

Energy Tidbits

February 18, 2024

Produced by: Dan Tsubouchi

Is Min. Guilbeault Setting the Stage to Delay Canada's Mandatory EVs Sales Targets by Saying EVs Are Not a Panacea?

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. My priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is the review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector. My target is to write on 50 weekends per year and to post by noon MT on Sunday. The Sunday noon timing was because PMs said they didn't have research to read on Sundays and Sundays are a day when they start to think about the investing week ahead.

This week's memo highlights:

1. We have to believe Environment Minister Guilbeault is setting the stage to delay Canada's mandatory percentage of EV sales of total car sales by saying EVs are not a panacea. [\[click here\]](#)
2. Shell says LNG Canada 1.8 bcf/d Phase 1 is in its LNG global supply forecasts for 2025. [\[click here\]](#)
3. Bloomberg's Javier Blas brings global audience to WCS less WTI differentials narrowing upside in near term. [\[click here\]](#)
4. Diamondback Energy confirms its Permian base decline rate is 31%. [\[click here\]](#)
5. IEA says global onshore oil stocks at Jan 31 to be lowest since 2016 but its forecast assumes a slight build in stocks in Q1/24. [\[click here\]](#)
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: -49 bcf draw from US gas storage; now +255 bcf YoY surplus

It was warm in the US, which led to a smaller draw from natural gas storage in the US this week with -49 bcf, which is less than half the normal draw for this week. For the week of February 9, the EIA reported a -49 bcf draw. Total storage is now 2.535 tcf, representing a surplus of +255 bcf YoY compared to a surplus of +187 bcf last week. Last month was the highest storage has been in 5 years, with the previous high being 3,460 bcf from 2020. Total storage is +348 bcf above the 5-year average, up from the +248 bcf surplus last week. Below is the EIA's storage table from its Weekly Natural Gas Storage report [\[LINK\]](#).

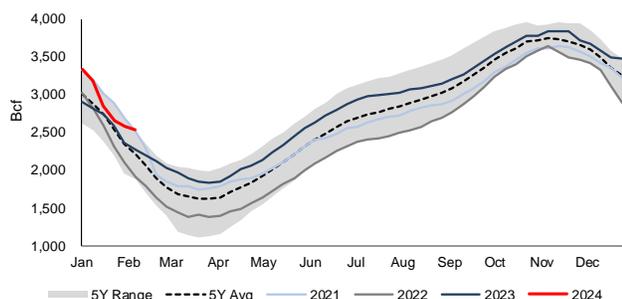
-49 draw in US gas storage

Figure 1: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf)				Historical Comparisons			
	02/09/24	02/02/24	net change	implied flow	Year ago (02/09/23)		5-year average (2019-23)	
					Bcf	% change	Bcf	% change
East	536	568	-32	-32	502	6.8	490	9.4
Midwest	662	689	-27	-27	607	9.1	581	13.9
Mountain	178	183	-5	-5	115	54.8	118	50.8
Pacific	222	228	-6	-6	122	82.0	181	22.7
South Central	936	916	20	20	934	0.2	818	14.4
Salt	271	257	14	14	263	3.0	240	12.9
Nonsalt	665	659	6	6	671	-0.9	578	15.1
Total	2,535	2,584	-49	-49	2,280	11.2	2,187	15.9

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



Source: EIA, SAF

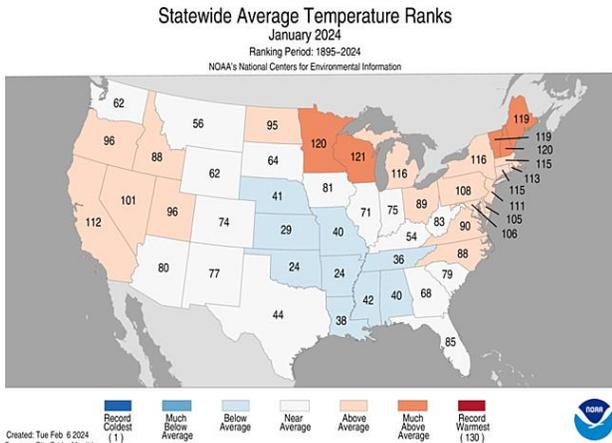
Natural Gas: Even with cold blast, January 2024 was 48th warmest in past 130 years

We have been highlighting the warmer than normal US temperatures so far this winter that has led to lower natural gas demand and the key driver for why HH prices went below \$2 in Jan and have stayed there. On Thursday, the NOAA posted its national climate recap for Jan and Jan 2024 was the 48th hottest on record in the past 130 years, even with the extreme cold snap we had in the middle of the month. On Thursday, we tweeted [\[LINK\]](#) "ICYMI Here's key reason why HH #NatGas went below \$2 in Jan. Even with Arctic freeze in mid-Jan, Jan was 48th warmest in last 129 yrs and, most importantly, NE US and Great Lakes was near record warmth. Nov 1-Jan 31, was 5th warmest in last 129 yrs. Thx @NOAA #OOTT". This follows Dec 2023, which was the hottest in 129 years. Below is the NOAA map showing Jan 2024 indexed average statewide temperatures for the last 130 years.

Jan 48th warmest for US in 130 yrs

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Figure 3: NOAA Average Temperatures for Jan 2024

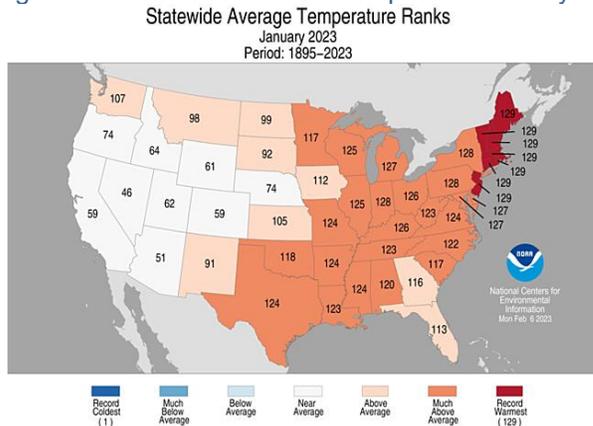


Source: NOAA

Jan 2023 was the 6th hottest in the last 129 years

Here is what we wrote in our Feb 12, 2023 Energy Tidbits memo. “On Wednesday, we tweeted [LINK](#) “No wonder HH #NatGas prices crashed in Jan. @NOAA says Jan 2023 was 6th hottest Jan in last 129 years. Never good for HH when it’s hot in Jan as Jan (see 📌 01/08/23 tweet/table) is the most important month for winter temperature driven res/com #NatGas consumption. #OTT. All of the populous eastern half of US was well above normal temps in Jan with the northeast experiencing some of the hottest temps on record. No surprise, HH prices crashed thru Jan with HH prices falling from \$7 just before Xmas to \$2.68 on Jan 31, a +60% decline in less than six weeks. Our tweet Wednesday included NOAA’s below Jan average temperature ranks.

Figure 4: NOAA historical US temperate ranks by state



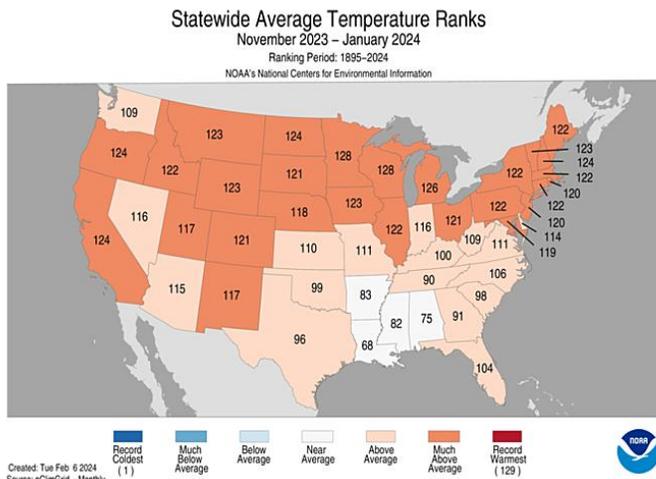
Source: NOAA

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Nov/Dec/Jan was the 5th warmest in the last 129 years

The winter up until this point has been very warm overall, and now with the January data the NOAA says that the period from Nov/Dec/Jan was the 5th warmest the US has seen in 129 years. We have highlighted how higher YoY US natural gas production has been a negative to HH prices, but the more significant factor is the hot winter. Below is a map of statewide average temperature ranks for Nov/Dec/Jan since 1895.

Figure 5: US Statewide Average Temperature Ranks Nov 1, 2023 – Jan 31, 2024



Source: NOAA

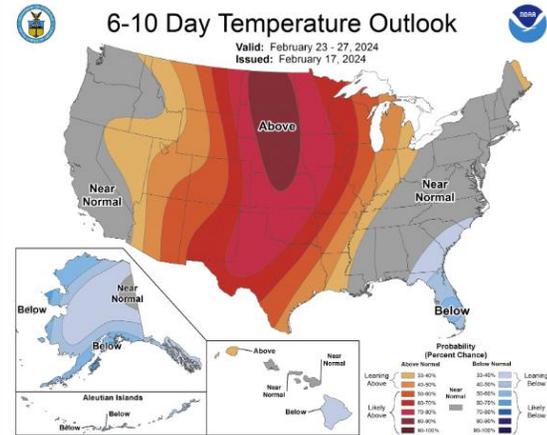
Natural Gas: NOAA forecasts warmer than normal temps to end Feb

Yesterday, we tweeted [\[LINK\]](#) "Today's @NOAA updated 6-10 & 8-14 day temperature outlook covers Feb 23-Mar 2. Won't be any near term help to HH #NatGas prices with way warmer than normal temps in east 1/2 of US to end Feb. #OOTT." Every day, NOAA updates its 6-10 and 8-14 day temperature outlooks and yesterday's calls for much warmer than normal temperatures to end Feb. HH closed at \$1.61 on Friday.

NOAA 6-10 & 8-14 day temp outlook

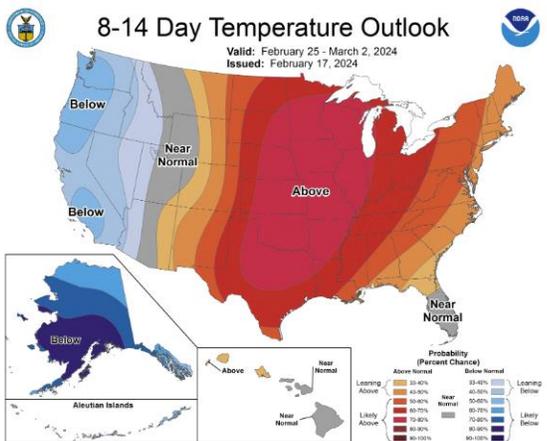
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Figure 6: NOAA 6-10 day temperature outlook as of Feb 17



Source: NOAA

Figure 7: NOAA 8-14 day temperature outlook as of Feb 17



Source: NOAA

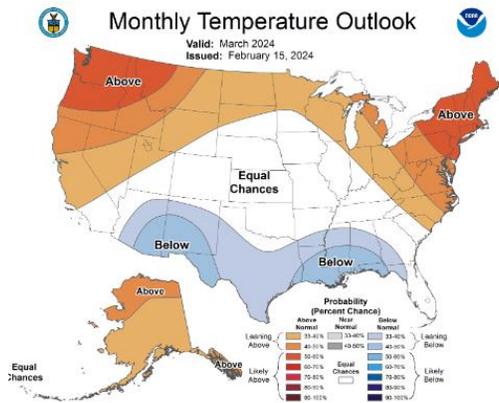
Natural Gas: NOAA forecasts warmer than normal temps in March for northern states

On Thursday, we tweeted [LINK](#) “Today’s @NOAA temperature outlook for March won’t bring any boost to HH #NatGas. Calls for warmer than normal temps in March, in particular in NE US and Great Lakes. #OOTT.” On Thursday, the NOAA updated its Monthly Temperature Outlook for March, which calls for warmer than normal temperatures, especially in the northern states, while some southern states will have below-normal temps. March is really the last winter temperature driven natural gas demand month before moving into shoulder season where there is generally no weather driven natural gas consumption.

NOAA monthly temp outlook

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Figure 8: NOAA Monthly Temperature Outlook for March



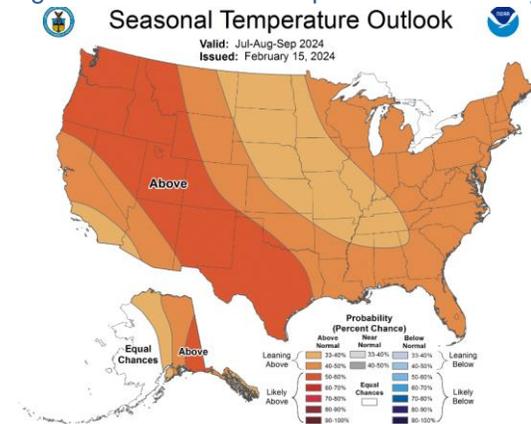
Source: NOAA

Natural Gas – NOAA’s early look is for a hot summer in the US

We recognize that weather forecasts, even near term, are far from 100%, but, on Wednesday, NOAA released its monthly update to its seasonal temperature forecasts. It is still early but the outlook for the summer JAS [\[LINK\]](#) calls for warmer than normal temperatures across almost all of the US. This would be supportive of natural gas prices. Below is NOAA’s Feb 15 temperature probability map for JAS.

NOAA forecasts hot summer

Figure 9: NOAA JAS Temperature Probability Forecast



Source: NOAA

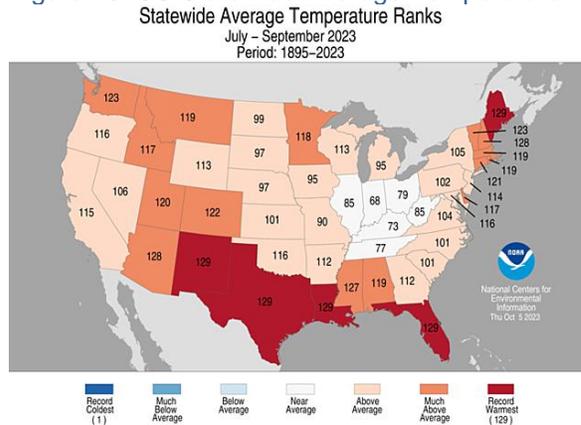
But JAF 2023 was 3rd hottest in the last 129 years

If NOAA’s early look at JAS 2024 is right, it will be well above normal but cooler than last summer’s JAS 2023. Our Oct 15, 2023 Energy Tidbits wrote “September [\[LINK\]](#). September was the 7th hottest in the last 129 years. It was record heat in Texas and New Mexico, and really hot in Plains, Midwest, Great Lakes NE and south. NOAA also posted its recap of summer July/Aug/Sept [\[LINK\]](#) and it was near

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record heat as the 3rd hottest in the last 129 years. It was record heat in a number of states and near record in many others. Below is NOAA's by state ranking for September and July/Aug/Sept temperatures.

Figure 10: US Statewide Average Temperature Ranks July/Aug/Sept 2023



Source: NOAA

Natural Gas: 62% of US homes have winter home heating fueled by natural gas

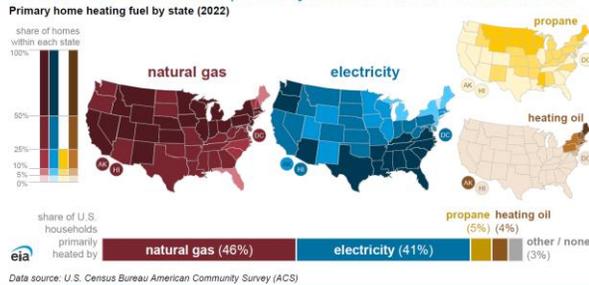
We focus our winter temperature looks on the Great Lakes and NE US, which are the major home heating natural gas regions for the winter. We are keeping this item in our memos for Jan and Feb as one of the common questions we get is on where is it important to be cold in the US for natural gas. Here is what we wrote in our Nov 19, 2023 Energy Tidbits memo on overview of US home heating by fuel. *“Our primary focus for winter weather tends to be in the US NE and around the Great Lakes for the combination of population density, areas that have colder winters, and a higher percentage of the US homes in these regions that primarily use natural gas for heating. Below is the EIA’s map from Oct showing the primary fuel source for heating homes. (i) On Thursday, we tweeted [\[LINK\]](#) “62% of US homes winter heated directly (46%) and indirectly (16%) by #natgas. All direct fuel % splits unchanged YoY ie. #natgas 46%, electricity 41%, etc. @EIAgov #natgas fuels 40% of electricity for home heating ie. indirect 16% #OOTT.” (ii) Natural gas continues to be the major fuel for “direct” fuel for home heating with 46% of US homes followed by electricity 41%, propane 5%, heating oil 4% and other/none at 3%. Note these % shares are unchanged vs last year. (iii) much of the electricity is provided by natural gas. (iii) Natural also is the major fuel to generate electricity. On a direct basis, electricity is the primary source for heating 41% of US homes. The EIA notes that natural gas provides the fuel for 40% of electricity. The EIA wrote “Last winter, electricity generation fueled by natural gas reached a new record of 619 billion kilowatthours (kWh), accounting for nearly 40% of all generation in the U.S. electric power sector. We forecast a similar level and share of natural gas generation for winter 2023–24. The addition of new natural gas-fired generating capacity has been one factor keeping natural gas the largest source of power generation. By October 31, we expect U.S. natural gas generating capacity to have grown by 4.7 gigawatts (GW) from the previous October.” ivi Adding the indirect and direct, natural gas provides the fuel for 62% of US homes.”*

Natural gas home heating

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Figure 11: Fuels for winter home heating of US homes

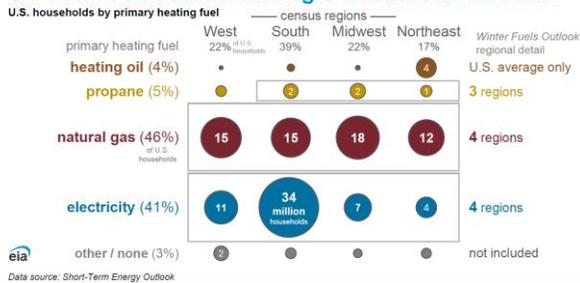
97% of U.S. homes are primarily heated with one of four fuels



Source: EIA

Figure 12: Fuels for winter home heating by region

Our Winter Fuels Outlook has regional detail for three fuels



Source: EIA

Natural Gas: Williams sees big growth in natural gas generation for baseload and peaking

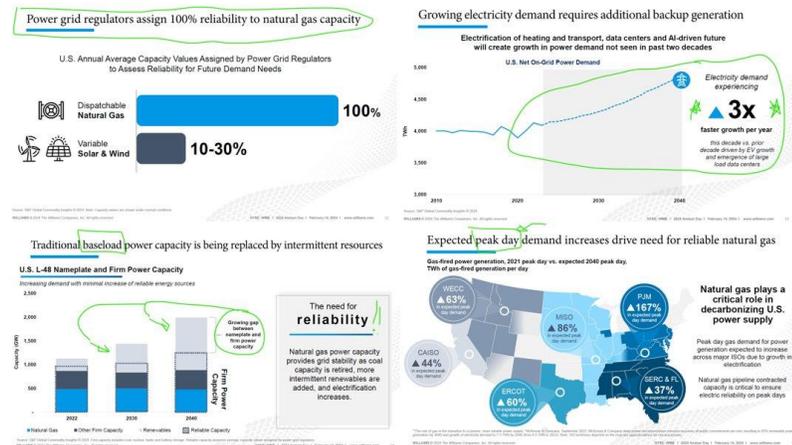
Later in the memo, we highlight Williams emphasizing the increasing demand for electricity from data centers and how that is driving increasing demand for natural gas. Williams held its analyst day on Wednesday. We tweeted [LINK](#) "\$WMB analyst day today. US needs big growth in BOTH baseload and peaking capacity to 2040. US needs more #NatGas power generation need to 2040, not less as many long term forecasts. Data centers don't run less when sun doesn't shine & wind doesn't blow. #OOTT." Williams is in the natural gas business and not the renewable business. Williams see data centers already driving big electricity demand and that will only increase. That is part of the reason why they see increasing demand for both baseload and peaking natural gas power. Below are the key slides from their analyst day.

Increasing natural gas demand

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Figure 13: Increasing electricity demand requires more natural gas

Excerpt Slides from Williams Analyst Day 2024 February 14, 2024



Source: Williams

Natural Gas: EIA, US shale/tight natural gas to get back above 100 bcf/d in Feb, Mar

US natural gas production is still up strong YoY with the US shale/tight natural gas plays up 3.5 bcf/d YoY, and this month's EIA DPR brought estimates for the next couple months back up again. Recall the EIA revised historical months down in December's DPR due to a change in data methodology, stating on their website "Our data vendor for oil and gas production data, Enverus, reported a change in the Texas Railroad Commission's (TX RRC) methodology for reporting natural gas production that discontinued applying a "well separation extraction loss factor" to condensate production reported by operators. For example, the impact of the methodology change lowers TX RRC reported natural gas gross production by 914 million cubic feet per day, nearly 3% in the month of January 2022. The December Drilling Productivity Report released on December 18, 2023, reflects this revision". The EIA also wrote on their website "The Drilling Productivity Report (DPR) rig productivity metric new-well oil/natural gas production per rig can become unstable during periods of rapid decreases or increases in the number of active rigs and well completions. The metric uses a fixed ratio of estimated total production from new wells divided by the region's monthly rig count, lagged by two months. The metric does not represent new-well oil/natural gas production per newly completed well. The DPR metric legacy oil/natural gas production change can become unstable during periods of rapid decreases or increases in the volume of well production curtailments or shut-ins. This effect has been observed during winter weather freeze-offs, extreme flooding events, and the 2020 global oil demand contraction. The DPR methodology involves applying smoothing techniques to most of the data series because of inherent noise in the data". This comes in light of the very cold weather spurts that impacted some North American production in Jan. (i) On Monday, the EIA released its monthly Drilling Productivity Report for February 2024 [LINK], which is the EIA's forecast for oil and natural gas production from the major shale/tight oil and gas basins for the current month (in this case February) and next month (March). (ii) The EIA forecasts US shale/tight natural gas for

Shale/tight gas production

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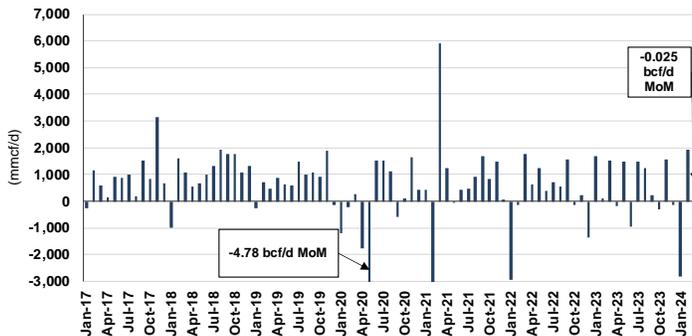
February at 100.450 bcf/d, which is up from last month's February estimate of 98.891 bcf/d. March natural gas production is estimated to be 100.426 bcf/d. (iii) The Permian is estimated to be above 24.000 bcf/d for 5 months; Nov 24.029 bcf/d, Dec 24.415 bcf/d, Jan 24.022 bcf/d, Feb 24.628 bcf/d and March 24.762 bcf/d. (iv) Haynesville has been falling gradually for the past 7 months; from Sep 17.099 bcf/d, Oct 16.912 bcf/d, Nov 17.039 bcf/d, Dec 16.879 bcf/d, Jan 16.354 bcf/d, Feb 16.624 bcf/d and Jan 16.375 bcf/d. (vii) Remember US shale/tight gas is ~90% of total US natural gas production. So, whatever the trends are for shale/tight gas are the trends for US natural gas in total. Below is our running table showing the EIA DPR data for the shale/tight gas plays, and the MoM changes in major shale/tight natural gas production. Our Supplemental Documents package includes the EIA DPR.

Figure 14: EIA Major Shale/Tight Natural Gas Production

mmcf/d	2023												2024			Jan DPR			Feb DPR			
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Mar YoY	Mar YoY%	Mar MoM	Mar MoM%	Feb	Feb	Change
Anadarko	6,910	6,683	6,537	6,609	6,608	6,550	6,802	6,747	6,905	6,855	6,772	6,719	6,263	6,581	6,556	19	0%	-25	0%	6,667	6,581	-86
Appalachia	35,248	34,904	35,292	34,847	35,599	35,741	35,805	36,229	35,703	35,772	36,845	36,863	36,209	36,484	36,408	1,116	3%	-76	0%	35,483	36,484	1,001
Bakken	2,897	3,093	3,104	3,172	3,214	3,296	3,350	3,372	3,499	3,455	3,512	3,523	3,198	3,350	3,364	260	8%	14	0%	3,489	3,350	-139
Eagle Ford	6,986	7,095	7,490	7,373	7,448	7,396	7,473	7,344	7,592	7,545	7,609	7,546	7,178	7,411	7,426	-64	-1%	15	0%	7,221	7,411	190
Haynesville	16,432	16,895	16,649	16,685	17,229	16,463	16,599	17,092	17,099	16,912	17,039	16,879	16,354	16,624	16,534	-114	-1%	-90	-1%	16,297	16,624	327
Niobrara	4,988	4,900	4,978	5,031	5,131	5,192	5,262	5,393	5,363	5,379	5,375	5,380	5,286	5,372	5,375	397	8%	3	0%	5,339	5,372	33
Permian	21,856	21,863	22,887	23,034	23,013	22,634	23,449	23,794	24,048	23,981	24,298	24,415	24,022	24,628	24,762	1,875	8%	134	1%	24,393	24,628	234
Total	95,318	95,432	96,938	96,751	98,242	97,273	98,740	99,971	100,209	99,900	101,450	101,325	98,510	100,450	100,426	3,488	4%	-25	0%	98,891	100,450	1,560

Source: EIA, SAF

Figure 15: MoM Change – Major Shale/Tight Natural Gas Production



Source: EIA, Drilling Productivity Report

Source: EIA, SAF

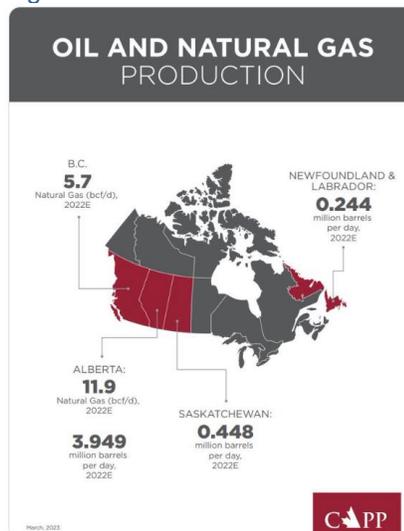
Natural Gas: LNG Canada 1.8 bcf/d Phase 1 is 10% of total Alberta/BC production

The reason why we have highlighted LNG Canada for years is that LNG Canada is material Alberta/BC natural gas and a game changer for the sector. It's not just that it opens up Cdn natural gas directly to global markets, the volume of natural gas is material. On Friday, we tweeted [\[LINK\]](#) "Reminder #LNGCanada is a game changer for CA #NatGas/ Phase 1 is 1.8 bcf/d, TC is ready to start delivering gas as soon as LNG Canada wants it. Phase 2 FID would add another 1.8 bcf/d. Phase 1 + 2 is approx 20% of BC/AB natural gas production. #OOTT." Each Phase is 1.8 bcf/d so Phase 1 and 2 in total is 3.6 bcf/d. Our tweet included the below CAPP March 2023 fact sheet that notes Alberta and BC produced a total of 17.6 bcf/d in 2022. Ie. each Phase of LNG Canada is ~10% of total Alberta + BC natural gas production.

LNG Canada 1.8 bcf/d is material to AB/BC

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Figure 16: Canada oil and natural gas production



Source: CAPP

Natural Gas: TC Energy is ready to deliver gas to LNG Canada whenever they want it

TC Energy held its Q4 call on Friday morning. We were hoping for some indication of when they might start taking natural gas on Coastal GasLink to supply natural gas for commissioning LNG cargos at LNG Canada's 1.8 bcf/d Phase 1. We have been hearing industry believing, perhaps just hoping, for this to start in the summer and we were hoping for analysts to ask questions on a start up but that did not happen. And mgmt. did not give any indication for when gas supply for LNG Canada would start. However, mgmt. did emphasize in their early comments that they are just waiting on LNG Canada to let them know when to start. We listened to the Q4 call at 6:30am MT and quickly tweeted [\[LINK\]](#) "TC Energy Q4 call just started. CEO "we are now ready to deliver natural gas to #LNGCanada facility as soon as they are ready to receive it" Hopefully analysts can get a sense of when in the Q&A. LNG Canada 1.8 bcf/d is ~10% of BC/Alberta total natural gas production. #OTT". TC CEO was clear – Coastal GasLink is ready to deliver natural gas as soon as LNG Canada says they want it. Note that we have been highlighting the significance of LNG Canada's 1.8 bcf/d Phase 1 LNG it is game changer for Cdn natural gas as 1.8 bcf/d is ~10% of total BC and Alberta natural gas production. Our Supplemental Documents package includes excerpts from TC Energy's Q4 release and call slide deck.

**Coastal GasLink
waiting on LNG
Canada**

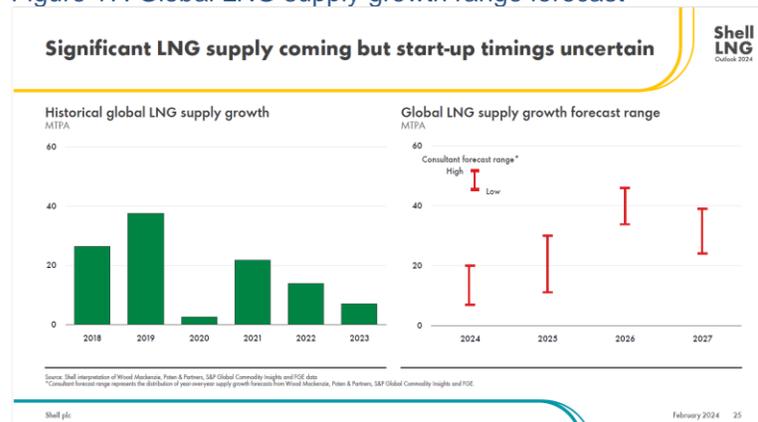
02/14/24: Shell says LNG Canada 1.8 bcf/d will be producing in 2025

Shell held its LNG Outlook 2024 on Wednesday. There were no specifics on the timing for when LNG Canada would be receiving natural gas and producing commissioning LNG cargos. So we don't know when in 2024 they will start to receive natural gas. The only insights we have is that Shell says LNG Canada will be producing LNG cargos in 2025. In the Q&A, mgmt. was asked on the below slide 25 and that Shell "obviously have LNG Canada, Arctic, Golden Pass and so on..." in the new LNG supply. Mgmt replied "This is the growth in the market. I think some of the

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projects that you would be looking at in 2025 would include LNG Canada, Golden Pass, Packermans Train 1. In 2026, the new Qatar projects, Packermans 2, '27, Rio Grande, Port Arthur.”

Figure 17: Global LNG supply growth range forecast



Source: Shell LNG Outlook 2024

02/01/24: Shell pointed to 1.8 bcf/d LNG Canada commissioning cargoes in 2024

As a reminder, LNG Canada will first go thru a commissioning process before moving into commercial operations. And that commissioning process includes commissioning LNG cargoes ie. LNG Canada will be operating and will be taking natural gas. Given that Shell is involved in the dispute with Venture Global on commissioning cargoes, we would not expect Shell to extend commissioning cargoes longer than necessary. Here is what we wrote in our last week's (Feb 11, 2024) Energy Tidbits memo. "Last week's (Feb 4, 2024) Energy Tidbits memo highlighted the comments from Shell's Q4 call on Feb 1. Shell CEO Sawan said "Thank you very much. Our free. I'll take the first one and then let Sinead address the second one. LNG Canada. You will have. We also address this last year, we have seen of course the GasLink Coastal GasLink Pipeline completed mechanically last year and ready and available to ramp-up through the course of 2024. The facility itself at Kitimat is now just over 90% complete. As per the report from the joint-venture. So they're making good progress and. I would expect that we would expect that later this year, they would start-up. The commissioning of the plant. That of course takes several months well into 2025, but it's comforting to see the progress that is being made. And of course, once we start producing those commissioning cargoes will be made available from day-one to our foundational customers. As you would expect. So. Pleased with the progress. But this no doubt this is a very-very complex facility that's going to be. Be ramped-up. And therefore, we are going to be to watch it and to support the team as they do that in the course of the coming 12 months to 18 months." Sawan didn't specifically say it but commissioning activities include commissioning LNG cargoes and he is pointing to that later in 2024. This would fit the hinted Precision timing for Coastal GasLink to start up this summer."

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LNG Canada 1.8 bcf/d Phase 2**Natural Gas: Seems TC Energy expects LNG Canada 1.8 bcf/d Phase 2 FID is soon**

We hadn't expected any comments from TC Energy on the potential for FID on LNG Canada's 1.8 bcf/d Phase 2 on the Q4 call. TC Energy did not specifically say anything about the Phase 2 FID. However, it's clear that TC Energy expects FID to happen soon because they built that into their expectations for LNG growth in North America. TC expects 3-4 bcf/d of Canadian LNG by 2030 and the only possible way to get from 1.8 bcf/d coming from LNG Canada 1.8 bcf/d Phase 1 is to bring on the brownfield LNG Canada 1.8 bcf/d Phase 2. There is nothing else that could meet the volume and timing other than LNG Canada Phase 2. And if TC Energy sees this coming on stream by 2030, it means that Shell has to FID LNG Canada 1.8 bcf/d Phase 2 pretty soon. Even if LNG Canada Phase 2 is a brownfield project, it will have to start soon. So even though TC Energy didn't mention LNG Canada Phase 2 by name, the only project that they must be thinking of is LNG Canada Phase 2. While the Q4 call Q&A was still on, we tweeted [\[LINK\]](#) "Seems TC expects 1.8 bcf/d #LNGCanada Phase 2 FID is soon. "exporting ~14 bcf of #LNG from the US today. We see that growing to somewhere north of 30 bcf by the end of the decade across all of NA, with maybe 3 to 4 bcf coming from CAN and 2 to 3 bcf coming from MEX" TC EVP. #OTT #NatGas"

Shell gave no hint at potential FID timing for LNG Canada 1.8 bcf/d Phase 2

Shell held its LNG Outlook 2024 on Wednesday. There was no mention by Shell of LNG Canada 1.8 bcf/d Phase 2 nor were there any analyst questions on LNG Canada 1.8 bcf/d Phase 2.

It would make sense for an LNG Canada Phase 2 FID around Phase 1 start

So there has been no hints from Shell as to when they expect FID for LNG Canada 1.8 bcf/d Phase 2. And the analysts did not ask any questions on LNG Canada Phase 2. We think the analysts will be moving to ask the question as LNG Canada FID over the coming months. As noted above, TC Energy seemed to point to a near term FID. From our perspective, we think the FID on LNG is more likely sooner than later. Shell is working towards starting commissioning activities that will lead to commissioning LNG cargos as the step before they move to commercial operations. We don't think Shell will play games and drag out commissioning activities any longer than is necessary especially since Shell is involved in the Venture Global LNG commissioning cargo dispute. Shell has LNG Canada Phase 1 in its forecast for 2025 global LNG supply additions, which points to a commercial declaration likely with a year if not sooner. But we believe that once Shell starts commissioning activities, and certainly no later than when it starts commercial operations, the questions will be moving to what about LNG Canada Phase 2 FID. So we expect that change in questions to come over the coming months. Don't forget they will, if they haven't done so yet, on the contracts with services and fabricators. We are surprised that analysts haven't asked if they have services and fabricators committed. It just means that we think the catalyst or time for the next FID announcement is sooner than later, maybe in the fall.

Can LNG Canada Phase 2 go ahead ONLY If it is running on hydroelectricity?

Canada's Minister of Energy and Natural Resources, Jonathan Wilkinson, was interviewed on Bloomberg on Wednesday. One of the interesting comments was on

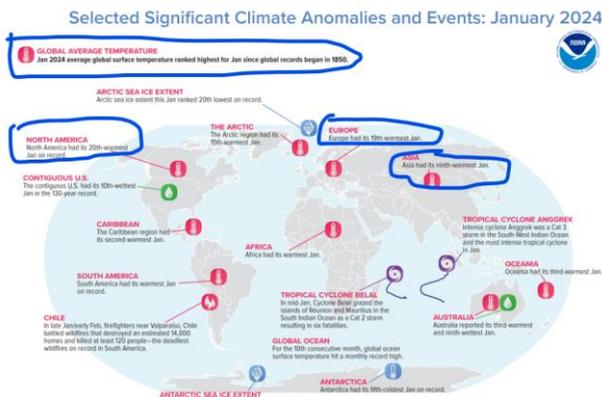
LNG. We tweeted [\[LINK\]](#) “Did #LNGCanada’s govt approvals yrs ago grandfather its 1.8 bcfd Phase 2 from Canada’s @JonathanWNV requirement on using clean electricity & not #NatGas to power. ie. can they FID on an agreement/commitment to use hydro when and if available? #OOTT.” Wilkinson seemed pretty clear that all LNG projects have to run on clean energy ie. hydro. What isn’t clear to us is if this requirement includes LNG Canada Phase 2. And it isn’t clear if the requirement is that LNG has to be powered by hydro from Day 1 or if it is okay if there is a commitment to use hydro if and when available. Our tweet included the transcript we made of Wilkinson’s comments. SAF Group created transcript of comments by Jonathan Wilkinson (Canada, Minister of Energy and Natural Resources) with Bloomberg’s Dani Burger and Manus Cranny on Bloomberg Brief on Feb 14, 2024. Items in “italics” are SAF Group created transcript. At 3:18am MT, Wilkinson “As I’ve said, we’ve done that. We are the only country in the world that’s put in place regulations that actually require 75% methane reductions in the upstream in terms of the production of natural gas. We are one of the only countries in the world that actually effectively requires the liquefaction of natural gas using clean electricity and not natural gas, which eliminates much of the emissions. And we actually look externally in the context of what is the LNG going to be used for. If its’ not being used to displace coal, then it’s being used to potentially to displace potentially future renewables, which doesn’t help us at all from a climate perspective”.

Natural Gas: Jan 2024 had the hottest average global temperature on record

On Thursday, we tweeted [\[LINK\]](#) “Here’s key reason why global #LNG & #NatGas prices went down in Jan. 9th warmest Jan in Asia. 19th warmest Jan in EU. 20th warmest Jan in North America. Unfortunately, weak prices in late winter lead to stalled prices thru spring shoulder season. Thx @NOAA #OOTT.” And [\[LINK\]](#) “Forgot to add the punch line - Jan 2024 was the hottest Jan for the world on record. #NatGas #OOTT #LNG.” On Wednesday, NOAA posted its global climate recap for Jan, and it was another of the hottest winter months on record. And importantly, it was warm around the world. The 9th warmest in Asia. The 19th warmest in Europe. The 20th warmest in North America. Below are the NOAA graphics for Jan.

Hottest Jan on record globally

Figure 18: Selected Significant Climate Anomalies and Events: Jan 2024

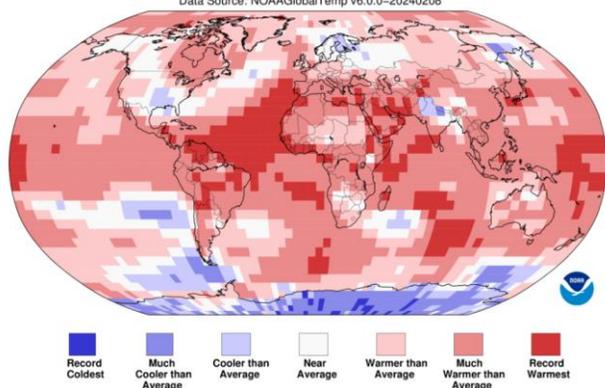


Source: NOAA

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Figure 19: Land & Ocean Temperature Percentiles for Jan 2024

Land & Ocean Temperature Percentiles Jan 2024
 NOAA's National Centers for Environmental Information
 Data Source: NOAAGlobalTemp v6.0.0-20240208



Source: NOAA

Both Nov and Dec 2023 had the hottest average global temperature on record

No wonder global LNG and natural gas prices are low, it's been record hottest global temperatures in Nov, Dec and now Jan. Our Jan 14, 2024 Energy Tidbits memo wrote "On Friday, we tweeted [LINK](#) "Here's why JKM #LNG and Europe TTF #NatGas prices are basically half of a year ago. And why the risk for repeat of 2023 with soft LNG and #NatGas prices carrying thru shoulder season. Hottest average global temperature on record for BOTH Nov 2023 and Dec 2023. #OOTT." NOAA's December 2023 Global Climate Report [LINK](#) had a simple message – it was hot everywhere in December. NOAA noted "Dec 2023 average global surface temperature ranked highest for Dec since global records began in 1850." "Europe had its seventh warmest Dec on record". "Asia had its 18th warmest Dec". "North America had its warmest Dec on record". Our Dec 17, 2023 Energy Tidbits memo wrote "On Thursday, we tweeted [LINK](#): "No wonder global #LNG #NatGas prices are weak. - Global warmest Nov on record. - US 19th warmest on record - EU 15th warmest on record - Asia warmest on record. Need sustained cold temps ASAP broadly in world or risk repeat of winter 22/23 hit on 2023 prices. Thx @NOAA #OOTT". The NOAA's Global Climate Report for the month of November [LINK](#) showed that globally, the average surface temperature was +1.44C above the 20th century average of 12.9C, which made it the warmest November for the planet on record. This makes sense as Asia just had their warmest November on record, Europe tied it's 15th warmest on record, and as we mentioned earlier in this memo, the US saw the 19th warmest Nov in the past 129 years."

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Figure 20: Land & Ocean Temperature Percentiles for Dec 2023

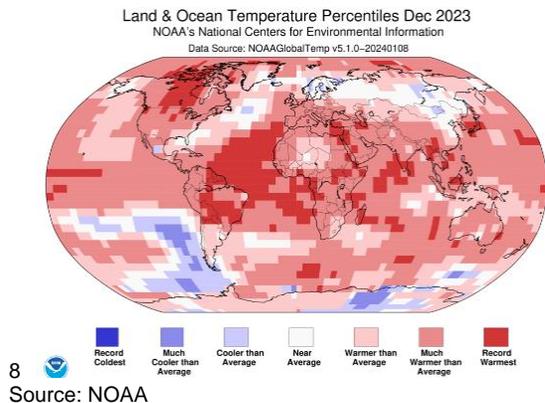
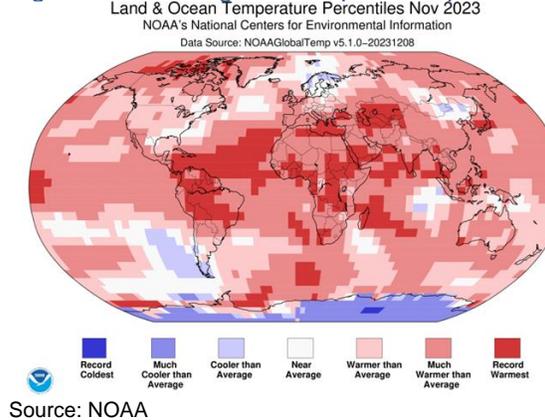


Figure 21: NOAA global temperature percentiles for Nov 2023



Natural Gas: India January natural gas production basically flat MoM at 3.58 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 were several months of basically flat production but production growth has returned in 2023. On Friday, India's Petroleum Planning and Analysis Cell released their monthly report for January's natural gas and oil statistics [\[LINK\]](#). India's domestic natural gas production for January was 3.58 bcf/d, which was basically flat MoM from 3.57 bcf/d in December. On a YoY basis, natural gas production was up +5.51% from 3.39 bcf/d in January 2023. Our Supplemental Documents package includes excerpts from the PPAC monthly.

India natural gas production flat MoM

Natural Gas: India LNG imports up MoM at 2.75 bcf/d in January, up +0.57 bcf/d YoY

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

India LNG imports up YoY

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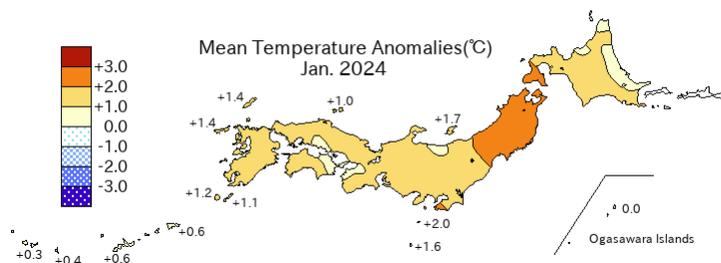
up in LNG imports. But with the sky-high LNG prices in 2022, India did their best to minimize LNG imports. But then LNG prices pulled back in 2023 and we have been seeing some India LNG imports move up or down in line with domestic production moving down or up. There is also some opportunistic buying when LNG prices are this weak. On Friday, India's Petroleum Planning and Analysis Cell released their monthly report for January'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, January 2024's LNG imports were 2.75 bcf/d, which is essentially flat MoM from 2.73 bcf/d in December. LNG imports are now up +26.24% YoY from 2.17 bcf/d in January 2023. Our Supplemental Documents package includes excerpts from the PPAC monthly.

Natural Gas: Above normal temperatures in Japan in January

No one should have been surprised by the Japan Meteorological Agency's recap of January 2024 temperatures that it was above normal temperatures, which meant that any electricity demand, including for natural gas, would be less than normal. On Thursday, the Japan Meteorological Agency posted its climate recap for January [\[LINK\]](#). It included the below mean temperature anomalies map. The JMA wrote "*Monthly mean temperatures were significantly above normal in northern / eastern / western Japan and were above normal in Okinawa / Amami, because the regions were less affected by cold air and covered by warm-air.*" This comes after the December recap, which was also warmer than normal for Japan.

A warm January in Japan

Figure 22: JMA Mean Temperature Anomalies Jan 2024



Source: Japan Meteorological Agency

Natural Gas: Japan to see a hot end to Winter, next week very warm

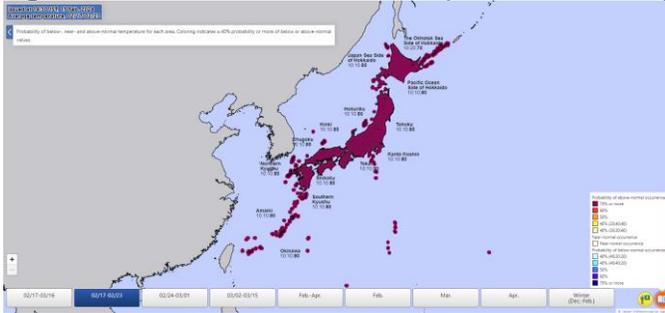
Japan is the #2 LNG importer just behind China. It's now Feb and JKM LNG markets are past any worry about a risk to winter LNG supply and prices especially with the current forecasts for a much warmer Feb in Japan. And, in Japan, that really takes it through any winter weather driven natural gas demand period. We have been warming for weeks that it is setting up a repeat of winter 2022/23 where the warm winter led to JKM LNG prices being held back for months. This is when JKM LNG prices should be high and not showing JKM LNG futures around \$9.50 to end winter. Every Thursday, the Japan Meteorological Agency updates its 30-day outlook [\[LINK\]](#). The February 15 update calls for much warmer than normal temperatures for the rest of January and through most of February. The JMA forecast is for Feb 17 – Mar 16, which is forecasted to be much warmer than normal across the entire country so a hot end to Winter for Japan. We wanted to point out that the monthly outlook is heavily skewed by hot temperatures in the upcoming week where Tokyo is set to have 20C weather, while in contrast the Feb 24-March 1 outlook is actually colder than normal / close to

Japan's 30-day temperature forecast

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normal. Still, overall looking like a very warm end to Japan’s winter. Below is the JMA’s 7-day temperature probability forecast for Feb 17 – Feb 23.

Figure 23: JMA Feb 17 – Feb 23 Temperature Probability Forecast



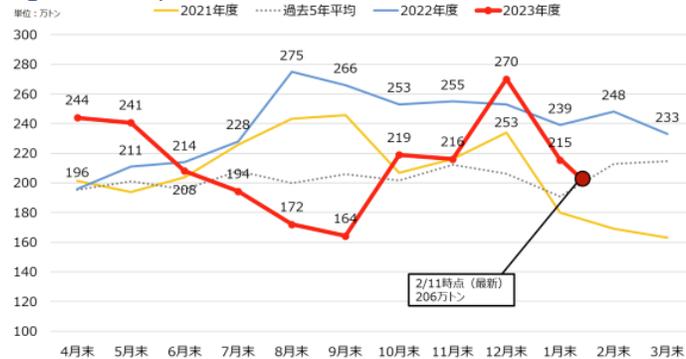
Source: Japan Meteorological Agency

Natural Gas: Japan LNG stocks down WoW, down YoY, and below 5-yr average

Japan LNG stocks are below 2022 levels and the 5-year average. On Wednesdays, Japan’s METI releases its weekly LNG stocks data [\[LINK\]](#). LNG stocks on Feb 11 were 98.9 bcf, down -10% WoW from Feb 4 of 110.0 bcf, down -16.9% YoY from 119.1 bcf a year earlier, and below the 5-year average for the end of February of 102.3 bcf. Last week was the lowest storage had been since October. METI did not comment on the WoW increase. Below is the Japanese LNG stocks graph from the METI weekly report.

Japan LNG stocks down -10% WoW

Figure 24: Japan LNG Stocks



Source: METI

Natural Gas: Western Europe forecast to end Feb with very warm weather

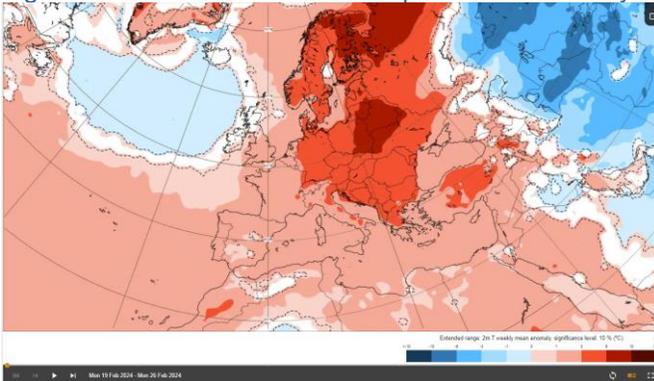
Winter natural gas season in Europe is essentially over and it is turning out similar to winter 22/23, which was a negative and a negative for natural gas thru the spring shoulder season. We have been warning that, as far as Europe natural gas markets are concerned, any risk to winter natural gas is effectively over. The short-term weather forecasts for Europe have been pretty accurate so far this winter. The ECMWF (European Centre for Medium-Range Weather Forecasts) temperature probability forecasts from yesterday’s forecast much warmer than normal temperatures for the last week of Feb, Feb 19-26. Winter natural gas

Europe temperature forecast

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season in Europe is effectively over and it is looking like a replay of 2023 where a weak Europe natural gas market to end winter led to months of soft Europe natural gas prices through shoulder season and into summer 2023.

Figure 25: ECMWF Feb 19-2 Temperature Probability Forecast



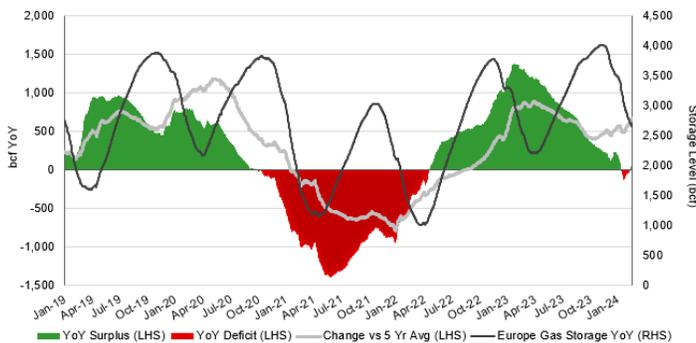
Source: ECMWF

Natural Gas: Europe storage drops again WoW to 65.71%, YoY deficit flips to surplus

Europe is seeing some draws on gas storage. This week, Europe storage decreased by -1.77% WoW to 65.71% on Feb 15 vs 67.48% on Feb 8. Storage is now +0.84% higher than last year's levels of 64.87% on Feb 15, 2023, which reverses the short-lived deficit we saw up until last week. Recall the panic of late 2021 on natural gas, it was because Europe gas storage was only 67.21% full on Dec 1, 2021. Below is our graph of Europe Gas Storage Level.

Europe gas storage

Figure 26: European Gas Storage Level



Source: Bloomberg, SAF

Oil: US oil rigs down -2 WoW to 497 rigs, US gas rigs flat WoW at 121 rigs

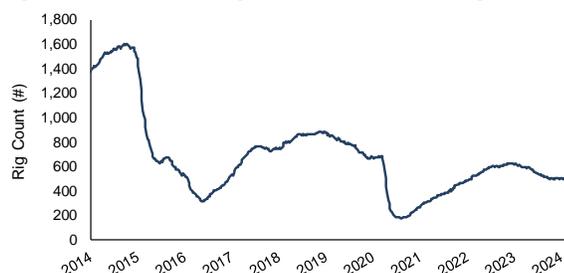
On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Total US oil rigs were down -2 rigs WoW to 497 oil rigs as of Feb 16. US oil rigs went below 520 rigs on Aug 25 and stayed there for 4 weeks and for the last 15 weeks have been between 494 and

US oil rigs down WoW

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507 oil rigs. (ii) The major basin changes for oil rigs were Permian -1 rig WoW to 306 oil rigs, Granite Wash +2 rigs WoW to 4 oil rigs, Cana Woodford -1 rig WoW to 21 oil rigs, Ardmore Woodford -1 rig WoW to 0 rigs, and Others -1 rig WoW to 67 rigs. (iii) US gas rigs were flat WoW at 121 gas rigs.

Figure 27: Baker Hughes Total US Oil Rigs



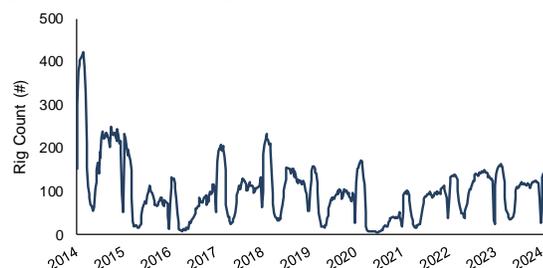
Source: Baker Hughes, SAF

Oil: Total Cdn rigs unchanged WoW, risk road bans to start anytime now

Cold weather allowed for more late winter drilling, especially for drillers in the Montney in NE BC (natural gas) ahead of LNG Canada Phase 1. We still expect a turndown in rigs over the next couple of weeks as some warm weather is headed for NW AB / NE BC in about a week. For the week of Feb 16, total Cdn rigs were up +2 WoW to 234 rigs. By province, the only change was BC which was up net +2 rigs WoW to 27 rigs. Cdn oil rigs were up+ 3 rigs WoW to 144 oil rigs and are down -19 rigs YoY. Cdn gas rigs were down -1 rig WoW to 90 rigs, which is up +5 rigs YoY.

**Cdn total rigs flat
WoW**

Figure 28: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes, SAF

Oil: US weekly oil production estimates flat WoW at 13.300 mmb/d

After the EIA slashed production estimates by -1.000 mmb/d last month in response to cold temperatures and production shut-ins, the EIA's estimates are now back up to where they were before January. On Jan 24, the EIA wrote "This week's domestic crude oil production estimate incorporates a decrease of 1 million barrels per day, representing an estimate of the impact of winter storms and extreme cold temperatures. We will report survey-based domestic production for January in the Petroleum Supply Monthly (PSM) at the end of March". We will see how accurate they were when we see the actuals. The latest Form 914

**US oil production
flat WoW**

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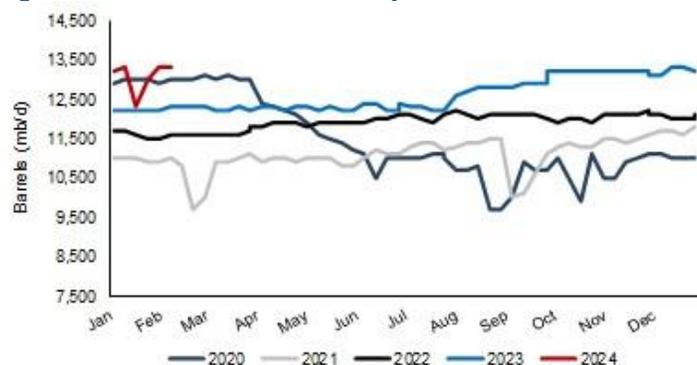
(with November actuals) was +0.108 mmb/d higher than the weekly estimates of 13.200 mmb/d. This week, the EIA’s production estimates were flat WoW at 13.300 mmb/d for the week ended February 9. Alaska was up +0.004 mmb/d WoW to 0.439 mmb/d. Below is a table of the EIA’s weekly oil production estimates.

Figure 29: EIA’s Estimated Weekly US Field Oil Production

Year-Month	Week 1		Week 2		Week 3		Week 4		Week 5	
	End Date	Value								
2023-Jan	01/06	12,200	01/13	12,200	01/20	12,200	01/27	12,200		
2023-Feb	02/03	12,300	02/10	12,300	02/17	12,300	02/24	12,300		
2023-Mar	03/03	12,200	03/10	12,200	03/17	12,300	03/24	12,200	03/31	12,200
2023-Apr	04/07	12,300	04/14	12,300	04/21	12,200	04/28	12,300		
2023-May	05/05	12,300	05/12	12,200	05/19	12,300	05/26	12,200		
2023-Jun	06/02	12,400	06/09	12,400	06/16	12,200	06/23	12,200	06/30	12,400
2023-Jul	07/07	12,300	07/14	12,300	07/21	12,200	07/28	12,200		
2023-Aug	08/04	12,600	08/11	12,700	08/18	12,800	08/25	12,800		
2023-Sep	09/01	12,800	09/08	12,900	09/15	12,900	09/22	12,900	09/29	12,900
2023-Oct	10/06	13,200	10/13	13,200	10/20	13,200	10/27	13,200		
2023-Nov	11/03	13,200	11/10	13,200	11/17	13,200	11/24	13,200		
2023-Dec	12/01	13,100	12/08	13,100	12/15	13,300	12/22	13,300	12/29	13,200
2024-Jan	01/05	13,200	01/12	13,300	01/19	12,300	01/26	13,000		
2024-Feb	02/02	13,300	02/09	13,300						

Source: EIA

Figure 30: EIA’s Estimated Weekly US Oil Production



Source: EIA, SAF

Oil: North Dakota Dec oil production basically flat MoM at 1.273 mmb/d

On Thursday, the North Dakota Industrial Commission posted its Directors Cut, which includes December’s oil and natural gas production data [\[LINK\]](#). North Dakota oil production in December was basically flat MoM at down -5,838 b/d MoM to 1.273 mmb/d, which is up +32.9% YoY from 0.958 mmb/d in December 2022. We expect to see Jan 2024 oil production to be down MoM due to the freezing weather that shut in significant production at times in January. Our Supplemental Documents package includes the NDIC Directors Cut.

North Dakota oil production

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Figure 31: North Dakota Oil Production by Month

(b/d)	2017	2018	2019	2020	2021	2022	2023	2023/2022
Jan	981,380	1,179,564	1,403,808	1,430,511	1,147,377	1,088,613	1,060,708	-2.6%
Feb	1,034,248	1,175,316	1,335,591	1,451,681	1,083,554	1,089,091	1,158,837	6.4%
Mar	1,025,690	1,162,134	1,391,760	1,430,107	1,108,906	1,122,640	1,122,693	0.0%
Apr	1,050,476	1,225,391	1,392,485	1,221,019	1,123,166	900,597	1,133,435	25.9%
May	1,040,995	1,246,355	1,394,648	859,362	1,128,042	1,059,060	1,135,009	7.2%
June	1,032,873	1,227,320	1,425,230	893,591	1,133,498	1,096,783	1,166,604	6.4%
July	1,048,099	1,269,290	1,445,934	1,042,081	1,076,594	1,072,632	1,180,611	10.1%
Aug	1,089,318	1,292,505	1,480,475	1,165,371	1,107,359	1,075,307	1,223,617	13.8%
Sept	1,107,345	1,359,282	1,443,980	1,223,107	1,114,020	1,121,063	1,280,052	14.2%
Oct	1,183,810	1,392,369	1,517,936	1,231,048	1,111,910	1,121,754	1,254,475	11.8%
Nov	1,194,920	1,375,803	1,519,037	1,227,138	1,158,622	1,098,389	1,278,909	16.4%
Dec	1,182,836	1,402,741	1,476,777	1,191,429	1,144,999	957,864	1,273,071	32.9%

Source: NDIC, NDPA

North Dakota oil growth in 2023 was driven by DUCs & 3-mile wells

As usual, there were great insights from the monthly North Dakota Directors Cut webcast [\[LINK\]](#) to discuss the December data. One of which was the reminder on what drove North Dakota oil growth – eliminating surplus DUCs and the success of 3-mile wells with new completions on Tier 2 lands. Director Lynn Helms was referencing the growth from Dec 2022 to Dec 2023, which really isn't a fair comparison as Dec 2022 was hit by interruptions. Even still, the North Dakota in Dec 2023 was 1.273 mmb/d vs 1.098 mmb/d in Nov 2022 or vs 1.061 mmb/d in Jan 2023. Here is the transcript we made of Helms at 1;30 min mark *“what can we attribute that to? There are a couple of things. One of the biggest factors is our Drilled but Uncompleted Wells, our DUC wells, that inventory has been exhausted. So there were a couple hundred DUC wells that were completed with modern frack technology during the year. On top of that, we saw a major shift to 3-mile laterals and newer completion technologies in the Tier 2 area. So all of the drilling in the Tier 2 geology has turned out to be every bit as productive as what we saw in the core in the Tier 1 geology.”*

North Dakota est 700,000 b/d of Bakken shut in on Jan 17, long slow recovery

Here is what we wrote in our Jan 21, 2024 Energy Tidbits memo on why North Dakota January production will be hit. *“On Friday, we tweeted [\[LINK\]](#) “Today, North Dakota estimates still 400,000 b/d of #Oil is still offline and warns “A lot of times, these things take a month from the time that it hits until we see back to normal production”. Didn't specify #NatGas offline. See 📌 SAF transcript. #OOTT.” On Friday, North Dakota held its monthly Directors Cut webcast to review November oil and gas production data. One of the first comments by North Dakota's Lynn Helms was the status of shut-in North Dakota oil production from the deep freeze. Helms did not comment on shut-in associated natural gas, only oil. But since the natural gas in North Dakota is almost all from associated natural gas from oil wells, there would still be a big shut-in impact of natural gas. Helms said that the peak oil shut-in was 700,000 b/d on Jan 17, but was down to 400,000 b/d on Friday. Helms also warned that recovery of all the oil doesn't happen overnight and warned some can take some time to recovery. We made the below transcript of his comments.” Note the last update we saw attributed to North Dakota was that shut-in was down to approx. 100,000 b/d.”*

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SAF transcript of North Dakota's comments on shut in oil from the cold

Our Jan 21, 2024 Energy Tidbits memo also wrote *"Here is the transcript we made of North Dakota's Lynn Helms on the shut-in oil production from the cold. SAF Group created transcript of comments by North Dakota Director of Mineral Resources, Lynn Helms and Justin J. Kringstad, Director North Dakota Pipeline Authority on the monthly Directors Cut webcast on Jan 19, 2024. [LINK] Items in "italics" are SAF Group created transcript. At 6:15 min mark, Helms "I do want to talk about what January is going to look like. It started in. Justin kind of tracks this for us. He has access to some numbers that let us look at production, not quite in real time, but pretty much as the days develop. The cold weather hit a week ago, January 11 was the first indication that this Arctic blast was going to have an effect on the oilpatch. By January 12, it looked like we were down almost 300,000 b/d. The worst of it was the 17th, two days go, when it looked like we were down about 700,000 b/d. So if you think 1.3 minus 700, that's way below a million barrels a day. It looks like as of yesterday, we were still down 500,000. And as of today, about 400,000. So we are coming back out of that. But we are probably still well below a million barrels a day of production in North Dakota."* At 7:52 min mark, Helms *"Once the wells get shut in or curtailed, then it becomes really, really difficult to bring them back on production, especially at minus 30 or minus 70 wind chills. People can't go out and work on the wells, so it's very hard to put them back on. It will be a long slow recovery. A lot of times, these things take a month from the time that it hits until we see back to normal production. So like I said December should be good but January is going to be a very very bad month in terms of production numbers. We still think it will be good in terms of gas capture. But all of the overall numbers are going to be down."*

Oil: North Dakota sees modest 2024 oil growth based on feedback from top operators

Director Helms was at NAPE in Houston earlier in Feb and reported on his meetings with 12 of the top operators in North Dakota. He didn't disclose the specific names but we assume he met with all the big Bakken players. Helms said he discussed the plans for 2024, which point to modest growth in North Dakota oil production in 2024. Here is the transcript we made of his comments. At 12:05 min mark, Helms *"So let's talk a little bit about the trip to Houston. I got to sit in the CEO's office or in a boardroom with 12 of our top producing companies and talk about their plans for 24, 25, 26. For the most part, not expecting a lot of growth but, based on the numbers they each gave me, somewhere between 10,000 , 15,000 b/d increase in 2024. So we should, that's on the low side, so we should see one more drilling rig, maybe two more drilling rigs in 2024. Somewhere between 10,000 and 15,000, maybe twice that much in terms of oil production. We should hit that 1.3 million b/d number."*

Modest growth in 2024

Oil: North Dakota crude by rail up MoM to 149,510 b/d in December

On Thursday, the North Dakota Pipeline Authority posted its monthly update *"February 2024 Production & Transportation"* [LINK]. Please note that we always go to the backup excel sheets from the North Dakota Pipeline Authority that provide low and high estimates for Williston crude by rail exports. The NDPA Monthly Update (graph below) report has a thick line that represents the low and high range. In the backup excel, the NDPA estimates crude by rail in December from a low of 134,510 b/d and a high of 164,510 b/d for an average of

North Dakota CBR up MoM in December

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149,510 b/d. There was a slight upward revision to November's numbers which used to have an average of 124,228 b/d, but is now 125,553 b/d. Because of this, the MoM increase is slightly smaller. The NDPA did not comment on the MoM changes. Below is a chart from the NDPA monthly update showing the crude by rail volumes since 2014. Our Supplemental Documents package includes excerpts from the NDPA monthly update.

Figure 32: Estimated North Dakota Rail Export Volumes



Source: NDPA

Oil: US shale/tight oil production in Mar 2024 slightly up from Feb estimates

On Monday, the EIA released its monthly Drilling Productivity Report for February 2024 [\[LINK\]](#), which is the EIA's forecast for oil and natural gas production from the major shale/tight oil and gas basins for the current month (in this case February) and the next month (in this case March). (i) Last month, there were notices posted on the EIA website about changes in methodology and the impact of cold weather on production estimates. In this month's data, the shut-in was properly reflected by a January estimate of 9,279 mmb/d vs the estimate from January's DPR estimate which had the month at 9,681 mmb/d. (iii) US shale/tight oil in Mar continues the now 7-month trend (excluding the January shut-in effect) of being flat around 9.7 mmb/d. The EIA is forecasting a big +0.418 mmb/d MoM bump in February up from January, and then an immaterial +0.020 mmb/d increase for March. So basically flat production to start 2024 if we ignore January's shut-in. (iv) February's 9.696 mmb/d figure was revised upwards by +0.016 mmb/d compared to January's DPR, which had Feb at 9.680 mmb/d. (v) Permian shale/tight oil production is seeing a slight ramp-up in production, growing from 5.721 mmb/d in June to 6.085 mmb/d in March almost linearly. (vi) US shale/tight oil production is +0.287 mmb/d YoY to 9.716 mmb/d in March 2024. The major change areas are Permian +226,000 b/d YoY, Bakken at +48,000 b/d YoY, and Niobrara at +67,000. (vii) Note that shale/tight oil is approx. ~75% of total US production, so whatever the trends are for shale/tight oil are normally the trends for US oil in total. Below is our table of running DPR estimates of shale/tight oil production and our graph of MoM changes in major shale/tight oil production.

Shale/tight oil production

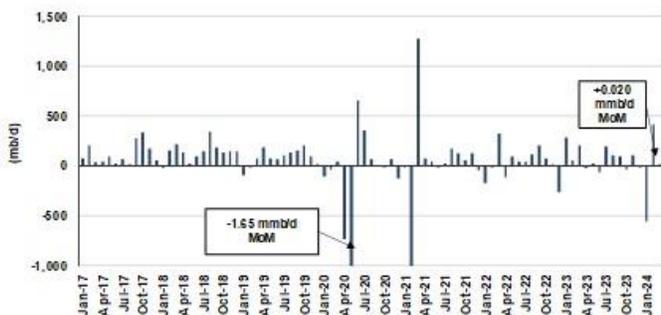
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Figure 33: US Major Shale/Tight Oil Production

Thousand b/d	2023												2024				Jan DPR	Feb DPR	Change			
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Mar YoY				Mar YoY%	Mar MoM	Mar MoM%
Anadarko	393	394	406	406	421	408	421	411	406	405	402	398	339	384	383	-23	-6%	-1	0%	391	384	-8
Appalachia	144	152	152	153	155	148	137	139	144	157	161	159	153	154	152	0	0%	-2	-1%	145	154	10
Bakken	1,093	1,191	1,158	1,165	1,167	1,201	1,210	1,250	1,340	1,306	1,303	1,304	1,119	1,203	1,206	48	4%	3	0%	1,303	1,203	-100
Eagle Ford	1,109	1,129	1,175	1,153	1,181	1,186	1,204	1,181	1,186	1,138	1,144	1,143	1,072	1,140	1,145	-30	-3%	5	0%	1,147	1,140	-7
Haynesville	36	36	35	35	35	31	32	32	31	33	34	33	32	33	33	-3	-7%	0	0%	31	33	2
Niobrara	624	612	645	649	663	676	665	682	684	696	713	715	683	711	712	67	10%	1	0%	689	711	22
Permian	5,776	5,713	5,859	5,843	5,812	5,721	5,898	5,975	5,973	5,996	6,086	6,084	5,880	6,071	6,085	226	4%	14	0%	5,974	6,071	97
Total	9,175	9,226	9,429	9,404	9,434	9,371	9,568	9,671	9,764	9,603	9,843	9,835	9,279	9,696	9,716	287	3%	20	0%	9,680	9,696	16

Source: EIA, SAF

Figure 34: MoM Changes in US Major Shale/Tight Oil Production



Source: EIA, Drilling Productivity Report

Source: EIA, SAF

Oil: EIA DUCs basically flat MoM in January, 12th straight monthly decrease in DUCs

We have been warning that we see a key risk to how much US oil production can sustainably grow in 2024 is the need to increase rig counts (not have less frac spreads) to replenish the inventory of Drilled Uncompleted wells at higher levels and the challenge for oilfield services to add capacity to increase frac spreads and completions. The biggest problem in the past with the EIA’s Drilling Productivity Report [LINK](#) estimate of Drilled Uncompleted wells was that the data had been constantly revised and sometimes significantly. (i) The EIA estimates DUCs were down -13 MoM (-956 YoY) in January to 4,386 DUCs. Note that December’s data had a net upwards revision of +25 DUCs to 4,399 DUCs. (ii) To put in perspective, there were 8,883 DUCs in the height of the Covid slowdown in June 2020, 7,481 DUCs in January 2021, 5,241 DUCs in January 2022, 5,340 in January 2023, and now 4,386 DUCs in January 2024. (iii) It looks like DUCs have steadily decreased over the past 12 months from the 5,340 in Jan 2023, diving below 4,000 DUCs by July with 4,922 DUCs, and now 4,386 DUCs to start 2024. (iv) We still believe there is still the need for drilling rigs to pick up to replenish the DUC inventory if the US is to have sustained strong oil growth in 2024 and beyond. (v) The largest YoY December DUCs declines are the Eagle Ford (-295 YoY), Bakken (-274 YoY), and Permian (-107 YoY). (vi) Note that shale/tight oil is approx. ~70% of total US production, so whatever the trends are for shale/tight oil are normally the trends for US oil in total. Below is our table of running DPR estimates of shale/tight oil production.

DUCs down slightly in January

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Figure 35: Estimated Drilled Uncomplete Wells in 2023/24

Drilled Uncomplete Wells	2024												Change	
	July	Aug	Sept	Oct	Nov	Dec	Jan	Jan YoY	Jan YoY%	Jan MoM	Jan MoM%	Jan DPR		Feb DPR
Anadarko	742	735	725	715	708	699	699	60	-8%	-1	0%	699	699	0
Appalachia	818	808	785	775	772	772	780	-77	-9%	8	1%	768	772	4
Bakken	452	415	371	353	338	324	321	-274	-68%	-3	-1%	323	324	1
Eagle Ford	449	424	397	377	357	348	350	-295	-66%	2	1%	352	348	-4
Haynesville	743	746	744	740	736	737	745	58	8%	8	1%	735	737	2
Niobrara	815	801	781	734	705	677	653	-201	-24%	-24	-4%	667	677	10
Permian	903	901	892	860	849	842	839	-107	-11%	-3	0%	830	842	12
Total	4,922	4,830	4,675	4,554	4,463	4,369	4,306	-566	-18%	-13	0%	4,374	4,399	25

Source: EIA, SAF

Oil: Diamondback Energy reminds its “base total decline is 31% in its Permian lands”

Long term readers know that we always look for insight into global decline rates of oil and natural gas. All oil and gas properties decline and at various rates. And the amount of decline in any period is the amount of new oil or natural gas that must be added to keep production flat. The big US oil and gas sector news on Monday morning was Diamondback Energy’s \$26 billion acquisition of privately held Endeavor Energy Partners. Diamondback’s slide deck was titled “*Creating the Must-Own Permian Pure Play*” with proforma Q4/23 production of 468,000 bpd of oil, and total of 816,000 boepd oil equivalent. We had a number of comments on our tweet on the deal but, to be fair, one of the advantages of no longer being a stock analyst is that we can look at transaction from a sector perspective and not get involved in the detail of models and stock valuations. But in going thru the deal slide deck, there was one key reminder of the Permian – it has a high decline rate. Early Monday morning, we tweeted [\[LINK\]](#) “US #Oil supply can grow but the treadmill is not slowing down. \$FANG is now 3rd largest Permian player at 816.000 boe/d. Says “Base Total Decline (%) is ~31%” in its Permian lands” ie. need to add ~250,000 b/d to keep Permian flat. #OOTT.” Our tweet included the below table that was in the Diamondback slide that noted the “base total decline (%)” was ~31% for the Diamondback Permian lands, ~32% for the Endeavor Permian lands, and ~31% on a proforma basis. It’s a reminder that there is a high decline rate in the Permian and that is the challenge for growth. And the other issue is that with the big increase in US oil production in 2024, it means the challenge to replace is greater in 2024. Our Supplemental Documents package includes slides from the Diamondback deal slide deck.

31% base decline in FANG Permian

Figure 36: “Base total decline (%)” for Diamondback and Endeavor lands

	 DIAMONDBACK ENERGY	 Endeavor Energy Resources	 DIAMONDBACK ENERGY Pro Forma
Enterprise Value	\$36.2bn ⁽¹⁾	~\$26.0bn	~\$62.2bn
Q4 2023E Production (MBO/d / MBOE/d)	273 / 463	195 / 353	468 / 816
Base Total Decline (%)	~31%	~32%	~31%
Net Midland Acreage	350k	344k	694k
Total Permian Acres	494k	344k	838k
Gross Core Locations (Sub \$40 B/E)	~3,800	~2,300	~6,100

Source: Diamondback Energy

Oil: Are refracks/twin wells/E-fracks overlooked upside to US oil production to 2030

Yesterday, we tweeted [\[LINK\]](#) “Overlooked upside to #Bakken and why not other shale/tight US oil plays! See 🗣️ SAF transcript NDIC webcast. Lots of unstimulated reservoir in Bakken. Especially in pre-2021 wells that had 50 frac entry pts vs 250 today. Great set up for refracks, twin wells. #OOTT.” There was some good food for thought from Thursday’s North Dakota

Refracks, twin wells, E-fracksOur

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monthly Directors Cut webcast. Every month that doesn't come out in the published materials. We recognize these are Bakken concepts but there should be no reason why they aren't applicable to some degree to other shale or very tight zones. If applied to other shale, does it mean the US can show continued oil growth? We don't know but, at a minimum, it will help offset declines. But these will be viewed as "new" barrels and help provide visibility to the US having a better chance to maintain oil production at plateau levels for longer. (i) Pre 2021 wells have a lot of unstimulated (unrecovered) oil. They note the feedback from the top 12 operators and how they were highlighting a lot of unstimulated reservoir in the Bakken at the toe, the heel, on the section lines, plus they reminded how older fracked wells had 50 fracture entry points vs 250 today. Here is what Helms said "So refracks sometimes have a lot of mechanical risk associated with them, working in that old well bore. But for not much more money, you can exit the old well bore [assume he means at the heel] and drill right parallel to it and get to new unstimulated rock using today's stimulation techniques. And so a well that was fracked with swell packers and sliding sleeves in the late teens in North Dakota would have had maybe 50 fracture entry points. A well today would have 250." Some of the increase is due to longer wells, but there is also a lot from just basic technology. (ii) This sets up refracks in old wells or what is more likely drilling a twin horizontal leg out of an existing well bore. North Dakota highlighted that the additional cost of drilling a new horizontal leg isn't much different just doing a refrack. (iii) on completions. We didn't do a transcript of their comments on the Haliburton Octiv AI on completions but the AI gives them millisecond feedback on the pressures while fracking and not waiting for human response time so they can have significantly better completions. (iv) Plus the movement to longer horizontals was highlighted but that shouldn't surprise. North Dakota emphasizes the combination of longer horizontals and new completions has made 3-mile horizontals in Tier 2 wells as good as the Tier 1. Our Supplemental Documents package includes the transcript we made of Helms's comments.

North Dakota also says Bakken Tier 2 wells are as good as Tier 1 wells

The success on the Bakken Tier 2 well success emerged in H2/23. Here is what we wrote in our Oct 15, 2023 Energy Tidbits memo. "There is an overlooked upside to the Bakken that is still not getting the headlines – Bakken Tier 2 wells are delivering wells comparable to Tier 1 wells. (i) On Friday, we tweeted [\[LINK\]](#) "Overlooked #Bakken upside to value of contiguous acreage. 3-mile horizontals plus new completions = Bakken Tier 2 wells performing as well as Tier 1. See 📌 SAF transcript. North Dakota's Lynn Helms yesterday reinforces Harold Hamm Aug comments on Tier 2 upside. #OOTT." (ii) On Thursday, North Dakota highlighted this in its monthly webcast on how Tier 2 wells have as good performance as Tier 1, plus they have the added benefit of lower gas/oil ratios. Here is the transcript we made of Helms' comment. At 20:15 min mark, Helms "the question was what's the reason for the migration out of Tier 1 into Tier 2. Probably #1 reason is that high gas/oil ratio in Tier 1 area. It's about 90% drilled up so there's only about 10% of the potential drilling slots left in that Tier 1 geology. And the gas/oil ratios are very high. And so with the new, with the development of the ability to easily and for very little incremental cost drill 3-mile laterals and the performance of some of the new completion technologies, the Tier 2 geology is performing just as good as the Tier 1 was. And so the incentive has been very strong because of the low gas/oil ratios and the high well IPs and the economics out there to go drill 3-mile laterals in Tier2.

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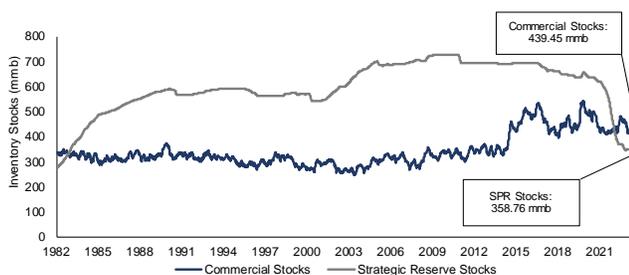
It's actually more economic in terms of infrastructure and capital deployment. It's exciting news and we think ultimately that's going to spill over into the Tier 3 geology. We see one or two rigs working out there. And some leasing activity. Folks are seeing landmen and getting leasing offers up in Divide County. And been a long time since that was happening."

Oil: US SPR-commercial reserve deficit now -80.687 mmb after huge commercial build

US SPR reserves

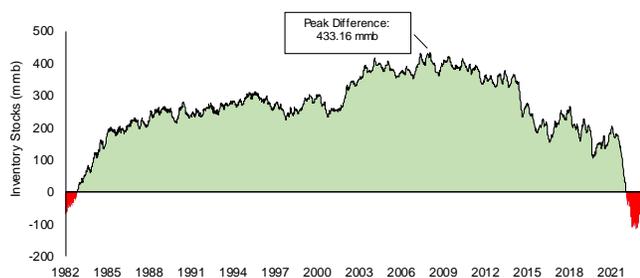
Oil in the US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sept 16, 2022 week. The deficit widened this week after a huge build in commercial oil stocks of +12.018 mmb. The EIA's weekly oil data for February 9 [LINK](#) saw the SPR reserves increase +0.746 mmb WoW to 358.763 mmb, while commercial crude oil reserves increased +12.018 mmb to 439.450 mmb. There is now a -80.687 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles.

Figure 37: US Oil Inventories: Commercial & SPR



Source: EIA, SAF

Figure 38: US Oil Inventories: SPR Less Commercial



Source: EIA, SAF

Oil: US gasoline prices +0.10 this week to \$3.28

US gasoline prices

US gasoline prices were holding around \$3.10 for the past several weeks on a national average, but went up over the last three weeks. It looks like the Whiting refinery going down is a key factor in last two weeks increases. Yesterday, AAA reported that US national average prices were \$3.28, which is up \$0.10 WoW, up \$0.19 MoM and down \$0.14 YoY. As of yesterday, the California average gasoline prices was \$4.65 (+\$0.04 WoW) and a \$1.37

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premium to the national average gasoline price of \$3.28. Remember the big gasoline crisis in summer 2022 started to see US gasoline prices ease below \$4 in August 2022 and were helped in Q4/22 by the SPR releases.

Whiting refinery outage led to big WoW increases to regional gasoline prices

The US national average gasoline prices were +\$0.10 WoW. But the regional gasoline prices near bp's 430,000 b/d Whiting (Indiana) refinery were up much more for the second consecutive week post the refinery going down. Illinois gasoline prices were +\$0.13 to \$3.50 WoW, which followed last week's +\$0.18 to \$3.37, and Indiana gasoline prices were +\$0.17 WoW to \$3.30 this week, which followed last week's +\$0.24 WoW to \$3.13.

Oil: Crack spreads narrowed \$4.80 WoW to \$25.23

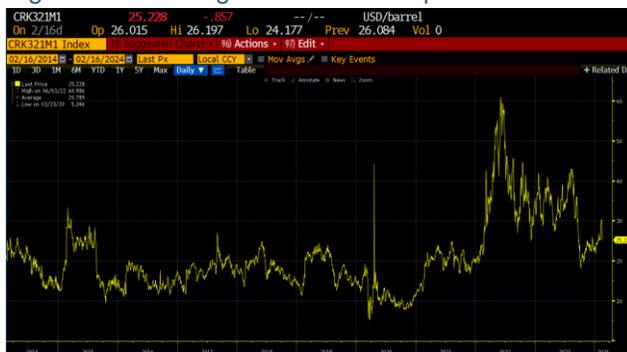
There was a big narrowing of crack spreads this week following last week's big widening. The narrowing makes sense as WTI was +\$2.35 to close at \$79.19 on Friday. This week's narrowing followed a big +\$4.98 WoW widening to close at \$30.03 on Feb 9. Last Friday (Feb 9), we tweeted [\[LINK\]](#) "321 crack spreads hit \$30 today. normally \$30 spreads provides big incentives for refineries to keep up runs and first response is to drag up #Oil prices a bit. Thx @business #OOTT." 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. And when crack spreads jump up to \$30 is a big incentive to refiners to want more crude and produce more product. This week, crack spreads narrowed \$4.80 WoW to \$25.23 on Feb 16, which followed \$30.03 on Feb 9, \$25.07 on Feb 2, \$26.65 on Jan 26, \$24.47 on Jan 19, \$24.10 on Jan 12, \$21.71 on Jan 5, and \$23.57 on Dec 29. Crack spreads at \$25.23 are still well above the high end of the more normal pre-Covid that was more like \$15-\$20, which is why we believe refineries continue to be incentivized to take more oil.

**Crack spreads
closed at \$25/23**

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 vs WTI that we put in our tweet where we marked the gaps where the crack spread normally drags up oil prices. The crack spread was \$25.23 as of the Friday Feb 16, 2024 close.

Figure 39: Cushing Oil 321 Crack Spread & WTI Feb 16, 2014 to Feb 16, 2024



Source: Bloomberg

Oil – Bloomberg’s Javier Blas on TMX narrowing Cdn WCS less WTI differential

On Monday, we tweeted [\[LINK\]](#) “Positive to *CDN* #Oil stocks. @JavierBlas weekly opinion piece brings his 300k global followers to note *TMX* start up should narrow discount of *Cdn* oil prices to *WTI* from $-\$17$ (2010-24 ave) to $\sim\$10$ ie. a $\$7/b$ uplift To *Cdn* oil prices! [\[LINK\]](#) #OOTT.” Bloomberg’s Javier Blas is one of the most know oil reporters and his weekly opinion piece is read around the world. So it was great to see his opinion piece that will bring a global audience to how *Cdn* oil differentials should have a big near term win with the start up of the 590,000 b/d *Trans Mountain* *TMX* expansion. We have always been big believers that *Cdn*-based analysts just don’ have a global following so it’s always a positive when someone like Blas, with his global audience, bring attention to a big near-term positive in the *Cdn* oil patch. Blas’s opinion piece was titled “A $\$10$ Billion Mistake That Will Revive Canadian Oil: Javier Blas”, “If all goes as planned, the first barrels [on *TMX*] could be moving before June. With it, the discount of Canadian oil should narrow”, and “Despite its colossal cost, *TMX* had two advantages that may compensate for the financial folly. One is that it’s likely to narrow the differential between Canadian and US crude, leading to higher revenue for everyone involved in the petroleum industry — and that includes provincial governments which take royalties. How much the discount would narrow is hotly debated. On average, it has averaged minus $\$17$ a barrel between 2010 and 2024. The consensus is, that’s going to trend now toward minus $\$10$ a barrel. Crucially, *TMX* probably means that the differential will no longer suffer from its perennial blowouts, when it has widened to as much as minus $\$40$ and even minus $\$50$ a barrel.” We write every week on *WCS* less *WTI* differentials and many, many times on the upcoming impact of the *TMX* start up. And it is an overlooked big near-term win to *Cdn* oil. Our Supplemental Documents package includes the Bloomberg Javier Blas opinion piece.

**Narrowing WCS
less WTI
differentials**

Precision CEO sees WCS-WTI differentials narrowing to high single digits C\$

Here is what we wrote in last week’s (Feb 11, 2024) Energy Tidbits memo on Precision CEO’s view on how *TMX* will drive down *WCS* less *WTI* differentials. “On Tuesday, Precision held its Q4 call and CEO Neveu reminded of the upcoming win for *Cdn* oil producers with the start-up of the 590,000 b/d *Trans Mountain* *TMX* expansion – *WCS* less *WTI* differentials should narrow. Neveu expects differentials to narrow high single-digit discounts, which is well below what we have traditionally

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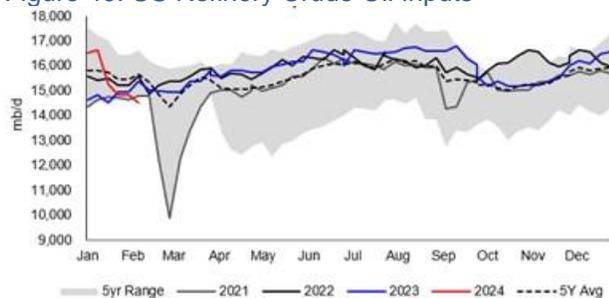
referred to as a range of US\$15 to \$20. We tweeted [\[LINK\]](#) "Big 2024 upside is coming soon to Cdn #Oil. Precision CEO: discount for WCS ranged in C\$25-C\$40 below WTI range, and Trans Mountain TMX startup means "WCS discounts are expected to moderate to high single-digit discounts" #OOTT." On the call, Neveu said "Now, for most of the last decade, the Canadian market has been constrained by hydrocarbon takeaway bottlenecks and constraints. As a result, the discount for Western Canada select oil has ranged in the CAD25 to CAD40 below WTI range. While the Alberta natural gas commodity price Nisku has been a function of highly cyclic seasonal weather patterns and regional market energy needs also limited by bottlenecks and takeaway capacity. Now, I think most of us know that later this year, two major transmission projects, the Trans Mountain oil pipe and the coastal gaslink natural gas pipe, will begin full operation and serve to fully alleviate the Canadian constraints. WCS discounts are expected to moderate to high single-digit discounts and LNG Canada exposes Canadian natural gas to the global LNG market."

Oil: Refinery Inputs down -0.297 mmb/d WoW to 14.542 mmb/d, new 5 year low

There are other refinery items impacting crude oil inputs into refineries but the big one is the continued unplanned shut down of the 435,000 /d Whiting (Indiana) refinery that is primarily run on Cdn crude. It went down on Feb 1 so we are seeing the effect in this week's data, which is for the week ended Feb 9. The EIA reports on crude oil inputs into refineries for the week ended February 9, which shows a new 5-year low (on a 2019-2023 basis). It reminds that there are always unplanned issues that impact crude oil inputs into refineries, but refineries around the world follow seasonal patterns for their maintenance. US refineries are in their normal winter turnaround period ie. more refineries are down for turnaround. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended February 9 [\[LINK\]](#). The EIA reported crude inputs to refineries were down -0.297 mmb/d this week to 14.542 mmb/d and are down -0.484 mmb/d YoY. Refinery utilization was down -180 bps WoW to 80.6%, which is -590 bps YoY.

Refinery inputs
-0.008 mmb/d WoW

Figure 40: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil: bp 435,000 b/d Whiting refinery now expected down thru Feb

As noted above, the big factor for the lower oil inputs into refineries is the continued unplanned shut down of the 435,000 b/d bp Whiting (Indiana) refinery on Feb 1. Last week's (Feb 11, 2024) Energy Tidbits memo noted the Reuters report expecting Whiting to be shut down for up to 3 weeks. On Tuesday, Bloomberg posted an updated that said "BP's refinery in Whiting, Indiana, will need until at least the end of February to restore normal operations

bp Whiting refinery

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after an abrupt loss of power on Feb. 1, people familiar with restart efforts said * The restart is progressing at a very measured pace, one person said.” The Whiting refinery runs almost all on Cdn crude oil from the Enbridge main line.

Oil: US net oil imports -1.188 mmb/d WoW as oil exports up +0.751 mmb/d WoW

The EIA reported US “NET” imports were down -1.188 mmb/d to 2.123 mmb/d for the February 9 week. US imports were down -0.437 mmb/d to 6.470 mmb/d against exports which were +0.751 mmb/d WoW to 4.347 mmb/d. (i) Venezuela weekly imports. We know why the EIA doesn’t have any data in the row for Venezuela weekly oil imports but we still don’t know if the weekly oil imports are off or if Venezuela is included in the weekly oil imports in the Others number. But we do know that Chevron continues to import >100,000 b/d from Venezuela into the Gulf Coast. Give the EIA credit for putting out weekly oil import estimates, but it’s a reminder that we have to be careful about using the weekly oil import estimates. Rather we need to make sure we go to the monthly data for oil imports. ii) Top 10 was down -0.034 mmb/d. Some items to note on the country data: (i) Note that Canada was up +0.460 mmb/d to 3.999 mmb/d but we would expect to see this down over the next two weeks. These barrels were put in the pipeline before bp Whiting went down so we expect to see the lower Cdn barrels this week and next. (ii) Saudi Arabia was up +0.037 mmb/d to 0.390 mmb/d. (iii) Mexico was down -0.367 mmb/d to 0.294 mmb/d. (iv) Colombia was down -0.265 mmb/d to 0.150 mmb/d. (v) Iraq was up +0.043 mmb/d to 0.043 mmb/d. (vi) Ecuador was up +0.129 mmb/d to 0.201 mmb/d. (vii) Nigeria was up +0.056 mmb/d to 0.137 mmb/d.

US net oil imports

Figure 41: US Weekly Preliminary Imports by Major Country

(thousand b/d)	Nov 10/23	Nov 17/23	Nov 24/23	Dec 1/23	Dec 8/23	Dec 15/23	Dec 22/23	Dec 29/23	Jan 5/24	Jan 12/24	Jan 19/24	Jan 26/24	Feb 2/24	Feb 9/24	WoW
Canada	3,835	3,846	3,243	3,972	3,572	3,686	3,423	3,796	3,557	4,188	3,270	3,573	3,539	3,999	460
Saudi Arabia	242	224	141	400	316	406	75	139	474	413	81	150	353	390	37
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	366	971	571	876	633	851	380	952	522	756	356	427	661	294	-367
Colombia	316	217	143	289	214	215	157	129	220	212	72	79	415	150	-265
Iraq	283	36	178	166	85	22	380	239	192	64	206	205	0	43	43
Ecuador	36	126	112	252	233	49	142	83	30	150	3	103	72	201	129
Nigeria	70	79	174	226	111	162	80	95	165	147	199	190	81	137	56
Brazil	135	257	148	274	255	197	238	305	249	264	266	213	338	148	-190
Libya	86	86	0	87	87	86	0	171	0	7	37	0	0	63	63
Top 10	5,369	5,842	4,710	6,542	5,506	5,674	4,880	5,909	5,409	6,201	4,490	4,940	5,459	5,425	-34
Others	1,004	687	1,123	966	1,011	1,076	1,396	986	832	1,219	1,090	665	1,448	1,045	-403
Total US	6,373	6,529	5,833	7,508	6,517	6,750	6,278	6,896	6,241	7,420	5,580	5,605	6,907	6,470	-437

Source: EIA, SAF

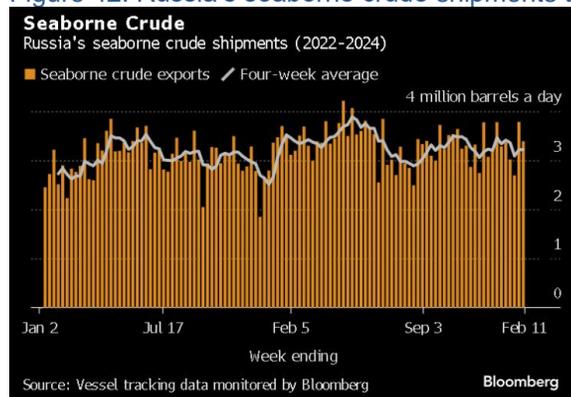
Oil: Russia’s crude oil shipments for Feb 11 down WoW, but still well above target

While down this week from the recent 7-month high, Russia is still exceeding its pledged crude shipment cuts on both a seven-day and 4-week basis. Bloomberg had reported “Russia’s seaborne crude shipments slipped back from a seven-month high — but remained above their 52-week average — as flows settled down after a period in which storms and maintenance caused volatility in the nation’s seaborne exports. The drop in shipments saw the weekly flow fall by about 290,000 barrels a day in the week to Feb. 11. That put exports 200,000 barrels a day above the level Moscow has pledged to its OPEC+ partners for the first quarter on a weekly basis. Despite the fall in the weekly figure, the less volatile four-week average rose by about 30,000 barrels a day, putting it very close to the target.” Despite seeing the first shipment in a long time to India last week, Russia still seems to be having a hard time placing their Sokol crude due to disagreements over whether the price cap has been breached. Normally Korea and Japan would be big buyers of this grade since it comes out of Russia’s offshore Pacific fields. Our Supplemental Documents package includes the Bloomberg report.

Russia oil shipments exceed commitment

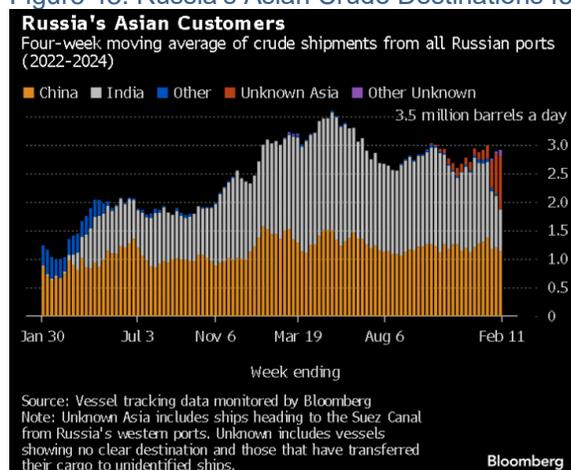
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Figure 42: Russia's seaborne crude shipments thru Feb 11 week



Source: Bloomberg

Figure 43: Russia's Asian Crude Destinations for Feb 11 week



Source: Bloomberg

Oil: OPEC MOMR: unchanged 2024, 2025 demand growth

On Tuesday at 5:50am MT, OPEC released its February Monthly Oil Market Report. (i) We thought the takeaway was neutral. There was no change to oil demand forecasts for 2024 and 2025. OPEC made a small reduction in non-OPEC supply growth for 2024 to +1.2 mmb/d YoY (was +1.3 mmb/d YoY), no change to non-OPEC supply YoY growth in 2025. Total Oil + Products stocks at Dec 31 were 159 mmb below 2015-19 average, which is a higher deficit than the updated Nov 30 at 151 mmb below 2015-19 average. Note there is a slightly lower call on OPEC due to an upward revision to non-OPEC supply in 2023 of +0.30 mmb/d. (ii) Demand. The big criticism on OPEC's forecast is their demand growth forecast as being too optimistic. For 2024, no change to YoY growth of +2.25 mmb/d YoY but a higher total of 104.40 mmb/d due to higher 2023 starting point (Was +2.25 mmb/d YoY to 104.36

OPEC Monthly
Oil Market Report

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mmb/d.) For 2025, no change to YoYY growth of +1.85 mmb/d YoY but a higher total of 106.25 mmb/d due higher starting point (was +1.85 mmb/d to 106.21). China demand increased to 17.23 mmb/d (was 17.19) due to higher 2024 starting point. (iii) OPEC still forecasts increasing oil demand for OECD countries at +0.26 mmb/d YoY to 46.03 mmb/d in 2024, i.e. not reaching peak oil demand. (iv) Non-OECD is still forecast to grow +1.99 mmb/d YoY to 58.37 mmb/d (was 58.34 mmb/d) in 2024 with the largest growth being China +0.63 mmb/d YoY to 16.82 mmb/d and the Middle East +0.38 mmb/d YoY to 9.59 mmb/d. Other Asia non-OECD is up +0.31 mmb/d YoY to 9.59 mmb/d, and India +0.22 mmb/d YoY to 5.56 mmb/d. (v) Non-OPEC supply was increased for 2023 at 69.36 mmb/d (was 69.06 mmb/d). OPEC forecasts non-OPEC supply at +1.19 mmb/d YoY to 70.55 mmb/d (was 70.40 mmb/d). Key YoY non-OPEC growth areas for 2024 are US +0.54 mmb/d (was +0.60), Canada +0.24 mmb/d (unchanged), Guyana at +0.20 mmb/d (was +0.16), Brazil at +0.12 mmb/d (unchanged), and Norway +0.12 mmb/d (unchanged). (vi) Non-OPEC supply in 2025 is expected to grow by +1.27 mmb/d (unchanged) to 71.82 mmb/d (was 71.67), with major growth areas in North America at +0.70 mmb/d (unchanged, US at +0.60 mmb/d) and Latin America +0.27 mmb/d (unchanged). (vii) OPEC Secondary Sources for January were -350,000 b/d MoM to 26.342 mmb/d. The noticeable MoM changes were Libya -0.162 mmb/d to 1.015 mmb/d, Kuwait -0.109 mmb/d to 2.434 mmb/d and Iraq -0.098 mmb/d to 4.194 mmb/d. The Libyan declines were due to the protests they had in their major Sharara and El-Feel oil fields that shut-in production for a couple of weeks. (viii) Direct Communications (what the OPEC countries report). There were a few items to note vs what countries directly reported vs Secondary Sources estimates: Iran does not provide production numbers. Iraq does its norm and says it produced less at 3.979 mmb/d in Jan vs. Secondary Sources of 4.194 mmb/d, Saudi Arabia says it produced 8.956 mmb/d in Jan vs Secondary Sources of 8.965 mmb/d, and Venezuela does its norm and says it produced more at 841,000 b/d vs. Secondary Sources of 796,000 b/d. (ix) Our Supplemental Documents package includes excerpts from the February OPEC MOMR.

Oil: IEA keeps 2024 demand flat, bumps up non-OPEC supply growth

On Thursday, the IEA released its monthly Oil Market Report for February at 2am MT. They only release very limited public info, but Bloomberg provided detailed tables and added colour from the report. (i) We see the report as slightly negative. The IEA kept their 2024 demand outlook flat, but the downside comes from the IEA's forecast for non-OPEC supply growth being +0.2 mmb/d vs. the Jan OMR, which remember was already +0.3 mmb/d against the Dec OMR, which aggravates the existing forecasted imbalance of supply against demand growth. (ii) The big difference vs OPEC MOMR is the IEA demand forecast growth is +1.2 mmb/d YoY in 2024 vs OPEC MOMR that has oil demand growth of +2.25 mmb/d YoY in 2024. (iii) 2024 demand. There were a few quarterly changes to estimates, which ultimately offset each other: Q2/24 was revised +0.1 mmb/d to 102.8 mmb/d, Q3/24 +0.1 mmb/d to 103.8 mmb/d, and Q4/24 -0.1 mmb/d to 103.7 mmb/d. FY2024 demand was kept flat at 103.0 mmb/d. (iv) IEA slightly increased non-OPEC supply. Note that the IEA now includes Angola's production in this category since they left OPEC. 2023 non-OPEC was left unchanged from the Jan OMR at 69.1 mmb/d, although OECD Americas (including the US) was increased to 27.4 mmb/d from 27.3 mmb/d. For 2024, non-OPEC supply growth rate increased to +1.6 mmb/d to 70.6 mmb/d for FY2024 (was +1.5 mmb/d to 70.4 mmb/d), which would outpace demand growth, hence the IEA's negative tone in their comments. (v) OECD Stocks. The IEA highlighted the low global oil stocks in January (lowest since 2016), citing

IEA Oil Market Report

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the cold snap in North America causing more energy demand but shut-in of production, but then in the next sentence they write “*With the robust outlook for non-OPEC+ supply, our balances suggest a slight build in inventories in 1Q24 despite the extension and deepening of OPEC+ supply curbs*”. Our Supplemental documents package includes the IEA release and the Bloomberg reports.

Figure 44: IEA Global Demand Forecast by OMR Report

mmb/d	2022	Q1/23	Q2/23	Q3/23	Q4/23	2023	23-22	Q1/24	Q2/24	Q3/24	Q4/24	2024	24-23
Feb 24	99.6	100.2	101.8	102.9	102.1	101.8	2.2	101.7	102.8	103.8	103.7	103.0	1.2
Jan 24	99.6	100.2	101.8	102.9	102.0	101.7	2.1	101.7	102.7	103.7	103.8	103.0	1.3
Dec 23	99.6	100.2	101.7	102.8	102.2	101.7	2.1	101.4	102.4	103.4	103.9	102.8	1.1
Nov 23	99.6	100.3	101.7	103.0	102.8	102.0	2.4	101.5	102.4	103.5	104.1	102.9	0.9
Oct 23	99.6	100.4	101.8	102.7	102.6	101.9	2.3	101.3	102.2	103.5	103.9	102.7	0.8
Sep 23	99.6	100.4	101.7	102.6	102.5	101.8	2.2	101.1	102.6	104.0	103.5	102.8	1.0
Aug 23	100.0	100.6	102.0	102.9	103.1	102.2	2.2	101.5	102.6	104.2	104.3	103.2	1.0
July 23	99.9	100.5	101.4	103.1	103.3	102.1	2.2	101.4	102.6	104.3	104.5	103.2	1.1
June 23	99.9	100.5	101.6	103.4	103.5	102.3	2.4	101.5	102.5	104.1	104.4	103.1	0.8
May 23	99.9	100.5	101.3	103.0	103.1	102.0	2.1						
Apr 23	99.9	100.4	101.2	103.1	103.0	101.9	2.0						
Mar 23	99.9	100.7	101.3	101.9	101.9	101.5	1.6						
Feb 23	100.0	100.1	101.1	102.9	103.5	101.9	1.9						
Jan 23	99.9	99.6	100.8	102.9	103.5	101.7	1.8						
Dec 22	99.9	99.7	100.6	102.7	103.4	101.6	1.7						

Source: IEA, Bloomberg, SAF

IEA sees low oil stocks at Jan 31 flipping to a build by March 31

There is no question that the IEA messaging in the OMR Feb was negative. The OMR was released at 2am MT was trying to be negative. IEA highlighted global onshore oil stocks at Jan 31 were at lowest levels since 2016 yet their forecast is for a slight build in global inventories in Q1/24. On Thursday, we tweeted [\[LINK\]](#) “*Actuals vs Forecast! IEA OMR writes ‘Global observed oil stocks plummeted by about 60 mb in January, preliminary data indicate, with on-land inventories falling to their lowest level since at least 2016’ – ‘our balances suggest a slight build in inventories in 1Q24’ #OOTT.*” The IEA Feb OMR wrote “MR wrote “*Global observed oil stocks plummeted by about 60 mb in January, preliminary data indicate, with on-land inventories falling to their lowest level since at least 2016. In December, global stocks rose by 21.6 mb as a surge in oil on water (+60.7 mb) more than offset draws in on-land inventories (-39 mb). OECD industry stocks fell by 24.1 mb in December, reflecting declines in all three regions*”. And “*With the robust outlook for non-OPEC+ supply, our balances suggest a slight build in inventories in 1Q24 despite the extension and deepening of OPEC+ supply curbs. From 2Q24 onwards, continuation of this strength could leave OPEC+ pumping above requirements for its crude oil if extra voluntary cuts are unwound in the second quarter.*”

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IEA highlights deep freeze hurt supply but didn't note demand impact

We did not have access to the detailed IEA report so they very well could have highlighted the impact that the deep freeze had on NA demand. But in their press release, they highlighted that extreme Arctic “prompted significant supply outages” as part of the commentary explaining why Jan oil stocks are low. We don't disagree that the big freeze impacted US and Canada oil supply for some period but there was also some measure of offsetting as mobility and travel went down in the cold. We don't know if it balances but there is an offset and we heard this in some of the food and retail earnings calls on how people stayed more at home in the deep cold. But in the IEA release, there was a highlighting of the freeze impact on supply but no mention that the extreme Arctic freeze hurt demand. On Thursday, we tweeted [\[LINK\]](#) “IEA “extreme Arctic freeze that swept through key oil producing regions in the US & CAN prompted significant supply outages”. Agreed! BUT freeze also hit transportation. Chili's kept diners home, school closures, retail sales, Delta was 5-week low, home building pause...#OOTT.” For anyone watching CNBC this week on Q4 results and US retail sales, they heard how the freeze kept Chili's diners at home, Delta Airlines CEO reminding this is the 5-week low period for air travel, home building starts were impacted, and commentators reminded of how the deep freeze had school closures. The point is that the deep freeze also had a big impact on demand as well as supply.

Oil: US & Houthis continue back and forth attacks

It was another week of back and forth attacks by the US and the Houthis. (i) The Houthis continue with missile and drone attacks on ships and tankers in the Red Sea/Bab el Mandeb. And the US continue to hit back hard. There was no sign of slow down by the Houthis despite the US having hit the Houthis hard. The US has been hitting the Houthis to try to discourage their fight and destroy their military capability. It's another week and, at least so far, the Houthis aren't giving up as long as Israel's war on Hamas is continuing.

Is US having any impact on Houthis?

Oil: Houthi leader not going to stop and it's working

On Thursday, the Houthi leader made another speech to the people. It seems like Thursday is his regular big speech day. His speech had two points – they see their attacks working and they aren't stopping their naval operations. On Thursday, we tweeted [\[LINK\]](#) “Houthi leader. Continuing Red Sea ops. It's working “Our operations at sea have had the effect of preventing the movement of ships linked to the Israeli enemy” US/UK can't stop them. “... is continuing, effective, and influential despite the US & UK aggression” #OOTT.” Our Supplemental Documents package includes the Saba (Yemen news) reporting of the Houthi leader's speech.

Houthi leader speech

Oil: Houthi hit tanker carrying Russia crude to India

We have to believe there will be even less tankers using the Red Sea . On Friday, we tweeted [\[LINK\]](#) “#Houthi hit tanker M/T Pollux reportedly carrying Russia crude bound for India. Thx @Reuters Jana Choukeir, Ahmed Tolba, Daphne Psaledakis #OOTT.” Reuters reported “A Panamanian-flagged tanker carrying crude oil bound for India was struck with a missile in the Red Sea, the U.S. State Department said on Friday. The missile launched from Yemen hit the M/T Pollux on its port side, according to the State Department. Earlier on Friday, the United Kingdom Maritime Trade Operations (UKMTO) agency and British

Houthi hit oil tanker

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maritime security firm Ambrey said a Panama-flagged tanker had reportedly been hit 72 nautical miles (133 km) northwest of the port of Mokha, off Yemen. "The vessel ... reportedly sustained minor damage. The crew was reported safe and unharmed," Ambrey said. "This is yet another example of the lawless attacks on international shipping, which continue after numerous joint and international statements calling the Houthis to cease," a State Department spokesperson said. M/T Pollux embarked from Russia's Black Sea port city of Novorossiysk on Jan. 24 and was due to discharge in Paradip, India, on Feb 28, according to LSEG data. Indian Oil Company has a 300,000 barrels per day (bpd) oil refinery at Paradip, in eastern Odisha state." Our Supplemental Documents package includes the Reuters report.

Added oil tanker days from avoiding Suez Canal and Panama Canal

Here is what we wrote in our Feb 4, 2024 Energy Tidbits memo. "We always love a good map. On Friday, we tweeted [\[LINK\]](#) "Great map courtesy of @EIAgov Josh Eiermann. Shows relative tanker travel times from US Gulf Coast to China. Via Panama Canal (27 days) Suez Canal (44 days) Cape of Good Hope (48 days) #OOTT." We included the below EIA map, which shows a lot more than just tanker times from US Gulf Coast to China. It also shows the comparative times Rotterdam, Gulf Coast, Arabian Sea and China. For example, it notes the time from the Arabian Sea to Rotterdam is 19 days via the Suez Canal but 34 days via the Cape of Good Hope. On Wednesday, the EIA posted its blog "Red Sea attacks increase shipping times and freight rates" [\[LINK\]](#). Our tweet included the below EIA map. Note the EIA "voyage time is calculated for laden Suezmax tankers traveling at 14 knots without extended chokepoint delays". Our Supplemental Documents package includes the EIA blog."

Figure 45: Selected commercial shipping routes, as of January 2024



Data source: U.S. Energy Information Administration using calculations from Vortexa
 Note: Voyage time is calculated for laden Suezmax tankers traveling at 14 knots without extended chokepoint delays.

Source: EIA

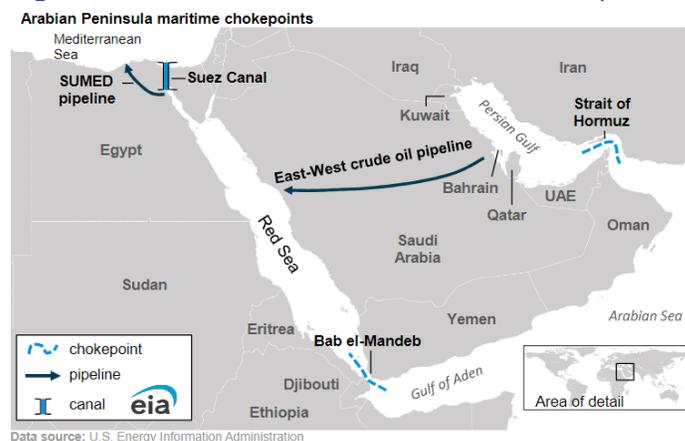
EIA estimates 8.8 mmb/d & 4.1 bcf/d thru Bab el Mandeb/Red Sea chokepoint

Here is what we wrote in our Dec 10, 2023 Energy Tidbits memo. "For the past few years and over the past couple months in particular, we have referenced the EIA's Aug 27, 2019 brief "The Bab el-Mandeb Strait is a strategic route for oil and natural

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gas shipments”, which highlighted the volume of oil, petroleum products and LNG that goes thru the Red Sea and Bab el Mandeb every day. The EIA then wrote “In 2018, an estimated 6.2 million barrels per day (b/d) of crude oil, condensate, and refined petroleum products flowed through the Bab el-Mandeb Strait toward Europe, the United States, and Asia, an increase from 5.1 million b/d in 2014.” On Monday, the EIA updated the same data in a blog titled “Red Sea chokepoints are critical for international oil and natural gas flows” [LINK]. The volumes thru the Bab el Mandeb and Red Sea are a lot higher. The EIA’s updated data for H1/23 estimates the volume was now up to 8.8 mmb/d and 4.1 bcf/d of LNG. Our Supplemental Documents package includes the EIA blog.”

Figure 46: Bab el-Mandeb Strait, a world oil chokepoint



Source: EIA

Figure 47: Bab el-Mandeb Strait, a world oil chokepoint

Volume of crude oil, condensate, and petroleum products transported through the Suez Canal, SUMED pipeline, and Bab el-Mandeb Strait (2018–1H23)

	2018	2019	2020	2021	2022	1H23
Total oil flows through Suez Canal and SUMED pipeline	6.4	6.2	5.3	5.1	7.2	9.2
crude oil and condensate	3.4	3.1	2.6	2.2	3.6	4.9
petroleum products	3.0	3.1	2.6	2.9	3.6	4.3
LNG flows through Suez Canal (billion cubic feet per day)	3.3	4.1	3.7	4.5	4.5	4.1
Total oil flows through Bab el-Mandeb Strait	6.1	5.9	5.0	4.9	7.1	8.8
crude oil and condensate	3.0	2.7	2.2	1.9	3.3	4.5
petroleum products	3.1	3.2	2.8	3.1	3.8	4.4
LNG flows through Bab el-Mandeb Strait (billion cubic feet per day)	3.1	3.9	3.7	4.5	4.5	4.1

Data source: U.S. Energy Information Administration analysis based on Vortexa tanker tracking
 Note: 1 H23=first half of 2023

Source: EIA

Oil: Houthis Leaders says have no intention of targeting submarine cables

On Tuesday, we tweeted [LINK] “Houthis leader “we have no intention of targeting submarine cables connecting to countries in region”. Lets hope his intention is more indicative than when politicians say no intention. #OOTT.” The Houthis leader was responding to the media reports last week about the risk to underwater communications cables from Europe to Asia

Underwater communication cables

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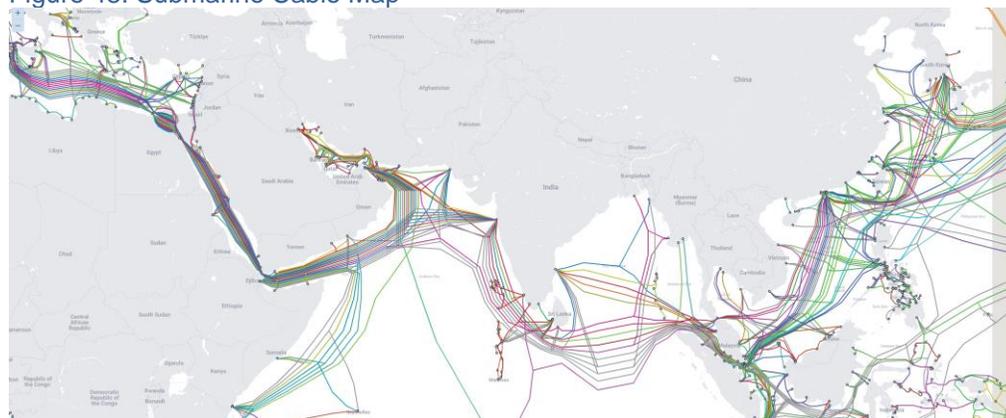
that all run thru the Red Sea and Bab el Mandeb. Our tweet included the Al Masirah (Yemen news) web page that showed the headlines of the Houthis leader comments “*Sayed Abdulmalik. We have no intention of targeting submarine cables connecting to countries in region*” “*Sayed Abdulmalik. Rumors circulating in some media about our intention to target submarine cables, internet cables are aimed at distorting, mispresenting Yemen’s position.*”

EU to Asia underwater communications cables run thru Houthis Bab el Mandeb

Here is what we wrote in last week’s (Feb 11, 2024) Energy Tidbits memo. “There was a good reminder that the Bab el Mandeb is more than a critical shipping chokepoint, it is also a critical choke point for global communications. On Monday, we tweeted [LINK](#) “*Overlooked Houthis global risk. “we also have to make sure they never build the capacity to touch the underground sea cables that handle most of the internet traffic between EU and Asia that go thru the Bab el Mandeb” warns @Norman_Roule to @FerroTV @lisaabramowicz1 @annmarie See*

👉 @TeleGeography map. #OOTT.” This was a reminder from Norman Roule (Senior Advisor, Transnational Threats Project for CSIS Center for Strategic & International Studies on Bloomberg Surveillance. HE reminded that all of the major underwater cables for communications from Europe to Asia went thru the Bab el Mandeb. And that the Houthis could cause major global economic hit if they damaged this underwater cables. Our prior writings on these underwater cables was on the risk in the South China Sea and not the Bab el Mandeb but the concept is the same. These underwater communications cables are at risk. Our tweet included the Submarine Cable Maps from TeleGeography that shows the major global underwater communications cables. Our Supplemental Documents package includes the Submarine Cable Maps.

Figure 48: Submarine Cable Map



Source: GeoTelegraphy

Oil: Saudi Abdulaziz reminds OPEC has been the better forecaster of oil demand

One of the big criticisms of OPEC is that they are too optimistic in their oil demand forecasts, especially with their current 2024 oil demand forecast growth of +2.25 mmb/d YoY vs IEA’s current demand forecast growth of +1.2 mmb/d YoY. On Monday, prior to the new OPEC MOMR and IEA OMR forecasts, Saudi Arabia Energy Minister Abdulaziz was asked about

Saudi on OPEC forecasting

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OPEC's demand forecast. We tweeted [\[LINK\]](#) *“Just look at how consistently OPEC Secretariat has been on the spot and how much others, they keep backpedaling” Saudi Energy Minister Abdulaziz on OPEC's demand growth forecast of +2.4 mmb/d in 2024 and +1.8 mmb/d in 2025. See 🗨️ SAF Group transcript. #OOTT.* Abdulaziz didn't say IEA but that is clearly who he means when he talks about others forecasts. We have noted his comments before on how he sees the IEA always underestimating oil demand, which always gets the headlines. And how they will revise up going back as they know those revisions tend to get overlooked. We made a transcript of Abdulaziz's comments. *“Not only myself but the job of all of us in this sector is not to be comfortable. Our job is to be attentative. Now, I am not a fortune teller and I keep telling people. Although I would give it to OPEC by a record if you compare what they have been doing, as Secretariat, over the last 3 years and compare it with others, which we did and I would be more than happy to share it with anybody. Just look at how consistently OPEC Secretariat has been on the spot and how much others, they keep backpedaling, which is they issue numbers at the early part of the year which are low and disgustingly pessimistic. And then they, in a shy way, they come back and they keep chasing the can by saying Oh we've got it wrong. And then, after the fact, they say sorry, we've had it, got it wrong, now we are going to be reassessing, then they reveal the true number, taddah, and the number is way much bigger. Consistently they have been doing that. And I would ask you John and those who are interested, check the record. Especially the revisions that they do after the year, after the fact. By that time, the market will have been impacted with this negativity. And then when they do the backpedaling, it will have been an ex post facto thing and they get away with it. Because nobody, again is going to look at what they have done at the beginning of the year and how hey fare at the end or the beginning of the first quarter of the year after.”*

Oil: Saudi Abdulaziz says didn't need the 1 mmb/d added MSC due to NGLs growth

One of the big oil questions of late is why did Saudi Arabia defer its plan to increase its MSC by 1 mmb/d. It seemed that the most common outside view was that Saudi Arabia must believe peak oil demand will be sooner or the alternative view is that Saudi sees much stronger than expected and for longer non-OPEC supply. We got a different reason on Monday, when Saudi Energy Minister Abdulaziz spoke at the IPTC conference. He said that Saudi Arabia didn't need the oil as they were cranking up natural gas and NGLs to replace some of their domestic consumption of oil. He didn't specifically say it, but the inference is that their export capacity would be unchanged as they free up 0.95 to 1.0 mmb/d of domestic consumption of oil so they didn't need the increase in MSC. We listened to the Youtube video [\[LINK\]](#). We tweeted [\[LINK\]](#) *“Here's why Saudi can postpone the 1 mmb/d increase to MSC. Saudi Energy Minister reminds will be saving ~0.95 to 1.0 mmb/d of consumed crude, diesel and fuel oil in great part with 0.6 to 0.75 mmb/d of condensate/NGLs from Jafurah #NatGas. See 🗨️ SAF transcript. #OOTT.* Our tweet included the transcript we made of Abdulaziz comments. *“It's very simple. I think we have respond this investment simply because to what I have tried to demonstrate last night that we are transitioning, and transitioning means that even our oil company, which used to be an oil company, became a hydrocarbon company, now it's becoming an energy company. It has lots of investments to do, it has oil, it has gas, it has even geothermal very soon, it is going to go into oil chemicals, something that we really want to put lots of money on, and we're going to chemicals, and we are of course going to renewables. We are going to be, as we've been saying all along, that we are going to be the*

Saudi doesn't need the 1 mmb/d

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country that produces every source of energy, Aramco will be involved in quite a few of these things including downstream and what have you. But also, we are the one who have created that word 'transitioning'. And last night, I did allude to the fact that ever since you were there in Abu Dhabi, September 2019, we had a big space that was mainly dedicated to showcase how Saudi Arabia will be transitioning. I think even I have to give it to our leadership. Over the last nine years we've been transitioning to things that not even ourselves as Saudi would have thought that we will be able to achieve those changes that has taken place in this country. And the fact is, because we are transitioning, which is a good thing, we are going to be saving approximately around 950 to a million barrels of consumed crude, diesel, and fuel oil. In fact, most of it was imported fuel oil, simply because we are transitioning to renewables and gas. The fact is that we're getting so much gas out of Jaffoura, even actually, we're going to get around 650 thousand barrels of condensate, NGLs, and if you aggregate the net effect of these savings, of even the million, if you assume you'll be consuming somewhere around 250-300 thousand barrels over the next few years as an additional demand, you still have the 700 [thousand barrels], and you still have the 6-750 [thousand barrels], and you still have the 650 [thousand barrels] of liquids, that will come out actually of gas, so between the two numbers you're talking about 1.3 to 1.4 million [barrels]."

Oil: NY times reports it was Israel that bombed Iran's major natural gas pipeline

On Tuesday night, we tweeted [\[LINK\]](#) "Iran Watch! Let's hope it's an accident and not sabotage. Breaking reports of explosion/fire on Iran's major #NatGas pipeline from fields in south to Tehran and other cities is a big hit. Although pipeline repairs are normally quick. #OOTT." This is the major natural gas transmission line that brings natural gas from the southern natural gas fields to the Tehran and, the disruption of natural gas supply led to interruptions in natural gas for heat, cooking, and industrial use. On Friday, SHANA (news agency for Iran's oil ministry) reported [\[LINK\]](#) "Two gas transmission pipelines damaged in terrorist attacks were completely repaired, said the dispatching director of the National Iranian Gas Company (NIGC) on Friday. Talking to a TV channel, Saeid Aqli added the gas pipelines will operate at maximum capacity soon." As of 11pm MT last night, we have not seen any Iran reports blaming any specific country or party responsible for the sabotage. Yesterday, we tweeted [\[LINK\]](#) "Iran watch. "Israel carried out covert attacks on two major natural gas pipelines inside Iran this week according to two Western officials and a military strategist affiliated with IRGC. "strikes represent a notable shift in the shadow war that Israel and Iran have been waging by air, land, sea & cyberattack for years". #OOTT. [\[LINK\]](#)." Iran may not have said they blame Israel but on Saturday morning, IRNA (news agency for Iran) [\[LINK\]](#) posted a story on the New York Times report. Our initial tweet was let's hope it's an accident and not sabotage. Unfortunately, it's not an accident and it looks like it's sabotage. And, if the New York Times is right that it's Israel, we would agree that it's an escalation from a more shadow war to a direct attack on major energy infrastructure. This can only escalate potential Iran risk to a much greater level. Our Supplemental Documents package includes the New York Times report.

Iran natural gas pipeline explosion

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Figure 49: Approx location of Iran natural gas pipeline explosion



Source: Wikimedia
Source: Wikimedia

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

Our Jan 21, 2024 Energy Tidbits memo highlighted the news that the protests had ended and oil production was being restored at the Sharara oil field. On Monday, the National Oil Corporation of Libya tweeted [\[LINK\]](#) “Crude oil production reached 1,212,000 barrels per day, and condensate production reached 52,000 barrels per day during the past 24 hours.” Other than the protest impact, Libya oil production has been stable at ~1.2 mmb/d for the last several months. And while the NOC confirmed that production has come right back to those levels, the OPEC MOMR Secondary Sources estimated the protests hit Libya oil production by 60,000 b/d.

Libya oil stable at 1.2 mmb/d

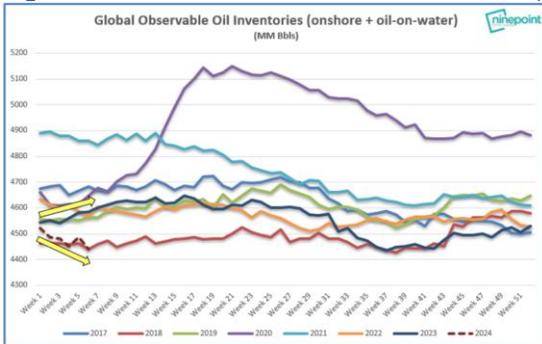
Oil: Baidu China city-level road congestion plunged during Lunar New Year

On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly Feb 15 report, which includes the Baidu city-level road congestion for the week ended Feb 14. (i) As expected China Baidu city-level road congestion plunged ahead of Lunar New Year on Feb 10..” We expected this plunge in congestion as each year during Lunar New Year, China’s road traffic levels drop off a cliff. (ii) The BloombergNEF report was titled “China’s congestion falls to lowest in a year as Lunar New Year celebrated” and its China slide was titled “China congestion plummets amid holiday season”. (iii) The city-level road congestion was -70.8% WoW to 28.5 of Jan 2021 levels. The WoW decline was the third week of the 40-day Spring Festival travel rush. (iv) We expect to see a steep rebound in the coming weeks, as is usually the case after Lunar New Year. Note the below graph shows steeper and earlier drops in city-level road congestion, which is due to the early Lunar New Year On Jan 22, 2023 and Feb 1, 2022.

China city-level traffic congestion

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Figure 51: Global Observable Oil Inventories (onshore + oil-on-water)



Source: Kpler
NOTE: This is after the global oil market absorbed ~268MM bbls net from the US Strategic Political Reserve (SPR)

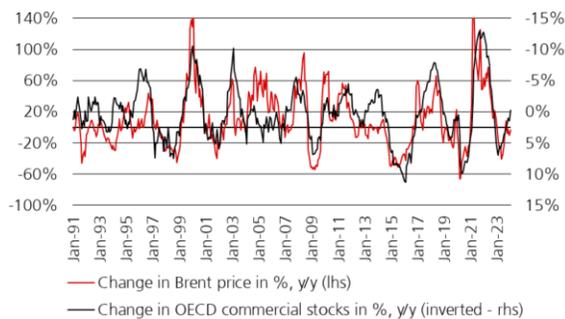
Source: Kpler, Ninepoint

Oil: Oil prices follow changes in OECD commercial oil inventories

There are always items that impact oil prices but one of the key fundamental factors impacting oil prices that hasn't changed is the correlation of OECD crude oil inventories vs oil prices. Oil prices tend to follow moves in OECD commercial oil inventories either up when inventories go down, or down when inventories go up. It's also important to note the correlation has continued even as OECD crude oil consumption growth has slowed over the past several years. This correlation is why oil markets follow inventories. And it's also why we always hear Saudi Energy Minister Abdulaziz says he doesn't focus on prices, rather he focuses on if the market is in balance ie. is supply more than demand or vice versa. On Friday, we tweeted [\[LINK\]](#) "Oil 101. It's why markets hear Saudi Energy Minister Abdulaziz focus on keeping the #Oil market in balance. Inventories reflect supply vs demand & he knows oil prices follow changes in inventories up or down. It's a matter of time. Thx @staunovo for great graph. #OOTT." Our tweet included the below graph from the well known analysts, UBS's Giovanni Staunovo.

Oil prices vs inventories

Figure 52: Relationship changes in oil prices vs OECD commercial oil inventories



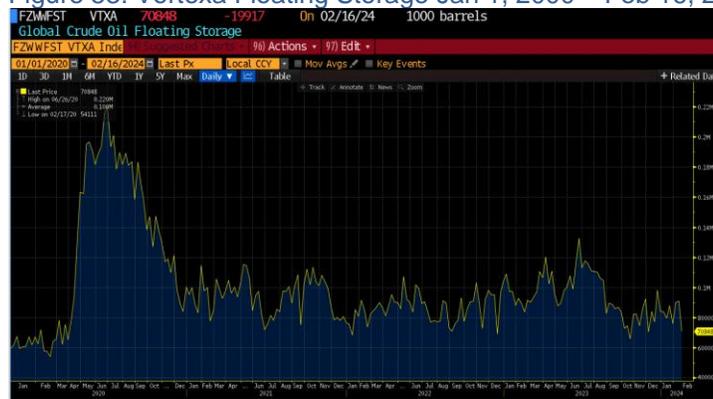
Source: UBS Giovanni Staunovo

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Oil: Vortexa crude oil floating storage est 70.85 mmb at Feb 16, -19.92 mmb WoW**Vortexa floating storage**

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 Feb 10 at 9am MT. (i) Yesterday, we tweeted [LINK](#) "2nd week of revisions point to oil back to storage after filling in for initial impact of longer tanker trips to avoid Red Sea. #Oil floating storage at Feb 16 -19.92 mmb WoW to 70.85. BUT 2nd week of big revisions. Feb 9 +15.81, Feb 2 +6.35. Jan 26 +4.56. Thx @vortexa @business. #OOTT." (ii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Feb 16 at 70.85 mmb, which is -19.92 mmb WoW vs revised up big Feb 9 of 90.77 mmb. Note Feb 9 was revised +15.81 mmb vs 74.96 mmb originally posted at 9am on Feb 10. (iii) Our comment is the same as last week as this is the 2nd consecutive week of large upward revisions. It seems like refineries and shippers have now had a few weeks to work thru the longer tanker trips into deliveries, which should return oil storage back to normal ie. returns oil to storage that was used to fill in as deliveries took longer. We finally saw our expected larger revisions to floating storage for the past few weeks and they were upward revisions. Prior to these upward revisions, we saw record low floating storage, which we thought likely reflected using floating storage to make up for longer tanker voyages due to avoiding the Red Sea. But the upward revisions likely reflect the return of those barrels to floating storage now that the tankers taking the longer voyages have arrived. (iv) Revisions. It was the 2nd consecutive week of large revisions, which we believe is likely due to the tankers arriving at their destinations from the longer than originally planned voyages that forced floating storage to be used to fill in while waiting for the tankers. Here are the revisions compared to the estimates originally posted on Bloomberg at 9am MT on Feb 10. Feb 9 revised +15.81 mmb. Feb 2 revised +6.35 mmb. Jan 26 revised +4.56 mmb. Jan 19 revised +4.28 mmb. Jan 12 revised +0.91 mmb. Jan 5 revised +2.10 mmb. Dec 29 revised +2.44 mmb. (v) There is a wide range of floating storage estimates for the past seven weeks, but a simple average for the past seven weeks is 82.71 mmb vs last week's then seven-week average of 79.38 mmb. The increase is due to the large revisions. (vi) Also remember Vortexa revises these weekly storage estimates on a regular basis. For example, when most report on the Vortexa data on Monday morning, they will be reporting on different estimates. We do not track the revisions through the week. Rather we try to compare the first posted storage estimates on a consistent week over week timing comparison. Normally we download the Vortexa data as of Saturday mornings around 9am MT. (vii) Note the below graph goes back to Jan 1, 2020 to show the run up to Covid and then how Covid started to impact Covid in March/April 2020. (viii) Feb 16 estimate of 70.85 mmb is -12.80 mmb YoY vs Feb 17, 2023 of 83.65 mmb. (ix) Feb 16 estimate of 70.85 mmb is -149.46 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (x) Feb 16 estimate of 70.85 mmb is +5.24 mmb vs pre-Covid Feb 28, 2020 of 65.61 mmb. (xi) Below are the last several weeks of estimates posted on Bloomberg as of 9am MT Feb 17, 9am MT Feb 10, and 9am MT Feb 3.

Figure 53: Vortexa Floating Storage Jan 1, 2000 – Feb 16, 2024, posted Feb 17 at 9am MT



Source: Bloomberg, Vortexa

Figure 54: Vortexa Estimates Posted 9am MT on Feb 17, Feb 10, and Feb 3

Posted Feb 17, 9am MT				Feb 10, 9am MT				Feb 3, 9am MT																			
FZWWFST_VTXA Indx				FZWWFST_VTXA Indx				FZWWFST_VTXA Indx																			
ID	3D	1M	6M	YTD	1Y	5Y	Max	ID	3D	1M	6M	YTD	1Y	5Y	Max	ID	3D	1M	6M	YTD	1Y	5Y	Max				
Date: 02/16/2024				Date: 02/09/2024				Date: 02/02/2024				Date: 01/26/2024				Date: 01/19/2024				Date: 01/12/2024				Date: 01/05/2024			
Last Px: 70848				Last Px: 74958				Last Px: 72247				Last Px: 63698				Last Px: 78024				Last Px: 76953				Last Px: 79667			
Fr 02/09/2024: 90765				Fr 02/02/2024: 83592				Fr 01/26/2024: 63698				Fr 01/19/2024: 78024				Fr 01/12/2024: 76953				Fr 01/05/2024: 79667							
Fr 02/02/2024: 89936				Fr 01/26/2024: 71362				Fr 01/19/2024: 83525				Fr 01/12/2024: 78727				Fr 01/05/2024: 81907				Fr 12/29/2023: 80464							
Fr 01/26/2024: 75919				Fr 01/19/2024: 83525				Fr 01/12/2024: 78727				Fr 01/05/2024: 81907				Fr 12/29/2023: 80464				Fr 12/22/2023: 95667							
Fr 01/19/2024: 87812				Fr 01/12/2024: 78727				Fr 01/05/2024: 81907				Fr 12/29/2023: 80464				Fr 12/22/2023: 95667				Fr 12/15/2023: 75840							
Fr 01/12/2024: 79643				Fr 01/05/2024: 81907				Fr 12/29/2023: 80464				Fr 12/22/2023: 95667				Fr 12/15/2023: 75840				Fr 12/08/2023: 81473							
Fr 01/05/2024: 84066				Fr 12/29/2023: 81610				Fr 12/22/2023: 95584				Fr 12/15/2023: 75840				Fr 12/08/2023: 81473				Fr 12/01/2023: 69303							
Fr 12/29/2023: 84046				Fr 12/22/2023: 95584				Fr 12/15/2023: 75840				Fr 12/08/2023: 81473				Fr 12/01/2023: 69303				Fr 11/24/2023: 90926							
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Fr 12/15/2023: 77156				Fr 12/08/2023: 81346				Fr 11/24/2023: 90926				Fr 11/17/2023: 90926				Fr 11/10/2023: 90926											
Fr 12/08/2023: 83942				Fr 12/01/2023: 68265				Fr 11/24/2023: 90926				Fr 11/17/2023: 90926				Fr 11/10/2023: 90926											

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

Bloomberg also posts the Vortexa crude oil floating storage in 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, Feb 9, in total, was revised +15.81 mmb. The main revisions in a region vs the originally posted (as of 9am Feb 10) floating oil storage for Feb 9 were Asia revised +12.03 mmb and Other revised +4.06 mmb. (ii) As noted above, Feb 16 of 70.85 mmb was -19.92 mmb WoW vs the revised up Feb 9 of 90.77 mmb. The major WoW changes by region were Middle East -12.11 mmb WoW and Asia -9.52 mmb WoW. (iii) Feb 16 at 70.85 mmb is -62.30 mmb vs the summer June 23, 2023 peak of 133.15 mmb. Recall Saudi Arabia started its voluntary 1 mmb/d production cuts on July 1, 2023. The major changes by region vs the summer June 23 peak are Asia -34.05 mmb and Other -20.95 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 the “Original Posted” regional data for Feb 9 that was posted on Bloomberg at 9am MT on Feb 10.

Vortexa floating storage by region

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Figure 55: Vortexa crude oil floating by region

Vortexa Crude Oil Floating Storage by Region (mmb)				Original Posted		Recent Peak	
Region	Feb 16/24	Feb 9/24	WoW	Feb 9/24	Jun 23/23	Feb 16 vs Jun 23	
Asia	39.78	49.30	-9.52	37.27	73.83	-34.05	
Europe	2.62	2.23	0.39	2.23	6.21	-3.59	
Middle East	3.51	15.62	-12.11	15.44	6.76	-3.25	
West Africa	7.37	7.18	0.19	7.37	7.62	-0.25	
US Gulf Coast	0.76	0.13	0.63	0.40	0.97	-0.21	
Other	16.81	16.31	0.50	12.25	37.76	-20.95	
Global Total	70.85	90.77	-19.92	74.96	133.15	-62.30	

Vortexa crude oil floating storage posted on Bloomberg 9am MT on Feb 17

Source: Vortexa, Bloomberg

Source: Bloomberg, Vortexa

Oil: Expedia CEO: “The macro is tougher...the post COVID thing is slowing down”

The surge in travel we've seen since the COVID shut-out is starting to see some cracks. On Tuesday, Expedia CEO Peter Kern was interviewed on CNBC Squawk Box where he commented on the “softening” of the travel industry. Here's what we tweeted on Tuesday [\[LINK\]](#): “western Europe has slowed down.. Asia & Latin America are also now slowing down. So the macro is tougher. Travel just doesn't grow till infinity.....so the post Covid thing is slowing down” Expedia CEO to @andrewsorkin @JoeSquawk just now on @SquawkCNBC, #OOTT”. Kern noted that regions around the world are seeing a slowdown in travel growth, especially western countries which were the first to come out of the pandemic. Kern said “The macro environment is softening around the world, it has been in North America, Western Europe has slowed down, you know they were the first ones out of COVID, they were the first to slow down. Asia, Latin America are also now slowing down. So the macro is tougher, you know, travel doesn't just grow till infinity, it grows at a modest rate in a normal situation...So the post COVID thing is slowing down, and now we are actually accelerating because of all the work we did during COVID to revamp our company, to totally improve our technology stacks, rebrand, launch OneKey, I was here when we launched OneKey, our new loyalty program which is doing great. So, we're actually going to outperform the market, we believe, but the market is slowing somewhat, so that's just a reality. And I think the market understood that, most of the market”. Our Supplemental Documents Package includes the Kern transcript.

Expedia CEO on slowing travel

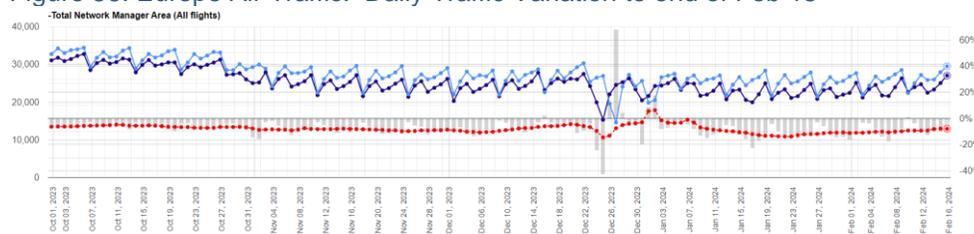
Oil: Europe airports daily traffic 7-day average is -7.9% below pre-Covid levels

Other than over Christmas, European daily traffic at airports continues to be stuck below pre-Covid levels. As of our 7am MT news cut off, the latest Eurocontrol daily traffic at Europe airports shows the 7-day rolling average to then end of Feb 15 is -7.9% below pre-Covid 2019 levels. Note this is better than as of Feb 8, which was at -9.9% below pre-Covid 2019 levels. Eurocontrol updates this data daily and it is found at [\[LINK\]](#)

Europe airports daily traffic

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Figure 56: Europe Air Traffic: Daily Traffic Variation to end of Feb 15



Source: Eurocontrol

Energy Transition: Data centers are driving big electricity & natural gas demand

We have been highlighting how the rapid ramp up in data center electricity demand can't be met by intermittent wind and solar but requires natural gas. And we keep reminding this is happening quickly. On Tuesday, we tweeted [LINK](#) "Got to be #NatGas as data centers don't run less when sun goes down or wind doesn't blow. "demand is just cranking up very fast, one to keep up with growing demand from data-center loads & the electrification that's going on" \$WMB CEO, reports @ElizabethElkin See 📌 02/06 @PippaStevens13 report. #OOTT." Bloomberg reported on comments by Williams CEO at the Williams Clean Energy Expo in Washington on how surging electricity usage from data centers is happening now and the energy transition was pushing demand for natural gas. Williams held its analyst day on Wednesday and data centers were features. On Wednesday, we tweeted [LINK](#) "Time to pay attention! \$WMB. #NatGas needed "to support the reliability of the US power sector as it faces growing regional demand driven in large part by the emergence of new, large-scale data centers that are accelerating throughout our key markets" #OOTT." Williams is in natural gas so the criticism from climate change is that they are speaking to their book. That is true, but the reality is that data centers run 24/7 and need 24/7 power.

Data centers
need 24/7 power

Can wind/solar power 24/7 needs from data centers/AI growth

Here is what we wrote in last week's (Feb 11, 2024) Energy Tidbits memo. "There was a great CNBC reminder on Tuesday about how data centers and AI are going to drive a massive power need and we think that is an overlooked positive for natural gas. This is especially so since data centers run 24/7. We tweeted [LINK](#) "Data centers/AI growth = massive need for power. Data centers don't run less when the sun goes down or the wind isn't blowing. Looks like a lot more #NatGas power will be needed. 📌 @PippaStevens13 on massive power needs, especially in US, are just ramping up. #OOTT." Our tweet included a clip of a portion of the CNBC report that noted how the IEA forecasts data centers electricity demand to double by 2026 and that would be equal to Japan's electricity use. That is a huge number. We only have one friend who is a modest data center owner in the US and he reiterated his biggest concern looking forward over the next decade is how to ensure reliable, affordable electricity if he is forced to go renewable and storage. The big issue for 24/7 electricity consumers is when the sun doesn't shine or the wind doesn't blow. And this is even moreso if it's a few days of low sun and wind.

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Figure 57: Data Center Electricity Use



Source: CNBC

Data center electricity consumption ramp up is happening now

Here is another item from last week's (Feb 11, 2024) Energy Tidbits memo. *"The reason why we highlight natural gas or even coal for data centers is that the growth in data centers electricity demand is happening quickly. We had suggestions or reminders of nuclear power for this data center demand. We are big fans of mini-nukes for power but this is not happening until sometime in the 2030s. On Friday, we tweeted [\[LINK\]](#) "Agreed! US has to push SMR nuclear now so it can be a rapidly increasing power source post 2030. For the 2020s for this added electricity needs 1st wave of AI/data centers, 24/7 power has to fall on #NatGas, maybe even some #Coal." The other option is storage but storage still isn't available for long send-out. So the only significant 24/7 power sources now are natural gas and coal."*

Energy Transition: Canada uses IEA scenarios as if they are data-based

We continue to see one of our concerns play out – western leaders use the IEA scenarios as if they are forecasts. And despite these being scenarios of what if's, the western leaders want use these scenarios to support their policies, in this case the push to net zero. And that is why we have warned for several years that the Energy Transition will take way longer, cost way more and be a bumpy/rocky road. The question is do they not read the IEA work or just choose to use it as something it isn't. Either way, the Energy Transition plans aren't based on data but based on what if's. Canada's Energy & Natural Resources Minister, Jonathan Wilkinson, gave a good reminder of this in his interview with Bloomberg on Wednesday morning. Its like the western leaders are using scenarios based on what they are saying is policy to set policy. We tweeted [\[LINK\]](#) *"Unfortunately, a big difference between data driven forecast vs a scenario based on stated policies! ca Energy Minister, "when the IEA SAYS that #Oil #NatGas #Coal utilization is gong to peak this decade, that is based on the data that show actually much of this is becoming uneconomic" IEA WEO 2023 peak demand was based on a "Stated Energy Policies Scenario" #OOTT @ManusCranny @daniburgz."* Wilkinson gave the perfect example and it seems like his staff never read the assumptions when IEA Fatih Birol came out in Sept in his call for peak oil, natural gas and coal demand by 2030 that he said would be detailed in IEA big World Energy Outlook 2023 in Oct. Wilkinson said that the IEA call for peak oil, natural gas and coal demand is NOT based on policy. We made a transcript of his comments. At 3:23 am MT, Wilkinson *"But I would say that a lot of this is just being driven by straight economics and by the financial markets. Like when the IEA says that oil, gas and coal utilization is going to peak this decade, that is based on the*

IEA scenarios

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data that shows that actually much of this is becoming uneconomic for a whole range of different reasons". His staff didn't read the IEA executive director Birol FT op-ed or IEA world energy outlook key findings. Our tweet included the FT Fatih Birol op-ed and the excerpt from IEA World Energy Outlook Oct 2023 that both indicate the call for peak oil, natural gas and coal this decade is based on policy statements coming true. The IEA WEO wrote "The analysis does not present a single view of the future but instead explores different scenarios that reflect current real-world conditions and starting points. The Stated Policies Scenario (STEPS) provides an outlook based on the latest policy settings, including energy, climate and related industrial policies." And "We are on track to see all fossil fuels peak before 2030. A legacy of the global energy crisis may be to usher in the beginning of the end of the fossil fuel era: the momentum behind clean energy transitions is now sufficient for global demand for coal, oil and natural gas to all reach a high point before 2030 in the STEPS. The share of coal, oil and natural gas in global energy supply – stuck for decades around 80% – starts to edge downwards and reaches 73% in the STEPS by 2030. This is an important shift. However, if demand for these fossil fuels remains at a high level, as has been the case for coal in recent years, and as is the case in the STEPS projections for oil and gas, it is far from enough to reach global climate goals." Our Supplemental Documents package includes the IEA Executive Director Birol FT OP-ED in Sept and the excerpts from the IEA WEO 2023.

Energy Transition: Canada backing off some clean electricity rules

One of the things we have learned to expect over the last 30 years in financial markets is to always expect negative news releases on Friday afternoons before a long weekend. We say negative to mean news that the issuer wished they didn't have to release as it normally means changes to plans, forecasts or direction. That was the case on Friday, when the Liberal government posted its "Minister Guilbeault provides update with new design options for the Clean Electricity Regulations" [\[LINK\]](#). Remember "new design options" means they have had to back off what they wanted for clean electricity rules. On Friday, we tweeted [\[LINK\]](#) "#NatGas for longer. Great report @row1960 on clean electricity changes ie. "Any fossil fuel-burning electric generation built before 2025 can operate for 20 years without having the regulations apply to it," Anderson said. "There could be a bit of wiggle room on the start date". #OOTT." Our tweet included the National Observer reporting because they had added color on the release from a spokesman, Oliver Anderson, with Environment and Climate Change Canada. NO one should be surprised that the reality check of the Liberals clean electricity regulations is causing some changes. It's reality check. And what is significant is that even the most ardent climate changers are being forced to make changes, although it is being couched as an I'm listening as opposed to our prediction from two years ago that they would be forced to admit their energy transition plans won't work. National Observer highlighted the key changes "The government now proposes a time-limited exemption to that rule for fossil fuel generators that come into operation before 2025. Ottawa floats changes to clean electricity rules after consulting with provinces and industry. # "Any fossil fuel-burning electric generation built before 2025 can operate for 20 years without having the regulations apply to it," Anderson said. "There could be a bit of wiggle room on the start date." Industries that generate their own power and feed extra back into the grid are also affected by the proposals. Previously, all generated power would have been affected by the regulations. Under the suggested changes, only the power that gets fed back into the grid is affected. Power generated and used on-site would not be. Finally, small generators

Canada clean electricity rules

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producing under 25 megawatts would still be exempted. But any new units at the same facility collectively generating more than that would have to follow the regulations.” Our Supplemental Documents package includes the press release, excerpts from the fact sheet and the National Observer report.

Energy Transition: Are Liberals about to back off mandatory EV sales targets?

Earlier this morning, we tweeted [LINK](#) “Is phasing out of ICE vehicles in CA about to be delayed? Did Min Guilbeault highlight EVs not a panacea to set stage to relax his 🙌 #EVs sales targets >20% by 2030 & >60% by 2030? #Oil #Gasoline will be needed for longer #OOTT.” (i) Liberals Environment Minister Guilbeault got the ire of provincial leaders, when the Montreal Gazette reported “Besides funding these types of projects, all levels of government must make the hard decision to stop expanding the road network, he said. Adding more roads and new lanes on existing roads has proven to encourage more car use, which means more congestion, and more calls for road expansion, he said. “Our government has made the decision to stop investing in new road infrastructure. Of course we will continue to be there for cities, provinces and territories to maintain the existing network, but there will be no more envelopes from the federal government to enlarge the road network. The analysis we have done is that the network is perfectly adequate to respond to the needs we have. And thanks to a mix of investment in active and public transit, and in territorial planning and densification, we can very well achieve our goals of economic, social and human development without more enlargement of the road network.” Guilbeault backtracked a bit by saying he meant major road infrastructure projects. (ii) We thought there was more to think about Guilbeault’s dinner speech than the headline that The Liberals “has made the decision to stop investing in new road infrastructure.” Although that is a quite headline. (iii) We also don’t think enough people give Guilbeault credit for intelligence, but also that he is a crafty politician with what and how he says things so when we read the Montreal Gazette reporting. He surely knew Premier Smith and others would jump all over the not investing in new road infrastructure. (iv) That was the magician’s distraction. And we think what Guilbeault wanted to do was set the stage to start backtracking in some way on EVs. On Wednesday night, we tweeted [LINK](#) “Hmmm! CA Guilbeault 🙌 is warning that Cdns (including himself??) have been overestimating the impact of EVs on climate fight despite being considered 1 of the critical success factors to do so. Where do they go to make up for EVs overestimating? Thx @mtlgazette Michelle Lalonde #OOTT.” (v) And we think what he wanted to do was start the process of backtracking on what EVs can do for their climate plan. To us, this is a major start of new messaging on EVs. And as we keep saying, the critical success factors for the energy transition are not working anywhere near as assumed in the Liberals net zero plans or any western Govt net zero plans. The Montreal Gazette wrote “Electric cars are among the many necessary solutions to Canada’s environment problems, but they are far from a panacea, Environment and Climate Change Minister Steven Guilbeault told a conference on public transit in Montreal on Monday. “We must stop thinking that electric cars will solve all our problems,” said Guilbeault, who was the keynote speaker at a fundraising luncheon at the Westin Montreal.” Guilbeault is basically saying that and EVs are the key success factor for reducing emissions in transportation. We believe this is significant – it’s a way of admitting that the energy transition isn’t working without saying so. (vi) Also, we have to wonder if Guilbeault is kid of admitting he overestimated the potential of EVs ie. did he include himself in the “we must stop thinking...”. . The Montreal Gazette wrote “Guilbeault said over-

Guilbeault on EVs

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estimating the ability of electricity-powered transportation to solve climate change and other environmental crises would be “an error, a false utopia that will let us down over the long term.” (vii) So Guilbeault is saying EVs’ won’t solve all the problems in emissions despite being viewed as one of the critical success factors to do so, which led to our tweet this morning that he must be setting the stage to back off the Liberals 2030 Emissions Reduction Plan that has EVs as a key to the plan. It seems the Liberals have to back off their 2026 and 2030 mandatory targets for EVs sales. Our tweet included the ERP that says *“Develop a light duty vehicle (LDV) ZEV sales mandate, which will set annually increasing requirements towards achieving 100% LDV ZEV sales by 2035, including mandatory interim targets of at least 20% of all new LDVs offered for sale by 2026 and at least 60% by 2030.”* (viii) Then the next question moves where do they go to cut emissions and to ensure they don’t lose any more emissions setbacks in other areas. We will have to more say on this in future Energy Tidbits memos. Our Supplemental Documents package includes the Montreal Gazette report and the Liberals 2030 Emissions Reduction Plan on Transportation.

Critical success factors for Net Zero aren’t working as hoped/planned

Minister Guilbeault’s warning on EVs not being the panacea is another reminder that one of the critical success factor for the energy transition is not working anywhere near as fast as hoped/planned. And EVs are probably the most significant factor given EVs are hoped to tackle transport emissions. We are saying they have to back off their EVs mandatory sales targets as they are impossible. But it fits our theme the critical success factors for Net Zero aren’t working as hoped/planned. Here is what we wrote in our Oct 29, 2023 Energy Tidbits prior to COP28. Note that we never wrote the blog. *“We expect to post a long overdue blog ahead of COP28, which runs from Nov 30 to Dec 1 in the UAE. Our view on the Energy Transition is unchanged for the past several years – it’s happening but it will take way longer, cost way more and be a bumpy/rocky road. It is very hard to predict what will happen at COP28 but we would hope that everyone doesn’t fool themselves with their starting point – all of the major items for the energy transition aren’t working as planned. For the past few years, we have placed a priority for tracking the major items of the energy transition because their progress, or lack thereof, relative to their plans/aspirations is the most important factor for oil and natural gas for the next decade. It’s why we have said for years that oil and natural gas will be needed for longer and therefore there will be cash flow value for the next decade. Our memos have highlighted the major energy transition items being well behind plans and aspirations. (i) EVs. The major oil consumption impact is forecast to come from EVs replacing ICE. So far, our focus has been on how EVs aren’t displacing ICE mileage as much as assumed as forecasts like the IEA assume that every new EV replaces the miles driven by an ICE. It’s like they assume that every EV sold means an ICE gets junked or stopped driving. So the IEA demand forecasts assume way too much demand destruction from new EV sales. But, as noted later in the memo, we expect to see forecasters reduce their assumption for EV adoption as they move to not assume the rate of growth in EVs isn’t as fast as EVs move to lower and middle income. (ii) Sustainable aviation fuel. Sustainable aviation fuel is the key item for the airline industry to reach its Net Zero targets. The problem with SAF is that it is very expensive relative to jet fuel and there won’t be enough supply. Climate change side has been trumpeting that there is a huge growth in SAF. That is correct, it is a huge growth, the amount of*

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SAF tripled in 2022 but the IATA highlighted SAF supplied only 0.1% of total 2022 jet fuel consumption. We expect to see the reality of SAF potential to be reflected in new forecasts. (iii) Offshore wind is having a huge pause. This has been the big news item over the past six months – offshore wind projects in the US and Europe are being paused or trying to be renegotiated due to insufficient returns to developers. This is pause has been now going on for six months or so, and will need to be addressed as they are projects that were approved by governments so assumed to be happening. Best case scenario is a pause of a year. So it pushes back assumed startup of wind. (iv) Hydrogen costs too much so no buyers will step up. Hydrogen is expected to be a key fuel for energy intensive uses. The problem is that it is too expensive and there haven't been any large buyers step up to commit to long term hydrogen such that hydrogen suppliers can commit the billions for large commercial supply. We expect to see more reflect a significant reduction in their hydrogen penetration forecasts.”

Fits our 2022 Prediction leaders to admit energy transition isn't working

The Guilbeault trying to message down the potential impact of EVs is a typical indirect admission that their assumptions for their energy transition plans aren't working. This is something we have seen more and more in the last year. Here is what we wrote in our Oct 29, 2023 Energy Tidbits memo. *“We don't expect to see many western leaders come out and directly say the energy transition isn't working but we do expect to see their actions reflect that conclusion. Our #1 prediction for 2022 was on this concept. We were probably 6 to 12 months early but it is unfolding. Here is what we wrote in our Dec 12, 2021 Energy Tidbits memo. “Its December and so analysts will soon be coming out with 2022 predictions, so we thought we would beat them with one of our main 2022 predictions. On Thursday, we tweeted [\[LINK\]](#) “Time for #2022Predictions. My #1 is more #EnergyTransition #NetZero leaders come out of closet, have a #MacronMoment ie. have “transition” not self inflicted shortage so 2021 energy crisis isn't every year. A return to #EnergySecurity = #Oil #NatGas #LNG strong thru 2030. #OOTT.” This should not surprise readers as we have been noting the start of energy transition leaders starting to admit, in a politician's manner, that the energy transition isn't working as per aspirations and energy costs will be a lot higher than aspired. We have said for years that the energy transition will happen, but it will take longer, be bumpy road and cost more than the aspirations. Last week's (Dec 5, 2021) Energy Tidbits wrote on the ADNOC CEO speech There was much more in the speech, which is why we tweeted [\[LINK\]](#) “If more leaders have a “Macron Moment” in 2022, maybe COP28 UAE in 2023 can be catalyst for getting down to work on practical, commercial, sustainable energy solutions: pro climate/pro growth? See SAF Group transcript of @SultanAhmedalj8 #ADIPEC keynote. #EnergyTransition #OOTT.” We do wonder if we will see more world leaders accept that the energy transition isn't working according to their aspirations and that there is an increasing risk of a decade of energy crisis like seen in Europe in H2/21 unless the world puts in an achievable energy transition plan.” We think COP26 will turn out to be turning point, but a turning point to force energy transition leaders into changing their plan. It why we think we will more of the energy transition leaders come out of the closet and admit this in 2022. But what got us to*

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tweet this week was after seeing Saudi Aramco CEO Nasser speech at the WPC in Houston. Nasser said "There is one more thing that can no longer remain unsaid. A majority of key stakeholders agree with these realities as much as they believe in addressing climate change. We know this, because they say so in private. They should say it publicly too. I understand their dilemma. Publicly admitting that oil and gas will play an essential and significant role, during the transition and beyond, will be hard for some." So our #1 2022 Prediction is that we will see leaders come out of the close and admit, in a politician's way, that the energy transition plan needs to be changed. The key result will be that fossil fuels are needed for way longer and the outlook for oil, natural gas and LNG will be stronger thru 2030 and beyond."

Energy Transition: Saudi future energy security risk is renewables, materials, mines

We have been, and are still, in the camp that worries the world's leaders haven't addressed the energy security risks under the Energy Transition. It's not just the risk of providing 24/7 reliable, affordable, available electricity, it's the availability and security of supply of critical metals, and more. Saudi Energy Minister Abdulaziz highlighted this future energy risk in his Monday interview. On Monday, we tweeted [\[LINK\]](#) *"future problem on energy security, it will not be oil, it will be renewables, and the materials, and the mines..."* Saudi Energy Minister Abdulaziz. *Need dispatchable #NatGas #Coal #Nuclear for renewable down time. Who ensures stable metals supply? See 📌 SAF transcript #OOTT.* Our tweet included the transcript we made of Abdulaziz's comments. *"what we want to do also is make sure that people understand that we also used to maintain what you have rightly said the 1.5 to 2 million because energy security in the 70s, and 80s and 90s was more dependent on oil. Now, look at what happened last year, 22 I mean. It was gas. The future problem on energy security, it will not be oil, it will be renewables, and the materials, and the mines, and the mining industry. And who is going to be the source of these materials that will constitute the very essence of the new energy of the world. Therefore, and we have also, and it should be said that if emergency stocks were utilized for commercial purposes in 22 because they were not used for attending to shortages of supply. Why should we be the last country to hold energy capacity, capacity, emergency capacity when it is not appreciated and when it is not recognized. I think we owe it to the oil market, to the stability of the market that we have to manage our capacity in a way that enables us to continue to again, our first and foremost endeavour, of sustainable stability of the market. That's what we owe actually to ourselves to start with, and to the rest of our colleagues in OPEC and OPEC+. And we really believe that we are doing a remarkable job attending to this task because, not only we're helping ourselves, but we are helping the industry, be it in the US, Patrick is here, he's enjoying what we're doing. I hope so. But also we believe that we're helping the world economy because there is nothing, as we have seen happening in 22, there is nothing that can be ruinous to the world economy more than not stable energy markets."*

Future energy security is not oil

Energy Transition: Hyundai the latest to pull back EVs ambition

It isn't just in the US that the major auto companies, including the ones leading on EVs, are pulling back on their EVs ambitions. In Hyundai's case, they are reported pulling back from their plan to move to all EVs to one that has increasing Hybrids. This week, it was Hyundai. On Tuesday, we tweeted [\[LINK\]](#) *"Hyundai latest to pull back #EVs ambition. "adding a hybrid model to its premium brand 'Genesis'. This is a revision of the previous strategy to release all new Genesis cars that will be introduced from next year as EVs", EVs sales were down YoY.*

Hyundai pulls back EVs ambition

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reports @hankyungmedia #OOTT.” Our tweet included the Hankyung (Korea media) report [\[LINK\]](#) that said “Hyundai Motor Company is adding a hybrid model to its premium brand 'Genesis'. This is a revision of the previous strategy to release all new Genesis cars that will be introduced from next year as electric vehicles. Considering the fact that the era of pure electric vehicles is likely to be slower than initially expected, and considering the annual sales of more than 200,000 Genesis units, the industry interprets that the company has the capacity to operate two-track vehicles such as electric vehicles and hybrid cars. According to the automobile industry on the 13th, Hyundai Motor Group has recently started developing a hybrid engine and related systems to be applied to Genesis. Considering that it is a premium brand, it is known that it will be developed based on a 2.5L engine, which is larger than the internal combustion engine (1.6L) used in the Carnival Hybrid. The industry expects it to be applied first to popular models such as the G80 and GV70. If all goes according to plan, Genesis' first hybrid model will be released next year. It is reported that it has not yet decided whether to develop a 'plug-in hybrid' (PHEV) model that charges the battery like a pure electric vehicle. The industry believes that Hyundai Motor Group's decision to develop the Genesis hybrid model is the result of judging that the 'slowdown in the growth of electric vehicles' will be prolonged. Instead of going straight from the internal combustion engine to an electric vehicle, it will put in an intermediate step called a hybrid to overcome the "electric vehicle growing pains." Our Supplemental Documents package includes the Google Translate of the Hankyung report.

South Korea EV sales flat YoY in 2023

The Hankyung report noted “The unstoppable popularity of electric vehicles began to decline in the second half of last year. Genesis alone saw a slight increase in overall sales last year (225,189 units) compared to a year ago (215,128 units), but the number of electric vehicle models (18,846 units →18,759 units) decreased. Hyundai expects its hybrid model to fill this gap.” Last week’s (Feb 11, 2024) Energy Tidbits memo wrote “The Korean car makers have been having strong success and reviews with their EVs in North America, but also in their home country, where EVs have gone through very rapid growth to roughly 40% of new car sales. But that rapid growth rate came to a halt in the data for 2023 EV and car sales and EV sales ended up basically flat YoY in 2023. On Monday, we tweeted [\[LINK\]](#) “More slowing #EVs growth EVs sales -0.1% YoY to 157,823 EVs in South Korea, key factors holding back are safety concerns on fires in a crash or during charging, & lack of fast chargers. @Business Heejin Kim. Peak #Oil demand will be further out than IEA forecasts. #OOTT.” Bloomberg reported on the Korea Automobile Manufacturers Association 2023 data that said “Yet EV sales slipped last year for the first time since 2017 — dipping 0.1% to 157,823 units.” Bloomberg also reported “According to a survey conducted by the Korea Transportation Safety Authority published in November, around half of EV owners said their biggest safety concern is a fire caused by a car crash, or during charging. Several high-profile incidents have stoked that worry. In 2022, an electric van that had finished charging but remained plugged in caught fire in the parking lot of an apartment building in Busan, quickly spreading to four other vehicles, according to a report from the National Fire Agency. In 2020, a passenger in a chauffeur-driven EV died when the car caught fire after crashing into the wall of an underground parking lot. That case resonates with Koreans, many of whom live in high-rise residential apartments. Fires at chargers in underground

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parking areas — a closed space where flames can spread quickly and fire trucks can have difficulty accessing make drivers even more nervous.” Our Supplemental Documents package includes the Bloomberg report.”

Energy Transition: JP Morgan, State Street, BlackRock (US) pull out of CA100+

It won't change the reality that there a very large number of global financial firms in the Climate Action 100+ (CA100+) that are still firmly committed to working to use their capital to convince companies to get on board with climate change actions. But, this week, we saw reports of three major defections from this group of financial firms – JPMorgan, State Street and BlackRock to a significant way. There may not have been politics as a reason, but it's hard not to believe politics is the key reason. These are all US based firms and they are seeing how Republican states are pulling capital invested from firms who are anti oil and gas. On Thursday, Reuters reported [\[LINK\]](#) “JPMorgan Chase's (JPM.N), opens new tab and State Street's (STT.N), opens new tab investment arms on Thursday both quit a global investor coalition pushing companies to rein in climate-damaging emissions, while BlackRock (BLK.N), opens new tab said it has transferred its membership to its international arm, limiting its involvement. The decisions together remove nearly \$14 trillion of total assets from efforts to coordinate Wall Street action on tackling climate change and came after the coalition, known as Climate Action 100+, or CA100+, asked signatories to take stronger action over laggards. Financial firms have faced growing pressure from Republican politicians over their membership of such groups, amid accusations that committing to shared action could be a breach of antitrust law or fiduciary duty.” Our Supplemental Documents package includes the Reuters report.

CQ100+ loses 3 big members

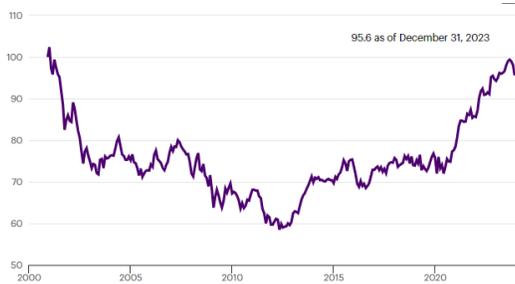
Capital Markets: WTW Cdn Pension Index down QoQ as yields dropped in Q4/23

Interest rates going lower is good for most but one group that gets hurt in their liabilities is pension funds as lower interest/discount rates mean the discounted liability of their future pension payouts is higher. We used WTW (Willis Towers Watson) Canada Q4 update to show how the lower discount rate impact on liability more than offset the increase in portfolio benchmark. Last Thursday, WTW posted its Pension Finance Watch Q4 2023 [\[LINK\]](#), which showed the WTW Pension Index was down 3.8% QoQ after yields dropped, with the Canadian 30-yr dropping as much as -79 bps over Q4/23. The Pension Fund Watch update for Q4/23 highlighted negative investment returns. wtw stated “The WTW Pension Liability Index increased by 15.9% for the quarter, reflecting the combined effect of interest accumulation and the benchmark discount rate change. The increase in accounting liability measures were partially offset by positive investment returns resulting in a net decrease in the WTW Pension Index over the quarter, from 99.4 to 95.6 as at December 31, 2023. The change in the WTW Pension Index does not reflect any contributions made to reduce the size of any deficit or any contribution holiday taken on account of any surplus.” Below is a chart of the WTW Pension Index from 2000 to present. Our Supplemental Documents package includes excerpts from the wtw Pension Finance Watch Q4 2023.

WTW Pension Finance Watch

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Figure 58: Change in WTW Pension Index



WTW Pension Index chart showing from 2000 to present (December 31, 2023).

Source: WTW (Willis Towers Watson)

Capital Markets – Japanese stocks +35% since Buffett Apr 12 CNBC interview

Japanese stocks continue to be on a run and the reality is that the run started with Warren Buffett’s CNBC interview on April 12, 2023. We try to watch Bloomberg TV’s evening shows on the opens in Asia and China. On Tuesday night, we saw the below Bloomberg TV chart and tweeted [LINK](#) “Thank you #WarrenBuffett say investors in Japanese stocks. He led the way in getting investors going on Japanese stocks in his 04/12/23 CNBC interview with @BeckyQuick. Nikkei +35% from 04/11/23 close. @business TV chart tonight.” The rally has been great and has brought Japan stocks back to the 1989 peak.

Warren Buffett effect

Figure 59: Japanese stocks near bubble highs



Source: Bloomberg

05/18/23: Seems like still a Warren Buffett effect, at least on Japanese stocks

The Warren Buffett impact on Japanese stocks didn’t come to our attention until we were watching Bloomberg TV Asia shows on May 18. Here is what we wrote in our May 21, 2023 Energy Tidbits memo. “We aren’t in the category of the Warren Buffett fanatics who think everything he says is gospel and he touches turns to gold. But we really respect what he has accomplished and continues to accomplish over the decades. It’s amazing when someone can be considered to be on the top of his game over many decades. So we couldn’t help tweet a Warren Buffett shout-out on Thursday, when we saw the below Bloomberg TV chart on how foreigners are loving Japanese stocks. We tweeted [LINK](#) “The #WarrenBuffett effect is still working. @business “foreigners loving Japanese stocks. positive flows into equities for 7th straight week”. Last 5 weeks were since #WarrenBuffett made his positive

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comments on Japanese trading houses in his @BeckyQuick Apr 12 interview in Japan. #OTT.” Buffett was in Japan in early April and there was big investor attention to the CNBC Becky Quick interview with Buffett and Greg Abel on April 12, where he made positive comments about the Japanese trading houses. We have to believe this got a lot of attention from investors around the world. Was it coincidental or did people follow? Given his following, we suspect a good portion of this was people following Warren Buffett into Japanese stocks.”

Figure 60: Positive flows into Japanese equities for 7th straight week



Source: Bloomberg

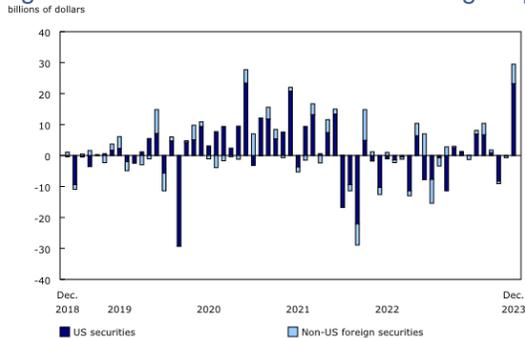
Capital Markets: Canadian investment in foreign shares hit all-time high in December

Statistics Canada released Canada's international transactions in securities for December 2023 on Friday [\[LINK\]](#). There was a huge outlay of investment into foreign markets in December. Canadian investors purchased +\$29.4bn of foreign securities in December, mainly US equities, the largest in the past 3 years. Combined with the purchase of non-US foreign shares of \$6.3bn, this is the most Canadians have invested outside of Canada in a single month, ever. Meanwhile, foreign investors added \$10.4bn of Canadian securities in December, even after a net divestment in Canadian equities. \$11.0bn of Canadian debt securities were purchased by foreign investors, down from \$16.3bn in November, mainly corporate bonds and debt instruments denominated in US dollars. Foreign investors dumped \$532mm worth of Canadian equities, marking the 11th month of divestment in 2023. The report stated “Canadian investors acquired an unprecedented \$29.4 billion of foreign securities in December, led by a record investment in foreign shares. Meanwhile, foreign investment in Canadian securities totalled \$10.4 billion, mainly in debt instruments. As a result, international transactions in securities generated a net outflow of funds of \$19.0 billion from the Canadian economy in December 2023”. We believe the trend of investments leaving Canada, even from Canadians, speaks to a lack of confidence in Canadian industry. Below is a graph illustrating Canadian investments in foreign equities.

International transactions in Cdn securities

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Figure 61: Canadian investment in foreign equities and investment funds



Source: Statistics Canada

Demographics: GoFundMe passes \$30 billion from 150 million people

There must be a fair amount of people who feel the same in liking GoFundMe as a way to try to help other people, especially those that we may be one or two degrees separated and aren't in our regular sphere of friends and families. And when you get a lot older, there are a lot of people who fit into that sphere. So we weren't surprised to see last week's note from GoFundMe CEO Tim Cadogan "Today, GoFundMe and Classy are announcing a record-setting milestone achieved by our community – \$30 billion of help delivered. This is a testament to the tremendous impact that comes from people asking and offering help. The \$30 billion represents more than 150 million people from all over the world coming together to help each other." Cadogan says more than 150 million people have used GoFundMe. Cadogan's note also included a split of the \$30 billion and we weren't surprised that \$24 billion was to help each other. Our Supplemental Documents package includes the GoFundMe CEO note. [\[LINK\]](#).

GoFundMe passes \$30 billion

Figure 62: GoFundMe's split of \$30 billion

- \$356M to care for Veterans
 - \$1M to grow community gardens
 - \$2B to recover from disasters
 - \$512M to fund faith groups
 - \$50M to help kids play sports
 - \$43M to supply wheelchairs
 - \$95M to support cancer nonprofits
 - \$1B to strengthen education
 - \$2M to cover school lunch debt
 - \$173M to protect the planet
 - \$400M to aid Ukraine
 - \$851M to save animals
 - \$114M to feed neighbors
 - \$24B to help each other
-
- \$30 billion and counting**

Source: GoFundMe

Twitter: Thank you for getting me to 10,000 followers

It may not last as followers can drop off but, In January, I went over 10,000 followers on Twitter/X. I really appreciate the support and, more importantly, some excellent insights and

@Energy_Tidbits on Twitter

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items to look at from Twitter followers. It helps me do a better job. For new followers to our Twitter, we are trying to tweet on breaking news or early views on energy items, most of which are followed up in detail in the Energy Tidbits memo or in separate blogs. Our Twitter handle is @Energy_Tidbits and can be followed at [\[LINK\]](#). We wanted to use Energy Tidbits in our name since I have been writing Energy Tidbits memos for over 20 consecutive years. Please take a look thru our tweets and you can see we aren't just retweeting other tweets. Rather we are trying to use Twitter for early views on energy items. Our Supplemental Documents package includes our tweets this week.

LinkedIn: Look for quick energy items from me on LinkedIn

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.

“Jet lag is a choice”

We thought one of the great lines from the on-the-field celebration of Kansas City Chiefs with friends, families and WAGS was from Taylor Swift, who flew back from performing in Tokyo to make it back a few hours before kickoff. There are many video clips of this exchange with Chiefs tight end Travis Kelce. Swift “*I’ve never been more proud in my life. I can’t believe you. How did you do that?*” Kelce “*How do you not have jet lag right now?*” Swift “*Jet lag is a choice!*” And her expression after she says it and looks at Kelce is a classic. It’s like come on, I am Taylor Swift, I don’t succumb to jet lag.

Figure 62: Taylor Swift after saying “jet lag is a choice”



Source: X

19,285 fans attended Toronto/Montreal PWHL game on Friday

It may not be the Leafs vs the Habs, but it’s Toronto vs Montreal and the fans came out big time on Friday night to see the Professional Women’s Hockey League game in Toronto where Toronto shut out Montreal 3-0. Anyone who has had the opportunity to be in front of 10,000 or more realizes it must have been such an amazing experience for these PWHL hockey stars when they got on the ice and saw a packed house of 19,285 fans at the Scotiabank Arena for their game. This beat

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the prior record for women's hockey that had 18,013 fans in the Canada/Finland game at the 2013 Women's world championship game in Ottawa. The prior PWHL record was 13,316 at the Minnesota/Montreal game at the Xcel Energy Center in St. Paul, Minn on Jan 6. Congratulations to the PWHL and kudos to the Toronto fans for their massive support to the PWHL.

Thursday Feb 22 is National Margarita Day

This is a holiday that many, including us, will celebrate. National Margarita Day is Thurs Feb 22. As usual, there is always a couple stories about who and where the margarita was invented. Foodimentary writes "*Some say the Margarita is a version of a popular prohibition drink called the Daisy, a drink found on Mexican border towns substituting brandy with tequila. Margarita in Spanish means Daisy. One 'Origin' Myth about the Margarita is that in October 1941, a bartender at Husson's cantina in Ensenada, Mexico created the drink for Margarita Henkel, a well known German celebrity. Another 'Origin' Myth about the Margarita is that in 1948 at the Balinese Room in Galveston, Texas created the drink for the singer Peggy Lee. The Spanish version of Peggy's name is Margarita (Margaret).*" For those fortunate to be in San Jose del Cabo, our favorite place for tacos and margaritas is La Lupita Taco & Mezcal. We were there on Feb 22, 2023 but won't be there on Thursday to celebrate but will on Saturday.

Figure 64: Margaritas at La Lupita Taco & Mezcal on Feb 22, 2023



Source: SAF Group

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