Energy Tidbits

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Produced by: Dan Tsubouchi

Shell Increases Its LNG Demand Forecast Thru 2040 & More Investment is Needed. FID Its 1.8 bcf/d LNG Canada Phase 2?

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1998 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. Shell upgrades its LNG demand forecast thru 2040 and says more LNG supply investment is needed to meet the demand. Would seem to set the stage for FID of its 1.8 bcf/d LNG Canada Phase 2. [click here]

2. We see Trump's public dressing down of Zelensky for the global audience as increasing the probability for the return of Russia pipeline natural gas i.e. a big potential negative to TTF and LNG prices. [click here]

3. Trump posted he will not be extending Chevron oil license in Venezuela i.e. the 6-month wind down has started. [click here]

4. WCS less WTI differentials stay narrow ahead of Trump's tariffs still scheduled to start on Tuesday. [click here]

5. Vortexa crude oil floating storage 7-week moving average is 72.47 mmb, highest since Aug. [click here]

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

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

Dan Tsubouchi
Chief Market Strategist
dtsubouchi@safgroup.ca

Ryan Dunfield
CEO
rdunfield@safgroup.ca

Aaron Bunting
COO, CFO
abunting@safgroup.ca

Ian Charles
Managing Director
icharles@safgroup.ca

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Natural Gas: -261 bcf draw in US gas storage, now -561 bcf YoY

-261 bcf draw in US gas storage

The very cold temperatures across most of the Lower 48 for the last few weeks has been great for storage. For the week ending Feb 21, the EIA reported a -261 bcf draw [LINK]. Total storage is now 1.840 tcf, representing a deficit of -561 bcf YoY compared to a deficit of -386 bcf last week. For much of 2024, storage figures exceeded the 5-year range but moved back into the 5-yr range as winter approached and continues to be within the 5-yr range. The week of Feb 21 saw storage at -238 bcf below the 5-yr average, down from last week's deficit of -118 bcf to the 5-yr average. Below is the EIA's storage table from its Weekly Natural Gas Storage report and a table showing the US gas storage over the last 8 weeks.

Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (02/21/24)		5-year average (2020-24)	
Region	02/21/25	02/14/25	net change	implied flow	Bcf	% change	Bcf	% change
East	362	419	-57	-57	468	-22.6	441	-17.9
Midwest	424	494	-70	-70	609	-30.4	537	-21.0
Mountain	168	182	-14	-14	170	-1.2	121	38.8
Pacific	198	208	-10	-10	217	-8.8	180	10.0
South Central	688	799	-111	-111	938	-26.7	798	-13.8
Salt	159	214	-55	-55	276	-42.4	220	-27.7
Nonsalt	528	585	-57	-57	662	-20.2	579	-8.8
Total	1,840	2,101	-261	-261	2,401	-23.4	2,078	-11.5

Source: EIA

Figure 2: Previous US Natural Gas Storage

Previous 8 weeks (Bcf)				
Week Ended	Gas in Storage	Weekly Change	Y/Y Diff	Diff to 5 yr Avg
Jan/03	3,373	-40	-3	207
Jan/10	3,115	-258	-111	77
Jan/17	2,892	-223	-57	21
Jan/24	2,571	-321	-144	-111
Jan/31	2,397	-174	-208	-111
Feb/07	2,297	-100	-248	-67
Feb/14	2,101	-196	-386	-118
Feb/21	1,840	-261	-561	-238

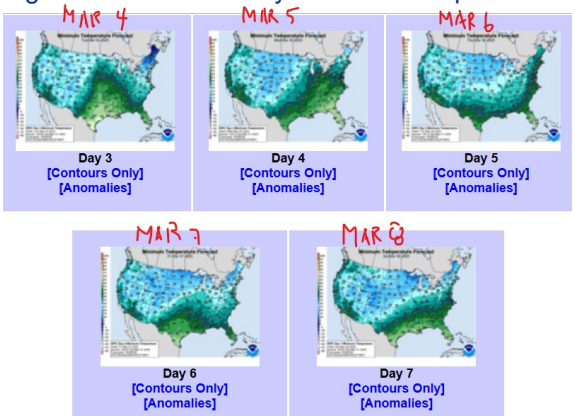
Source: EIA

Natural Gas: The end of winter driven natural gas demand is mostly over

NOAA 3-7 day temperature

Its March, which means that winter driven temperature demand is, to the most part, over. And that also means we won't be including NOAA's 3-7, 6-10, and 8-14 day temperature outlooks for the next month or so until we get closer to May and the potential for warmer May temperatures or even a colder May. Yesterday's NOAA 3- day temperature did show parts of the US still going to zero overnight so some weather driven demand but daytime highs in the double digits for the next week or so. Below is the NOAA minimum temperature map for the next 3-7 days as posted yesterday.

Figure 3: NOAA 3-7 day minimum temperature forecast for March 4-8



Source: NOAA

Natural Gas: US December natural gas production +0.2 bcf/d YoY to 105.7 bcf/d

US December gas production

On Friday, the EIA released its Natural Gas Monthly [LINK], which includes its estimated "actuals" for December dry gas production. Key items to note are as follows: (i) December was 105.7 bcf/d, which followed November's revised 103.2 bcf/d. The EIA does not provide any explanation for the MoM change. (ii) December at 105.7 bcf/d is up +0.2 bcf/d YoY and down -0.2 bcf/d since the high in February of 105.9 bcf/d. (iii) November's data was revised up +0.3 bcf/d, to 103.2 bcf/d. (iv) December's production of 105.7 bcf/d was up +2.5 bcf/d MoM and up +0.2 bcf/d YoY from December 2023's figure of 105.5 bcf/d, which was the high in production for 2023. The EIA does not provide any commentary. Our Supplemental Documents package includes the EIA Natural Gas Monthly.

Figure 4: US dry natural gas production

bcf/d	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Jan	65.3	66.8	73.4	73.6	70.6	78.7	89.3	97.4	92.6	96.2	102.0	103.5
Feb	65.4	68.4	73.8	74.6	71.5	80.4	89.9	95.5	85.8	96.0	101.8	105.9
March	65.3	68.9	74.1	73.8	73.2	81.3	90.3	95.3	93.6	97.6	103.2	102.6
Apr	66.1	70.5	75.2	73.7	73.3	81.2	90.7	95.0	94.3	98.3	102.3	101.7
May	65.9	70.2	74.1	72.9	73.3	82.1	91.4	87.9	94.2	99.1	103.5	101.5
June	65.8	70.5	74.0	72.2	74.0	82.5	91.7	90.4	93.9	99.3	103.1	102.8
July	67.1	72.0	74.2	72.8	74.7	84.2	92.2	90.3	94.8	100.4	103.3	104.1
Aug	66.9	72.4	74.3	72.2	74.7	85.9	94.4	90.4	95.0	100.9	104.1	103.0
Sept	66.8	72.4	74.7	71.7	76.0	87.3	94.8	91.3	95.7	102.4	104.2	101.8
Oct	67.0	73.1	74.2	71.4	77.3	88.4	95.6	89.7	97.2	102.2	104.1	102.9
Nov	67.7	72.6	73.9	72.0	79.8	89.9	97.2	92.5	98.3	102.2	105.5	103.2
Dec	66.5	73.2	73.9	71.2	80.4	89.5	97.1	93.1	99.1	100.2	105.5	105.7
Average	66.3	70.9	74.2	72.7	74.9	84.3	92.9	92.4	94.5	99.6	103.6	103.2

Source: EIA

Natural Gas: US natural gas pipeline exports to Mexico down -0.22 bcf/d MoM in Dec

US to Mexico December natural gas exports

On Monday, the Department of Energy (DOE) posted its Natural Gas Imports and Exports Monthly [LINK], which includes its estimate for December natural gas exports via pipeline to Mexico. These are the same data points that came out on Friday in the more referenced EIA Natural Gas Monthly. Natural gas exports to Mexico were down -0.22 bcf/d to 5.72 bcf/d in December from 5.94 bcf/d in November and were immaterially changed YoY from 5.75 bcf/d in December 2023. There was no revision to November's figures. The DOE doesn't provide a split for pipeline vs LNG or CNG exports to Mexico, but we believe essentially 100% of the exports are via pipeline, without any CNG/LNG in the mix. Please note that we will note if we

ever believe there are any notable CNG/LNG exports to Mexico. Below is a summary of natural gas via pipeline exports to Mexico from the US. Our Supplemental Documents package includes excerpts from the DOE US Natural Gas Imports and Exports Monthly.

Figure 5: US Natural Gas Pipeline Exports to Mexico

(bcf/d)	2019	2020	2021	2022	2023	2024
January	5.32	5.41	5.59	5.67	5.46	5.97
February	5.08	5.32	5.39	5.54	5.46	5.84
March	5.05	5.60	5.91	5.48	5.83	5.87
April	5.01	4.62	6.10	5.89	5.64	6.34
May	5.61	4.69	6.21	6.00	6.25	6.82
June	5.78	5.43	6.61	6.21	6.80	6.77
July	6.20	5.85	6.40	6.12	6.79	6.75
August	5.87	6.12	6.25	5.89	6.87	7.12
September	5.77	6.18	5.96	5.64	6.75	6.85
October	5.75	6.23	5.99	5.55	6.51	6.48
November	5.40	5.64	5.52	5.37	5.97	5.94
December	5.20	5.31	5.39	5.14	5.75	5.72
Average	**5.50**	**5.53**	**5.94**	**5.71**	**6.17**	**6.37**

Source: DOE, SAF

Natural Gas: US LNG exports increase +0.72 bcf/d MoM to 13.25 bcf/d in Dec

US December LNG exports

The DOE's Natural Gas Imports and Exports Monthly [LINK] was posted on Monday and it also included the US LNG export data for December, which is the same data as in the more commonly referenced US LNG exports from the EIA's Natural Gas Monthly that came out on Friday. The EIA is a group within the DOE, so the data for LNG exports is either identical or just a rounding issue. US LNG exports were up +0.72 bcf/d MoM in December at 13.25 bcf/d but down -0.39 bcf/d YoY from 13.64 bcf/d in December 2023. The top five country destinations for US LNG in December were Turkey at 2.23 bcf/d, United Kingdom at 1.84 bcf/d, France at 1.39 bcf/d, Spain at 1.06 bcf/d, and the Netherlands at 0.90 bcf/d. The DOE did not comment on the MoM or YoY changes. Our Supplemental Documents package includes excerpts from the DOE natural gas imports and exports monthly.

Figure 6: US Monthly LNG Exports

(bcf/d)	2019	2020	2021	2022	2023	2024
January	4.10	8.10	9.80	11.40	10.90	12.78
February	3.70	8.10	7.40	11.30	11.70	12.38
March	4.20	7.90	10.40	11.70	11.80	11.93
April	4.20	7.00	10.20	11.00	12.50	10.13
May	4.70	5.90	10.20	11.30	11.80	11.86
June	4.70	3.60	9.00	10.00	10.93	11.88
July	5.10	3.10	9.70	9.70	11.30	10.45
August	4.50	3.60	9.60	9.70	11.40	11.73
September	5.30	5.00	9.50	9.80	11.55	12.10
October	5.70	7.20	9.66	9.98	12.40	12.13
November	6.40	9.40	10.20	10.10	12.87	12.53
December	7.10	9.80	11.10	11.00	13.64	13.25
Average	**4.98**	**6.56**	**9.73**	**10.58**	**11.90**	**11.93**

Source: EIA, DOE

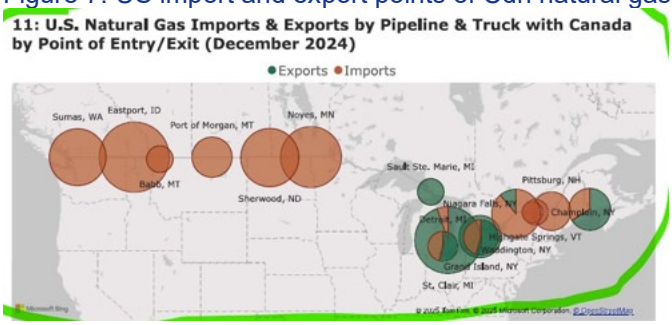
Natural Gas: US net natural gas imported from Canada 6.08 bcf/d in 2024

US net importer of natural gas from Canada

On Thursday, Trump posted that he still intends to proceed with tariffs on Canada on Tuesday. And there has been no indication of any change to Trump's plan to have a 10% tariff on Cdn energy resources. On Wednesday, we posted [LINK] "*DYK? US net imports of NatGas from Canada a.k.a. what Trump calls US subsidizing Canada. 2024: 2,224.3 bcf or 6.08 bcf/d. per @ENERGY. Using $3, that's $6.7b worth of #NatGas. #OOTT."* On Monday, the DOE posted its monthly report US Natural Gas Imports an Exports Monthly. Notwithstanding the US is the world's largest LNG exporter, the US is a net importer of Cdn

natural gas but it nothing compared to US net imports of Cdn oil. But it is part of Trump's US is subsidizing Canada to $250 billion or whatever is his latest estimate. The DOE estimates the US was a net importer of natural gas from Canada of 6.08 bcf/d. Below is the DOE general map of US import points of Cdn natural gas. Our Supplemental Documents package includes excerpts from the DOE Natural Gas Imports & Exports Monthly.

Figure 7: US import and export points of Cdn natural gas by pipeline and truck



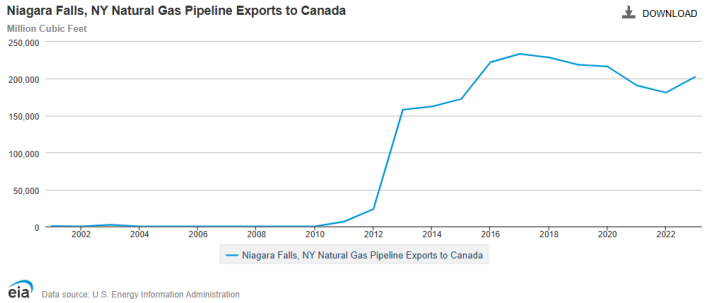
Source: DOE

Trump wants Marcellus gas for New England, therefore not Ontario

In the early days of Trump announcing the tariffs on Canadian oi l and natural gas, we were asked on whether Trump would stop US natural gas exports to Ontario, we said that it wasn't that Trump would stop the natural gas exports. Rather, it's Trump wanting to get natural as pipelines into and within New England so US natural gas can penetrate those markets. Our point was that, if so, that would mean less Marcellus/Utica natural gas for export. Here is what we wrote in our Feb 16, 2025 memo. "*Trump wants Marcellus gas for New England, therefore not Ontario. Earlier this morning, we posted [LINK] on Trump's Friday Executive Order establishing his Energy Dominance Council and noted the winners/losers from the his mandate to the council. Our post included "#Marcellus #NatGas wins "approving the construction of natural gas pipelines to, or in, New England, California, Alaska, and other areas of the country underserved by American natural gas; " Note the "or in". Eastern Canada loses if Marcellus NatGas can stay in US and doesn't get exported to eastern Canada. ie. ~0.6 bcf/d via Niagara Falls." Trump wants to get natural gas pipelines to and into New England, which has been for a well over a decade something Marcellus producers have been trying to done but haven't been able to get approved federal and state regulators. We would expect Trump's federal regulators to be okay but then the question will be the states. And knowing Trump's style, there will be some sort of big threat to force the states to ultimately get onside. IF so and it is still an IF, then it will mean Marcellus/Utica natural gas can feed local regional markets and it should lead to lower Marcellus gas price differentials. Then the flip side is that IF Marcellus gas can stay regional, then it would mean less natural gas exports at Niagara Falls to Ontario. This was a big event 15 years ago when Marcellus natural gas started to be exports via Niagara Falls. It went from zero to its current ~0.6 bcf/d. Earlier this morning, we also posted [LINK] "Marcellus #NatGas exports ~0.6 bcf/d to Ontario via Niagara Falls export point per @EIAgov. IF and a big IF, Trump Energy Dominance Council can get pipelines to and IN New*

England, be better market for Marcellus than Canada. #OOTT." Our post included the below EIA graph of natural gas exports to Ontario at the Niagara Falls export point."

Figure 8: Niagara Falls, NY natural gas pipeline exports to Canada



Source: EIA

Natural Gas: Mexico's natural gas production down MoM in Jan, stuck below 5 bcf/d

Mexico Jan natural gas production

Whether Mexico new President Sheinbaum likes it or not, any increasing Mexico natural gas consumption will continue to mean increasing natural gas pipeline imports from the US and/or LNG imports. On Tuesday, Pemex posted its natural gas production data for January [LINK]. Pemex reported January natural gas production of 4.368 bcf/d, which is down -8.6% YoY from 4.780 bcf/d in January 2024 and down -0.7% MoM from 4.400 bcf/d in December 2024. The big picture story for Mexico natural gas for the past six years has been that Mexico natural gas production has been stuck at or below 5 bcf/d, and that means any increased domestic natural gas consumption has been met by US natural gas imports. Below is our ongoing table of Pemex reported monthly natural gas production.

Figure 9: Mexico Natural Gas Production

Natural Gas Production bcf/d	2018	2019	2020	2021	2022	2023	2024	2025	YoY%
Jan	4.910	4.648	5.005	4.848	4.713	4.955	4.780	4.368	-8.6%
Feb	4.853	4.869	4.942	4.854	4.646	4.979	4.777		-4.1%
Mar	4.646	4.857	4.946	4.839	4.766	5.035	4.768		-5.3%
Apr	4.869	4.816	4.827	4.671	4.740	5.095	4.500		-11.7%
May	4.827	4.841	4.460	4.730	4.702	5.034	4.488		-10.8%
June	4.840	4.843	4.754	4.727	4.744	5.035	4.606		-8.5%
July	4.856	4.892	4.902	4.725	4.815	4.936	4.566		-7.5%
Aug	4.898	4.939	4.920	4.656	4.796	4.947	4.534		-8.3%
Sept	4.913	5.017	4.926	4.746	4.798	4.969	4.515		-9.1%
Oct	4.895	4.971	4.928	4.718	4.795	4.950	4.503		-9.0%
Nov	4.776	5.015	4.769	4.751	4.845	4.888	4.432		-9.3%
Dec	4.881	5.024	4.846	4.697	4.845	4.786	4.400		-8.1%

Source: Pemex

Natural Gas: Southern reminds big value uplift to existing natural gas power plants

Big value uplift to natural gas power plants

Yesterday, the WSJ report "*AI Fever in Power Stocks Moves From Nuclear to Plain Natural Gas*" [LINK] wrote "*Next to existing nuclear power, new natural gas-fired power is the best bet for AI because it runs around the clock and can be built much faster than nuclear power."* Don't disagree that new natural gas plants have those advantages. However, we think the WSJ missed what has an advantage over both – existing relatively new natural gas power plants that can be expanded. We highlighted this theme in last week's (Feb 23, 2025) Energy Tidbits memo with Southern's comments on their Q4 call. . Here is what we wrote "*Southern reminds big value uplift to existing natural gas power plants. Even prior to the AI*

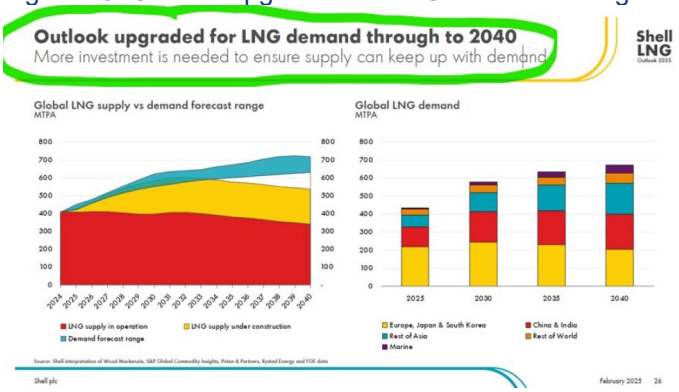
data center boost, one of our big themes for the past few years has been that existing natural gas power plants will see a value uplift as the energy transition was going to take way longer, cost way more and be a rocky/bumpy road. We have said this about the energy transition for many years. And it meant that relatively new existing natural gas power generation would have big upside lift to value as renewable proved to not match the pace and reliability of the energy transition aspirations. And then in the last year, data centers have taken that to a new level as the market started to realize in 2024 that renewables couldn't power data centers. The data centers would take as much renewable power as available but they needed natural gas, coal and nuclear for their 24/7 power generation. This means existing natural gas power generation will have an even bigger value uplift. Southern made a very clear statement on this this view in their Q4 call on Thursday. In their prepared remarks, mgmt said "First, as contracts on our existing natural gas fleet come up for renewal beginning in the early 2030, the load growth in the Southeast is expected to support future renewal pricing that is significantly higher than our existing contracts. Second, meaningful upgrade opportunities are being evaluated on Southern Power's legacy natural gas fleet. These could translate into several hundred additional megawatts available to meet future market demands for capacity. Third, Southern Power has options at its existing plant sites to build new brownfield power plants in the Southeast. And, lastly, Southern Power is exploring opportunities outside of the Southeast to serve data centers with new natural gas generation. We are very gratified to have developed and retained this incredibly valuable business, as it represents a tremendous opportunity to support sustainable growth well into the next decade."

Natural Gas: Shell increases LNG demand thru 2040, says more investment is needed

Shell says more LNG investment is needed

No one should have been surprised to have seen Shell's LNG Outlook 2025 come out with an upgraded bullish view of LNG demand growth and highlighting the need for more LNG supply investment to meet the growth. Early Tuesday morning, we saw the Shell slide deck and their clear quotes on LNG demand growth and need for investment and posted [LINK] ""*Outlook upgraded for LNG demand through to 2040. More investment is needed to ensure supply can keep up with demand" Shell #LNG Outlook. More investment needed? what about FID for Shell's 1.8 bcf/d LNG Canada Phase 2. See 👇02/12 post. Shell signaled the upgrade to LNG demand. #OOTT #NatGas."* We subsequently watched the webcast replay and mgmt's comments provided the background for why they increased their LNG demand forecast. Shell included a range of LNG demand forecasts and, even under the bottom end of the demand range, there is still a big LNG supply gap emerging in the early 2030s and, at the high end of the range, there is a LNG supply gap emerging starting in 2026., And Shell had a simple message "*more investment is needed to ensure supply can keep up with demand*." As our post said Shell's view that more investment is needed in LNG supply to fill the gap has to be a very bullish view that Shell will FID the 1.8 bcf/d LNG Canada Phase 2.

Figure 10: Outlook upgraded for LNG demand through to 2040

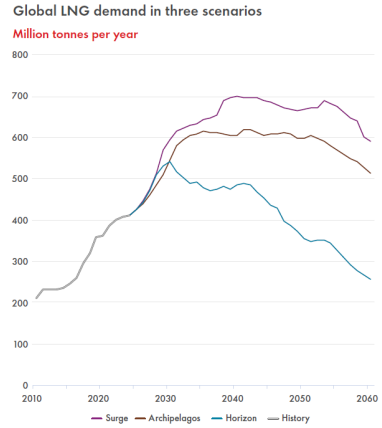


Source: Shell LNG Outlook 2025

02/12/25:Shell sees significant LNG demand growth, LNG Canada Phase 2 FID?

We said no one should have been surprised to see Shell upgrade its LNG demand forecast. Two weeks ago, we thought Shell previewed that investors should expect to see a bullish outlook for LNG demand. Here is what we wrote in our Feb 16, 2025 Energy Tidbits memo. "*Shell sees significant LNG demand growth, LNG Canada Phase 2 FID? Shell is holding its big LNG Outlook 2025 on Feb 25, but it looks like they gave away the LNG views in their just released Shell 2025 Energy Security Scenarios posted on Wed. Early Wed morning, we posted [LINK] "Spoiler alert for Shell's LNG Outlook 2025 on Feb 25. "In all three scenarios, LNG shows significant [demand] growth in the near term". 👇Shell 2025 Energy Security Scenarios. This demand outlook should be favorable for LNG Canada 1.8 bcfd Phase 2 FID in 2025. #OOTT #NatGas." Our post included Shell's slide "LNG in three scenarios". And Shell is very bullish on LNG demand growth. We wish they would just use scenarios with normal names. Rather Shell has three scenarios. Horizon is really another way of saying Net Zero, it is the "rapid acceleration of the energy transition" that will sharply reduce emissions to reach net zero by 2050 and limit global warming to 1.5C by end of the century. Archipelagos seems to be something like but not quite a business as usual case. Surge is "an era of robust economic growth is ushered in by AI technologies that are welcomed and not overly challenged, with economic growth and AI infrastructure driving up energy demand." Here is what Shell wrote on LNG. "In all three scenarios, liquefied natural gas (LNG) shows significant growth in the near term, fuelled by ongoing projects in Qatar and the USA, reaching around 550 million tonnes per year (mtpa) by the end of the decade. Divergence between the scenarios is a function of project timelines up until about 2030, but after that the scenarios diverge significantly as the different scenario drivers take hold." No surprise, the Net Zero type scenario shows LNG dropping steadily after 2030 to meet Net Zero emissions. But the other two scenarios see strong global LNG demand growth after 2030. It is why our post included the comment that this LNG demand growth outlook should be good for the potential of a FID for LNG Canada 1.8 bcf/d Phase 2. Below is the Shell Global LNG demand graph."*

Figure 11: Global LNG demand forecast



Source: Shell 2025 Energy Security Scenarios

TC Energy CEOs "very bullish" on CGL Phase 2 ie. LNG Canada Phase 2

We have also been highlighting how TC Energy CEO' wouldn't be publicly saying he was very bullish on a FID for Coastal GasLink Phase 2 unless he had some sort of strong view that Shell and LNG Canada were going to FID the 1.8 bcf/d LNG Canada Phase 2. Here is what we wrote last week's (Feb 23, 2025) Energy Tidbits memo that was titled "*TC Energy CEO must Expect FID on 1.8 bcf/d LNG Canada Phase 2 as he is "Very Bullish" on Prospects for CGL Phase 2*." "*TC Energy CEOs "very bullish" on CGL Phase 2 ie. LNG Canada Phase 2. We were surprised that TC Energy CEO Poirier's Feb 14 "very bullish" view on CGL Phase 2 proceeding didn't get an attention from media and analysts. CEO Poirier clearly points to the expectation for Shell and LNG Canada to FID the 1.8 bcf/d LNG Canada Phase 2. So on Thursday, we posted [LINK] "02/14/25: TC Energy CEO is "very bullish about the prospects for CGL Phase 2". CGL Phase 2 will supply #NatGas for LNG Canada brownfield 1.8 bcf/d Phase 2. Surely CEO Poirier has reason to believe Shell/LNG Canada Phase 2 FID is highly likely to go. #OOTT. Coastal GasLink Phase 2 is the expansion of the Coastal GasLink that will add compression and equipment so the Coastal GasLink pipeline that feeds LNG Canada 1.8 bcf/d Phase 1 can handle double the natural gas so that the expanded CGL, CGL Phase 2, can deliver all the natural gas for LNG Canada 1.8 bcf/d Phase 2. On the Q4 call, CEO Poirier highlighted he is "very bullish" for CGL Phase 2 and our view is simple – Surely CEO Poirier has reason to believe that Shell/LNG Canada will FID the LNG Canada 1.8 bcf/d Phase 2 in the coming weeks or months. There is no way a big company CEO would say he is very bullish on a project proceeding that depends on another party's FID unless he had reason to believe that the other party would FID their project. Our post included an excerpt from the transcript of CEO Poirier's reply in the Q&A "On the natural gas side, there is absolutely demand for more LNG export and market opportunity for us to prosecute. We're very bullish about the prospects for CGL Phase 2 happening. That, of course, is only an input into the FID decision that our customer LNG Canada will make in due course."*

ADNOC & Osaka 15 yr LNG supply deal

Natural Gas: ADNOC signs long-term 0.11 bcf/d LNG supply deal with Osaka

On Thursday, ADNOC announced that it had signed a long-term LNG sales agreement with Osaka Gas for a supply of up to 0.11 bcf/d for 15-years, with first deliveries to begin in 2028 [LINK]. The LNG will be sourced primarily from the lower-carbon Ruwais LNG project. The press release said, "*The LNG will be primarily sourced from the Ruwais LNG project, which is under development in Al Ruwais Industrial City, Abu Dhabi, and is scheduled to start commercial operations in 2028. The SPA is the fourth signed for Ruwais LNG, marking another milestone in ADNOC's global LNG expansion strategy and reinforcing the company's position as a leading global supplier of lower-carbon LNG. To date, up to 8 mtpa of the Ruwais LNG project's 9.6 mtpa production capacity has been committed to international buyers across Asia and Europe through long-term arrangements."* The Senior Vice President of Marketing at ADNOC, Rashid Khalfan Al Mazrouei, said: "*This agreement with Osaka Gas reinforces our long-standing energy partnership with Japan and supports our strategy to expand our global LNG footprint. Through our world-class Ruwais LNG project, ADNOC will continue to provide more lower-carbon gas to meet growing global demand, fuel industries and power homes.*" Our Supplemental Documents Package includes the ADNOC press release.

There have been 28.51 bcf/d of long-term LNG supply deals since July 1, 2021

It's been a busy last five years of long-term LNG deals and, even though high-profile calls, such as the IEA are for peak natural gas consumption by 2030, buyers continue to lock up long-term LNG supply. This 5-year big wave of LNG deals started in July 2021, and we highlighted this in our July 14, 2021, 8-pg "*Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support for Brownfield LNG FIDs*". We continue to update that table, which now amounts to 28.51 bcf/d of long-term LNG deals since July 1, 2021. 65% of the deals have been by Asian LNG buyers. Note in our non-Asian LNG deals, major LNG players (i.e. Chevron, Shell, etc.) are buying for their LNG portfolio supply. China has been particularly active in this space, accounting for 42% of all Asian LNG buyers in long term contracts since July 1, 2021. There have been so many long-term LNG deals since the market changed back to long-term LNG deals in the spring of 2021 that we have now summarized on a per quarter basis. But our Supplemental Documents package includes our detailed by deal table for all long-term LNG deals since July 1, 2021.

Figure 12: Long-Term LNG Quarterly Buyer Deals Since July 1, 2021

Long-Term LNG Quarterly Deals Since July 1, 2021						
Quarter	Deals	Volume	Average deal length	Asian buyers	European buyers	Other buyers
	(#)	(bcf/d)	(years)	(%)	(%)	(%)
Q3 2021	6	1.6	15.3	83.8%	16.3%	0.0%
Q4 2021	13	2.1	15.4	94.8%	5.2%	0.0%
Q1 2022	8	2.3	19.5	77.1%	0.0%	22.9%
Q2 2022	18	3.7	18.6	44.0%	42.1%	13.9%
Q3 2022	9	1.8	19.3	54.1%	7.3%	38.6%
Q4 2022	7	1.4	17.4	55.4%	44.6%	0.0%
Q1 2023	7	1.3	17.1	69.1%	30.9%	0.0%
Q2 2023	9	2.0	18.4	69.6%	26.5%	3.9%
Q3 2023	9	1.1	14.1	37.8%	9.2%	53.0%
Q4 2023	10	2.2	20.8	33.6%	58.7%	7.7%
Q1 2024	10	2.1	15.7	93.9%	6.1%	0.0%
Q2 2024	10	2.1	14.3	41.3%	8.9%	49.8%
Q3 2024	13	2.7	13.7	77.5%	19.3%	3.2%
Q4 2024	9	1.6	14.0	78.5%	5.0%	16.6%
Q1 2025	5	0.5	12.8	60.0%	0.0%	40.0%

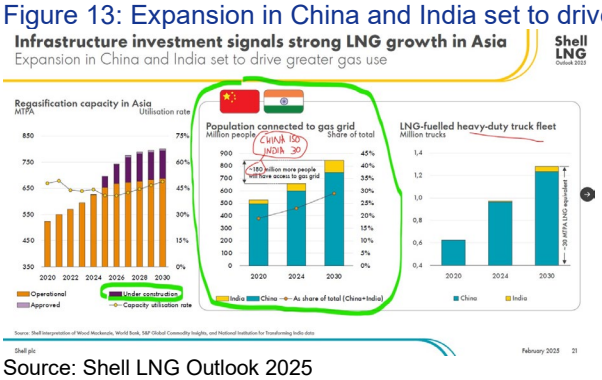
Source: SAF

Natural Gas: Shell sees sustained strong growth in China/India LNG demand growth

Shell sees strong LNG demand growth in China & India

One of the key reasons for Shell's upgrade to its LNG demand forecast is the strong growth expected in Asia including the two most significant LNG growth countries – China and India. Shell highlighted a number of reasons such India's building out of regasification to allow more LNG unloading, continued strong growth in LNG-fueled heavy-duty trucks, the maturing natural gas supply that is turning former LNG exporters such as Indonesia and Thailand into LNG importers. But one overlooked Natural Gas 101 theme caught our attention – how once a natural gas distribution network is established, it's relatively easy to tie in more customers to the established network ie. like what happens when a new subdivision is built, it ties into the natural gas network on the former previous last subdivision on the grid. This is what happened as the natural gas grid expanded in North America 50 years ago. And once you connect people to the natural gas network, natural gas is then the baseload power. Shell sees 180 million more people in China and India being added to natural gas distribution networks. On Wed, we posted [LINK] "*Shells sees China/India to connect 180 million people to #NatGas by 2030. Similar # of people, 183 mm, as US total 73.2 million "residential consumers" if 2.5 people per residential consumer that consume 12.4 bcf/d. China/India per person NatGas consumption intensity will be much lower. At 1/3 to 1/2 that would be 4 to 6 bcf/d. #OOTT."* Shell sees 150 million more Chinese and 30 million more Indians being connected to natural gas networks by 2030. Note that this was the number of people to be connected and not the number of households. We aren't surprised that it's only 30 million in India. India hasn't yet had the regasification to drive up LNG imports to support a big build out of the natural gas distribution network.

Figure 13: Expansion in China and India set to drive greater gas use



Source: Shell LNG Outlook 2025

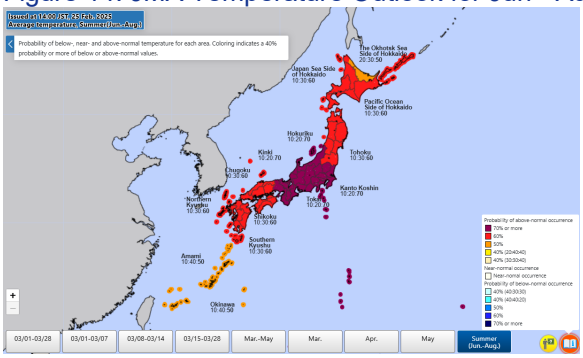
Natural Gas: JMA forecasts much warmer than normal temperatures for Jun/Jul/Aug

JMA JJA summer temperature forecast

Please note we won't be including the JMA 30-day temperature forecasts for a couple months as it is shoulder season so there should be little weather driven demand for natural gas. We will pick up again in May as the look moves to late May/June when it starts to get hotter and humid. However, on Thursday the Japan Meteorological Agency (JMA) updated its temperature forecast for June/July/Aug in Japan [LINK]. There is no JMA commentary on the forecasts. JMA is forecasting a 50% or more probability of much warmer than normal temperatures throughout Japan for June through August. A hot summer can be a big boost to natural gas consumption, and so far, the summer prediction would indicate increased natural

gas demand as it will be hot. Note that, at this time, the JMA forecast for June/July/Aug is looking similar to the actual temperatures last June/July/Aug where it was warmer than normal for all three months. Below is the JMA's seasonal temperature probability forecast for the summer (June-August).

Figure 14: JMA Temperature Outlook for Jun - Aug



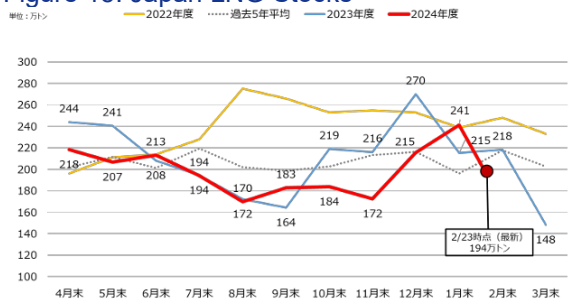
Source: Japan Meteorological Agency

Natural Gas: Japan LNG stocks down WoW and YoY; down against to 5-yr avg

Japan LNG stocks down WoW

It looks like the colder than normal start to Feb led to Japan's LNG stocks being down WoW, YoY, and when compared to the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on February 23 were at 93.2 bcf, down -3.5% WoW from 96.5 bcf on February 16, and down -11.0% from a year ago. Stocks are down compared to the 5-year average of 104.7 bcf. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 15: Japan LNG Stocks



Source: METI

Source: Japan Meteorological Agency

Natural Gas: Japan LNG imports up MoM and YoY in January

Japan LNG imports

On Thursday, Japan's Ministry of Finance (MOF) posted its import data for January [LINK]. The MOF reported Japan's January LNG imports were 10.28 bcf/d, up +4.4% MoM from December, which was 9.85 bcf/d, and up +8.7% YoY from 9.46 bcf/d in January 2024. There was a warm start to winter in Japan so there was no urgency to ramp up LNG imports in Dec and Jan. Plus, thermal coal is cheaper, and Japan will preferentially take more thermal coal

than LNG for electricity generation due to prices. Japan's thermal coal imports in January were up +4.5% YoY. Petroleum Products imports were up +3.7% YoY. Below is our table that tracks Japan LNG import data.

Figure 16: Japan Monthly LNG Imports

bcf/d	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	YoY%
Jan	12.66	13.06	11.22	12.85	12.79	11.69	11.63	12.48	10.51	10.56	9.46	10.28	8.7%
Feb	12.88	13.26	12.30	13.36	14.23	12.61	10.99	13.84	12.19	10.98	9.97		-9.2%
Mar	12.46	12.60	12.62	12.61	12.28	11.30	11.16	11.04	10.07	8.86	8.59		-3.0%
Apr	11.54	10.56	10.21	10.52	8.97	9.00	8.31	7.96	8.92	7.25	8.46		16.6%
May	10.06	8.91	8.55	9.66	9.92	8.62	7.09	7.67	8.92	7.14	7.54		5.6%
June	10.91	10.61	10.02	9.90	8.88	8.32	8.42	9.13	9.29	7.25	7.31		0.8%
July	12.14	10.77	10.19	10.19	10.55	10.56	9.35	9.58	9.54	7.88	8.70		10.4%
Aug	10.92	10.93	11.96	11.24	11.73	9.45	9.04	9.75	9.71	8.78	8.87		1.0%
Sept	11.64	11.06	10.67	9.31	10.04	10.30	10.41	8.66	8.52	8.84	8.69		-1.7%
Oct	10.75	9.38	9.73	9.50	10.12	9.75	9.20	7.17	7.88	8.38	8.19		-2.2%
Nov	11.00	10.71	12.07	10.26	10.15	10.03	9.63	9.38	8.88	8.53	8.08		-5.3%
Dec	12.79	12.51	11.69	12.31	11.23	10.54	11.96	10.89	9.39	10.06	9.85		-2.1%

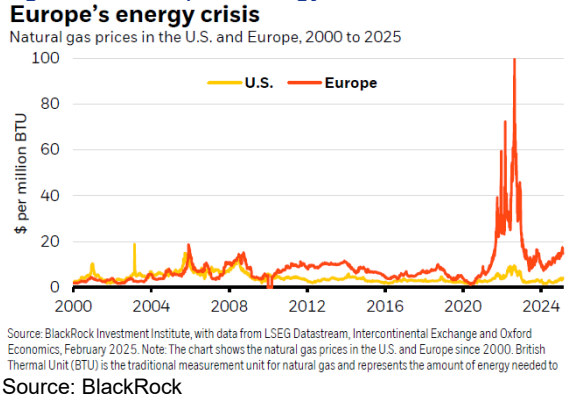
Source: Japan Ministry of Finance, SAF

Natural Gas: BlackRock highlights potential catalyst RUS NatGas to Europe

Natural gas price is crucial for Europe

On Friday, we posted [LINK] "*Positives & Negatives. Just like there is a big risk to TTF & LNG prices if Trump/Putin deal for Ukraine sees Russia pipeline #NatGas back to Europe. BlackRock upgrades Europe with key potential catalyst being a return of Russia #NatGas to boost Europe economy. #OOTT.*" This week, BlackRock upgraded its Europe weighting from underweight to neutral and they see several potential catalysts to turn around poor sentiment. The one potential catalyst they highlighted was natural gas. For years and before Russia invaded Ukraine, we have highlighted how high natural gas prices has been the big economic hit to Europe, in particular to Germany. BlackRock choosing to highlight natural gas reinforces that view. BlackRock wrote "*One example: Possible de-escalation in the Ukraine war. Reduced reliance on Russian gas brought European energy prices down from 2022's highs. See the chart. A form of peace agreement could lower energy prices further, boosting European growth and lowering inflation. This is just one of several catalysts we think could broaden U.S. equity strength to Europe.*" Our Supplemental Documents package includes BlackRock's Feb 24 weekly investment commentary.

Figure 17: Europe's energy crisis



Source: BlackRock

Natural Gas: Increasing downside risk to TTF, LNG price post Trump Zelensky blow up

Natural gas price is crucial for Europe

On Friday, we posted [LINK] "*Amazing public chastisement of Zelensky by Vance/Trump.*

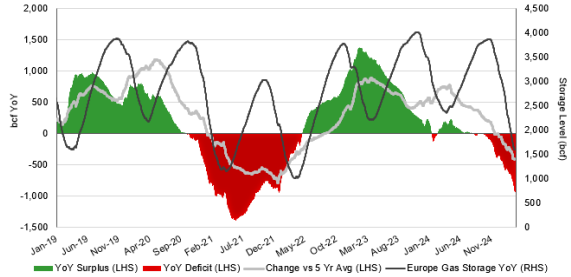
Does it point to Trump is giving Zelensky right now a take it or leave it deal for Russia/Ukraine. And increasing probability for a return of Russia #NatGas to Europe ie. negative for TTF #LNG. #OOTT." Our post forwarded our Feb 16 post of our Feb 16, 2025 Energy Tidbits memo that was titled "*Reminder: Big Risk to TTF LNG Prices IF Trump/Putin Deal for Ukraine Sees Russia Pipeline Natural Gas Back to Europe*". We aren't as concerned if this was a staged attack as many speculate, we just look at it was the opportunity for Trump to show the world he has reached his limit with Zelensky and Ukraine and that means he will be forcing, directly or indirectly, a near term deal. There are many reports of how Trump is aligning with the Russia position. We don't know what Trump has or hasn't given in to Putin. But we are in the camp that expects any Russia/Ukraine peace deal to put Putin in a position to be able to restore Russian pipeline natural gas to Europe. And that there will be EU buyers for that natural gas as it will dramatically reduce energy costs, which means big downside risk to TTF prices. Here is what we wrote in our Feb 16, 2025 Energy Tidbits memo. *"Big downside risk to TTF & LNG if Russian pipeline gas returns to Eruope. For the past few years we warned on how Germany cutting off Russian pipeline natural gas would hammer their industrial economy, thought they were the weak link to give so have been surprised Germany has hung in solidly with Ukraine and Europe on no Russian pipeline natural gas. And that a return of Russian pipeline natural gas would be a big negative to TTF and LNG prices. It's hard not to see the last few days reporting and not believe Trump and Putin have likely agreed on the outline of a deal and that there is big momentum to papering such deal to happen soon ie. within weeks and not months. Our view has been that we see the return of Russian pipeline natural gas and, pre-Trump, that would likely include some sort of allocation of revenues to help in some sort of Ukraine rebuild support. However, with Trump, we aren't convinced that Russia will be forced to contribute out of natural gas to some sort of rebuild. Regardless of the natural gas money split, we still expect a Russia/Ukraine peace deal will see the return of Russian pipeline natural gas to Europe as it will reduce energy costs and Europe needs all the help it can get to stimulate their economy. And if Russian pipeline natural gas comes back, it's a big negative to TTF and LNG prices."*

Natural Gas: Europe storage down -2.3% WoW to 39.1% full, down -24.0% YoY

Europe gas storage at 39.1%

It's been a good Jan/Feb for natural gas, which has been helped by multiple periods of very low wind generation when wind generation is normally at its seasonal high in the winter. This has also been a big plus to coal generation in Germany to help fill the void. And as a reminder, the YoY comparison is to a hot Feb 2024 in Europe. The good news for Europe was that storage was fairly full to start the winter. It would have been full if Europe had not cut back on LNG imports in Q2 and Q3 for fear of being full early. But with some colder temperatures and low wind in Dec, storage draws picked up. This week, on Feb 27, Europe storage was down -2.3% WoW to 39.1% vs 41.4% on Feb 20. Recall that winter 2023/24 was one of the hottest winters in Europe. Storage is now down -24.0% from last year's levels of 63.1% on Feb 27, 2024, and down against the 5-year average of 50.5%. Below is our graph of European Gas Storage Level.

Figure 18: European Gas Storage Level

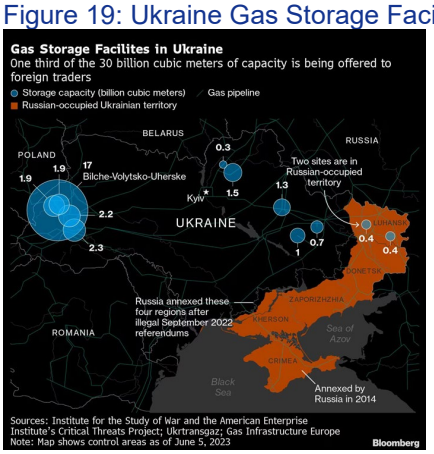


Source: Bloomberg, SAF

Ukraine storage is currently 3.8% of total Europe gas storage volume

We have been breaking out Ukraine gas storage levels since the Mar/Apr Russian bombing of the Ukraine natural gas storage, which only impacted some above ground natural gas infrastructure. But it also reminded of the risk to Europe gas storage from Russia attacks. We broke out the Ukraine storage data from the above Europe data we monitor weekly from the GIE AGSI website [LINK], and, on Feb 27, natural gas in Ukraine storage was at 5.7% of its total capacity, down compared to 7.1% of its total capacity on Feb 20. Last winter, Ukraine storage as of Nov 1, 2023, was at 39.4%. Right now, Ukraine makes up about 3.8% of Europe's natural gas in storage and, at the beginning of winter 2023/24, it was ~10% of Europe's natural gas in storage. Below is a map of Ukraine's major gas storage facilities.

Figure 19: Ukraine Gas Storage Facilities as of June 2023



Source: Bloomberg

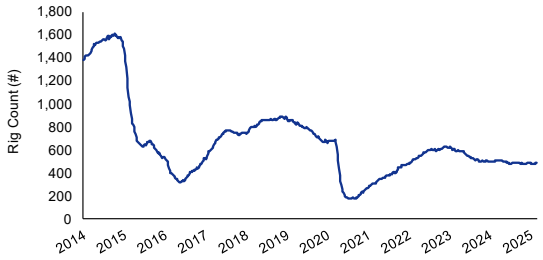
Oil: U.S. oil rigs down -2 rigs WoW, down -20 rigs YoY

US oil rigs down WoW

We have been highlighting the consistent comments from the service companies that they are expecting relatively flat or some small decline in US rig levels in 2025 as the oil and gas companies stay in their capital disciplined + return of capital to investors mode. On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Note Baker Hughes no longer breaks out the basin changes by oil vs gas rig type. (ii) Total U.S. oil rigs were down -2

rigs WoW as of Feb 28. Total U.S. oil rigs are now down -20 oil rigs YoY to 486 rigs, which is above the recent low seen in the week of Jan 24. (iii) Note we can see the basin changes but not by type of rig; the WoW changes at the major basins were as follows: Haynesville +1 rig WoW and Permian +1 rig WoW. There must have been a rig lost outside of the major basins to account for the total rig change for the week. (iv) The overlooked U.S. rig theme is the YoY declines, which have begun to taper as Q4 2023 saw activity leveling off, however, it is still important to note the YoY change. Total U.S. gas and oil rigs are down -37 rigs YoY to 588 rigs including US oil rigs down -20 rigs YoY to 486 rigs. And for the key basins, the Permian is -10 rigs YoY, Haynesville is -10 rigs YoY, DJ-Niobrara is -6 rigs YoY, Marcellus is -8 rigs YoY, Granite Wash is +4 rigs YoY, Eagle Ford is -4 rigs YoY, Barnett is +1 rig YoY, Ardmore Woodford is +2 rigs YoY, Arkoma Woodford is -1 rig YoY, Cana Woodford is -1 rig YoY, Mississippian is -2 rigs YoY, Utica is -1 rig YoY, and Williston is -1 rig YoY. (v) U.S. gas rigs were up +3 rigs WoW to 102 gas rigs and down -17 rigs YoY. We believe U.S. gas rigs will need to increase over the next several months as more U.S. LNG capacity comes onstream in 2025. Lastly, U.S. miscellaneous rigs were flat WoW at 5 rigs and +1 rig YoY.

Figure 20: Baker Hughes Total US Oil Rigs



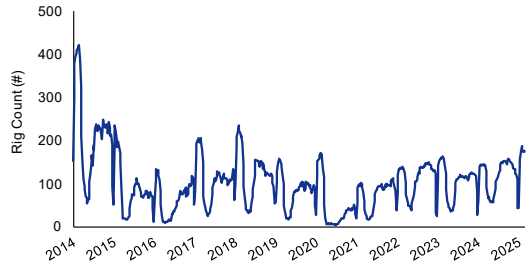
Source: Baker Hughes

Oil: Total Cdn oil rigs up +4 rigs WoW, winter peak drilling extended an extra week

Cdn oil rigs up WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. This week's total oil and gas rig count was up +4 rig WoW to 248 rigs on Feb 28 and are up +17 rigs YoY. It has been very cold in western Canada so that has allowed companies to keep rigs going a little longer and drill a couple extra wells to take advantage of stronger than expected natural gas prices. Normally, Cdn rigs have started their end of winter drilling peak is mid to late Feb, so we were a bit surprised to see the increase in rigs this week. But it was cold, so the winter drilling conditions were still good. We expect to see a decline in rigs beginning next week. Oil rigs are up +3 rigs WoW to 177, and up +33 rigs YoY. Gas rigs are up +1 rig WoW at 71 rigs and are down -16 rigs YoY, and miscellaneous rigs are flat WoW and flat YoY at 0 rigs total. As a reminder Baker Hughes changed their reporting format which does not allow us to see the provincial breakouts.

Figure 21: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes

US weekly oil production

Oil: US weekly oil production basically flat WoW to 13.502 mmb/d, up YoY

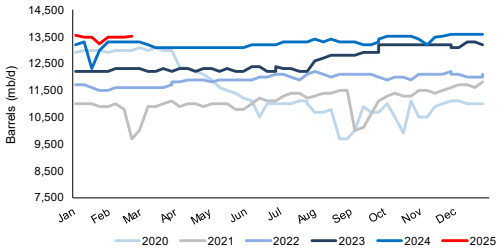
The EIA estimated US oil supply was immaterially up from last week's numbers. We don't place as much emphasis on the EIA weekly oil supply estimates as others do because we recognize the near impossibility for anyone to post an accurate estimate on a Wednesday for the totality of US oil production for the week ended the prior Friday [LINK]. As an example, please note our below comment from last week's memo on how North Dakota oil production was hit by the recent cold, and we suspect that this wasn't reflected in the EIA weekly oil estimates. We have to give the EIA credit for putting out weekly oil supply estimates for the prior week, that can't be easy so no one should be surprised that the EIA weekly oil supply estimates, based on the Form 914 actuals, will regularly require re-benchmarking; sometimes the re-benchmarking can be significant and other times, it is relatively small. The EIA does not provide any commentary. This week's estimate came in up +0.005 mmb/d WoW to 13.502 mmb/d for the week ending Feb 21. This is up +0.202 mmb/d YoY from 13.300 mmb/d for the week ended Feb 21, 2024. This week, the EIA's production estimates were up +0.005 mmb/d WoW to 13.502 mmb/d with Alaska production figures up +0.002 mmb/d WoW at 0.439 mmb/d and the Lower 48 up +0.003 to 13.063 mmb/d. Below is a table of the EIA's weekly oil production estimates.

Figure 22: EIA's Estimated Weekly US Field Oil Production (mb/d)

	Week 1		Week 2		Week 3		Week 4		Week 5	
Year-Month	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
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	02/16	13,300	02/23	13,300		
2024-Mar	03/01	13,200	03/08	13,100	03/15	13,100	03/22	13,100	03/29	13,100
2024-Apr	04/05	13,100	04/12	13,100	04/19	13,100	04/26	13,100		
2024-May	05/03	13,100	05/10	13,100	05/17	13,100	05/24	13,100	05/31	13,100
2024-Jun	06/07	13,200	06/14	13,200	06/21	13,200	06/28	13,200		
2024-Jul	07/05	13,300	07/12	13,300	07/19	13,300	07/26	13,300		
2024-Aug	08/02	13,400	08/09	13,300	08/16	13,400	08/23	13,300	08/30	13,300
2024-Sep	09/06	13,300	09/13	13,200	09/20	13,200	09/27	13,300		
2024-Oct	10/04	13,400	10/11	13,500	10/18	13,500	10/25	13,500		
2024-Nov	11/01	13,500	11/08	13,400	11/15	13,201	11/22	13,493	11/29	13,513
2024-Dec	12/06	13,631	12/13	13,604	12/20	13,585	12/27	13,573		
2025-Jan	01/03	13,563	01/10	13,481	01/17	13,477	01/24	13,240	01/31	13,478
2025-Feb	02/07	13,494	02/14	13,497	02/21	13,502				

Source: EIA

Figure 23: EIA's Estimated Weekly US Oil Production



Source: EIA

02/23/25: Cold snap in Feb shut in 40-70,000 b/d for a week in North Dakota

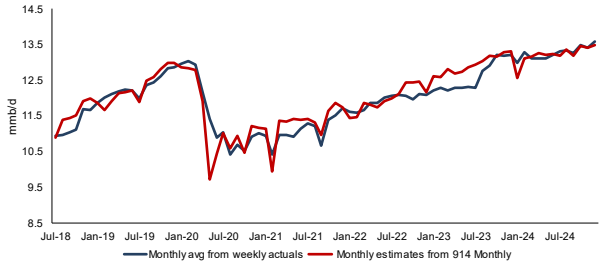
Here is what we wrote in last week's Energy Tidbits memo (Feb 23, 2025), "*We reiterate that it must be very tough for the EIA to come up with weekly US oil production estimates. As noted above, one example is the recent cold that has shut in some North Dakota oil production. Here is what we wrote in last week's (Feb 16, 2025) Energy Tidbits memo. "Cold snap in Feb has shut in about 40-70,000 b/d for about a week or so. We listened to the 22-min Feb 2025 Director's Cut monthly webcast on the North Dakota NDIC Director's Cut and NDPA Monthly report [LINK]. One of the question asked was how much North Dakota oil was shut-in due to the cold snap. NDIC Director Nathan Anderson said it was about 40-70,000 b/d. We assume he was just talking about oil and there would be a separate volume of shut-in natural gas. Then later in the Q&A, North Dakota Pipeline Authority Director Jusin Kringstad said the shut-in is typically for about a week."*

Oil: EIA Form 914 – US December oil production up MoM and YoY

US Dec oil production

On Friday, the EIA released its Form 914 data [LINK], which is the EIA's "actuals" for December US oil and natural gas production. (i) This month, the EIA made a downwards revision to November's oil production, decreasing -0.082 mmb/d from 13.314 mmb/d to 13.396 mmb/d. As a result, the November actuals were -0.017 mmb/d lower vs the average weekly supply estimate of 13.413 mmb/d. (ii) The EIA Form 914 reported December "actuals" at 13.491 mmb/d, which was down -0.102 mmb/d against the weekly supply estimate average of 13.593 mmb/d. (iii) December "actuals" of 13.491 mmb/d are up +0.095 mmb/d MoM vs 13.396 mmb/d in November. On a YoY basis, "actuals" are up +0.183 mmb/d YoY vs December 2023 at 13.308 mmb/d. Below is a chart of monthly actuals vs. weekly estimates. Our Supplemental Documents package includes an excerpt from the Form 914 figures.

Figure 24: EIA Form 914 US Oil Production vs Weekly Estimates



Source: EIA, SAF

Oil: Trafigura sees US shale growth of several hundred thousand b/d in 2025

Trafigura on US shale oil growth

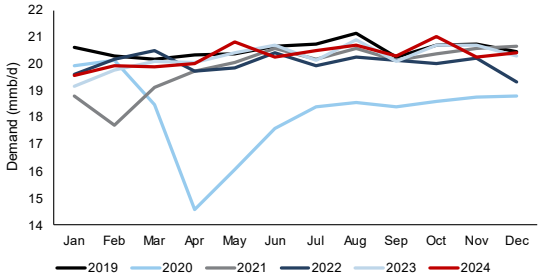
On Friday, we posted [LINK] ""*I don't think there will be much growth in the US shale patch this year. Small, several hundred thousand barrels a day of growth, which is not nothing by the way, but it's not the good old days" @trafigura's Ben Luckock. #OOTT @KritiGuptaNews @lizzzburden @TomMackenzieTV."* Trafigura Oil Global Head Ben Luckock was asked about what they see for flows out of the US. Luckock described it as small but not nothing and they see growth of several hundred thousand b/d in 2025. For most, we suspect that that is on the high end of growth in US shale in 2025. Our post included the transcript we created of Ben Luckock (Trafigura, Trafigura Oil Global Head) comments with Bloomberg's Kriti Gupta, Tom Mackenzie & Lizzy Burden on Bloomberg TV's The Opening Trade on Feb 27, 2025. [LINK] Items in "*Italics*" are SAF Group created transcript. Gupta *"….How does that affect the flows you are seeing out of the US?"* At 9:00 min mark, Luckock *"… I think some of the conversations that perhaps the new Administration has had with those producers is that they will produce in a rationally economic way. I think you mentioned before I came on you know TI is just below $70 now. It's an acceptable number for most producers but that's not one when you certainly add extra drill rigs and drill baby drill, is it? I think it's that kind of price you have. I think they will be driven by price. I don't think there will be much growth in the US shale patch this year. Small, several hundred thousand barrels a day of growth, which is not nothing by the way, but it's not the good old days of the cycle upwards of American energy growth. So, I don't think we should mix politics with American oil industry too much, so as much as they talk a lot. They are very, very rational and they are very good at what do. But they are driven by price and they are driven by what their shareholder want. And I would say the shareholders still want share buybacks at the moment rather than incremental production, which I think would be negative for their share prices*."

Oil: US oil demand in Dec was +0.055 mmb/d above EIA STEO forecast for Dec

US Dec oil demand

On Friday, the EIA posted its "actuals" oil data for December, which includes US oil and products demand. In February, the EIA posted its monthly Short Term Energy Outlook, and their backup data includes splitting their 2024 forecast into the monthly splits so we can compare how the actuals compare to the monthly forecast. On Friday, the EIA posted the "actuals" for December demand at 20.433 mmb/d, which is +0.055 mmb/d above the STEO forecast for December of 20.378 mmb/d. This is larger than last month's November actuals, when the EIA posted the "actuals" for November demand at 20.235 mmb/d, which was -0.198 mmb/d below the EIA STEO forecast for November of 20.489 mmb/d. The below graph shows the EIA's reported monthly crude demand for the last 5 years.

Figure 25: EIA's Monthly US Oil Demand



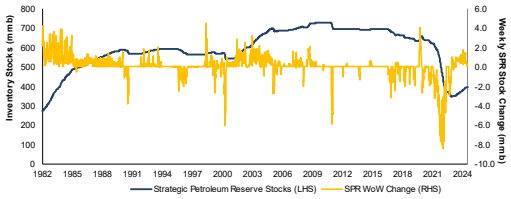
Source: EIA

Oil: US SPR less commercial reserve deficit narrows, now -34.848 mmb

US SPR reserves

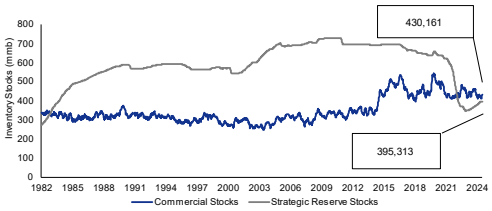
The SPR will be increasingly on the watch with Trump's stated plan to fill the SPR to the brim. The US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the week of Sep 16, 2022. This week, we again saw no change on the SPR side and a draw on the commercial side. The EIA's weekly oil data for Feb 21 [LINK] saw the SPR reserves flat WoW at 395.313 mmb for the third week in a row, while commercial crude oil reserves decreased -2.332 mmb to 430.161 mmb. There is now a -34.848 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles, along with the weekly changes to SPR stockpiles.

Figure 26: Strategic Petroleum Reserve Stocks and SPR WoW Change



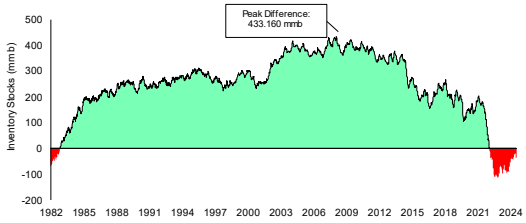
Source: EIA

Figure 27: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 28: US Oil Inventories: SPR Less Commercial



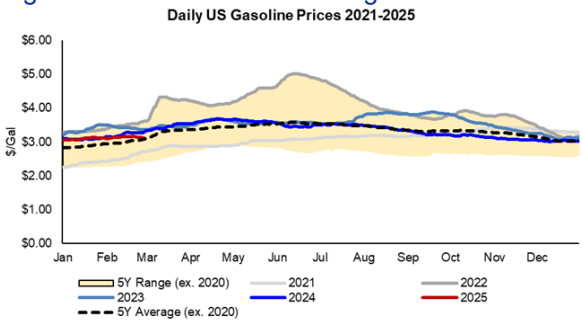
Source: EIA

US gasoline prices

Oil: AAA US national average gas price -$0.05 WoW, California -$0.05 WoW

Yesterday, we posted [LINK] "*AAA National average gasoline prices -$0.05 WoW to $3.10 on Mar 1, flat MoM & -$0.23 YoY. California average gas prices are -$0.05 WoW to $4.79, +$0.32 MoM, $0.03 YoY. Big jump up in Feb was the continued unplanned Martinez refinery down. Thx @AAAnews #OOTT.*" Yesterday, AAA reported that US national average prices were $3.10 on Mar 1, which was -$0.05 WoW, flat MoM, and -$0.23 YoY. The big news over the past six weeks was how California gasoline prices jumped up post the unplanned Martinez refinery being down that saw California gas prices get to +$0.39 MoM. As of our 7am MT news cut off, there has been no updates from the Martinez Refining [LINK] as to how many weeks/months before a restart. However, it looks like California is somewhat adjusting its gasoline supply chain to slightly pull back gasoline prices. Yesterday, AAA also reported California average gasoline prices were $4.79 on Mar 1, which was -$0.05 WoW, +$0.32 MoM and +$0.03 YoY. Below is our graph of Bloomberg's National Average weekly gasoline prices.

Figure 29: AAA National Average Gasoline Prices



Source: AAA, Bloomberg

AAA reminds Feb is the normal start to seasonal increasing gasoline prices

Here is what we wrote in our Feb 16, 2025 Energy Tidbits memo reminding that this is the normal seasonal period for increasing gasoline prices. "*AAA reminds Feb is the normal start to seasonal increasing gasoline prices. As we remind also on crack spreads and WCS less WTI differentials, there are normally seasonal trends. There are always unforeseen item that can impact the seasonal trends. But, on Thursday, AAA reminded that the seasonal trend for US gasoline prices is to move for the next few months. This shows up in our above US gasoline price graphs. AAA posted*

[LINK] "Right on Cue: Seasonal Trends Nudge Gas Prices Higher. As spring approaches, refineries are beginning their transition to summer blend fuel, which often results in higher prices this time of year. This week, gas prices rose by a few cents, bringing the national average to $3.16 per gallon. Routine seasonal maintenance and an offline refinery in Northern California are putting additional strain on supply. These factors are pushing gas prices up, which means consumers may see higher prices at the pump as warmer months approach."

Oil: Crack spreads -$1.59 WoW to $25.02 on Feb 28, WTI -$0.64 WoW to $69.76

Crack spreads closed at $25.02

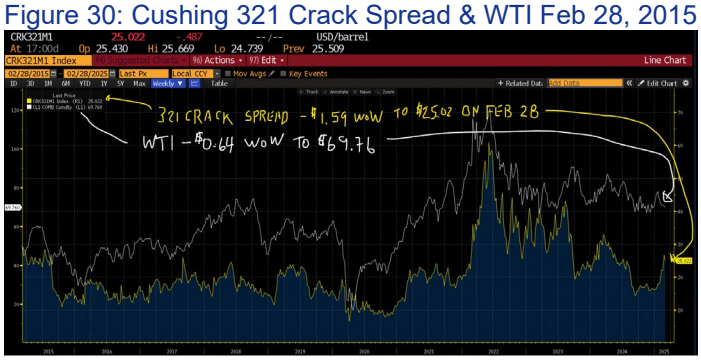
On Fri, we posted [LINK] "*321 crack spreads -$1.59 WoW to $25.02 on Feb 28. WTI -$0.64 WoW to $69.76. Reminder cracks normally start their seasonal move up in mid Feb thru June for refineries to crank up processing for summer peak gasoline/jet fuel demand. Thx @business #OOTT."* Crack spreads were -$1.59 WoW to $25.02 on Feb 28 and WTI was -$0.64 WoW to $69.76. There continues to be concerns on global oil prices with China still uncertain recovery, the currently scheduled Apr 1 start for OPEC+ to bring back voluntary cut barrels and Trump's continued pressure for low oil prices. Our post noted that mid-Feb is normally the time when crack spreads begin their seasonal move up as refineries move to process more oil for peak summer gasoline and jet fuel season. We have been highlighting that, for the past several months, for the most part WTI has been driven more by global factors and not crack spreads. Crack spreads $25.02 are strong and should, in theory, incentivize refiners to try to get more crude for refining and that, under normal times, would tend to drag up WTI. The typical pre-Covid range was $15-20. Crack spreads of $25.02 on Feb 28 followed $26.48, $21.96 on Feb 14, $22.06 on Feb 7, $18.74 on Jan 31, $17.73 on Jan 24, $17.94 on Jan 17, $16.47 on Jan 10, $16.48 on Jan 3, $16.05 on Dec 27, $16.44 on Dec 20, $16.53 on Dec 13, $15.95 on Dec 6, and $15.72 on Nov 29.

Crack spreads normally point to near term oil moves, explaining 321 cracks

Crack spreads and WTI price movement to end the week reinforced that WTI is more impacted by global oil items than crack spreads. It hasn't been normal times for oil markets in the last several months with a wide range of global factors. So for the most part, the last several months are a good example that global oil and market items impact WTI more than crack spreads. But in normal times, broad market factors aside, we have focused on crack spreads for since the 90s as they are an unchanged fundamental of refineries – wide/high crack spreads provide incentives for refineries to buy more crude because there are big profit margins to be made. We track US crack spreads but there is also an influence on global refining capacity on US crack spreads as the increasing global refining capacity has also tended to have downward pressure on US crack spreads especially with demand being less than most expect. So if crack spreads are wide/high like right now, it is normally a positive for the very near term look ahead to WTI. Conversely, if crack spreads are narrow/low, it doesn't give refineries any real incentive to take more crude, which is normally softness for the very near term look ahead to WTI. 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. 321 Crack spread closed at $25.02 on Feb 28.

Figure 30: Cushing 321 Crack Spread & WTI Feb 28, 2015 to Feb 28, 2025



Source: Bloomberg

Crack spreads normally move up mid-Feb into June for peak summer demand

Our Friday post highlighted "*Reminder cracks normally start their seasonal move up in mid Feb thru June for refineries to crank up processing for summer peak gasoline/jet fuel demand*." We included the below Bloomberg chart that shows the seasonal moves in 321 crack spreads over the past five years. There are always items that impact the normal seasonal moves but, as a general rule, 321 crack spreads start to widen in mid-Feb into June as refineries crank up processing to have product for peak summer gasoline and jet fuel season.

Figure 31: Cushing 321 Crack Spread – Seasonality to Feb 28, 2025 close

Source: Bloomberg

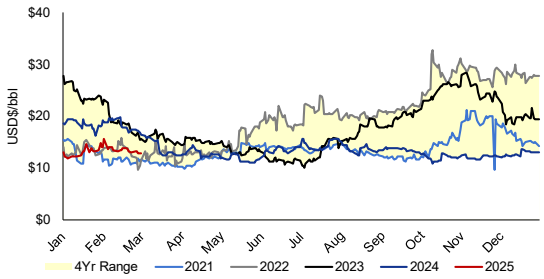
Oil: Cdn heavy oil differentials flat WoW at $12.90 on Feb 28

WCS less WTI diffs

As of our 7am MT news cut off, the expectation is still for the Trump tariffs on Cdn oil and natural gas to start on Tuesday. So the watch will be on what happens on Tuesday. But, at least so far, there really hasn't been a big impact on WCS less WTI differentials. Normally, at this time of the year, we would be trotting out our normal commentary that Feb normally marks the start of the seasonal narrowing of WCS less WTI differentials as refineries in the US start to take more medium sour crude as they change their runs to produce more asphalt

for the upcoming paving season. This week saw no change to the WCS less WTI differentials after it had seen substantial narrowing in the previous week. WCS less WTI diffs closed flat at $12.90 WoW on Feb 28.

Figure 32: WCS less WTI differentials

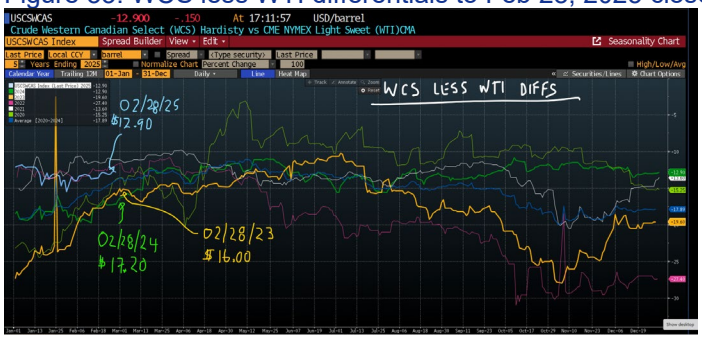


Source: Bloomberg

TMX impact: WCS less WTI diffs did not seasonally widen in H2/24

The start of TMX pipeline in June was the big expected positive for Cdn oil by keeping WCS less WTI differentials a lot narrower than what is normally seen in the normal seasonal widening in Sept/Oct/Nov. And it has continued to help in 2025 even in the face of Trump's on and pause tariffs. It is clear increasing tanker exports has worked and differentials did not widen as normally happens WCS less WTI differentials are approx. $5 narrower than seen over the past two years. However, we remind that WCS less WTI differentials normally seasonally narrow staring in Feb and continuing into June as refineries move into peak medium sour processing ahead of summer paving/asphalt season. This means the WCS less WTI gap vs last two years should start to narrow. On Friday, we posted [LINK] "*WCS-WTI diffs flat WoW at $12.90. Still way lower diffs since tanker exports increased with June TMX start. But gap is narrowing as this is the normal seasonal narrowing for WCS-WTI diffs as refiners look for more medium sour for paving season. WCS less WTI diffs: 02/28/25: $12.90. 02/28/24: $17.20. 02/28/23: $16.00. Thx @garquake @business #OOTT." "*Our post included the below chart that shows how WCS less WTI differential were low in the summer, stayed fairly flat in Aug/Sept/Oct/Nov/Dec whereas how differentials widened in Sept/Oct/Nov in 2022 and 2023. And it also shows how differentials normally narrow in Q1 every year as refiners start to process more medium/heavy as they look ahead to asphalt and paving season.

Figure 33: WCS less WTI differentials to Feb 28, 2025 close



Source: Bloomberg

Oil: Trump wants 830,000 b/d Keystone XL built by someone

Trump wants Keystone XL built

We have consistently pointed out that Trump hasn't distinguished or realized that the US needs heavy/medium oil imports because US oil production is predominately light oil. Trump has always highlighted US doesn't need oil imports as it is an oil exporter. Well based on Trump's post on Tuesday, we have to believe Energy Secretary Wright has explained the difference between light and medium/heavy oil and that the Gulf Coast refineries (and also the Midwest refineries) need a lot of medium/heavy sour to be imported from Canada, Mexico, Venezuela and others because the US oil is predominately light oil. On Tuesday, we posted [LINK] "*No surprise. Trump wants Keystone XL built, either by TC Energy or another pipeline Co. Gulf Coast refineries need >1 mmb/d medium/heavy crude that US doesn't have. MEX moving to keep oil for domestic refineries. COL oil production down with Pres Petro anti fossil fuels. VEN is VEN. KXL would bring 830,000 b/d Cdn heavy. #OOTT."* Please note that we put TC Energy and should have said South Bow, which was the new corporation set up last fall to hold the TC Energy oil pipeline assets and that was spun out to TC Energy shareholders. Our post included the EIA Gulf Coast PADD 3 medium/heavy oil imports mostly come from Canada, Mexico, Venezuela and Colombia. And we have to believe Wright has told Trump Mexico expects to reduce its oil exports to the US, other than to its refinery in the US, to zero, Colombia oil production has declined since President Petro who is anti-fossil fuels, and Venezuela is Venezuela. In other words, we can see why the US would want more dependable pipeline connected Canadian oil. We are doubtful that any new Cdn oil pipelines to move oil east or west would happen. But if there is less medium/heavy oil to the Gulf Coast from Canada, Mexico, Venezuela or Colombia, the US would have to be more reliant on more foreign heavy/medium oil from places like the Middle East or Russia. So we don't think it will happen. Plus the Globe and Mail reported [LINK] "*TC became a natural gas infrastructure and power business late last year, after spinning off the oil side of its operations into a new company called South Bow Corp. South Bow said Tuesday in an e-mail that it has "moved on" from Keystone. "We continue to engage with customers to develop options to increase Canadian oil supplies to meet growing demand," it wrote."* The other part of Trump's post was that he wants it built by anyone. Trump wrote "*Our Country's doing really well, and today, I was just thinking, that the company building the Keystone XL Pipeline that was viciously jettisoned by the incompetent Biden Administration should come back to America, and get it built — NOW! I know they were treated very badly by Sleepy Joe Biden, but the Trump Administration is very different — Easy approvals, almost immediate start! If not them,*

perhaps another Pipeline Company. We want the Keystone XL Pipeline built!" Below is the TC Energy Keyston XL pipeline map. South Bow doesn't have a project overview on its website. Our Supplemental Documents package includes the TC Energy summary from approx. 1 year ago.

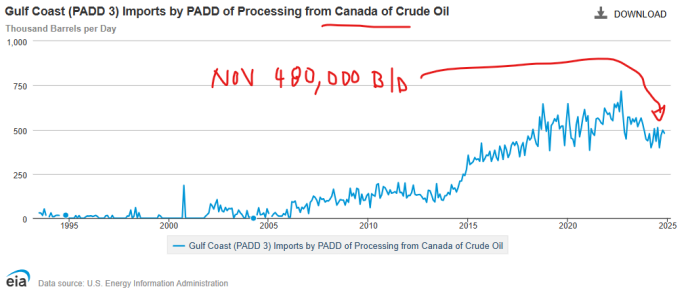
Figure 34: Keystone XL

Source: TC Energy

Gulf Coast imports medium/heavy 1.319 mmb/d from CAN, MEX, VEN, COL

Our Tuesday post on the Trump's Keystone XL pipeline also included the EIA"s then most current graphs for Gulf Coast PADD 3 oil imports for November. The EIA doesn't split out the API for the data but the oil would all be medium/heavy from Canada, Mexico, Venezuela and Colombia. In Nov, the US medium/heavy oil imports into the Gulf Coast PADD 3 were Canada 480,000 b/d, Mexico 453,000 b/d, Venezuela 217,000 b/d and Colombia 169,000 b/d for a total of 1.319 mmb/d. This was 80.0% of the Gulf Coast PADD 3 oil imports of 1.648 mmb/d in Nov. In addition to these top four countries, we would assume other medium/heavy oil imports in Nov would have been from Ecuador 24,000 b/d and Brazil 17,000 b/d. Our Supplemental Documents package includes the EIA oil imports into Gulf Coast PADD 3 graphs from our post.

Figure 35: Gulf Coast PADD 3 oil imports from Canada



Source: EIA

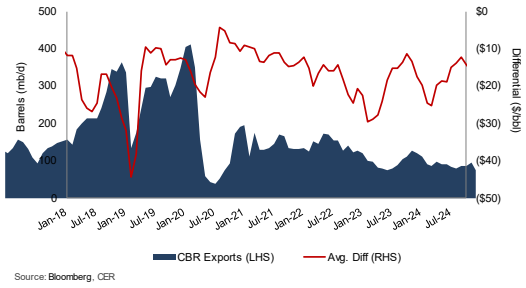
Oil: CER reports Cdn crude by rail exports at 75,412 b/d in Dec, down -37.1% YoY

As a reminder, the CER reports crude by rail exports to the US and these are typically higher

Cdn crude by rail -37.1% YoY in Dec

than the EIA reported crude by rail imports from Canada. Normally, this is because the EIA excludes Cdn crude by rail that is exported down to the Gulf Coast for immediate loading onto tankers for export, i.e. we believe the EIA doesn't include crude by rail from Canada that doesn't stay in the US. This is the normal situation but that isn't always the case. On Tuesday, the CER released their Canadian crude exports by rail figures for December [LINK]. December crude exports by rail were 75,412 b/d, which is down -19.9% MoM from 94,188 b/d in November and down -37.1% YoY from 119,972 b/d in December 2024. The CER doesn't provide any explanation for the MoM changes but we suspect weather played an impact in the MoM changes. One of the big oil stories in H2/24 was Alberta kept setting new record levels of oil production. Even still, Cdn crude by rail exports was less given the startup of TMX in Q2/24. Below is our graph of Cdn crude by rail exports compared to the WCS–WTI differential.

Figure 36: Cdn Crude by Rail Exports vs WCS Differential



Source: Canadian Energy Regulator, Bloomberg

Looks like Trump's tariffs exclude Cdn crude by rail thru US for export tankers

As we note every month, there is normally a larger volume of Cdn crude by rail exported by Canada reported by the CER vs US imports of Cdn crude by rail reported by the EIA. The difference has always seemed to be for Cdn crude by rail that is exported, goes thru the US and then directly onto tankers for export from the Gulf Coast. Based on the Trump executive order on 10% tariffs on Canada energy resources, it looks like these crude by rail exports to tankers are excluded from the 10% tariff. The Executive Order notes "*Such rate of duty shall apply with respect to goods entered for consumption, or withdrawn from warehouse for consumption, on or after 12:01 a.m. eastern time on February 4, 2025.*"

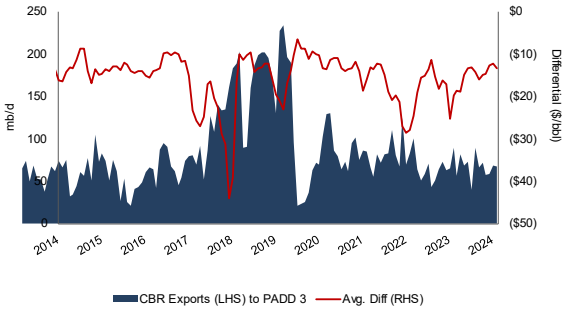
Oil: Total Cdn crude by rail imports down -25,901 b/d MoM to 84,032 b/d in December

EIA Cdn crude by rail imports

On Friday, the EIA posted its "*Movements of Crude Oil and Selected Products by Rail*" [LINK], which includes the EIA data on US imports of Cdn crude by rail. EIA estimates total US imports of Cdn crude by rail were 84,032 b/d in December, which is down -25,901 b/d MoM from the upward revision of 109,933 b/d in November. The EIA estimates Cdn crude by rail into PADD 3 (Gulf Coast) were 67,258 b/d in December, which is down -1,242 b/d MoM from the upward revision of 68,500 b/d in November. We have been highlighting how the EIA imports of oil by rail from Canada have normally been less than the CER estimates of Cdn oil exports by crude to the US. As mentioned below, the CER reported that 75,412 b/d of crude

was exported by rail out of Canada during December vs the EIA estimates of 84,032 b/d of Cdn oil imported by rail in December. There is no explanation given. This is not the norm. The norm is that the CER's numbers are higher than the EIA as the CER numbers will include all exports including oil that is railed down to the Gulf Coast and put on tankers whereas the EIA will only include Cdn crude by rail that stays in the US. Below is our graph of EIA imports of Cdn CBR to the Gulf Coast and WCS differential over time.

Figure 37: US Imports of Canada CBR to US Gulf Coast vs WCS Differential



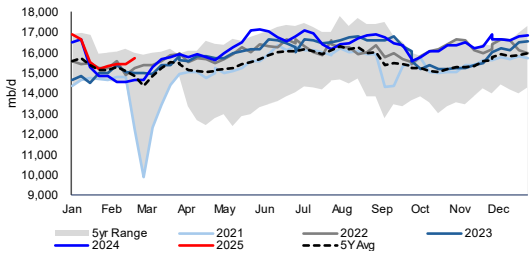
Source: EIA, Bloomberg

Oil: Refinery inputs up +0.317 mmb/d WoW to 15.733 mmb/d

Refinery inputs +0.317 mmb/d WoW

We have been highlighting that mid-February normally marks the start of refineries moving into a six-month period of increasing oil processing for the peak gasoline, diesel and jet fuel demand that happens every summer. There are always unplanned refinery items that impact crude oil inputs into refineries but there are normal seasonal trends that refineries follow to provide the right fuels at the right time. Normally late October marks the point when refineries have come out of fall turnarounds and are ramping up crude oil inputs as they change from summer to winter fuel blends. And in Nov/Dec, it is normally ramps up before we start to see refineries move into turnarounds starting in Jan/Feb for the normal winter turnarounds. And then leaving Feb is normally the start of the big seasonal increase in refinery throughput that continues into the summer. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended February 21 [LINK]. The EIA reported crude inputs to refineries were up +0.317 mmb/d this week to 15.733 mmb/d and are down -0.336 mmb/d YoY. Refinery utilization was up +1.6% WoW to 86.5% and was up +5.0% YoY.

Figure 38: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil: Trump tariffs to hit US oil imports of ~4.7 mmb/d of Cdn and Mexican oil

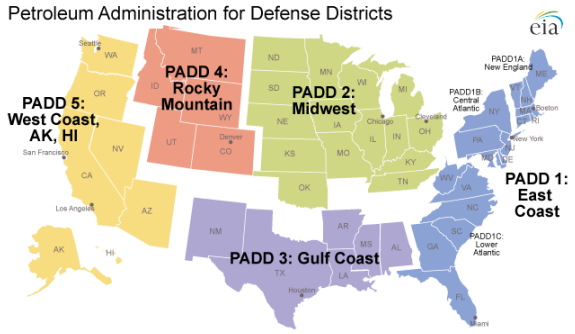
US oil imports from Canada & Mexico

As of our 7am MT news cut off, the Trump tariffs on Canada and Mexico oil is still planned to start on Tues. On Friday, we reminded that these tariffs are going to hit a huge amount of US oil imports. It will impact Canada and Mexico oil imports into the US as follows: 195,000 b/d of East Coast PADD 1 oil imports of 622,000 b/d. 100% of Midwest PADD 2 oil imports of 2,940,000 b/d. 820,000 b/d of Gulf Coast PADD 3 oil imports of 1,539,000 b/d. 100% of Rocky Mountain PADD 4 oil imports of 273,000 b/d. 457,000 b/d of West Coast PADD 5 oil imports of 1,183,000 b/d. Note our post included Venezuela even though they aren't included in the Tues Trump tariffs, but Trump decided to not renew the Chevron Venezuela license which means that a six-month wind down period for Chevron in Venezuela started yesterday. We posted [LINK["*Here's where Trump tariffs on CAN & MEX #Oil on Mar 4 will hit. @EIAgov Dec oil imports by PADD & % of PADD imports. PADD 1: Can: 146 kbd, 23%. Mex: 49 kbd, 8%. Ven: 11 kbd, 2%. PADD 2: Can: 2,940 kbd,100%. PADD 3: Can: 431 kbd, 28%. Mex: 389 kbd, 25%. Ven: 289 kbd, 19%. PADD 4: Can: 273 kbd, 100%. PADD 5: Can: 444 kbd, 38%. Mex: 13 kbd, 1%. #OOTT.*" Our Supplemental Documents package includes the EIA graphs of oil imports by PADD for each Canada, Mexico and Venezuela.

"PADDs" were created in WWII to ration gasoline

Our post included the EIA's map showing the PADDs. PADD stands for Petroleum Administration for Defense Districts. And the defense is because the PADDs were created in WWII. The EIA writes "*The Petroleum Administration for Defense Districts (PADDs) are geographic aggregations of the 50 States and the District of Columbia into five districts: PADD 1 is the East Coast, PADD 2 the Midwest, PADD 3 the Gulf Coast, PADD 4 the Rocky Mountain Region, and PADD 5 the West Coast. Due to its large population, PADD 1 is further divided into sub-PADDs, with PADD 1A as New England, PADD 1B the Central Atlantic States, and PADD 1C comprising the Lower Atlantic States. There are two additional PADDs (PADDs VI and VII) that encompass U.S. Territories (these are not pictured on the map). The PADDs help users of EIA's petroleum data assess regional petroleum product supplies. During World War II the Petroleum Administration for War, established by an Executive order in 1942, used these five districts to ration gasoline. Although the Administration was abolished after the war in 1946, Congress passed the Defense Production Act of 1950, which created the Petroleum Administration for Defense and used the same five districts, only now called the Petroleum Administration for Defense Districts.*"

Figure 39: Petroleum Administration for Defense Districts



Source: EIA

Oil: US net oil imports up +0.291 mmb/d WoW, oil exports were down -0.139 mmb/d

US net imports +0.291 mmb/d WoW

The EIA reported US "NET" imports up +0.291 mmb/d to 1.731 mmb/d for the week of February 21. US imports were up +0.098 mmb/d to 5.919 mmb/d, while exports were down -0.193 mmb/d to 4.188 mmb/d. Top 10 was up +0.337 mmb/d. Give the EIA credit for putting out weekly oil import estimates, but it's a reminder that we must be careful about using the weekly oil import estimates. Rather we need to make sure we go to the monthly data for oil imports. (i) US oil imports from Canada were up +0.165 mmb/d WoW to 3.818 mmb/d. This the normal seasonal period for US refineries to want more Cdn crude plus US refineries are motivated to take up Cdn crude before Trump sanctions. In addition, US oil imports from Canada have been higher post the start up of TMX as more of the TMX crude has been hitting west coast US refineries. (ii) Saudi Arabia was down -0.025 mmb/d to 0.252 mmb/d. (iii) Mexico was down -0.108 mmb/d to 0.445 mmb/d. This is still well below historical levels. However, as noted in the Mexican oil exports item below, there is an oil quality issue that is causing some Mexico oil exports to be rejected by US refineries. Prior to this, oil imports from Mexico were much lower with the new Olmeca (Dos Bocas) refinery slowing ramping up in 2024 and Pemex's other refineries increasing crude oil processing. The current oil quality issue aside, assuming Pemex can ramp up Olmeca and continue to improve processing at the other refineries, Mexico should be able to process all its own oil production (ie. no exports) by the end of 2025. (iv) Colombia was up +0.150 mmb/d to 0.150 mmb/d. (v) Iraq was down -0.029 mmb/d to 0.228 mmb/d. (vi) Ecuador was up +0.152 mmb/d to 0.195 mmb/d. (vii) Nigeria was down -0.062 mmb/d to 0.077 mmb/d.

Figure 40: US Weekly Preliminary Imports by Major Country

	Dec 27/24	Jan 3/25	Jan 10/25	Jan 17/25	Jan 24/25	Jan 31/25	Feb 7/25	Feb 14/25	Feb 21/25	WoW
Canada	3,733	4,422	3,985	4,329	3,716	4,063	3,918	3,653	3,818	165
Saudi Arabia	87	69	333	256	471	488	380	277	252	-25
Venezuela	353	253	240	416	319	214	226	198	276	78
Mexico	551	392	362	244	521	149	482	553	445	-108
Colombia	289	72	266	286	283	150	150	0	150	150
Iraq	212	180	152	218	336	99	46	257	228	-29
Ecuador	0	147	103	0	102	157	0	43	195	152
Nigeria	71	192	38	156	92	152	87	139	77	-62
Brazil	280	233	129	138	114	254	217	155	171	16
Libya	189	56	86	30	0	324	0	0	0	0
Top 10	5,765	6,016	5,694	6,073	5,954	6,050	5,506	5,275	5,612	337
Others	1,161	412	430	672	494	865	803	545	307	-238
Total US	**6,926**	**6,428**	**6,124**	**6,745**	**6,448**	**6,915**	**6,309**	**5,820**	**5,919**	99

Source: EIA, SAF

Mexico Jan oil production

Oil: Pemex Mexico oil production down -11.4% YoY to 1.509 mmb/d in Jan

Mexico oil production has continued its decline, reaching its lowest level in years. Please note that we are reporting on Pemex "oil" production excluding "condensate" production. On Tuesday, Pemex posted its oil production data for January [LINK]. Pemex reported January oil production was 1.509 mmb/d, which was down -11.4% YoY and down -0.5% MoM from 1.517 mmb/d in December. Mexico oil production has been stuck below ~1.7 mmb/d for the last four years. Pemex has been unable to grow Mexico oil production, which means that any increase in Pemex Mexico refineries crude oil input will result in less Mexico oil for export including to the US Gulf Coast. And it also means that if Mexico has refinery issues in a month, there will be more Mexico oil for export in a month. Below is our table tracking Pemex oil production.

Figure 41: Pemex (Incl Partners) Mexico Oil (excluding Condensate) Production

Oil Production (thousand b/d)	2018	2019	2020	2021	2022	2023	2024	2025	YoY%
Jan	1,909	1,623	1,724	1,651	1,649	1,628	1,703	1,509	-11.4%
Feb	1,876	1,701	1,729	1,669	1,619	1,619	1,696		4.8%
Mar	1,846	1,691	1,745	1,697	1,620	1,636	1,690		3.3%
Apr	1,868	1,675	1,703	1,693	1,586	1,656	1,625		-1.9%
May	1,850	1,663	1,633	1,688	1,588	1,661	1,664		0.2%
June	1,828	1,671	1,605	1,698	1,570	1,610	1,658		3.0%
July	1,823	1,671	1,595	1,701	1,583	1,550	1,636		5.5%
Aug	1,798	1,683	1,632	1,657	1,604	1,552	1,660		7.0%
Sept	1,808	1,705	1,643	1,709	1,594	1,581	1,637		3.5%
Oct	1,747	1,655	1,627	1,692	1,592	1,560	1,596		2.3%
Nov	1,697	1,696	1,633	1,691	1,582	1,558	1,566		0.5%
Dec	1,710	1,706	1,650	1,694	1,561	1,545	1,517		-1.8%

Source: Pemex, SAF

Pemex quality issues with its oil

Oil: Pemex Mexico Feb data will be hit by the water issues in their oil

It is hard to tell from the numbers alone but it seems that the concern of Gulf Coast refiners on quality issues with Pemex oil exports may have had some impact on Pemex Jan oil exports. But we have to believe there will be a much bigger impact on the Feb data. The issue started to emerge a few weeks ago with reports such as Bloomberg's Feb 10 report "*US oil refiners along the Gulf Coast are snubbing shipments from Mexico and instead turning to Colombia and Canada amid complaints that Petroleos Mexicanos is increasingly delivering crude that's unfit to make gasoline and diesel. Refiners in Texas and Louisiana are demanding discounts and repeatedly complaining about the high water content in crude currently coming from Mexico, according to people with knowledge of the situation who asked not to be named citing private discussions. That's upending flows of crude that the processors have relied on for the past half century.*" We have not seen any clear explanation of what caused the issue and how it will be fixed. This isn't just impacting oil to US refineries. It is also impacting Pemex refineries. On Feb 13, Bloomberg reported "*Pemex partially shut its Salamanca refinery in Mexico due to equipment issues caused by high water and salt content in crude oil, according to a report from IIR Energy published Wednesday.*" Then on Feb 20, Bloomberg reported "*Mexico's state oil company Petroleos Mexicanos partially shut down its Tula refinery in Hidalgo, Mexico, due to high water and salt content in crude oil feedstock, according to a report from IIR Energy published Thursday.*" These water quality issues are clearly going to impact Pemex Feb data for exports and refinery volumes. But it isn't clear yet if this will impact production volumes.

Oil: Pemex refineries processing up MoM in Jan despite Dos Bocas halting operations

Pemex refineries crude processed

Please note our above point that there will some unknown impacts in the Pemex Feb data. Prior to this wildcard, we have reminded for years that a key plus for Cdn medium/heavy oil differentials will be Mexico will be reducing its oil exports as its refineries gear up. More Mexico crude refined in Mexico = Less Mexico crude available for export. In January, Pemex's seven refineries processed 0.887 mmb/d of oil, which is 45.1% of 1.967 mmb/d capacity. Despite operating below half of installed capacity, largely due to Dos Bocas halting processing with the lack of refinery-ready oil, total refinery runs reached a five-month high. On Tuesday, Bloomberg posted a report "*Pemex Refineries Operate Below Half Capacity Despite Higher Runs"*. Bloomberg posted the below table and wrote *"Petroleos Mexicanos' seven refineries in Mexico operated below half of installed capacity for the fifth straight month as the country's largest facility, Dos Bocas, processed zero oil, according to company data compiled by Bloomberg. Refineries processed 887k b/d, up 1.3% from the previous month but 7.1% lower than a year earlier; facilities operated at 45.1% of installed capacity… Increase in oil processing at the Tula and Cadereyta refineries offset outage at the Dos Bocas refinery".* Below is the Bloomberg table and our Supplemental Documents package includes the Bloomberg report.

Figure 42: Pemex refinery crude oil processed in Jan

Refinery	January (b/d)	m/m	y/y	Capacity use	NOTE
Cadereyta	165,222	24%	-2.5%	60.1%	3-month high
Madero	96,704	-6.1%	-18%	50.9%	4-month low
Tula	197,810	22%	10%	62.8%	4-month high
Salamanca	146,648	13%	7.9%	66.7%	Still operating below levels seen in May, when refinery had a sulphuric acid leak
Minatitlan	84,092	-33%	-41%	29.5%	16-month low
Salina Cruz	196,312	10%	-6.5%	59.5%	Refinery struggles to ramp up after deadly September fire
Dos Bocas (Olmeca)	0	-100%	NA	0%	Crude processing halted since mid-Dec. on lack of refinery-ready oil
Total	886,787	1.3%	-7.1%	45.1%	5-month high

Source: Bloomberg

Oil: Mexico oil exports down to 0.532 mmb/d in Jan, lowest in 35 years

Mexico oil exports plunge

As noted above, we expect the water quality issues will be impacting Pemex Mexico oil exports in Feb. It's not clear if it did impact Jan exports. Prior to this issue, the big theme for Pemex (Mexico) oil exports is unchanged – oil production is stuck below ~1.6 mmb/d, so any improvement in crude run rates at the existing Pemex oil refineries and the startup, albeit

delayed, of the new 340,000 Olmeca (Dos Bocas) refinery means there will be less oil for export. Due to Olmeca volumes slowly ramping up, we have seen declining Mexico oil exports in H2/24. In January, exports were down -34.1% MoM, and this had nothing to do with Trump's election. Rather Mexico oil exports in 2024 were linked to refinery operations as the more oil Mexico refineries refined, the less Mexico oil there is for export. The other factor that impacts exports is that if there are interruptions at offshore oilfields and export loadings. On Tuesday, Pemex posted its oil exports for January [LINK]. Pemex does not provide any commentary on the data, but the reported January oil exports were 0.532 mmb/d, which is down -34.1% MoM and -44.1% YoY vs 0.951 mmb/d in January 2024. Below is our table of the Pemex oil export data.

Figure 43: Pemex Mexico Oil Exports

Oil Exports (thousand b/d)	2018	2019	2020	2021	2022	2023	2024	2025	YoY%
Jan	1,107	1,071	1,260	979	832	980	951	532	-44.1%
Feb	1,451	1,475	1,093	1,006	925	949	940		-0.9%
Mar	1,176	1,150	1,144	925	905	971	687		-29.2%
Apr	1,266	1,023	1,179	923	1,024	989	681		-31.1%
May	1,222	1,205	1,062	1,031	965	1,087	911		-16.2%
June	1,110	995	1,114	1,106	1,029	1,203	754		-37.3%
July	1,156	1,079	1,051	1,173	1,062	1,052	779		-26.0%
Aug	1,181	1,082	1,190	1,099	915	1,076	731		-32.1%
Sept	1,206	995	1,023	983	1,022	1,119	656		-41.4%
Oct	1,027	963	908	935	971	1,053	831		-21.1%
Nov	1,135	1,114	1,171	1,025	893	883	951		7.7%
Dec	1,198	1,115	1,243	1,037	900	1,027	807		-21.4%

Source: Pemex

Oil: Trump says won't renew Chevron's Venezuela license, starting 6-mth wind down

Trump stops Chevron in Venezuela

No one should have been surprised to see Trump's Wed post that he was ending the Biden's licenses to operate in Venezuela, which means the six-month clock has started for Chevron to operate in Venezuela under the approved US oil license. We say no surprise because Trump's comments last week really put him n the position of having to not renew the licenses unless he wanted to continue Biden's Venezuela policy. And that would include Chevron's ability to import Venezuela oil into the US. On Wednesday, we posted [LINK] "*Positive for Cdn medium/heavy #Oil. Trump is not renewing oil licenses to Chevron et al on Venezuela. "I am therefore ordering that the ineffective and unmet Biden "Concession Agreement" be terminated as of the March 1st option to renew." "I am therefore ordering that the ineffective and unmet Biden "Concession Agreement" be terminated. #OOTT."* Trump's post said "*We are hereby reversing the concessions that Crooked Joe Biden gave to Nicolás Maduro, of Venezuela, on the oil transaction agreement, dated November 26, 2022, and also having to do with Electoral conditions within Venezuela, which have not been met by the Maduro regime. Additionally, the regime has not been transporting the violent criminals that they sent into our Country (the Good Ole' U.S.A.) back to Venezuela at the rapid pace that they had agreed to. I am therefore ordering that the ineffective and unmet Biden "Concession Agreement" be terminated as of the March 1st option to renew. Thank you for your attention to this matter*!"

Trump had to stop Chevron Venezuela oil license to clean up Biden mess

We think it would have been pretty well impossible for Trump to renew the Chevron Venezuela license as it would have meant that he was continuing what he loudly called as Biden's mess. Here is what we wrote in last week's (Feb 23, 2025) Energy Tidbits memo. "*Doesn't Trump have to stop Chevron Venezuela oil license to clean up Biden mess. After seeing Trump's comments on Friday, it seems to us that Trump*

has to stop Venezuela's oil exports or else he will be continuing what he calls the big mess Biden left behind with Maduro and Venezuela. Yesterday, we posted [LINK] "Positive for Cdn oil. Unless Trump wants to continue Biden's Venezuela "mess", doesn't he have to cut off VEN #Oil revenues incl VEN oil into Gulf Coast PADD 3. See his 👇comments. If he doesn't, he will be making the same Biden mistakes/mess - let VEN make ton of money, make them strong & keep Maduro from quitting. Thx @business #OOTT." Trump's comments to the Governors on Friday night went on the mess Biden created in Venezuela by letting Venezuela export oil including to the US. He didn't say he would cut the oil exports but, if he doesn't, he will be continuing the conditions that led to Biden's mess – letting Venezuela make a lot of money because of oil. Trump also highlighted Secretary of State Rubio who has been one of the strongest anti-Maduro US politicians. Here is what Trump said on Friday night "And then we've made Venezuela strong again. You know, they've given them a lot of money. They never thought they were going to have so much money. And all the people are leaving. So you're going to have one guy sitting there with a lot of -- a lot of oil under his feet. That's not a good situation. But we're having talks about that whole mess. What a mess. It was, that was another one that was done. He was ready to quit. He was going to be out. Marco, you know that better than anybody. Marco's been very staunch against what, took place there. And we were going to have that in any form we wanted it. But Biden made them strong."

Oil: Russian refineries processing slight grow WoW despite drone attacks persisting

Longer down time for CPC pipeline

We have been surprised the last several weeks of how Russia has been able to keep its refineries going relatively well despite Ukraine drone attacks that even Russia local politicians admit hit the refineries. There were more drone hits on Russian refinery complexes last week, but unfortunately, we never get any detail on how a refinery is impacted when a drone hits at a refinery. On Feb 19, Rosenft's Syzran refinery was hit by a drone attack that caused a fire outbreak, resulting in a suspension to its operations. The Ryazan refinery, one of Russia's five largest oil refinery facilities, halted operations on Monday after its third drone attack in the past month caused fire outbreaks. Bloomberg reported that, during the period of Feb 12-19, Russia's average crude processing rate increased slightly to 5.36 mmb/d, which is up about than +0.230 mmb/d WoW. This is the largest weekly growth in processing rates since November, and was in part due to the Lukoil's Volgograd refinery significantly restoring its runs after three drone attacks in the past month had more than halved its processing rates. Bloomberg wrote, "*Russia's crude processing rates rose to a four-week high in the seven days through Feb. 19 as refiners restart some of the capacity damaged by drone attacks, according to a person with knowledge of industry data*." Our Supplemental Documents package includes the Bloomberg article.

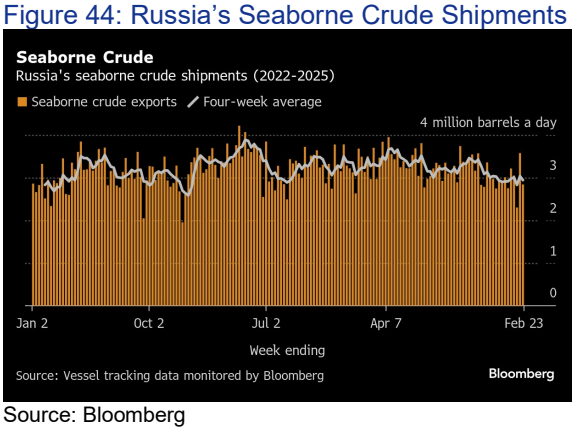
Oil: Russia's seaborne crude shipments up big with new tankers & workarounds

Russia's seaborne crude exports

On Tuesday, Bloomberg released their weekly Russian Seaborne crude tracker titled "*Russia Steps Up Covert Cargo Transfers to Keep Its Oil Moving*". There was a WoW decrease in Russia oil shipments after the previous week's spike. Bloomberg wrote "*Cargo switches from specialized shuttle tankers and sanctioned ships are helping to maintain flows out of Russia's ports in the Pacific and Arctic, vessel-tracking data compiled by Bloomberg show. Still, shipments dropped sharply in the latest week, and delivering the cargoes to China and India is proving challenging."* There was a 0.730 mmb/d WoW decline, cutting more than 55% of

the previous week's jump in shipments. Shipments of Russia crude from the Artic were down, while flows from Novorssiysk fell to zero. Bloomberg also wrote *"Daily crude flows in the seven days to Feb. 23 slumped by about 730,000 barrels, or 21%, from the previous week to 2.84 million. The drop reversed more than half of a 55% jump seen the previous week. Shipments of Russian crude from Novorossiysk fell to zero, while flows from the Arctic were also down. Exports from the Baltic were unchanged from the previous week, with an increase in operations at Primorsk offsetting a decline at Ust-Luga."* Our Supplemental Documents package includes the Bloomberg report.

Figure 44: Russia's Seaborne Crude Shipments



Source: Bloomberg

Russia oil exports to China continue to fall, down ~0.30 mmb/d vs Jan 5

Bloomberg also provided the Russia oil shipments to key Asian countries. We have been highlighting the reports in Jan that China had stopped some direct unloading of sanctioned Russian tanks, and this is evident in Bloomberg's Russian oil shipments to China. Bloomberg's crude oil shipments from Russia to China have continued to report lower volumes of shipments since the US sanctions were implemented on Jan 10. The four-week average of Russia oil shipments to China were 1.02 mmb/d for the week ending Feb 23, which is down 0.30 mmb/d vs the four-week average at Jan 5 of 1.320 mmb/d. Below are the Bloomberg table and graph that we attached to our post.

Figure 45: Russian Crude Shipments to China

Russia's Asian Customers
Shipments of Russian crude to Asian buyers in million barrels a day

4 weeks ending	China	India	Other	Unknown Asia	Other Unknown	Total
January 19, 2025	1.00	1.52	0.00	0.00	0.03	2.55
January 26, 2025	1.11	1.42	0.00	0.04	0.03	2.58
February 02, 2025	1.13	1.45	0.00	0.04	0.03	2.64
February 09, 2025	1.10	1.35	0.00	0.04	0.03	2.52
February 16, 2025	1.24	1.40	0.00	0.19	0.00	2.83
February 23, 2025	1.02	1.43	0.00	0.26	0.05	2.76

Source: Vessel tracking data compiled by Bloomberg
Bloomberg

Source: Bloomberg

01/10/25: Biden sanctioned 160 tankers that shipped 1.6 mmb/d of RUS oil

Here is what we wrote in our Jan 19, 2025, Energy Tidbits memo. "*Last week's (Jan 12, 2025) Energy Tidbits highlighted the Jan 10 new Biden sanctions on Russia energy sector. This week, the IEA noted the significance of the latest sanctions on Russian tankers. They noted it impacted over 160 tankers that carry oil for Russia, Iran and Venezuela. And that these newly sanctioned tankers shipped over 1.6 mmb/d of Russian oil in 2024, which was ~22% of Russia's seaborne exports. The IEA also noted "At the same time, there is heightened speculation that the incoming US administration will take a tougher stance on Iran's oil exports, compounding the impact of US Treasury sanctions on Tehran. On 19 December, the US expanded sanctions on vessels transporting Iranian crude. The new sanctions on Iran's shadow fleet now cover vessels that transported an average of over 500 kb/d of Iranian crude in 2024, nearly one-third of the country's crude exports. While it is too early to fully quantify the potential impact from these new measures, some operators have reportedly already started to pull back from Iranian and Russian oil."*

Oil: US security warnings for Ramadan were for Israel, West Bank & Gaza

Ramadan started March 1

Ramadan started on March 1 and, on Thursday, we finally saw a US govt security warning related to Ramadan. The security warning was different than in prior years in that it was specific to Americans in Israel, West Bank and Gaza and didn't include in other parts of the Middle East and Africa. Also the security warning didn't include the traditional warming on how terrorist events during Ramadan can have special significance. In prior years, the US Overseas Security Advisory Council [LINK] for Security Alerts have typically referred to Ramadan. In prior years, their warnings have noted that "*martyrdom during the month may hold a special allure to some*". The US normally makes this reminder much like they will remind of terrorist risk on certain anniversaries. Those prior warnings were not included in the Thursday US security warning [LINK] "*\Security Alert: Israel, the West Bank, and Gaza, February 27. Due to the potential for security issues, U.S. government employees and their family members are temporarily restricted from entering the Old City of Jerusalem on Fridays during Ramadan (from midnight Friday morning until midnight Saturday morning).The U.S. Embassy reminds U.S. citizens of the continued need for caution and increased personal security awareness since attacks often take place without any warning. The security environment is complex and can change quickly. U.S. citizens should take this into consideration when planning their own activities. In response to security incidents and without advance notice, the U.S. Embassy can further restrict or prohibit U.S. government employees and their family members from traveling to certain areas of Israel (including the Old City of Jerusalem) and the West Bank. The Embassy will continue to review the security situation and will provide additional information as needed."*

Oil: IOCs in Kurdistan want guarantees they will get their money if oil exports resume

Kurdistan oil via Turkey

Last week's (Feb 23, 2025) Energy Tidbits memo included the breaking news that Kurdistan and Iraq agreed on a deal to resume Kurdistan oil via Turkey and that it was to happen very quickly. However, we probably shouldn't have been surprised to see that things aren't as smooth as they should be. The restart hasn't yet happened. Yesterday, the Iraqi News Agency (state media) reported [LINK] Iraq is meeting with Kurdistan on Tuesday "*The ministry extended an invitation to the Ministry of Natural Resources in the region to attend in*

Baghdad next Tuesday for the purpose of discussing and debating issues related to the concluded contracts to reach understandings that contribute to developing the oil fields with the best international practices and in a manner that serves the national interest." Some of the initial reports suggested Iraq invited the IOCs to meet but that looks to be an incorrect interpretation of what the Iraqi News Agency reported. Rather they reported "*The ministry stated in a statement, received by the Iraqi News Agency (INA) today, Saturday, that it "extended an invitation to international foreign companies under (APICOR) and contracted with the Kurdistan Regional Government to develop the region's fields*." And the IOCs yesterday came out clearly saying there are issues to be resolved. Earlier this morning, we posted [LINK] "*Can't blame them. IOCs in Kurdistan ".. the principles are we must have guarantees that these payments will occur". @apikur_oil Myles Caggins. Still no firm restart for Kurdistan #Oil via Turkey. #OOTT."* APIKUR is the industry association for the international oil companies operating in Kurdistan. Our post included the video of APIKUR reminding there are still outstanding issues including they "*must have guarantees that these payments will occur."*

Oil: Libya oil production of 1.376 mmb/d is above Aug 1 levels

Libya oil production at 1.376 mmb/d

On Friday, the Libya National Oil Corporation (NOC) posted [LINK] *"Oil, gas and condensate production rates over the past 24 hours. #NOC #OIL #LIBYA"*. The NOC reported crude oil production of 1,376,112 b/d and 50,939 b/d of condensates amounting to total liquids production of 1,427,051 b/d. This is above the Aug 1 level of 1.279 mmb/d for oil + condensate before the interruptions started and when the NOC stopped providing oil production updates for a few months. Note that the NOC updated its posting format and now provides commentary on the changes in production. The NOC stated that oil production declined due to essential maintenance work on production lines. The NOC has removed its total production figure that included oil, condensate, and natural gas production measured in boe/d.

Libya targets 1.6 mmb/d in 2025 and 2 mmb/d by 2028

Here is what we wrote in our Jan 19, 2025 Energy Tidbits memo. "*Libya targets 1.6 mmb/d in 2025 and 2 mmb/d by 2028. We have been big believes for decades that there is big oil production growth potential in Libya if there is peace and access to foreign capital. So when we see the NOC saying they can get to 2 mmb/d in three years, we believe that is attainable as longer there is peace and access to capital. Yesterday, Libya held its Libyan Energy and Economy Conference 2025 in Tripoli. Yesterday, the NOC posted [LINK] "And moving forward to achieve the main goal of reaching a production of 2 million barrels per day within the next three years, if sufficient funding is available to achieve this." Amena Bakr (Senior Research Analyst at Energy Intelligence) X/Twitter post [LINK] gave further color. "Under the current plan Libya hopes to boost its capacity to 1.6 million bpd by the end of this year, and 2 million bpd by 2028". It isn't clear if this is oil or oil + condensate, but condensate, if included would likely be under 100,000 b/d in total of the 2 mmb*/d."

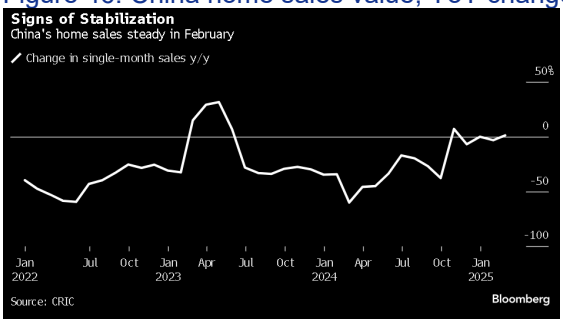
Oil: Preliminary China Feb new home sales value +1.2% YoY

Preliminary China Feb new home sales value

We have focused on China home values as, just like in North America, Chinese consumers most important asset is the value of their homes, which have gone down in value MoM for over a year and a half. Chinese consumers need to see a bottom in their home values. We

believe that until they see a bottom and a bit of turn, Chinese consumers will likely stay reserved in their spending. It is preliminary data and for the value of China new home sales in Feb as opposed to price per home but Bloomberg reported on some preliminary China new home sales value for Feb that is pointing to a bottom being found. Bloomberg wrote "*China's residential sales grew slightly in February, in a sign that the real estate market is stabilizing with continued policy support. The value of new-home sales from the 100 biggest property companies rose 1.2% to 188 billion yuan ($25.8 billion) from a year earlier, according to preliminary data from the China Real Estate Information Corp. That's after a 3.2% decline in January." .*

Figure 46: China home sales value, YoY change



Source: Bloomberg

China home prices keep dropping in value, 20 mths for new & 21 mths for old

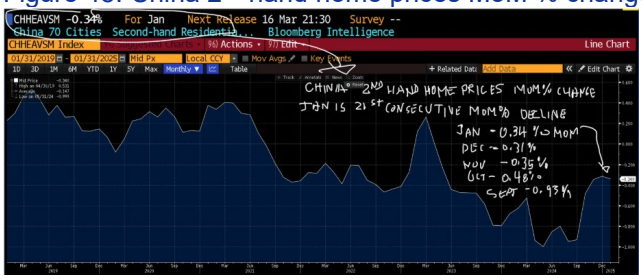
Here is what we wrote in last week's (Feb 23, 2025) Energy Tidbits memo about China's new and 2nd hand home prices for Jan. "*China home prices continue to lower in value, 20 mths for new & 21 mths for old. One of the most important priorities for China when announcing their stimulus was to stop home values from declining and increase consumer sentiment. And there is still the wildcard of how Chinese consumers sentiment will be impacted by what Trump does or does not do on China and how that will impact Chinese consumer sentiment for home buying as Trump implements his tariffs on China. But at least for now, the indicators for Jan new and used home prices were still negative MoM but improving with a lower MoM decline than seen in Dec. On Tuesday, we posted [LINK] "Chinese consumer's most important asset, their home values, keep going lower. Jan & Dec smallest MoM % decline but still a decline. New home prices: 20th straight MoM % drop. Jan -0.07%. Dec -0.08%. Nov -0.20%, Oct -0.51%. Sept -0.71%. 2nd hand home prices: 21th straight MoM % drop. Jan -0.34%. Dec =0.31%. Nov -0.35%, Oct -0.48%. Sept -0.93%. Thx @business #OOTT". China home prices continue to lose value – new home prices had a MoM% drop for the 20th straight month, and second-hand home prices fell for the 21th straight month. The MoM% drop was the lowest in several months, which seems to point to an improving China housing market. Nonetheless, prices are still falling. One of the most significant drivers of negative sentiment among Chinese consumers has, to date, been they keep losing value in their homes, which meant their biggest asset value keeps decreasing month after month. Just like in North America, the home is the most important asset for most Chinese people, and they have seen the value of their homes decline month after month with no end in*

sight. In Jan, China new home prices were down -0.07% MoM and second-hand home prices were down -0.34% MoM. It seems like China home prices got a lift post China Sept stimulus and fell far less than previous months. But, as noted above, the qualifier will be how the new Trump administration is viewed by Chinese consumers. Below are the Bloomberg graphs with the Jan home prices that were included with our post."

Figure 47: China new home prices MoM % change incl Jan 2025

Source: Bloomberg, National Bureau of Statistics

Figure 48: China 2nd hand home prices MoM % change incl Jan 2025



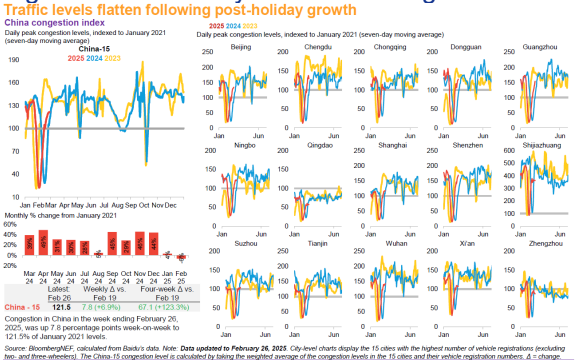
Source: Bloomberg, National Bureau of Statistics

Oil: China city-level road congestion normalizing post Spring Festival

China city-level road congestion

The 40-day Spring Festival ended last week, and we saw China city-level road congestion rebound post-holiday as people were back to work. As expected, this week traffic growth flattened after the big spike in the previous week. On Thursday, BloombergNEF posted its China Road Traffic Indicators Weekly report, which includes the Baidu city-level road congestion for the week ended Feb 26. BloombergNEF reported Baidu city-level road congestion saw an increase of +6.9% WoW to 121.5% of Jan 2021 levels. February 2025 data saw average daily peak congestion up +15.1% YoY when compared to February 2024. We noted in previous weeks memos that Chinese New Year and Spring Festival is early this year and that means China city-level road congestion saw a huge decline in January and not in February as happened in 2024. Note that this report was formerly titled Road Traffic indicators, and is now China Road Traffic Indicators, but the content of the report is unchanged. BloombergNEF's report was titled "*Congestion growth slows after post-holiday rebound*". Below are the BloombergNEF key figures.

Figure 49: China city-level road congestion for the week ended Feb 26



Source: Bloomberg

Oil: China official Jan Manufacturing PMI back to expansion before Trump 10% tariff

China official Manufacturing PMI

As of our 7am MT news cut off, the expectation is that the Trump 10% tariffs on China go into effect as planned on Tuesday. There is also a major China event starting Tues – The China two sessions that is March 4 and 5, where China will be expected to roll out their economic plans and policy support. Prior to the tariffs, we saw Chinese manufacturers turn back positive in Feb. On Friday night, we posted [LINK] "*China "official" manufacturing PMI back to expansion BUT two big wildcards on Tues: Trump tariffs & start of China "two sessions". Feb 50.2 vs est 49.9. Jan 49.1 vs est 50.1 Dec 50.1 Nov 50.3 Oct 50.1 Sept 49.8 Aug 49.1 July 49.4. Smaller, more export oriented Caixin manufacturing PMI is Sunday night. #OOTT.*" Bloomberg posted the official China manufacturing PMI on Friday night. As a reminder, there are two China manufacturing PMI data reports that come out each month, the Official Manufacturing PMI that the National Bureau of Statistics publishes and the Caixin Manufacturing PMI from S&P Global. The Caixin Manufacturing PMI is for more smaller, export-oriented companies and is being released tonight. We were a little surprised that the PMI was back above 50 given the still uncertain impact of Trump tariffs. The China official manufacturing PMI for Feb was an expansion 50.2 (vs estimates 49.9), which follows 49.1 in Jan, 50.1 in Dec and 50.3 in Nov. Below is the Bloomberg chart of China official general manufacturing PMI.

Figure 50: China Official General Manufacturing PMI

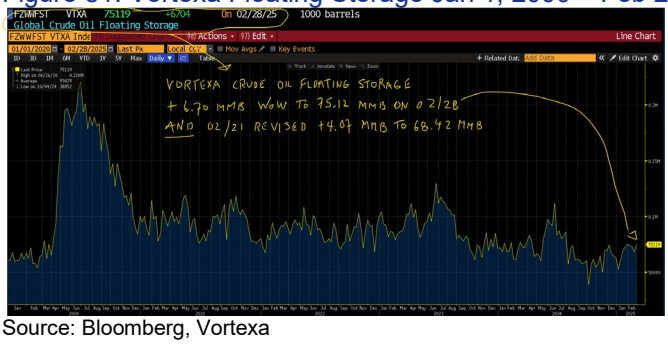
Source: Bloomberg

Oil: Vortexa crude oil floating storage +6.70 mmb WoW to 75.12 mmb at Feb 28

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 22 at 9am MT. (i) Yesterday morning, we posted [LINK] "*Vortexa crude #Oil floating storage. 75.12 mmb on 02/28, +6.70 mmb WoW vs revised up 02/21 of 68.42 mmb. 7-wk moving average of 72.47 mmb, 02/21 & 02/28 are 1st times >70 since Aug. Been a month since China stopped unloading some sanctioned RUS tankers. Asis is off from peak but still high ie. perhaps pointing to so so demand. Thx @vortexa @business #OOTT.*" (ii) As of 9am MT Mar 1, Bloomberg posted Vortexa crude oil floating storage estimate for Feb 28 was 75.12 mmb, which was +6.70 mmb WoW vs revised up Feb 21 of 68.42 mmb. Note Feb 21 was revised +4.07 mmb to 68.42 mmb vs 64.35 mmb originally posted at 9am on Feb 22. (iii) Revisions. Other than Feb 21 revised +4.07 mmb, the rest of the prior 7 weeks revisions were all small negative revisions such that the average revision for the prior seven weeks was -0.34 mmb. Here are the revisions for the prior seven weeks compared to the estimates originally posted on Bloomberg at 9am MT on Feb 22. Feb 21 revised +4.07 mmb. Feb 14 revised -1.13 mmb. Feb 7 revised -1.77 mmb. Jan 31 revised -1.14 mmb. Jan 24 revised -0.49 mmbb. Jan 17 revised -0.87 mmb. Jan 10 revised -1.08 mmb. (iv) The last two weeks have been the first time since Aug that the 7-week moving average is over 70 mmb. This week's increase is because the low Jan 10 week of 60.99 mmb was dropped from the 7-week moving average. The 7-week moving average to Feb 28 is 72.47 mmb vs last week's then 7-week moving average of 70.79 mmb. (v) Also remember Vortexa revises these weekly storage estimates on a regular basis. We do not track the revisions through the week. Rather we try to compare the first posted storage estimates on a consistent week over week timing comparison. Normally we download the Vortexa data as of Saturday mornings around 9am MT. (vi) Note the below graph 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. (vii) Feb 28 estimate of 75.12 mmb is-54.80 mmb vs the 2023 peak on June 25, 2023 of 129.92 mmb. Recall Saudi Arabia stepped in on July 1, 2023 with its voluntary cuts. (viii) Feb 28 estimate of 75.12 is +3.68 mmb YoY vs Mar 1 2024 at 71.44 mmb. Below are the last several weeks of estimates posted on Bloomberg as of 9am on Mar 1, Feb 22 and Feb 15.

Figure 51: Vortexa Floating Storage Jan 1, 2000 – Feb 28, 2025, posted Mar 1 at 9am MT



Source: Bloomberg, Vortexa

Figure 52: Vortexa Estimates Posted 9am MT on Mar 1, Feb 22 and Feb 15

Posted Mar 1, 9am MT

FZWWFST VTXA Inde

01/01/2020 - 02/28/2025

Date	FZWWFST VT... Last Px
Fr 02/28/2025	75119
Fr 02/21/2025	68415
Fr 02/14/2025	72691
Fr 02/07/2025	73317
Fr 01/31/2025	75414
Fr 01/24/2025	72402
Fr 01/17/2025	69915
Fr 01/10/2025	60985
Fr 01/03/2025	52278
Fr 12/27/2024	62750
Fr 12/20/2024	64515
Fr 12/13/2024	66507

Feb 22, 9am MT

FZWWFST VTXA Inde

01/01/2020 - 02/21/2025

Date	FZWWFST VT... Last Px
Fr 02/21/2025	64348
Fr 02/14/2025	73815
Fr 02/07/2025	75086
Fr 01/31/2025	76545
Fr 01/24/2025	72881
Fr 01/17/2025	70785
Fr 01/10/2025	62067
Fr 01/03/2025	53602
Fr 12/27/2024	64562
Fr 12/20/2024	63427
Fr 12/13/2024	65881
Fr 12/06/2024	73265

Feb 15, 9am MT

FZWWFST VTXA Inde

01/01/2020 - 02/14/2025

Date	FZWWFST VT... Last Px
Fr 02/14/2025	68562
Fr 02/07/2025	70403
Fr 01/31/2025	75279
Fr 01/24/2025	72772
Fr 01/17/2025	68537
Fr 01/10/2025	63539
Fr 01/03/2025	54058
Fr 12/27/2024	65106
Fr 12/20/2024	66219
Fr 12/13/2024	66772
Fr 12/06/2024	74068
Fr 11/29/2024	67717

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage by region

Vortexa floating storage by region

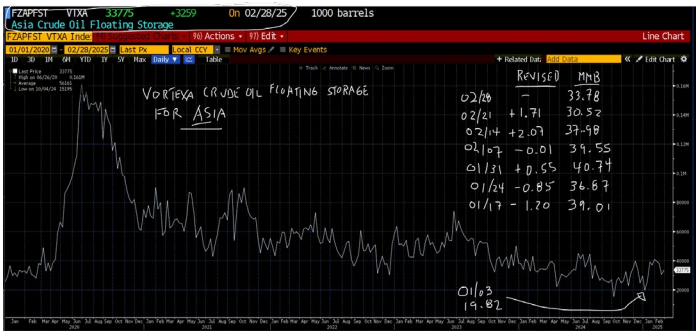
Bloomberg posts Vortexa crude oil floating storage in key regions, but not all regions of the world. The regions covered are Asia, North Sea, Europe, Middle East, West Africa and US Gulf Coast. We then back into the "Other" for rest of world. (i) As noted above, last week's Feb 21 was revised +4.07 mmb. The largest revisions were West Africa +2.02 mmb and Asia +1.71 mmb. (ii) Asia floating storage doubled in Jan when China surprised by becoming stricter on taking sanctioned tankers related to Russia from 19.82 mmb on Jan 3 reaching a high of 40.74 mmb on Jan 31. Feb 28 at 33.78 and Feb 21 at 30.52 mmb is better but still high. The China sanctioned tankers immediate hit should have worked thru the system by now so the continued higher Asia floating storage would seem to be more reflective of demand. The 7-week moving average is now 36.92 mmb, but it includes the big weeks in the aftermath of the surprise China change. (iii) Total floating storage on Feb 28 of 75.12 mmb was +6.70 mmb WoW vs revised up Feb 21 of 68.42 mmb. The major WoW changes were Europe +3.44 mmb WoW, Asia +3.26 mmb WoW and Middle East -2.86 mmb WoW. (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 21 that was posted on Bloomberg at 9am MT on Feb 22.

Figure 53: Vortexa crude oil floating storage by region

Vortexa crude oil floating storage by region				Original Posted	Recent Peak	
Region	Feb 28/25	Feb 21/25	WoW	Feb 21/25	Jun 23/23	Feb 28 vs Jun 23/23
Asia	33.78	30.52	3.26	28.81	74.06	-40.28
North Sea	3.71	2.28	1.43	2.28	4.71	-1.00
Europe	8.78	5.34	3.44	5.39	6.05	2.73
Middle East	7.19	10.05	-2.86	9.80	6.59	0.60
West Africa	7.06	6.04	1.02	4.02	7.62	-0.56
US Gulf Coast	2.16	2.87	-0.71	2.47	1.02	1.14
Other	12.44	11.32	1.12	11.58	29.87	-17.43
Global Total	75.12	68.42	6.70	64.35	129.92	-54.80
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Mar 1						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

Figure 54: Vortexa crude oil floating storage for Asia Jan 1, 2020 thru Feb 28, 2025



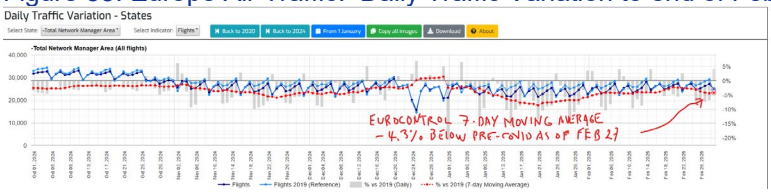
Source: Bloomberg, Vortexa

Europe airports daily traffic

Oil: Europe airports daily traffic 7-day moving average -4.3% below pre-Covid

Earlier this morning, we posted [LINK] "*"EU air traffic (arrivals/departures) still stuck below pre-Covid. 7-day moving average as of: Feb 27: -4.3% below pre-Covid. Feb 20: -2.4%. Feb 13: -4.1%. Feb 6: -4.3%. Jan 30: -5.9% below pre-Covid. Jan 23: -7.6%. Jan 16: -7.6%. Jan 9: -4.2%. Jan 2: -2.6%. Dec 26: +0.8%. #OOTT."* Note the Eurocontrol air taffic is daily arrivals/departures data. The Xmas rush for the 7-day moving average as of Dec 26 was the only time above pre-Covid since Jan 2024 but it didn't last and went right back below pre-Covid in Jan 2025. Air traffic always goes up for Xmas and it always seasonally drops after Xmas. But in Jan 2024, it didn't drop as much and was actually above pre-Covid in Jan 2024. This year, there was a big drop off after Xmas. The 7-day moving average was -4.3% below pre-Covid as of Feb 27, which follows -2.4% as of Feb 20, which follows -4.1% as of Feb 13, -4.3% as of Feb 6 ,-5.9% as of Jan 30, -7.6% as of Jan 23, -7.6% below as of Jan 16, -4.2% as of Jan 9, -2.6% as of Jan 2, and +0.8% as of Dec 26. Normally we try to pull the data early Saturday mornings for a consistent weekly comparison but we checked all Saturday and nothing was posted until this morning. Eurocontrol updates this data daily and it is found at [LINK].

Figure 55: Europe Air Traffic: Daily Traffic Variation to end of Feb 27



Source: Eurocontrol

Asian Pacific air traffic in Jan

Oil: Asia/Pacific international Jan passenger air travel up +19.9% YoY

On Tuesday, the Association of Asia Pacific Airlines (AAPA) released its Jan traffic results [LINK] which is comprised of aggregate data across a total of 40 Asia Pacific airline carriers. (i) Air travel. International passenger air travel on the 40 airlines is up big YoY. The AAPA reports preliminary Jan 2025 travel figures were up +19.9% YoY from Jan 2024. Travel was up +5.2% when compared to pre-Covid Jan 2020 numbers. Note that Asia air travel hadn't dropped much in Jan 2020, so it is a reasonable, but not perfect, comparison for pre-Covid.

The AAPA wrote *"The region's carriers achieved a solid 19.9% year-on-year growth for the month, transporting a combined total of 35.2 million international passengers. Demand as measured in revenue passenger kilometres (RPK) increased by 22.5%, markedly surpassing the 17.4% year-on-year expansion in available seat capacity. Consequently, the average international passenger load factor rose by 3.5 percentage points, to an elevated 83.7% in January."* (ii) Air cargo was up +4.7% YoY, measured in Freight Tonne Kilometres (FTK), and the load factor edged up by +3.5 percentage points to 83.7% YoY. Meanwhile, headline capacity measured in Available Seat Kilometres (ASK) rose +17.4% YoY but is still down -3.5% compared to Jan 2020 numbers. (iii) Subhas Menon, Director General of the AAPA, said *"The year began on a positive note for Asia Pacific carriers, with both international air passenger and cargo markets posting encouraging growth, underpinned by the timing of the Lunar New Year holidays… The relatively high load factors reflect strong demand but also ongoing capacity constraints, compounded by the grounding of aircraft due to engine issues and delays in aircraft deliveries. These challenges have contributed to an increase in expenditure on maintenance, aircraft leasing, and labour, while greater competition saw to lower yields and operating margins."* Below is a snapshot of the APAA's traffic update.

Figure 56: APAA Preliminary International Air Traffic Data

International	Jan-25	Jan-24	% Change
Passengers (Thousand)	35,196	29,345	+ 19.9%
RPK (Million)	123,719	101,010	+ 22.5%
ASK (Million)	147,775	125,920	+ 17.4%
Passenger Load Factor	83.7%	80.2%	+ 3.5 pp
FTK (Million)	5,956	5,689	+ 4.7%
FATK (Million)	10,797	9,732	+ 10.9%
Freight Load Factor	55.2%	58.5%	- 3.3 pp

Source: AAPA

Oil: IATA total air travel & domestic air above pre-Covid, up 10.0% YoY

January air travel up YoY

Overall global air travel is above pre-Covid levels for both domestic and international air travel. On Thursday, the International Air Transport Association (IATA) released air passenger data for January 2025 [LINK]. (i) Overall air travel. The IATA wrote "*Industry total Revenue Passenger-Kilometer (RPK) rose by 10.0% year-on-year (YoY) in January, a notable acceleration from the previous months. Passenger Load Factor (PLF) reached 82.1% across the industry, a record for January. Domestic and International PLF also climbed to record highs."* (ii) Domestic air travel. *"Total domestic RPK increased 6.1% over the year. Asia Pacific markets traffic rose at a higher pace in January. India domestic RPK increased by 17.1% YoY despite engine issues faced by some carriers in the country. Moreover, low-cost carriers, which already carry most of the country's domestic traffic, continued to expand their activity. PR China RPK climbed 10.0% annually."* (iii) International air travel. "*Asia Pacific and European carriers, the two largest airline regions in terms of international traffic, brought more than 75% of the total yearly increase in RPK in January. Asia Pacific carriers led among the regions with 21.8% annual growth, as traffic from Northeast Asia grew significantly. Europe RPK grew at 8.6% YoY, consistent with the trend noted over the past months".* Overall, international air travel is above pre-Covid with the Asia Pacific driving

growth this month, after being considered a laggard in previous months. Our Supplemental Documents package includes the official IATA report.

Figure 57: January 2025 Air Passenger Market

	World share [1]	January 2025 (% year-on-year)			
		RPK	ASK	PLF (%-pt)	PLF (level)
TOTAL MARKET	*100.0%*	**10.0%**	**7.1%**	**2.2%**	**82.1%**
International	*61.8%*	12.4%	8.7%	2.7%	82.6%
Domestic	*38.2%*	6.1%	4.5%	1.2%	81.2%

[1] % of industry RPKs in 2024

Source: IATA

12/10/24: IATA reminded average age of global fleet is record high of 14.8 years

When we see the IATA highlight both global air passenger and cargo volumes continue to set new record highs, we like to remind that this is being done with an aging fleet. One of the items that seems to be overlooked in looking at jet fuel consumption is that there is an aging global fleet of planes and older planes are, as a general rule, more fuel inefficient and will use more jet fuel per mile than new planes. The global fleet is at record high of 14.8 yrs. The IATA reminded of this in their recent Dec 10, 2024 global outlook for air travel. Here is what we wrote in our Dec 15, 2024 Energy Tidbits memo. "*IATA forecast jet fuel consumption to be +0.40 mmb/d YoY to 6.99 mmb/d in 2025. We don't have a jet fuel forecast model, but we couldn't help think that the IATA's forecast for global jet fuel consumption to be +0.40 mmb/d YoY in 2025 seems conservative given the IATA's highlighting of an aging global air fleet and increasing demand for used planes. (i) On Tuesday, the IATA (International Air Transport Association) posted its global outlook. The headline is record air passenger and air cargo in 2024 and going higher in 2025. For 2025 vs 2024, the IATA forecasts passengers +6.7% YoY to 5.221 million, flights +4.7% YoY to 40.0 million, passenger RPK +8.0% YoY, and cargo growth CTK +6.0% YoY. (ii) On Tuesday, we posted [LINK] "Anyone else surprised IATA only fcast jet fuel consumption +0.40 mmbd YoY in 2025 to 6.99 mmbd. Follows 2024 was +0.59 mmbd YoY to 6.59 mmbd. Air travel up again YoY to new record flying in 2025 AND IATA highlights global fleet average age now record high 14.8 yrs and increased demand for used planes. Old planes tend to be relative jet fuel guzzlers. #OOTT." (iii) We don't know their model, but we would have expected fuel efficiency would have been worse ie. more liters per passenger. Before we saw the fuel efficiency table below, the IATA highlighted the backlog of new plane deliveries, "high traffic demand, coupled with capacity constraints, has led to an increase demand for used aircraft, and in turn, to a significant decline int eh share of parked fleet, which dropped to 14%, the lowest since 2019." And they highlighted "The ongoing delays in deliveries have increased the average age of the global fleet to a record high of 14.8 years, compared to an average age of 13.6 years during 1990-2024". Having read these first, we would have expected fuel efficiency to be worse in 2025 and not better in 2025. An older fleet and more used planes would have normally pointed to less fuel efficiency and therefore more jet fuel consumption given increasing flights. And that is why we have to wonder if the IATA forecast for jet fuel consumption being +0.40 mmb/d YoY in 2025 is conservative. Our Supplemental Documents package includes excerpts from the IATA global outlook."*

Figure 58: Global air industry statistics

Table 10: Industry statistics

Global airline industry	2019	2020	2021	2022	2023	2024E	2026F
Segment passengers, million	4,560	1,779	2,304	3,472	4,439	4,893	5,221
O-D passengers, million	3,974	1,570	2,017	2,962	3,808	4,216	4,477
Flights, million	37.5	19.7	24.2	29.0	35.7	38.2	40.0
Passenger growth, RPK, % YoY	4.1%	-65.8%	21.8%	64.9%	36.8%	11.2%	8.0%
Cargo growth, CTK, % YoY	-3.2%	-9.9%	18.8%	-8.1%	-1.7%	11.8%	6.0%
Capacity growth, ATK, % YoY	3.3%	-44.3%	16.6%	19.7%	21.7%	9.9%	7.1%
Total load factor, % ATK	70.1%	59.8%	61.9%	67.2%	68.7%	69.6%	69.9%
Passenger load factor, % ASK	82.6%	65.2%	66.9%	78.7%	82.2%	83.0%	83.4%

Source: IATA

Figure 59: Key industry fuel metrics

Table 7: Key industry fuel metrics

Global airline industry	2019	2020	2021	2022	2023	2024E	2026F
Fuel spend, USD billion	190	80	106	215	269	261	248
% change YoY	1.5%	-58.0%	32.3%	103.6%	25.2%	-3.2%	-4.8%
% of operating costs	23.9%	16.1%	19.0%	29.6%	31.8%	28.9%	26.4%
Fuel use, billion gallon	96	52	62	76	92	101	107
% change YoY	2.2%	-45.9%	19.9%	22.9%	20.3%	9.8%	6.0%
Fuel efficiency, liter/100 ATK	0.24	0.23	0.24	0.24	0.23	0.23	0.23
% change YoY	-0.6%	-2.7%	3.0%	0.7%	-1.8%	-0.1%	-1.0%
Fuel consumption, liter per 100 km/passenger	4.2	6.6	6.5	4.8	4.3	4.2	4.1

Source: IATA

Oil: IATA, global air cargo Jan was 18th consecutive month of YoY growth

IATA January global air cargo

We look at international air cargo as the data that affirms the level of export orders and trade. On Thursday, the International Air Transport Association (IATA) announced cargo data for the month of January [LINK]. January global air cargo, measured through Cargo Tonne-Kilometers (CTK), increased +3.2% YoY. This marks the eighteenth consecutive month of YoY growth. The IATA wrote "*Total demand, measured in cargo tonne-kilometers (CTK), rose by 3.2% compared to January 2024 levels (3.6% for international operations) for an 18th consecutive month of growth. Capacity, measured in available cargo tonne-kilometers (ACTK), increased by 6.8% compared to January 2024 (7.3% for international operations).*" Willie Walsh, IATA's Director General, commented "*January marked 18 consecutive months of growth for air cargo, but the month's 3.2% year-on-year growth is a moderation from double-digit peaks in 2024. Similarly, yields, while still above January 2024 levels, saw a 9.9% decline from December as cargo load factors also declined by an average of 1.5 percentage points. While external factors such as trade growth, declining fuel costs and expanding e-commerce remain positive for air cargo, it is important to closely watch the evolution of market conditions at this time. In particular, the wild card is the potential for tariff-driven trade policies from the US Trump Administration. Fortunately, the air cargo industry is well practiced at dealing with shifts in the operating environment.*" Our Supplemental Documents package includes the official IATA report.

Figure 60: January 2025 Air Cargo Market

	World share [1]	January 2025 (% year-on-year)			
		CTK	ACTK	CLF (%-pt)	CLF (level)
TOTAL MARKET	100.0%	3.2%	6.8%	-1.5%	43.9%
International	87.3%	3.6%	7.3%	-1.7%	47.6%

Note 1: % of industry CTK in 2024

Source: IATA

Oil: Will travel be higher for longer? Accor sees 4-6% growth for next 20 years

Travel higher for longer driven by middle class

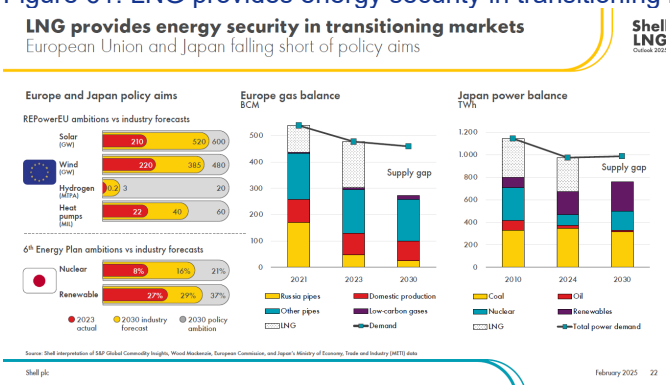
The post-Covid travel boost has been framed as just that – a post-Covid travel boost and not a trend that will go on for the longer term. But on Thursday morning, we saw a confident Accor CEO Bazin talk about how they see "*super good growth*" for the next 20 years. When we heard Bazin's comments, we thought this was a much more bullish indicator for travel going forward and one that seemed to directly tie to OPEC's reminder that middle class is in a huge travel expansion phase for the rest of the decade. And Accor is saying the middle class are driving the boost in travel. More travel is better for oil consumption. On Thursday, we posted [LINK] "*Potential upside to long term #Oil demand forecasts? @OPECSecretariat 1 billion more in middle class by 2030. WOW! says @BeckyQuick to Accor CEO "we see super good growth for the next probably 20 years... because of three things. We run on emerging, basically middle classes, increase the mobility and increased means of transporting.....been from 3 to 5% demand growth for the last 20 years, we're going to go to 4 to 6% growth for the next 20 years." #OOTT."* And [LINK] "*Higher travel levels for longer! More planes, trains & automobiles is positive for #JetFuel #Gasoline #DIESEL See 👇Accor CEO to @BeckyQuick #OOTT."* Here is the transcript we created of Bazin's comments. " Becky Quick *".. all these questions about what is happening, particularly at the mid and lower end, what are you seeing across the board*?" Bazin "*we see super good growth for the next probably 20 years*." Quick "*Wow!*" Bazin *"it's kind of amazing. This industry is blessed. It's blessed because of three things. We run on emerging, basically middle classes, increase the mobility and increased means of transporting, [?] airlines across the world. And those three [?}. So clearly for the next 20 years, we've been from 3 to 5% demand growth for the last 20 years, we're going to go to 4 to 6% growth for the next 20 years*."

Energy Transition: Shell, LNG needed to fill the gap in EU/Japan for transition delay

LNG needed to fill energy transition gap

For several years, one of our major energy themes is that the energy transition will take way longer, cost way more and be a bumpy/rocky road, and that means oil and natural gas will be needed for longer, especially tor natural gas to fill in the gap for electricity. Shell's LNG Outlook 2025 highlighted this theme. On Wednesday, we posted [LINK] *"#NatGas needed to save the day! Shell reminds the #NatGas needed to come to rescue in EU & Japan to fill the gap because transition items are taking way longer than expected. #NatGas #LNG will be needed for way longer than aspired in Net Zero. #OOTT."* Mgmt's comments on the webcast highlighted this slide that highlights EU is far from being able to attain its ambition for hydrogen. And Japan is also behind its ambition for its 6th Energy Plan on both renewables and nuclear. Shell then shows the huge supply gap that is needed to 2030 for more natural gas in EU and Japan. And that the only solution to fill the gap is more LNG or natural gas.

Figure 61: LNG provides energy security in transitioning markets



Source: Shell

Energy Transition: OPEC, $1T in renewables hasn't zeroed out fossil fuels growth

OPEC reminds of energy challenge

No one can deny that there has been huge growth in renewable energy. At the same time, no one can deny oil, natural gas and even coal demand continue to grow. This is what OPEC's consistent call has been – the addition of renewables is additive to fossil fuels. Rather there has been and continues to be strong growth in energy demand driven by well accepted drivers like population growth, 500 million people moving to urban areas, 1 billion more people in the middle class by 2030 and the bottom of the pyramid in non-OECD countries still lacking access to electricity, clean cooking fuels, etc. On Thursday, we posted [LINK] *"$ trillions in renewables haven't zeroed out fossil fuels growth. They are additive & needed to meet the big challenge of growing energy consumption for decades. Good reminder from @OPECSecretariat of energy challenge ahead. Global economy to double by 2050. 1 billion more people. 500 million move to urban where energy consumption is higher. 1 billion more in middle class by 2030. Great for mobility/travel. BOP in non-OECD still lack access to electricity, clean cooking fuels, etc. #OOTT #Oil #NatGas."* This is the challenge how to meet increasing needs in an economy that is set to more than double by 2050. OPEC says you need all forms of energy, especially considering how renewables haven't done what the western governments have assumed, which is why oil, natural gas and coal are needed. OPEC wrote "*However, despite $9.5 trillion spent on 'transitioning' over the past two decades, wind and solar make up around four per cent of today's global energy mix, while EVs have a global penetration rate of between 2% and 3%. This is not to undermine the importance of renewables or EVs, especially as their market share will increase. Instead, it is to highlight the scale of the energy challenges facing us, and the need to be realistic about our energy futures."* And "*It all points to a balanced approach, as advocated once again by the OPEC Secretary General, Haitham Al Ghais in recent comments at India Energy Week (page 26). An all peoples, all-fuels and all-technologies approach, where nothing or no-one is dismissed."* Our Supplemental Documents package includes the OPEC comment.

Energy Transition: Trump shutting down EV chargers at federal buildings

Trump revokes Biden's flagship 14057

On Monday, we posted [LINK] "*US BEVs take another hit. Trump shutting down EV chargers at federal buildings. See 👇 @andyjayhawk report. It's more than federal buildings. 👇02/08 post. can't see @SecDuffy approving states using any fed grants for EV charging in state,*

municipal, etc . #OOTT." Our post included the Verge reporting that the Trum Administration is "*shutting down its EV chargers, calling them 'not mission critical'. The agency in charge of managing buildings owned by the federal government has begun the process of taking hundreds of EV charging stations out of service*." "*The General Services Administration (GSA), which manages buildings owned by the federal government, is planning to shut down all of its electric vehicle chargers nationwide, describing them as "not mission critical." The agency, which manages contracts for the government's vehicle fleets, is also looking to offload newly purchased EVs. The GSA currently operates several hundred EV chargers across the country, with approximately 8,000 plugs that are available for government-owned EVs as well as federal employees' personally owned vehicles."* The several hundred EV chargers in federal buildings isn't material. However, this may only be for federal buildings but recall a few weeks ago, Trump canceled all funding for EV programs which should include the Biden grant programs that were available for state, municipalities, other organizations on adding charging infrastructure. And given that state plans that want federal funding need to be approved by the Transportation Dept Secretary, Trump taking EV charging out of service in federal buildings also has to point of the same in state and municipal buildings as long as the states and municipalities access federal funds for their charging infrastructure. Our Supplemental Documents report includes the Verge report.

02/08/25: Trump suspends new spending on Biden $5b EV charging infra

The above Verge report is dealing with Trump taking out of service any existing EV charging in federal buildings. He dealt with new spending three weeks ago. Here is what we wrote in our Feb 9, 2025 Energy Tidbits memo on Trum suspending any new spending on EV charging infrastructure. "*Trump suspends new spending on Biden's $5b EV charging infra. The three biggest holdbacks to broad BEV adoption in the US have been the high price (helped by subsidies), range anxiety and availability of charging infrastructure. There isn't much Trump can do to impact range anxiety but he is cutting out subsidies and now halting any new spending under Biden's $5b EV charging infrastructure program. Recall this is the program that Biden was criticized in 2024 because they had spent very little on public EV charging. Yesterday, we posted [LINK] "Big hit to #EVs #BEVs growth in US. Trump suspends any new obligations under Biden $5b NEVI (EV charging infra funding). New guidelines in spring to align with current DOT policy/priorities. THEN states submit new use of NEVI $ plans for approval by Transportation Sec. Surprised charging stocks weren't hit more? More #ICE for longer = more #Gasoline for longer. #OOTT." On Friday, the US Department of Transportation posted its Feb 6 directive on to stop new obligations under Biden's $5b NEVI program. The DOT said they would review and issue new guidelines in the spring and then states can submit new plans for the Transportation Secretary approval of how they would spend any NEVI funding. The DOT highlighted the new NEVI guidelines would be aligned to the current DOC policy/priorities. They did confirm they would "Until new guidance is issued, reimbursement of existing obligations will be allowed in order to not disrupt current financial commitments." But this has to be a huge concern for EV buyers. There is likely at least a several month pause in new funding allocations and any new guidelines for the $5b NEVI funding would be aligned Trump policy/priorities. The Biden NEVI was to focus on making sure there is charging infrastructure where it was*

needed. This has to be a big hit to EV adoption in the US. Our Supplemental Documents package includes the Transportation Department letter."

Trump revokes Biden EO 14057 on BEVs & carbon free electricity

No one should be surprised by Trump's latest action on EV charging in federal buildings. His first lengthy list of actions included what we thought was a big one – his revoking Biden's CO 14057 on BEVs and carbon free electricity. Here is what we wrote in our Jan 26, 2025 Energy Tidbits memo. "*Trump revokes Biden EO 14057 on BEVs & carbon free electricity. On Monday, the White House posted the lengthy list of "Initial Recissions of Harmful Executive Orders and Actions" [LINK], which included revoking of "Executive Order 14057 of December 8, 2021 (Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability)." 14057 was Biden's flagship clean energy program, which included the most significant anti oil and natural gas items. "100 percent carbon pollution-free electricity on a net annual basis by 2030, including 50 percent 24/7 carbon pollution-free electricity; • 100 percent zero-emission vehicle acquisitions by 2035, including 100 percent zero-emission light-duty vehicle acquisitions by 2027". The 100% carbon pollution-free electricity was the overriding force for have to retire coal generation, retire natural gas generation and cancel plans for future natural gas generation. Later in the memo, we noted how natural gas generation in the US has moved from net retirements to big net growth driven by AI datacenter power demand. But the net retirements was directly linked to EO 14057 and the move to 100% carbon pollution-free electricity by 2030. And then the 100% zero-emission vehicle sales by 2027 was what drove car manufacturers to drive to BEVs. And with the big BEV incentives, the Biden Administration was able to get Americans to buy BEVs. Our Supplemental Documents package includes an overview of 14057."*

Energy Transition: China's BYD Feb sales, NEV up huge YoY, PHEV are 1.5x BEV

China BYD sales

Earlier this morning, we posted [LINK] "*BYD Feb sales just out. Huge YoY growth in both PHEV + BEV sales. PHEVs keep dominating BEVs in China. Don't forget NEVs = BEVs + PHEVs. Feb sales: PHEV: 193,331, +189.2% YoY, 59.9% share. BEV: 124,902, +127.5% YoY, 38.7% sh. YTD Feb sales: PHEV: 364,400, +124.2% YoY, 58.5% sh. BEV: 250,279, +56.2% YoY, 40.1% sh. #OOTT."* BYD posted its Feb production and sales volumes this morning. The Feb sales were similar trend as seen in 2024: NEV sales continue to be up big and PHEV sales continue to be 1.5x BEV sales. As a reminder, in China NEV sales are the sum of BEV + PHEV sales. Our concern is that almost everyone refers to BYD's NEV sales without splitting between BEV and PHEV. We recognize it takes that extra step to go and get the split but there is likely a difference to the China gasoline consumption decline forecast if the cars are BEVs vs PHEVs. This is not a question that the huge % increase in PHEVs is because the huge % is relative to a low base. BYD's PHEVs reached parity to BEV volumes about a year ago. So, the YoY % growth between the two is from a similar basis in 2024. BEVs had a big recovery in Feb vs Jan when BEVs were +19.7% YoY so both BEV and PHEV were up huge YoY. And PHEVs continue to be 1.5x BEV sales. Our table below shows the BYD Feb and YTD Feb 28 NEV sales split into BEV, PHEV, Commercial vehicles – bus and Commercial vehicles – others. Our Supplemental Documents package includes the BYD release.

Figure 62: BYD New Energy Vehicle Sales for Feb and YTD Feb 28 2025

BYD New Energy Vehicle Sales: Feb 2025

	Feb-25	% Share	Feb-24	% Share	Volume Δ	*% change*
BEV	124,902	38.7%	54,908	44.9%	69,994	*127.5%*
PHEV	193,331	59.9%	66,840	54.6%	126,491	*189.2%*
Commercial Vehicle - Bus	453	0.1%	201	0.2%	252	*125.4%*
Commercial Vehicle - Others	4,160	1.3%	362	0.3%	3,798	*1,049.2%*
Total	**322,846**	**100.0%**	**122,311**	**100.0%**	**200,535**	***164.0%***

	YTD Feb 25	% Share	YTD Feb 24	% Share	Volume Δ	*% change*
BEV	250,279	40.1%	160,212	49.5%	90,067	*56.2%*
PHEV	364,400	58.5%	162,555	50.2%	201,845	*124.2%*
Commercial Vehicle - Bus	739	0.1%	526	0.2%	213	*40.5%*
Commercial Vehicle - Others	7,966	1.3%	511	0.2%	7,455	*1,458.9%*
Total	**623,384**	**100.0%**	**323,804**	**100.0%**	**299,580**	***92.5%***

Source: BIYD Production and Sales Volumes for February 2025 posted Mar 2, 2025
Prepared by SAF Group

Source: BYD

Big unknown – how much do Chinese drive in ICE vs electric mode

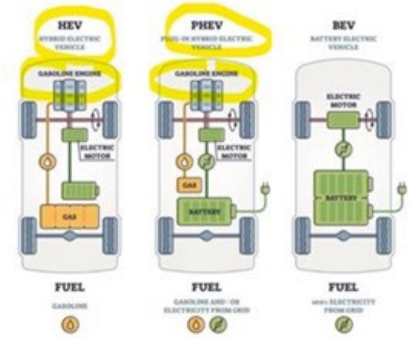
It seems like a dirty little secret for car companies to keep as to how much their PHEVs are driven in ICE mode vs electric mode. It is a split that they must all have but don't disclose whether it is in China, Europe or the US. The only clear statement we have seen was from Volvo and that wasn't in any disclosed reports, rather was the response in a conference call on how the km driven by their PHEVs is about 50/50 split ICE vs electric mode. Our BYD post highlighted this unknown. Our Tuesday post said "*Dirty little secret for PHEVs, what % of kms driven are in ICE vs electric mode. PHEVs are really just more fuel efficient ICE vehicles. See 👇09/04 tweet. Volvo said its PHEVs kms driven are 50/50 ICE vs electric mode. Unknown for Chinese PHEVs. Surely more kms in electric than Volvo but how much more?*" BYD newer higher end cars are moving more extended range electric, which has to help them drive significantly more in electric mode. But we don't know what % of kms are driven in ICE vs electric mode. In our prior posts on the BYD data, we remind that the vast majority of Chinese in cities live in apartments vs single family homes. And given that most of these apartments were built in the big China boom from 2000 to Covid, we have to question if they are set for broad EV charging for most of the residents. Only BYD and therefore Chinese govt knows the data on how many kms these millions of PHEVs are driven in ICE mode vs electric mode.

HEVs & PHEVs are really just more fuel-efficient ICE vehicles

We call it a dirty little secret by the car companies but, for some reason, they don't want to disclose what % of kms are their PHEVs driven in ICE mode vs electric mode. They have the data and we would have thought that would be some sort of sales/marketing pitch for the value equation of PHEVs vs ICE if they are driven mostly in electric mode. But that data doesn't seem to be something they disclose. As noted in our BYD post on Tuesday, it is unknown what % of kms are driven in ICE vs electric mode given vast majority of Chinese in cities live in apartments build in prior boom. Although, given that more BYD higher end PHEVs have are extended range electric, we would expect that Chinese drive their PHEVs significantly more in electric mode than driven by Volvo's PHEV owners. We linked to our prior disclosure on Volvo saying their PHEVs are driven about 50/50 in gasoline vs electricity mode. In the western world, HEVs are the big winners as opposed to PHEVs in China. The emergence of HEVs and PHEVs is a win or at least a much lesser loss of

gasoline/diesel consumption vs BEVs. No one can deny an HEV will burn less gasoline or diesel than its ICE counterpart. However, we still find many don't understand that HEVs and even PHEVs are really just more fuel-efficient ICE vehicles and, in particular, for PHEVs that are generally lumped in with BEVs for an electrified car group. HEVs and PHEVs run on gasoline or diesel for likely at least half of the time for PHEVs, at least for Volvo's, and probably 90% for HEVs. On Sept 4, we tweeted [LINK] "*HEV/PHEV 101 - They are really just more fuel efficient ICE. Ford: HEV F150 does 23 mpg vs ICE150 at 19 mpg. Volvo: PHEVs km driven are split 1/2 using battery, 1/2 using petrol/diesel. #OOTT."* Our tweet referenced Ford and Volvo data on HEVs and PHEVs. On Ford F150 Hybrid vs ICE mpg. Our tweet included the EPA rated mileage for the Ford F150 ICE vs Hybrid. The EPA rates the Hybrid fuel efficiency as being only 4 mpg more than the ICE. That increased fuel efficiency would be reduced if it was a full apples-to-apples comparison. The ICE has a much larger towing capacity. The F150 ICE 3.5L cyl F-150 does 19 MPG with a tow capacity of 13,500 lbs. The F150 HEV 3.5L 6 cyl F-150 does 23 MPG with a tow capacity of 11,200 lbs. On Volvo PHEVs, most just lump PHEVs in with EVs because both are electrified. But the reality is that a lot of PHEV is driven in ICE mode. As noted earlier, Volvo backed off its fully electric plans and its press released noted "*Volvo Cars' most recent data shows that around half of the kilometres covered by the latest plug-in hybrid Volvo cars are driven on pure electric power."* So based on the "most recent data", Volvo PHEVs are driven around 50/50 between km driven in battery mode vs ICE mode. Given the press release was Volvo having to back away from its electrified goals, we have to be believe the "around half" driven by PHEV is likely below half. We also believe that Volvo has likely picked the best time period for PHEVs driving in battery mode. We would assume the most recent data is referring to some spring/early summer period and it does not include winter months where the PHEVs will be driven more in their ICE mode.

Figure 63: HV vs PHEV vs BEV



Source: Engineering Infrastructure\

Energy Transition: ACEA, EU Jan BEV sales +34.0% YoY, but -13.9% MoM

EU Jan BEV sales

As a reminder, EU new car registrations do not include the UK. EU BEV sales were up a big +34.0% YoY in Jan, which followed -10.2% YoY in Dec, and -9.5% YoY in Nov. And Jan BEV sales were -13.9% MoM. On Tuesday, we posted [LINK] "*EU Jan car sales -2.6% YoY. BEV Jan very strong at +34.0% YoY to 15.0% share vs 10.9%. 2024 was weak -5.9% YoY to*

13.6% share vs 14.6%. PHEV Jan -8.5% YoY to 7.4% share vs 7.9%. 2024 share 7.1%. HEV keeps winning. Jan +18.4% YoY to 34.9% share vs 28.7%. 2024 share 30.9%. Petrol down big. Jan -16.3% YoY to 29.4% share vs 35.4%. 2024 share 33.3%. Diesel down big. Jan -27.0% YoY to 10.0% share vs 13.3%. 2024 share 11.9%. Thx @ACEA_auto #OOTT." A key theme from 2024 continues to play out: HEV sales are the big winner taking share from all the other fuels. But it was a big month for BEVs, which continue to be helped by reports of discounting BEVs to try to clear inventory. BEV Jan sales of 124,341 were up +34.0% YoY but down MoM vs Dec sales of 144,367. HEVs continue to be up strong and taking share from all other fuel sources. HEV Jan sales grew +18.4% YoY, bringing HEV share to 34.9% versus 28.7% in Jan 2024. PHEV sales were down -8.5% YoY, with the share down to 7.4%. The other general economic theme is that EU total car sales of 831,201 were down -2.6% YoY. Below is our table of the ACEO EU auto sales for Jan by fuel sources. Our Supplemental Documents package includes the ACEA Dec new car registrations.

Figure 64: EU Jan new car registrations by power source

EU Jan 2025 New Car Registrations by Power Source

	Volume Jan-25	Volumes Jan-24	% Change	Share Jan-25	Share Jan-24	YTD Jan 25	YTD Jan 24	% Change	Share YTD Jan 25	Share YTD Jan 24
BEV	124,341	92,781	34.0%	15.0%	10.9%	124,341	92,781	34.0%	15.0%	10.9%
PHEV	61,406	67,116	-8.5%	7.4%	7.9%	61,406	67,116	-8.5%	7.4%	7.9%
HEV	290,014	244,858	18.4%	34.9%	28.7%	290,014	244,858	18.4%	34.9%	28.7%
Others	27,735	33,136	-16.3%	3.3%	3.9%	27,735	33,136	-16.3%	3.3%	3.9%
Petrol	244,763	301,678	-18.9%	29.4%	35.4%	244,763	301,678	-18.9%	29.4%	35.4%
Diesel	82,942	113,680	-27.0%	10.0%	13.3%	82,942	113,680	-27.0%	10.0%	13.3%
Total	831,201	853,249	-2.6%	100.0%	100.0%	831,201	853,249	-2.6%	100.0%	100.0%

Others incl fuel-cell electric vehicles, natural gas vehicles, LPG, E85/ethanol, and other fuels

Source: ACEA

Germany Jan BEV sales +53.5% YoY

Energy Transition: Germany Jan BEV +53.5% YoY but only +2.7% MoM vs weak Dec%

After a brutal H2/24 for BEV sales in Germany, it was a good Jan for BEV sales in Germany on a YoY basis but only a small +2.7% MoM increase from a weak Dec. The Europe news reports were attributing the boost to government support. Germany BEV sales saw a big +53.5% YoY jump after a brutal Jan 2024, and its share increased to 16.6% from 10.5% from the previous year. On Tuesday, we posted [LINK] "*Germany Jan car sales -2.8% YoY. BEV: big Jan after brutal 2024. Jan BEV +53.5% YoY to 16.6% share vs 10.5%. 2024 was -27.4% YoY to 13.5% share vs 18.4%. PHEV Jan +23.1% YoY to 8.5% share vs 6.7%. 2024 share 6.8%. HEV Jan +13.7% YoY to 28.5% share vs 24.4%. 2024 share 26.8%. Petrol Jan -23.7% YoY to 30.0% share vs 38.3%. 2024 share 35.2% Diesel Jan -19.5% YoY to 15.9% share vs 19.2%. 2024 share 17.2% Thx @ACEA_auto #OOTT."* Despite the large YoY increase, BEV sales were up only +2.7% MoM from Dec which saw BEV sales and share that were down big for 2024. All other power sources have gained market share in 2024 besides BEVs, but in Jan BEV, PHEV, and HEV all gained share YoY. Below is our table of Germany new car registrations by power sources for Jan.

Figure 65: Germany Jan new car registrations by power source

Germany Jan 2025 New Car Registrations by Power Source

	Volume Jan-25	Volumes Jan-24	% Change	Share Jan-25	Share Jan-24	YTD Jan 25	YTD Jan 24	% Change	Share YTD Jan 25	Share YTD Jan 24
BEV	34,498	22,474	53.5%	16.6%	10.5%	34,498	22,474	53.5%	16.6%	10.5%
PHEV	17,712	14,394	23.1%	8.5%	6.7%	17,712	14,394	23.1%	8.5%	6.7%
HEV	59,252	52,102	13.7%	28.5%	24.4%	59,252	52,102	13.7%	28.5%	24.4%
Others	864	1,923	-55.1%	0.4%	0.9%	864	1,923	-55.1%	0.4%	0.9%
Petrol	62,358	81,724	-23.7%	30.0%	38.3%	62,358	81,724	-23.7%	30.0%	38.3%
Diesel	32,956	40,936	-19.5%	15.9%	19.2%	32,956	40,936	-19.5%	15.9%	19.2%
Total	207,640	213,553	-2.8%	100.0%	100.0%	207,640	213,553	-2.8%	100.0%	100.0%

Others incl fuel-cell electric vehicles, natural gas vehicles, LPG, E85/ethanol, and other fuels

Source: ACEA

Energy Transition: UK Jan BEV sales up +41.6% YoY, but down -32.1% MoM

UK Jan BEV sales +41.6% YoY

UK BEV sales continued their strong sales driven by discounting and the need for car manufacturers to try to get as close as possible to the UK govt targets for car manufacturers to have BEV sales to 28% of total car sales for 2025. The ACEA Jan new registrations for BEV sales in the UK amounted to 29,634 BEVs, which was +41.6% YoY but down -32.1% MoM from Dec's big jump in sales. We have been highlighting for months that we expected to see strong BEV sales in the last few months as car manufacturers offer big discounts to try to get BEV to their target of total sales, which was 22% for 2024 and now 28% for 2025. On Tuesday, we posted [LINK] "*UK Jan car sales -2.5% YoY. BEV. Big month in Jan +41.6% YoY to 21.3% share vs 14.7%. 2024 19.6% share. BEV price discounting helps but still far short of UK regulated target BEV 28% of total car sales in 2025. PHEV Jan +5.5% YoY to 9.0% share vs 8.4%. 2024 share 8.6%. HEV Jan +9.2% YoY to 37.25 share vs 33.2%. 2024 share 35.3%. Petrol Jan -28.5% YoY to 29.9% share vs 40.8%. 2024 share 33.7%. Diesel Jan -14.5% YoY to 2.7% share vs 3.0%. 2024 share 2.8%. Thx @ACEA_auto #OOTT*". We call the BEV numbers deceiving because there has been well reported big discounting and there has been ICE and HEV demand in the UK but some car manufacturers held back ICE and HEV deliveries in 2024 to ensure BEV sales got as close as possible to the UK targeted minimum total car sales of 28% for 2025. So, if the BEV demand hasn't and still isn't high enough, then the car manufacturers have to restrict and hold back ICE and HEV sales. Below is our table of UK Jan new car registrations by power source for Jan.

Figure 66: UK Jan new car registrations by power source

UK Jan 2025 New Car Registrations by Power Source

	Volume Jan-25	Volumes Jan-24	% Change	Share Jan-25	Share Jan-24	YTD Jan 25	YTD Jan 24	% Change	Share YTD Jan 25	Share YTD Jan 24
BEV	29,634	20,935	41.6%	21.3%	14.7%	29,634	20,935	41.6%	21.3%	14.7%
PHEV	12,598	11,944	5.5%	9.0%	8.4%	12,598	11,944	5.5%	9.0%	8.4%
HEV	51,785	47,435	9.2%	37.2%	33.2%	51,785	47,435	9.2%	37.2%	33.2%
Others	0	0	n/a	0.0%	0.0%	0	0	n/a	0.0%	0.0%
Petrol	41,630	58,236	-28.5%	29.9%	40.8%	41,630	58,236	-28.5%	29.9%	40.8%
Diesel	3,698	4,326	-14.5%	2.7%	3.0%	3,698	4,326	-14.5%	2.7%	3.0%
Total	139,345	142,876	-2.5%	100.0%	100.0%	139,345	142,876	-2.5%	100.0%	100.0%

Others incl fuel-cell electric vehicles, natural gas vehicles, LPG, E85/ethanol, and other fuels

Source: ACEA

Energy Transition: WSJ sees AI data center power supply focusing on natural gas

Natural gas for AI data centers

Earlier in the memo, we noted yesterday's WSJ report "*AI Fever in Power Stocks Moves From Nuclear to Plain Natural Gas*" [LINK] wrote "*Next to existing nuclear power, new natural gas-fired power is the best bet for AI because it runs around the clock and can be built much faster than nuclear power.*" Earlier we said that we don't disagree that new natural gas plants have those advantages. However, we think the WSJ missed what has an advantage over both – existing relatively new natural gas power plants that can be expanded. This is a

theme we have highlighted for years with respect to the energy transition taking longer and costing more than expected – the value of relatively new natural gas power plants will have increasing value. But the WSJ report notes why nuclear power is ideal for AI data centers. WSJ "*There are many reasons why funneling energy from existing nuclear power makes sense for data centers. It is quicker than building a power plant from scratch and provides round-the-clock clean power. Because these sites have plenty of land, it is possible to co-locate data centers and possibly dodge transmission fees. The sites also have ready access to cooling water. These are also the most lucrative contracts for power plant owners, who get to charge higher power prices for an existing asset*.". And how natural gas is the more likely source for 24/7 power. WSJ "*Easier contracts to strike could include ones for new natural gas-fired power plants, such as those NRG announced. Next to existing nuclear power, new natural gas-fired power is the best bet for AI because it runs around the clock and can be built much faster than nuclear power. Tech companies might also find it easier to put net-zero ambitions on the back burner under the current administration*." Our Supplemental Documents package includes the WSJ report.

WSJ notes regulatory scrutiny taking nuclear power away from the grid

The WSJ report also highlighted an overlooked aspect of the need from AI data centers for 24/7 power – regulators are supposedly looking more at the impact of taking away 24/7 nuclear power from the grid. The WSJ report only focused on taking 24/7 nuclear away from the grid, but we believe there will also be increasing scrutiny on taking any substantial 24/7 power from nuclear, coal or hydro. We have been highlighting how the more 24/7 power that is diverted from going into the grid leaves the regular grid customer more exposed to intermittent renewable power. WSJ "*This could now be changing. Thanks to regulatory scrutiny in key markets of deals between nuclear plants and data centers, most of which effectively draw power away from the rest of the grid, investor favor may shift to others:* " And "*But these deals are facing skepticism from regulators in the largest competitive power markets, which are already seeing surging power prices. Late last year, the Federal Energy Regulatory Commission blocked part of Talen Energy's plan to sell power from its existing nuclear power plant directly to Amazon's data center in Pennsylvania. Trump-nominated FERC Chair Mark Christie said an agreement of that type could have "huge ramifications for both grid reliability and consumer costs." The regulators last week voted to launch a review of issues associated with such arrangements in PJM Interconnection, a market that includes Pennsylvania."*

Overlooked, 24/7 NatGas/Electricity bypass grid to data centers

We have been highlighting that the increasing concern on 24/7 power bypassing the grid will be 24/7 power and not just nuclear power. Here is what we wrote in our Feb 16, 2025 Energy Tidbits memo. "*Overlooked, 24/7 NatGas/Electricity bypass grid to data centers. Above, we highlight the Energy Transfer deal will see up to 0.43 bcf/d of 24/7 natural gas directly supply the AI data center and not be provided to gas utilities for the grid. We continue to be surprised that governments and people aren't concerned about the implications of the increasing deals that see 24/7 natural gas and electricity (ie. nuclear) will be delivered directly to AI data centers and bypass going into the grid. We think governments and people are blinded by the AI data centers highlighting their adding renewable power and forget they are taking 24/7*

power either from the grid or bypassing the grid. The message tends to be how there will be way more renewable capacity added than electricity consumed. And that is very likely the case. But the capacity is intermittent and subject to more risk as seen in Europe this winter when wind generation is low in a seasonally high period. So there very well may be more "capacity" but that doesn't mean better reliability. Rather there is increased relative exposure to intermittent wind and solar and less relative availability of 24/7 power. There is only so much 24/7 power and the more that is siloed directly or indirectly for AI data centers means the rest of the grid customers are more exposed to intermittent wind and solar power generation. And it is difficult for the environmental groups to highlight this risk given their fundamental thesis is that renewable wind and solar can power the grid. Plus Energy Transfer highlights that this is the first of many such deals. Sooner or later, we have to believe (hope) people wake up to this development. Here are a few of our prior highlighting of this 24/7 power not gong into the grid."

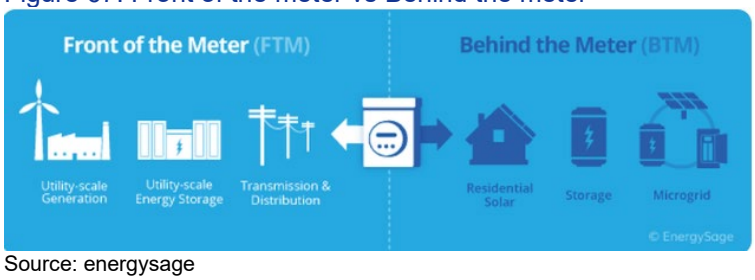
Consumers will be increasingly asked for electricity conservation

Here is what we previously wrote on our concern for the rest of grid customers the more 24/7 natural gas supply is provided directly to AI data centers and not being forced thru the grid. Long-term readers know that I have been following long-duration (multi-day not multi-hour) send-out capacity for battery electricity storage for over a decade as I think that will be the game changer for electricity. But we still have don't have multi-day send-out capacity. That means consumers should be prepared for an increasing push for electricity conservation and efficiency as the grid becomes more reliant on intermittent wind and solar. One thing that is very predictable about solar is that it only generates during daytimes. This is no different than what we have seen over the decades when power becomes very expensive. The difference this time is that the grid will be increasingly reliant on intermittent renewable ie. no solar when the sun goes down. It is inevitable that power utilities will increasingly be asking or educating or price driving regular consumers to use less electricity and to use it at non-peak times. So get ready for the barrage of commercials and social media short videos on how to use energy better ie. less and at off-peak hours. Regular grid customers will have to do what AI data centers can't/won't do.

What does "Behind-the-meter" mean?

We were surprised that some didn't either now what it meant or pay attention to the recent Energy Transfer reference to a "behind-the-meter" deal. Energy Transfer highlighted it but it was ignored. Energy Transfer said "*natural gas supply would be sufficient to generate up to approximately 1.2 gigawatts of direct, or "behind-the-meter" electric power for a period of at least 10 years".* Behind the meter simply means natural gas that will provide the power and it bypasses the grid. This is the key – it bypasses the grid. Energysage had the below graphic [LINK] and said "*What does behind-the-meter really mean? The difference between behind-the-meter (BTM) and front-of-meter systems comes down to an energy system's position in relation to your electric meter. A BTM system provides power that can be used onsite without passing through a meter, while a front-of-meter system provides power to off-site locations. The power provided by a front-of-meter system must pass through an electric meter before reaching an end user.*

Figure 67: Front of the meter vs Behind the meter



Source: energysage

AI datacenters make the grid more exposed to interruptible power

Here is what we wrote in last week's (Feb 23, 2025) Energy Tidbits memo. *"AI data centers make the grid more exposed to interruptible power. There was an overlooked part of the BlackRock CEO Larry Fink conversation on AI datacenters that plays into our fears that the public isn't concerned what the AI datacenter need/reliance on 24/7 power will do to the grid's regular customers. We suspect it's because the big tech companies have done an excellent job of making the public think AI datacenters are being powered by all the new renewable energy (solar and wind) capacity that has been added in recent years. Our fear remains that datacenters take 24/7 power off or new 24/7 power that could be added to the grid but they, in theory, replace the used capacity by adding more interruptible solar and wind capacity to replace what they are taking. So their story holds that they are not hurting the grid. However, if they replace 24/7 with interruptible, it means that the existing grid customers may have the same capacity or even little more BUT a lesser percentage of 24/7 power. So more exposure to interruptible power and risk to existing grids. Note the exchange by Fink and Peng Xiao (G42 CEO). Fink is saying their AI datacenters aren't going to take 24/7 power off the grid. But then Xiao addresses this in a more vague manner that reinforces our concern that AI data centers will take 24/7 power from the grid but add back some "capacity" to offset what they take. Our concern is that, unless people know the game that is being played, they won't recognize why things are said a certain vague way. Here is the transcript we made of the Bink and Xiao comments. Fink "It's very important if you're going to be building a datacenter. The datacenter has to be good for the locality. It can't be drawing power away from the average consumer. So therefore it can't raise the prices of electricity or it's not going to work. And so every case, you have to be working with the locality and the government. Working together. In many cases, its going to required, if we assume rounded up we need a gigawatt of power, we are going to have to source that power. We're not going to be tapping from the grid." Xiao "If we do, Larry, if as investors and builders, we do take power off grid, we have to come in to build additional capacity for the locality."*

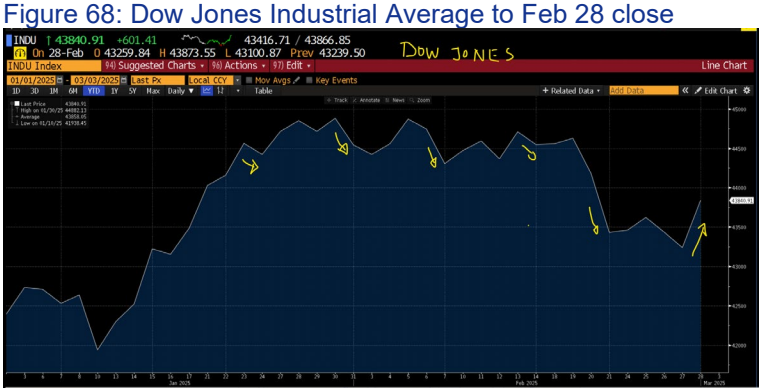
Capital Markets: Trump/Vance/Zelensky avoids 6th straight Friday down for DJIA

DJIA avoids 6th straight down Friday

One of our investor friends was telling us this week how investors have been cautious going into weekends as there is always a huge wildcard of what will Trump post do on weekends. And he reminded us that the Dow has had 5 consecutive down Fridays since the

inauguration. And it was on track for the 6th consecutive down Friday until the explosive Trump and Vance public chastisement of Zelensky that ultimately led to the cancellation of the Trump/Zelensky meeting. The Dow rallied over 700 points post the public dressing down and was up strong. On Friday, we posted [LINK] "*Huge 700 pt rally post Trump/Vance public dressing down of Zelensky meant the DJIA didn't get to the 6th straight down Friday since inauguration."* Below is the Dow Jones Industrial Average graph attached to our post.

Figure 68: Dow Jones Industrial Average to Feb 28 close



Source: Bloomberg

Capital Markets: IFIC, mutual funds equity & balanced funds net redemptions in Jan

IFIC Cdn mutual fund data

IFIC does not provide explanation to its monthly funds flows data. On Monday, IFIC (Investment Funds Institute of Canada) reported mutual funds and ETF sales for Jan [LINK]. IFIC reported net redemptions (outflows) of $0.388b in balanced funds and $2.143b in equity funds, while there were net sales (inflows) of $3.303b in bond funds and $1.413b in specialty funds. Jan 2025 mutual fund net sales totaled $3.036b, up +15.5% MoM from $2.628b in Dec, and saw a notable improvement compared to the same period last year when there were net redeemptions. Balanced funds had net redemptions of $0.388b compared to $0.573b in Dec, and saw a significant decrease in net redemptions from Jan 2024 which amounted to $4.475b. Equity funds saw net redemptions of $2.143b in Jan, after having net sales of $0.107b in Dec. Bonds mutual funds remained the top-selling asset class, maintaining that position for the last nine months. Our Supplemental Documents package includes the IFIC release.

Figure 69: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual fund net sales/net redemptions ($ millions)*

Asset class	Jan 2025	Dec 2024	Jan 2024
Long-term funds			
Balanced	(388)	(573)	(4,475)
Equity	(2,143)	107	(1,055)
Bond	3,303	1,871	3,743
Specialty	1,413	503	566
Total long-term funds	2,184	1,908	(1,222)
Total money market funds	852	721	442
Total	3,036	2,628	(780)

Source: IFIC

IFIC mutual funds for 2024, net redemptions in balanced, net sales in equities

Here is what we wrote in our Jan 26, 2025 Energy Tidbits memo on the IFIC Dec 2024 and full year 2024 mutual funds flows. It was still a negative year in 2024 but way better than the brutal 2023 year for mutual funds. *"IFIC does not provide explanation to its monthly funds flows data. On Friday, IFIC (Investment Funds Institute of Canada) reported mutual funds and ETF sales for Dec [LINK]. IFIC reported net redemptions (outflows) of $0.573b in balanced funds, while there were net sales (inflows) of $0.050b in equity funds, $1.863b in bond funds, and $0.500b in specialty funds. This brings the YE 2024 figure for balanced funds net redemptions to -$22.764b, less than the YE 2023 figure of -$56.131b. Equity funds saw net sales (inflows) of $0.050b in Dec, after net sales of $0.678b in Nov. YE 2024, equity fund net sales are up +$1.295b vs net redemptions of $23.984b for YE 2023."*

Figure 70: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual fund net sales/net redemptions ($ millions)*

Asset class	Dec 2024	Nov 2024	Dec 2023	2024	2023
Long-term funds					
Balanced	(573)	493	(4,662)	(22,764)	(56,131)
Equity	50	678	(2,191)	1,295	(23,984)
Bond	1,863	1,984	810	25,672	6,419
Specialty	500	733	168	7,426	3,530
Total long-term funds	1,839	3,889	(5,875)	11,629	(70,166)
Total money market funds	721	685	739	3,569	14,516
Total	2,560	4,574	(5,136)	15,197	(55,650)

Source: IFIC

There were massive redemptions in Cdn active equity/balanced funds in 2023

2023 was a brutal year for net redemptions for Cdn balanced and equity funds and even more than in 2022. Here is what we wrote in our Jan 28, 2024 Energy Tidbits memo. *On Friday, we tweeted [LINK] "Brutal year for net redemptions in balanced and equity mutual funds in Canada. @ific reflects $82.5 billion net redemptions including $56.9b from balanced mutual funds and $25.6b from equity mutual funds. #OOTT." One of the big Cdn equity stories in 2022 continued to play out in an even bigger way in 2023 – the continued net redemptions from active managed Cdn equity and balanced mutual funds. This flipped in Q2/22 from massive net sales into balanced and equity mutual funds to massive net redemptions in equity and balanced mutual funds. This year, the 2023 net redemption total dwarfed those in 2022. On Wednesday, IFIC (Investment Funds Institute of Canada) reported [LINK] mutual funds and ETF sales for November. IFIC reported net redemptions for balanced mutual funds were $4.612b in December vs $6.510b in November and $8.569b in October. IFIC also reported net redemptions for equity mutual funds were $2.514b vs net redemptions of $3.178b in November and $4.142b in October. This means, barring any major revisions, that in 2023 there were $82.5b of net redemptions in balanced and equity mutual funds! This is more than double the net redemptions of 2022."*

Figure 71: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual fund net sales/net redemptions ($ millions)*

Asset class	Dec 2023	Nov 2023	Dec 2022	2023	2022
Long-term funds					
Balanced	(4,612)	(6,510)	(4,935)	(56,866)	(29,959)
Equity	(2,514)	(3,178)	(3,069)	(25,568)	(8,461)
Bond	845	(435)	(2,187)	6,986	(13,811)
Specialty	176	391	102	3,538	1,306
Total long-term funds	(6,105)	(9,732)	(10,088)	(71,909)	(50,925)
Total money market funds	790	1,227	1,802	14,825	7,196
Total	(5,315)	(8,506)	(8,286)	(57,084)	(43,729)

Source: IFIC

Demographics: Canada is top destination for Americans looking to move countries

Canada top country for American movers

On Tuesday, Talker Research released the results of a poll asking Americans what country they would want to leave the US for [LINK]. The survey included 2,000 American adults and found that 17% of respondents said they would like to move from the US in the next five years, with Canada being the top choice at 19%. The reasons given for Canada included healthcare, landscape, and work/life balance. Italy was second at 11% and England came in at third with 10%. The survey found that millennials more than any other generation would like to move abroad soon at 25%. The survey also investigated why respondents wanted to leave the US and found that 69% were worried about the direction of the US, while 54% said that living in the US was no longer affordable. The article stated, *"In the survey, almost seven in ten respondents (69%) said they're worried about the direction the U.S. is moving in and looking at American society as a whole, the majority of Americans (65%) feel it's become toxic. More than half (54%) said that living in the U.S. is no longer affordable and 55% said that the wealth gap limits their opportunities domestically. Most respondents (57%) feel that American work/life balance is substandard and agreed that the American healthcare (65%) and education (66%) systems are broken*." Our Supplemental Documents package includes the Talker Research release.

Figure 72: Top 10 countries for Americans wanting to move:

Source: Talker Research

Twitter/X: Thank you for getting me to 12,000 followers

Last month, I went over 12,000 followers on Twitter/X. I really appreciate the support and, more importantly, some excellent insights and items to look at from Twitter/X followers. It helps me do a better job. For new followers to our Twitter/X, I am 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. My Twitter/X handle is @Energy_Tidbits and can be followed at [LINK]. I wanted to use Energy Tidbits since I have been writing Energy Tidbits memos for 25 consecutive years. Please take a look thru my tweets and you can see I don't just retweet other tweets. Rather I try to use Twitter/X for early views on energy items. Our Supplemental Documents package includes our tweets this week.

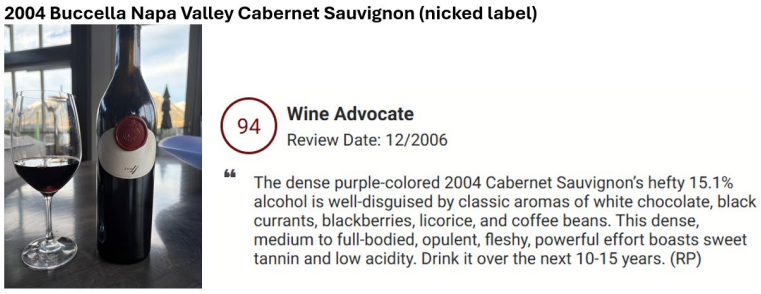
Misc Facts and Figures.

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

Wine of the week: 2004 Bucella Napa Valley Cabernet Sauvignon

In August, I started the wine of the week when I realized I had to get to opening up some wines bought 20 to 30 years ago that included some that, unfortunately, were getting past their prime. One of the negatives of the change in life from Covid was a huge absence of entertaining at home, which means there has been a big shortfall in wine drinking at our home. So am now making sure what, when I bought them 15-25 years ago, were some good wines and make sure bottles get opened especially as many are 20 to 40 years old. On Friday, I posted the wine of the week, the 2004 Buccella Napa Valley Cabernet Sauvignon (nicked label). I decanted for a couple hours. The 2004 Buccella had a recommended drinking window by 2020 but it was another example that great wines stay great for much longer than expected. I only bought a half dozen and am down to one bottle.

Figure 73: 2004 Buccella Napa Valley Cabernet Sauvignon (nicked label)



Source: SAF Group, K&L Wines

Five years ago, March 12, 2020, was Alberta's first Covid lockdown

It was March 5, 2020 that Alberta announced its first case of Covid, although it was later determined the first case was actually Feb 24, 2020. But that quickly escalated and it's still hard to believe it's been five years since the lockdown in Alberta first happened. But it was March 12, 2020 that Alberta put its first restrictions cancelling

all gatherings with more than 250 people. That quickly escalated all schools being closed on March 15, 20-20, and then the declaration of the public health emergency on March 17.

JonBenet Ramsey mini-series prop house is built & gone in 6 months

Our Nov 24, 2024 Energy Tidbits memo highlighted how the prop house for the JonBenet Ramsey mini-series being partially filmed on the Elbow River in Calgary was done start to finish in under three months including landscaping and big tree planting, and now at the end of Feb, it was taken down this week. On Wed, we posted a picture of the house started to be taken down and it was done so by Thurs. And as of yesterday morning, most had been cleared away. The mini-series starring Melissa McCarthy and Clive Owen filmed in Nov/Dec. One of the amazing features was how they planted many 15-20 ft evergreens to surround the home in Nov in Calgary. .

Figure 74: Prop house on Elbow River on Oct 12, Nov 22, Feb 27 and Mar 1

Source: SAF Group