple Leafs right defenseman Bob Baun passed away on Aug 14 at the age of 86. And how Baun was one of the three defensemen that played on the Leafs Stanley Cup wins (the last Cup wins for the Leafs) along with right defenseman Tim Horton and left defenseman Allan Stanley. And that Baun's left defense partner, Carl Brewer, didn't play on the 1967 winners. Brewer passed away 22 years ago on Aug 25, 2001 at the age of 62. In the 60s, the Leafs used to practice at the Tam O'Shanter rink in Agincourt whenever Maple Leafs Gardens was used for other events and it was always around lunch time. So my mom would pack us sandwiches, pick us up so we could watch them practice and ask for broken sticks and autographs. Below are the Bob Baun and Carl Brewer autographs from the 1963-64 season.

Figure 56: Bob Baun and Carl Brewer autographs 1963/64



Source: SAF Group

Sept 2, 1972, Soviet Union shocked Team Canada in Game 1 of Summit Series

Probably one of the most memorable hockey games of all time for any hockey fan of the 1970s was Sept 2, 1972, which was Game 1 of the Summit Series between Team Canada and the Soviet Union in Montreal. Prior to the start, the pundits were all calling for Canada to win all 8 games. And Canada jumped out to an early lead with Phil Esposito scoring after 30 seconds, and then Paul Henderson at 6:32 of the first period. But anyone who watched the game could see the Soviets gain confidence and looked like they were in a higher gear than Canada. The game ended up in a shocking 7-3 win for the Soviets. Coach Harry Sinden made some big changes to the lineup for Game 2 in Toronto on Sept 4. He dropped some top scorers like Vic Hadfield and Rod Gilbert to replace with tough defensive forwards Wayne Cashman and JP Parise. Canada won 4-1 in Toronto with one of the memorable goals when Peter Mahovlich (younger brother of the Big M) shorthanded goal.

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Farmers' Almanac vs Old Farmer's Almanac

This week we highlighted the Farmers' Almanac winter forecast and next week's memo will include the winter forecast from the Old Farmer's Almanac that is being released in the next few days. The difference is that the Farmers' Almanac started over 200 years ago in 1818, whereas the Old Farmer's Almanac started in 1792. The Old Farmer's Almanac started life as the Farmer's Almanac but added the old in 1832. We have to believe there weren't strict naming rights in 200 years ago, when the Farmers' Almanac started up in 1818 using the same name as the original Farmer's Almanac.

Bob Barker passed away at the age of 99

The well-known Bob Barker passed away yesterday at the age of 99. He was most know for being the host of The Price is Right from 1972 to 2007. The Price is Right is the longest running daytime game show in North America history. But I remember Bob Barker more from his prior gig as host of Truth or Consequences from 1956 to 1975. In the 60s, most families only had one TV so the program priority was Mom and Dad other than Saturday morning for cartoons. But in Toronto in the mid-60s, there were only six TV channels (ABC, NBC and CBS out of Buffalo, CBC and CTV out of Toronto, and CHCH out of Hamilton). So a lot of moms watched Truth or Consequences and that means a lot of boomer kids also watched it.

Won't be able to buy Kleenex in Canada

It was funny to hear some of the reactions to the Thursday news that Kleenex would no longer be sold in Canada. A lot of people forget that Kleenex is a brand that sales facial tissues because Kleenex is one of those select brands that becomes synonymous with a product. CTV reported that Kimberly Clark emailed statement said "*We have been operating in a highly constrained supply environment, and despite our best efforts we have been faced with some unique complexities on the Kleenex business.*" Recall working at Procter & Gamble in the late 70s and having some of the product managers talk about how great it would be to have a P&G product become synonymous with a product name. Just think about some of these brand products that because the product name such as Chapstick, Popsicle, Q-Tip, Sharpie, Bandaid, Tupperware and, of course, Zamboni.