Energy Tidbits

January 26, 2025

Produced by: Dan Tsubouchi

BlackRock CEO, AI Datacenters to be "*Heavily Powered*" by Natural Gas & "*Supplemented*" by Renewables. Not the Other Way Around.

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. BlackRock CEO Larry Fink highlighted for the global audience that in the near term, AI datacenters are going to be heavily powered by natural gas and "supplemented" by renewables. And not the other way around as western govts have portrayed. [click here]

2. Trump says thinking in terms of 25% tariffs on Canada and Mexico and "*I think we'll do it February 1st. 25% on each.*" [click here]

3. Trump tells the world at Davos "*And I'm also going to ask Saudi Arabia and OPEC to bring down the cost of oil.*" [click here]

4. Trump revokes Biden's flagship EO 14057 i.e. revokes 100% carbon pollution-free electricity by 2030 and 100% zero-emission car sales by 2035. [click here]

5. ECMWF forecasts warmer than normal temps in much of Europe for the next two weeks, which is to the most part the end of peak winter weather demand period. [click here]

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

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

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Natural Gas: -223 bcf draw in US gas storage; now -57 bcf YoY

-223 bcf draw in US gas storage

As we expected, there was another big storage draw this next week with the continued cold weather in the US. For the week ending Jan 17, 2025, the EIA reported a -223 bcf draw [LINK]. Total storage is now 2.892 tcf, representing a deficit of -57 bcf YoY compared to a deficit of -111 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 Jan 17, 2025, saw storage is +21 bcf above the 5-yr average, below last week's +77 bcf surplus 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 (01/17/24)		5-year average (2020-24)	
Region	01/17/25	01/10/25	net change	implied flow	Bcf	% change	Bcf	% change
East	613	669	-56	-56	674	-9.1	664	-7.7
Midwest	744	808	-64	-64	812	-8.4	790	-5.8
Mountain	229	240	-11	-11	198	15.7	163	40.5
Pacific	269	283	-14	-14	236	14.0	217	24.0
South Central	1,037	1,114	-77	-77	1,029	0.8	1,037	0.0
Salt	297	326	-29	-29	287	3.5	303	-2.0
Nonsalt	739	788	-49	-49	742	-0.4	735	0.5
Total	2,892	3,115	-223	-223	2,949	-1.9	2,871	0.7

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
Nov/29	3,937	-30	185	284
Dec/06	3,747	-190	67	165
Dec/13	3,622	-125	20	132
Dec/20	3,529	-93	14	166
Dec/27	3,413	-116	-67	154
Jan/03	3,373	-40	-3	207
Jan/10	3,115	-258	-111	77
Jan/17	2,892	-223	-57	21

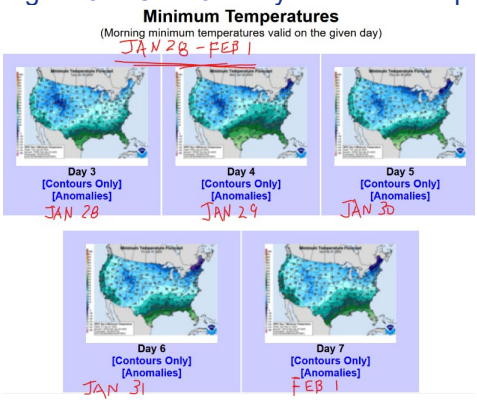
Source: EIA

Natural Gas: NOAA's 3-7, 6-10 & 8-14 day calls for a turn to warmer than normal temps

Cold temperatures to continue

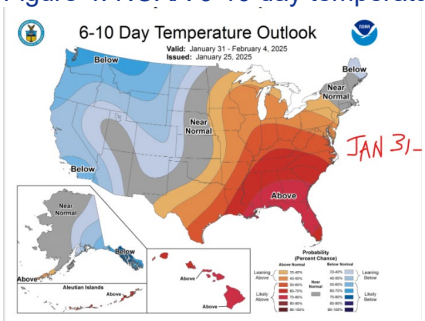
It was cold and snowy across the Lower 48 including in the south so, no surprise, it was another solid week for HH prices being +$0.08 WoW to close at $4.03 on Jan 24. As noted above, there should be another good storage draw for the Jan 24 storage week when reported on Jan 30. But, it is still the normal peak winter heating demand season for the end of Jan and early Feb so the concern is that NOAA forecasts the cold turning to warmer than normal temperatures in the east half of the US is likely to be a holdback to prices as markets look ahead to the warmer weather. Yesterday, we posted [LINK] "*Holdback to #NatGas prices this week. US expected to change from bitter cold across Lower 48 over the next week to warmer than normal temps across most of populous eastern coast. Today's updated @NOAA 3-7, 6-10 & 8-14 day temperature outlooks. #OOTT.*" The big chilling cold is forecast to end in about a week and NOAA is now forecasting temperatures to change to warmer than normal temperatures in the populous eastern half of the US. Our post included the below NOAA Jan 25 updated temperature maps for 3-7 days, 6-10 days and 8-14 days.

Figure 3: NOAA 3-7 day minimum temperature outlook covering Jan 28-Feb1



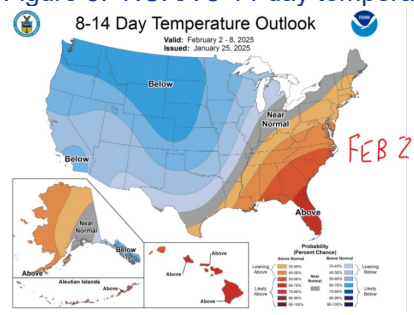
Source: NOAA

Figure 4: NOAA 6-10 day temperature outlook covering Jan 31-Feb 4



Source: NOAA

Figure 5: NOAA 8-14 day temperature outlook for Feb 2-8



Source: NOAA

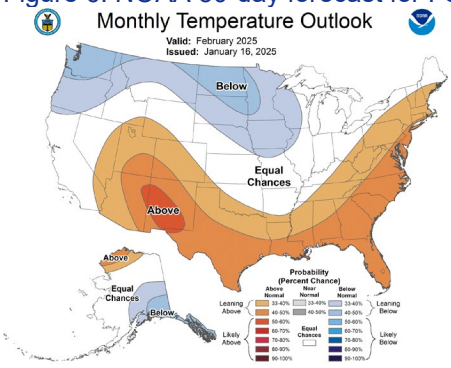
Natural Gas: NOAA expects warmer than normal temps along East and South for Feb

NOAA monthly temp outlook

It looks like the NOAA Jan 25 updated 6-10 an d8-14 day temperature outlooks are in line with NOAA's recent Jan 16 temperature outlook for Feb. Here is what we wrote in last week's (Jan 19, 2025) Energy Tidbits memo. "*NOAA expects warmer than normal temps along East and South for Feb. On Thursday, we posted [LINK] "HH #NatGas hits $4 with*

support for the next week or more from the forecast for really cold temperatures across populous east & south of the Lower 48 thru Jan 25. Looking further out, @NOAA's new Feb temperature forecasts is warmer than normal along east & south. #OOTT." HH went above $4 early on Thursday and, with the cold temperatures expected to continue for another week, no one was really caring what Feb would be like. But our post included NOAA"s 30-day forecast for February that had just been posted and the temperature probability calls for warmer than normal temperatures with some colder temperatures emerging in the North for the Lower 48. NOAA forecasts above normal temperatures in the South and populous NE, with the NW expected to have below normal temperatures, and the rest of the lower 48 forecasted to have equal chances of above or below average temperatures. We recognize that weather forecasts are far from 100% accurate, but near-term forecasts tend to have greater accuracy. Below is the NOAA temperature probability outlook forecast for February released on January 16."

Figure 6: NOAA 30-day forecast for Feb



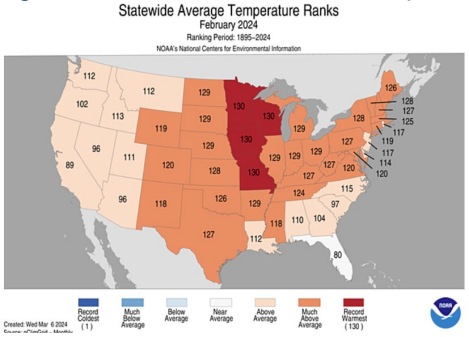
Source: NOAA

NOAA, Feb 2024 was 3rd warmest Feb on record

The reason for the much better YoY storage seen lately is that winter 2023/24 was the hottest on record and it included Feb 2024 as the 3rd warmest on record. Here is what we wrote in our March 10, 2024 Energy Tidbits memo. "*NOAA, 3rd warmest Feb on record, warmest winter on record for US. We started warning on the hot winter in Q4/23 with the reminder that it is always tough for natural gas markets to catch up from a warm start to winter. And that the only way that happens is if there is sustained cold weather in Jan and Feb. Unfortunately, the hot weather played out all winter. On Friday, the NOAA released their February recap for statewide average temperatures, which revealed February 2024 was the 3rd warmest the US has seen in the past 130 years. 4 other states saw their hottest February in recorded history as well. This comes after last February (2023) was labelled the 28th hottest since 1895. In a news release [LINK], the NOAA wrote "The average temperature of the contiguous U.S. in February was 41.1°F, 7.2°F above average, ranking third warmest in the 130-year record. February temperatures were above average across most of the contiguous U.S., while record-warm temperatures were observed across much of the Mississippi Valley and in parts of the Great Lakes and southern Plains. Minnesota, Wisconsin, Iowa and Missouri each had their warmest February on*

record…The meteorological winter (December–February) average temperature for the Lower 48 was 37.6°F, 5.4°F above average, ranking as the warmest winter on record. Temperatures were above average across a vast majority of the contiguous U.S. and near average along parts of the Gulf of Mexico. North Dakota, Minnesota, Iowa, Wisconsin, Michigan, New York, Vermont and New Hampshire each had their warmest winter on record." Note that NOAA's definition of winter is Dec-Feb. Below is a picture of statewide average temperature ranks in February."

Figure 7: NOAA Historical US Temperature Ranks by State – February 2024



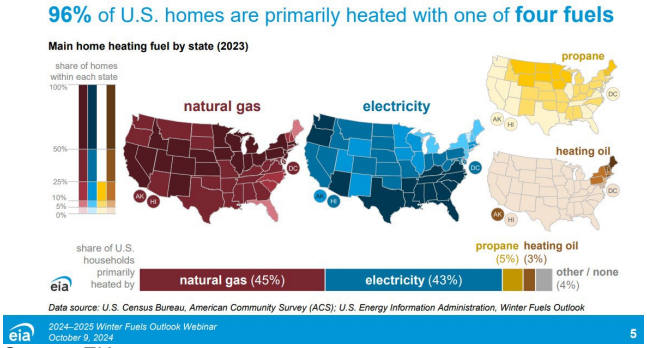
Source: NOAA

Natural Gas: US home heating by fuel by state

Natural gas home heating

Warmer temperatures around the Great Lakes and NE US are the most important regions for natural gas home heating. It's why our focus is normally how cold it is it in populous regions that use natural gas for winter home heating and that is why we typically focus on how cold is it around the Great Lakes and the NE US. But right now, it is cold everywhere. Below is the EIA's map showing US winter home heating by fuel by state. Natural gas, on average, heats 45% of US homes but a way higher percentage around the Great Lakes and parts of the NE US. Below is the EIA home heating by fuel by state map.

Figure 8: Fuels for winter home heating of US homes



Source: EIA

Natural Gas: Sounds like more delays to TotalEnergies Mozambique LNG restart

TotalEnergies Mozambique LNG

There is a going to be a big focus on TotalEnergies and when/if they will restart their

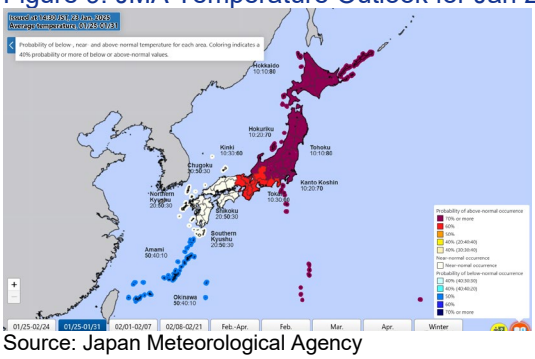
Mozambique LNG project. We have to believe TotalEnergies doesn't want to restart the project and then have to announce another indefinite pause. So it makes sense to us that they will take the time to be comfortable on security and work to get project financing complete before they say the project is on another indefinite pause. As of our 7am MT news cut off, we have not seen any statements from TotalEnergies as to the status of its Mozambique LNG project or comments that would seem to counter the Reuters Wednesday report [LINK] *"TotalEnergies' Mozambique LNG project faces delay beyond 2029. TotalEnergies' (TTEF.PA), opens new tab $20 billion Mozambique LNG project will not be operational by 2029 as hoped, the French oil major said on Wednesday, citing the need to end force majeure and ensure security at the project site. TotalEnergies had previously said that it hoped to lift force majeure and restart construction on the long-delayed liquefied natural gas project by the end of 2024, which would allow it to come online by 2029. However, a $4.7 billion loan from the U.S. Export-Import Bank (EXIM) has yet to be re-approved, after construction on the project was frozen in 2021 due to violent unrest in the northern Cabo Delgado region near the project site — before any disbursements were made. Total CEO Patrick Pouyanne told investors in October that force majeure could only be lifted with the project finance fully secured, and that three export agencies had not yet reconfirmed their loans after Total negotiated new restart costs with contractors. "The priority is to restore peace and security in Cabo Delgado and the lifting of force majeure," a Total spokesperson said on Wednesday following a report by the Financial Times on the slipped timeline."* Our Supplemental Documents package includes the Reuters report.

Natural Gas: JMA forecasts warmer than normal temps to end Jan/start Feb

JMA temperature forecast for next 30 days

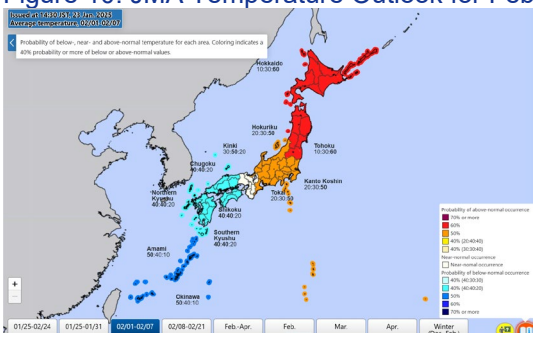
The JMA next 30-day temperature forecast continues what was seen last week - the cold across most of Japan to start the year has turned to warmer than normal temperatures. On Thursday, the Japan Meteorological Agency (JMA) updated its temperature forecast for the next 30 days, Jan 25 – Feb 24, in Japan [LINK]. There is no JMA commentary on the forecast. JMA is expecting warmer than normal temperatures for the end of Jan and into Feb ie. for the end of any potential significant winter temperatures. The key for winter temperatures is not the end of Feb but the end of Jan and start of Feb and the expectation is for warmer than normal temps to the most part. Below is the JMA temperature forecast for Jan 25-31 and Feb 1-7.

Figure 9: JMA Temperature Outlook for Jan 25-31



Source: Japan Meteorological Agency

Figure 10: JMA Temperature Outlook for Feb 1-7



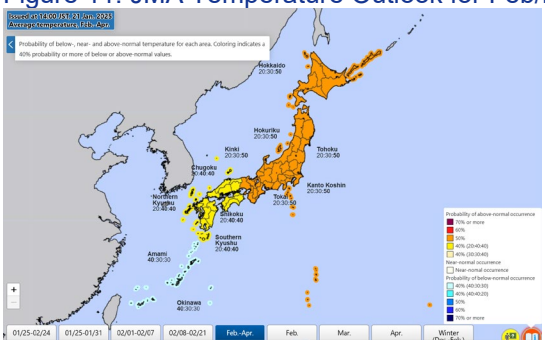
Source: Japan Meteorological Agency

Natural Gas: JMA forecasts warmer than normal temps in Feb/Mar/Apr in Japan

JMA temperature updated FMA forecast

On Tuesday, the Japan Meteorological Agency also updated its seasonal temperature forecast for Feb/Mar/Apr. In Japan, this is really their shoulder season and there normally isn't any significant temperature driven electricity/natural gas demand. It's normally not cold enough to drive any significant turn on the heater demand or warm enough to turn on the air conditioner. The JMA expects to see warmer than normal temperatures for Feb/Mar/Apr. Below are the JMA Jan 21 temperature outlook map for Feb/Mar/Apr.

Figure 11: JMA Temperature Outlook for Feb/Mar/Apr



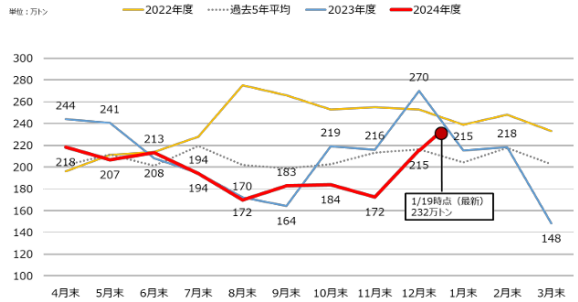
Source: Japan Meteorological Agency

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

Japan LNG stocks up WoW

Japan's LNG stocks are up WoW, up YoY, and are up when compared to the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on January 19 were 111.4 bcf, up +10.0% WoW from 101.3 bcf on January 12, and up +7.9% from 103.3 bcf from a year ago. Stocks are up compared to the 5-year average of 94.1 bcf. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 12: Japan LNG Stocks



Source: METI

China natural gas and LNG imports

Natural Gas: China Dec LNG imports up MoM, natural gas pipeline imports down MoM

On January 18, the China's General Administration of Customs ("GACC") released their pipeline, LNG split for natural gas for Dec [LINK]. We continue to highlight that, where possible, China favors imports of cheaper natural gas from pipelines over more expensive LNG imports but will take advantage of lower LNG spot pricing when possible. But since China has been taking maximum pipeline natural gas from Russia in 2023, it created a higher base for YoY comparisons and China is only able to have more modest YoY increases. i) LNG imports. GACC reported that over Dec, China imported 11.06 bcf/d of LNG, up +12.4% MoM from 9.85 bcf/d in Nov and down -13.9% YoY from Dec 2023. ii) Natural Gas via pipeline imports. GACC reported that over Dec, China imported 6.83 bcf/d of natural gas via pipeline, which is down -8.2% MoM from 7.44 bcf/d in Dec and +3.9% YoY from Dec 2023. China has been benefitting from cheap natural gas exports from Russia but have also been opportunistic in their buying of LNG given weak spot prices in recent months.

China domestic natural gas production 24.83 bcf/d in December, up +3.6% YoY

The starting point negative to China LNG imports is that China has been increasing its domestic natural gas production., Here is what we wrote in last week's (Jan 19, 2025) Energy Tidbits memo. "*China natural gas production 24.83 bcf/d in December, up +3.6% YoY. Well before Covid, our concern in 2019 has been that China's LNG imports were going to change from strong YoY growth in LNG imports to a period of zero to very low growth at best in China LNG imports. The reason was primarily the startup of the big Power of Siberia natural gas pipeline from Russia but also a return in the 2020s to modest growth in China domestic natural gas production. And since LNG is the most expensive natural gas, it would be and is the marginal natural gas/LNG supply. That concern has played out over the past few years and increasing domestic natural gas production and increasing cheaper natural gas pipeline imports from Russia squeezed out LNG imports in 2022 and 2023. On Thursday, Bloomberg's CHENNGAS Index (using data from the National Bureau of Statistics) showed that China natural gas production in December was 24.83 bcf/d, up +2.1% MoM at 24.33 bcf/d in November and +3.6% YoY from 23.76 bcf/d in December 2023. Recall the Chinese government website [LINK] also noted that over 2023, China's average natural gas production was 22.30 bcf/d, up +1.00 bcf/d from 2022, which is the 7th annual YoY increase.*"

China prioritizes Russian pipeline gas imports as it is cheaper than LNG

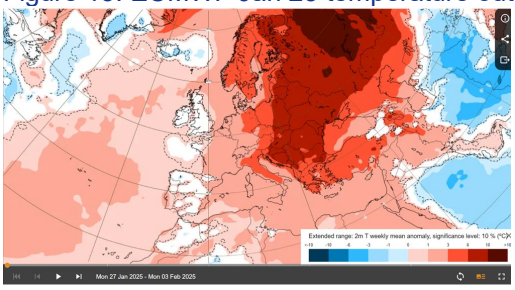
Here is what we wrote in our June 9, 2024 Energy Tidbits memo. "*For years, we have warned that how Chinese natural gas pipeline imports from Russia would be prioritized over LNG imports due to the cheap cost of Russian pipeline gas. On Monday, we tweeted [LINK] "It's way cheaper! And why China prioritizes imports of RUS #NatGas via pipeline vs #LNG imports. 2019-21: China only paid $4.40/mmbtu for RUS pipeline gas vs RUS charged Europe ~$10/mmbtu. See 👇 @maxseddon @NastyaStognei @HenryJFoy @leahyjoseph report. #OOTT." The FT report "Russia-China gas pipeline deal stalls over Beijing's price demands" was focused on China wanting too low a natural gas price for the next expansion of Russian pipeline natural gas to China. But what jumped out at us was the reminder that China is currently getting cheap natural gas from Russia. FT wrote "China already pays Russia less for gas than to its other suppliers, with an average price of $4.4 per million British thermal units, compared with $10 for Myanmar and $5 for Uzbekistan, the CGEP researchers calculated from 2019-21 customs data. During the same years Russia exported gas to Europe at about $10 per million Btu, according to data published by the Russian central bank." Our Supplemental Documents package includes the FT report."*

Natural Gas: ECMWF forecasts warmer than normal in Europe for end Jan/early Feb

Warm in Europe

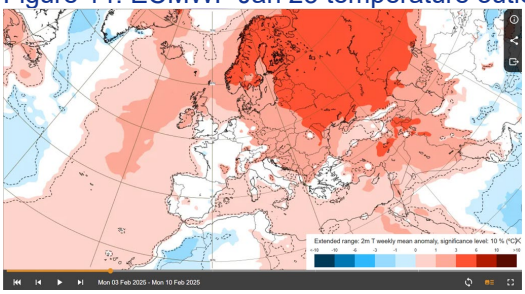
It's the end of January, which means the peak winter temperature driven natural gas season is about to end in Europe. So warmer than normal temperatures to end January and start February should be a holdback to Europe natural gas prices. Yesterday, we posted [LINK] "*Holdback to Europe #NatGas prices. @ECMWF updated outlook for next two weeks calls for warmer than normal temperatures for much of Europe. It's late Jan so nearing the end of normal peak winter temp demand for #NatGas. #OOTT."* Our post included the ECMWF (European Centre for Medium-Term Weather Forecasts) Saturday updated temperature outlooks for Europe for the Jan 27-Feb 3 and Feb 3-10 weeks. ECMWF calls for it to be warmer than normal for much of Europe for the next two weeks..

Figure 13: ECMWF Jan 25 temperature outlook for Europe for Jan 27-Feb 3



Source: ECMWF

Figure 14: ECMWF Jan 25 temperature outlook for Europe for Feb 3-10

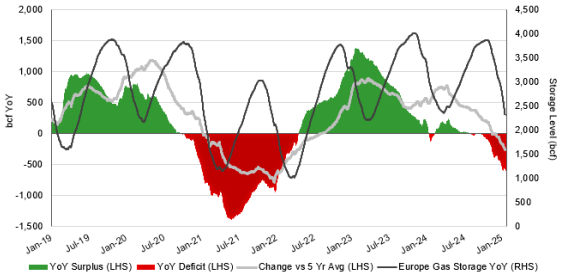


Source: ECMWF

Natural Gas: Europe storage down -5.5% WoW to 57.0% full, down -16.4% YoY

There have been gas storage draws in Europe with the recent normal to colder than normal temperatures and the very low wind generation. And as a reminder, the YoY comparison is to a hot Jan 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 Jan 23, Europe storage was down -5.5% WoW to 57.0% vs 62.6% on Jan 16. Recall that winter 2023/24 was one of the hottest winters in Europe. Storage is now down -16.4% from last year's levels of 73.4% on Jan 23, 2024, and down against the 5-year average of 65.1%. Below is our graph of European Gas Storage Level.

Figure 15: European Gas Storage Level

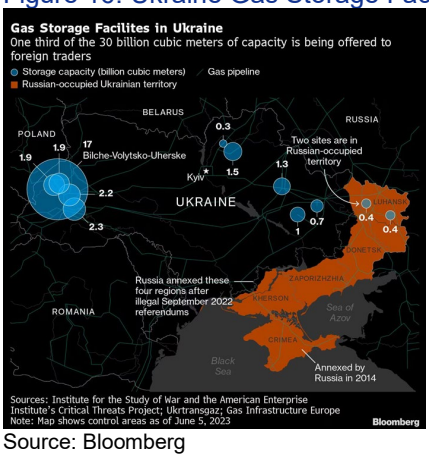


Source: Bloomberg, SAF

Ukraine storage is currently ~6% 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 January 23, natural gas in Ukraine storage was at 12.8% of its total capacity, down compared to 14.0% of its total capacity on January 16. Last winter, Ukraine storage as of Nov 1, 2023, was at 39.4%. Right now, Ukraine makes up ~6% 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 16: Ukraine Gas Storage Facilities as of June 2023



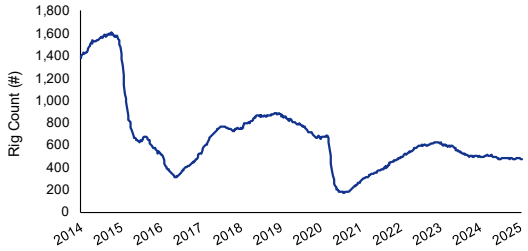
Source: Bloomberg

Oil: U.S. oil rigs down -6 rigs, very cold temps leading to more reductions

US oil rigs down WoW

As expected, US oil rigs were down this week, which we believe was driven by the frigid cold and snow that hit southern states like Texas. 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 -6 rigs WoW as of Jan 24. We expected to see a WoW decline with the very cold temperatures moving through the U.S. especially to the Texas. Total U.S. oil rigs are now down -27 oil rigs YoY to 472 rigs, which is below the recent low in July 2024. (iii) Note we can see the basin changes but not by type of rig; the WoW changes at the major basins were as follows: Permian -6 rigs WoW, Barnett -1 rig WoW, Cana Woodford -1 rigs WoW, and Eagle Ford +1 rig WoW. There must have been a rig added elsewhere because we did not have a proportionate number of gains within the major basins. (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 -47 rigs YoY to 571 rigs including US oil rigs -6 oil rigs YoY to 472 oil rigs. And for the key basins, the Permian is down -12 rigs YoY, Haynesville is down -13 rigs YoY, DJ-Niobrara is down -7 rigs YoY, Marcellus is down -6 rigs YoY, Williston is up -1 rig YoY, Granite Wash is up +7 rigs YoY, Eagle Ford is down -9 rigs YoY, Barnett is flat YoY, Ardmore Woodford is down -2 rigs YoY, Arkoma Woodford is down -1 rig YoY, Cana Woodford is down -5 YoY, Mississippian is down -2 rigs YoY, and Utica is down -2 rigs YoY. (v) U.S. gas rigs were up this week at 99 gas rigs. 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 up +1 rig WoW to 5 rigs and up +2 rigs YoY. (vi) We expect to see the very cold weather hitting the US have a continued impact on rig levels this week.

Figure 17: Baker Hughes Total US Oil Rigs



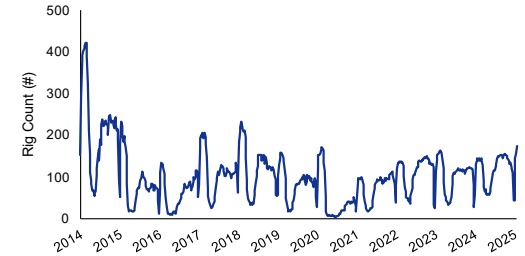
Source: Baker Hughes

Oil: Total Cdn oil rigs up +18 WoW on Friday, with gas rigs down -2 WoW

Cdn oil rigs up +18 WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. This week's total oil and gas rig count was up +16 rigs WoW to 245 rigs on Jan 24 and are up +15 rigs YoY. This is no surprise that Cdn rigs were up as we are at or near peak winter drilling activity levels. We have been expecting Cdn rigs to increase thru Jan. Oil rigs are up +18 rigs WoW at 174, and up +30 rigs YoY. Gas rigs are down -2 rigs WoW to 71 rigs and are down -15 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 18: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes

Oil: US weekly oil production down -0.004 mmb/d WoW to 13.477 mmb/d, up YoY

US weekly oil production

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]. 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, but we weren't surprised to see this week's estimate came in down -0.004 mmb/d WoW to 13.477 mmb/d for the week ending Jan 17. We have warned that the very cold temperatures (and even some snow) in the areas like Oklahoma and Texas was likely to temporarily impact production. This is up +1.177 mmb/d YoY from 12.300 mmb/d for the week ended Jan 19, 2024. The January STEO forecast was posted this week on Jan 14

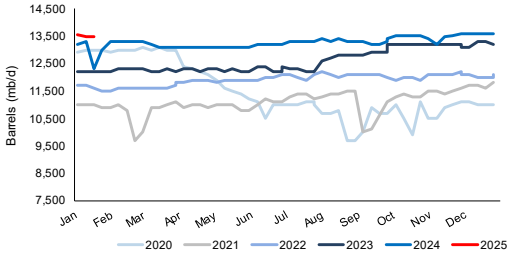
and slightly decreased its US crude expectations for 2024 by -0.020 mmb/d to 13.210 mmb/d which will exceed the Q4/19 peak of 12.880 mmb/d, with all quarters in 2024 expected to exceed 13.200 mmb/d, other than Q1/24 at 12.940 mmb/d. 2025 estimates were revised upwards to 13.540 mmb/d, with all quarters exceeding 13.400 mmb/d and reaching a peak of 13.670 mmb/d in Q4/25. The EIA is no longer releasing a DPR, so we no longer have MoM expectations. This week, the EIA's production estimates were down -0.004 mmb/d WoW to 13.477 mmb/d for the week ended Jan 17. Alaska production figures were down -0.010 mmb/d WoW to 0.442 mmb/d, compared to 0.452 mmb/d last week. Below is a table of the EIA's weekly oil production estimates.

Figure 19: 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-Sep	09/01	12,800	09/08	12,900	09/15	12,900	09/22	12,900	09/29	12,900
2023-Oct	10/06	13,200	10/13	13,200	10/20	13,200	10/27	13,200		
2023-Nov	11/03	13,200	11/10	13,200	11/17	13,200	11/24	13,200		
2023-Dec	12/01	13,100	12/08	13,100	12/15	13,300	12/22	13,300	12/29	13,200
2024-Jan	01/05	13,200	01/12	13,300	01/19	12,300	01/26	13,000		
2024-Feb	02/02	13,300	02/09	13,300	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				

Source: EIA

Figure 20: EIA's Estimated Weekly US Oil Production



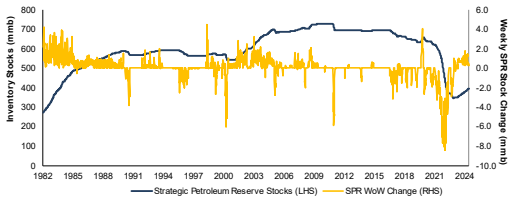
Source: EIA

US SPR reserves

Oil: US SPR less commercial reserve deficit narrows, now -17.097 mmb

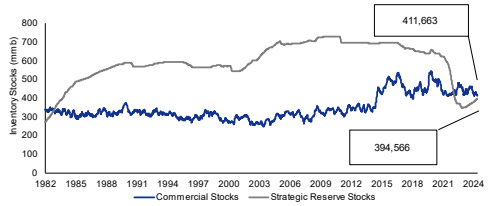
The SPR will be increasingly on the watch with Trump's stated plan to fill the SPR to the brim. The US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sep 16, 2022, week. This week, we saw a build on the SPR side and a draw on the commercial side. The EIA's weekly oil data for Jan 17, [LINK] saw the SPR reserves increase +0.249 mmb WoW to 394.566 mmb, while commercial crude oil reserves decreased -1.017 mmb to 411.663 mmb. There is now a -17.097 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 21: Strategic Petroleum Reserve Stocks and SPR WoW Change



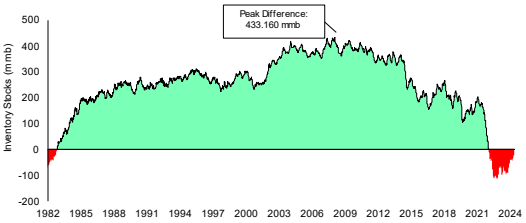
Source: EIA

Figure 22: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 23: US Oil Inventories: SPR Less Commercial



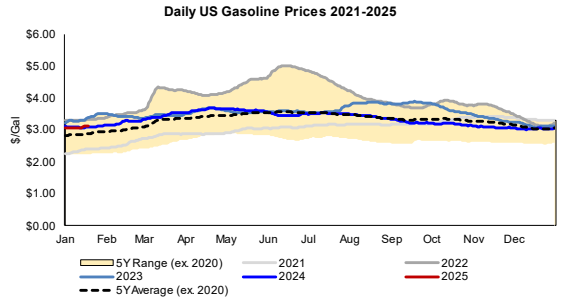
Source: EIA

US gasoline prices

Oil: AAA reports US national average gasoline prices +$0.01 WoW to $3.13 on Jan 25

The Trump gasoline price watch started this week with his taking office on Jan 20. Yesterday, we posted [LINK] "*AAA National average gasoline prices +$0.01 WoW to $3.132 on Jan 25,+$0.09 MoM & +$0.03 YoY. California average prices +$0.01 WoW to $4.45, +$0.11 MoM & -$0.04 YoY. Thx @AAAnews #OOTT.*" Yesterday, AAA reported that US national average prices were $3.13 on Jan 25, which was +$0.01 WoW, +$0.09 MoM and +$0.03 YoY. Yesterday, AAA also reported California average gasoline prices were $4.45 on Jan 25, which was +$0.01 WoW, +$0.11 MoM and -$0.04 YoY. Below is our graph of Bloomberg's National Average weekly gasoline prices.

Figure 24: AAA National Average Gasoline Prices



Source: AAA

Oil: Crack spreads -$0.21 WoW to $17.73 on Jan 24, WTI -$3.22 WoW to $74.66

Crack spreads closed at $17.73

On Friday, we posted [LINK] "*321 crack spreads -$0.21 WoW to $17.73 on Jan 24. WTI -$3.22 WoW to $74.66. Reminds WTI is more impacted by global oil items such as Trump trying to talk/push Saudi/OPEC to lower oil prices than 321 cracks. Thx @business #OOTT.*" Crack spreads were -$0.21 WoW to $17.73 on Jan 24 and WTI was -$3.22 WoW to $74.66. WTI was down to end the week driven by Trump's Davos remote appearance at Davos and saying "*And I'm also going to ask Saudi Arabia and OPEC to bring down the cost of oil. You got to bring it down, which, frankly, I'm surprised they didn't do before the election. That didn't show a lot of love by them not doing it. I was a little surprised by that.*" 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 at 17.73 is at the mid-point of the typical pre-Covid $15-$20 range and aren't high enough to incentivize refineries to take any more crude than necessary. Crack spreads of $17.73 on Jan 24 followed $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, $15.72 on Nov 29, $17.09 on Nov 22, $17.99 on Nov 15, $17.30 on Nov 8, $16.82 on Nov 1, and $16.91 on Oct 25.

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, 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 $17.73 on Friday Jan 24.

Figure 25: Cushing Oil 321 Crack Spread & WTI Jan 24, 2015 to Jan 24, 2025

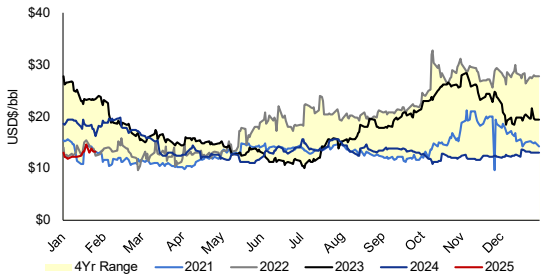
Source: Bloomberg

Oil: Cdn heavy oil differentials narrowed -$1.55 WoW to $13.10/b on Jan 24

WCS differential narrows

WCS less WTI differentials narrowed -$1.55/b to close the week at $13.10/b on Jan 24 versus the previous Friday's big spike to $14.65. The differential continues to trade in a narrower range relative to prior years. It looks like TMX worked as hoped, if not better, in keeping WCS less WTI differentials way lower than would be expected in Aug/Sept/Oct/Nov and now thru Dec and into Jan. Sept/Oct/Nov is when we normally see a significant seasonal widening of the WCS less WTI differentials. That didn't happen post TMX. WCS less WTI differentials have remained much lower and has not widened meaningfully in H2/24. But even with the TMX startup, there will always be the unexpected impact on WCS less WTI differentials from other items like refineries up and downs, wildfires, etc. Below is a graph showing WCS-WTI differentials that shows this normal seasonal trend of narrowing WCS-WTI differentials that normally widens into or through October, which it did not, and continue to be much narrower than in prior years. The WCS less WTI differential closed on Jan 24 at $13.10/b, which was a narrowing of -$1.55/b WoW vs $14.65/ on Jan 17.

Figure 26: WCS less WTI differentials



Source: Bloomberg

TMX impact: WCS less WTI diffs did not seasonally widen as in 2022 & 2023

The start of TMX pipeline in Q2 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. WCS less WTI differentials are approx. $4 narrower vs a year ago and approx. $9 narrower than two years ago. That is a big win for cash flows for all Cdn oil producers. For the past several months, we have been saying that the big test for the impact of the start of the 590,000 b/d TMX expansion on WCS less WTI differentials wasn't what happened in the summer months but what would happen in late Aug, Sept, Oct and Nov when differentials normally start to seasonally widen. It is clear increasing tanker exports has worked and differentials did not widen as normally happens. On Friday, we posted [LINK] "*Ahead of any Trump 25% tariff on Cdn oil, still a big continuing win for Cdn #Oil cash flows. Increasing tanker exports post TMX June 2024 start kept WCS-WTI diffs from normal S/O/N widening, and continue to stay narrow. WCS less WTI diffs: 01/24/25: $13.10. 01/24/24: $17.50. 01/24/23: $23.00. Can't recall what caused the 1-day crash in diffs from $23.00 to $2.60 on 01/25/23 and back to $23.75. Thx @garquake @business #OOTT.*"Our post included the below chart that shows how WCS less WTI differential were low in the summer and have stayed fairly flat in Aug/Sept/Oct/Nov/Dec and how differentials were widening in Sept/Oct/Nov in 2022 and 2023.

Figure 27: WCS less WTI differentials to Jan 24, 2025 close

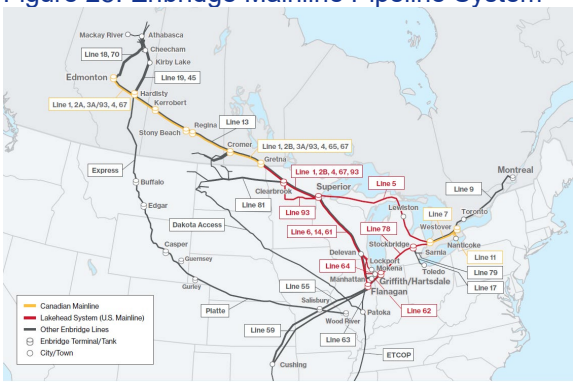
Source: Bloomberg

Oil: Trump thinking of Feb 1st for the 25% tariffs on Canada

Trump thinking Feb 1 for Canada tariffs

No ever knows with Trump how serious he is on his bold statements like the his planned 25% tariff on all Cdn products or if it just, as many believe, his big threat to setup negotiations for some sort of lesser win. We have said, like Trump or not, his negotiating strategy has worked for him and he normally gets something better out of a negotiation. However, Trump was clear this week that he is planning on the 25% tariffs on Canada starting this week. On Tuesday, we posted [LINK] "*Negative to Cdn #Oil & US consumers. Trump tariffs on CAN & MEX. "We're thinking in terms of 25% on Mexico and Canada, because they're allowing vast numbers of people. Canada is a very bad abuser also. Vast numbers of people to come in and fentanyl to come in. ""I think February 1st. "I think we'll do it February 1st. "25% on each" #OOTT. [LINK]."* And for the rest of the week, Trump highlighted US subsidizing Canada on multiple occasions in the US and on the global stage in his remote session with Davos. So he isn't going away on his threat. And when we still hear some Cdn politicians talk about shutting off the cutting off of oil to to the US of oil via Enbridge's Mainline Pipeline System, we also remid that the Enbridge Mainline Pipeline System route goes thru the northern US before it reconnects in Ontario to supply eastern Cdn markets. So any shutting down of the Mainline will also impact Ontario and Quebec. That also applies to its Line 5 pipeline that supplies needed propane to northern Michigan before connecting in Sarnia, Ontario. Our Supplemental Documents package includes Enbridge's overview of its Mainline Pipeline System.

Figure 28: Enbridge Mainline Pipeline System



Source: Enbridge

Captive buyers/captive sellers for Cdn medium/heavy oil to Midwest refineries

Here is what we wrote in our Dec 22, 2024 Energy Tidbits memo. "*Captive buyers/captive sellers for Cdn medium/heavy oil to Midwest refineries. We have heard how the shippers for the ~3 mmb/d of Cdn medium/heavy oil via pipeline to the Midwest PADD 2 will have to eat any Trump tariff costs as they have no other market for their oil. We agree that they are captive sellers. However, we have reminded that Midwest PADD 2 refineries are captive buyers of Cdn medium/heavy oil as they have no other way to replace ~3 mmb/d of Cdn medium/heavy oil. Sure the refineries could tweak it a little bit to run more US light oil. But that will have limitations. And then there is no logistics that could accommodate an additional 3*

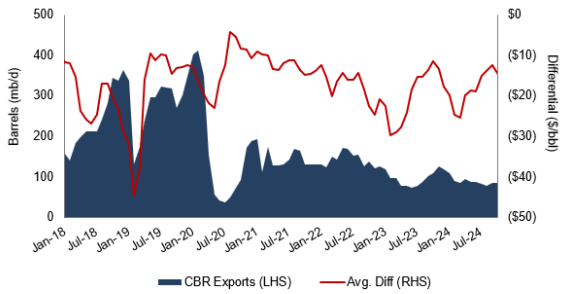
mmb/d of imports via tanker and then they have to find a way to get that oil from the Gulf Coast or East Coast or West Coast, without pipelines, to the Midwest refineries. It's why we posted, on Nov 27, [LINK] "Captive buyer and captive seller. Yes, Cdn oil producers have no other replacement market for its ~2.9 mmbd of heavy/medium oil to US Midwest refineries. BUT US Midwest refineries have no other replacement supply for its ~2.9 mmbd of Cdn heavy/medium oil. So Trump 25% tariff should flow thru to regional Midwest prices of gasoline, jet fuel, diesel, etc. #OOTT."

Oil: CER reports Cdn crude by rail exports at 94,188 b/d in Nov, down -26.3% YoY

Cdn crude by rail down YoY in November

As a reminder, the CER reports crude by rail exports to the US and these are normally higher 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 January 22, the CER released their Canadian crude exports by rail figures for November [LINK]. November crude exports by rail were 94,188 b/d, which is up +10.5% MoM from 85,279 b/d in October and down -26.3% YoY from 127,721 b/d in November 2023. The CER doesn't provide any explanation for the MoM changes. We have to believe, however, that the start up of the 590,000 b/d TMX in Q2/24 has to have had an impact. Below is our graph of Cdn crude by rail exports compared to the WCS–WTI differential.

Figure 29: Cdn Crude by Rail Exports vs WCS Differential



Source: Canadian Energy Regulator, Bloomberg

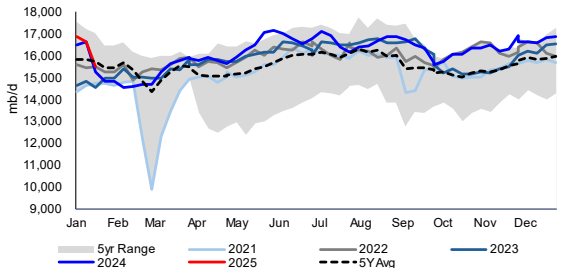
Oil: Refinery Inputs down -1.125 mmb/d WoW to 15.522 mmb/d with frigid cold

Refinery inputs -0.255 mmb/d WoW

As expected, the cold temperatures have hit crude oil inputs into refineries, in particular in the Gulf Coast (PADD 3). There are always unplanned refinery items that impact crude oil inputs into refineries. And there is always different timing for refinery turnarounds; generally 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. We have been expecting to see oil inputs into refineries decline in Jan/Feb with normal seasonal timing for refineries moving into turnarounds in Jan. However, last week's (Jan 19, 2025) Energy Tidbits memo warned that one of the areas that will be impacted by the very cold and snow will be crude oil inputs in some of the Gulf Coast refineries. That came trued this week. On Thursday, the EIA released its estimated crude oil input to refinery data for the

week ended January 17 [LINK]. The EIA reported crude inputs to refineries were down -1.125 mmb/d this week to 15.552 mmb/d and are up +0.246 mmb/d YoY. The big hit was in the US Gulf Coast PADD 3 where crude oil inputs were down -1.055 mmb/d WoW to 8.226 mmb/d for the week ended January 17. Refinery utilization was down -5.8% WoW to 85.9% and was up +0.4% YoY.

Figure 30: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil: US net oil imports up +0.184 mmb/d WoW, oil imports were up +0.621 mmb/d

US net imports +0.184 mmb/d WoW

The EIA reported US "NET" imports up +0.184 mmb/d to 2.230 mmb/d for the week of January 17. US imports were up +0.621 mmb/d to 6.745 mmb/d, while exports were up +0.437 mmb/d to 4.515 mmb/d. Top 10 was up +0.379 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 +0.344 mmb/d WoW to 4.329 mmb/d and are expected to stay high given refineries are maximizing oil imports from Canada ahead of any potential Trump tariff on Cdn oil. Weekly imports have been higher for the past five months with the increased Cdn crude coming off TMX and hitting west coast US refineries. (ii) Saudi Arabia was down -0.077 mmb/d to 0.256 mmb/d. (iii) Mexico was down -0.118 mmb/d to 0.244 mmb/d. And, as a general rule, oil imports from Mexico since Q2 have been significantly lower than prior year's levels with the new Olmeca (Dos Bocas) refinery slowing ramping up in 2024 and Pemex's other refineries increasing crude oil processing. However, we expect oil imports from Mexico are likely going higher given reported new problems with Olmeca (Dos Bocas). (iv) Colombia was up +0.020 mmb/d to 0.286 mmb/d. (v) Iraq was up +0.066 mmb/d to 0.218 mmb/d. (vi) Nigeria was up +0.118 mmb/d to 0.156 mmb/d. (vii) Venezuela was up +0.176 mmb/d to 0.416 mmb/d.

Figure 31: US Weekly Preliminary Imports by Major Country

US Weekly Preliminary Crude Imports By Top 10 Countries (thousand b/d)

	Nov 22/24	Nov 29/24	Dec 6/24	Dec 13/24	Dec 20/24	Dec 27/24	Jan 3/25	Jan 10/25	Jan 17/25	WoW
Canada	4,081	4,044	3,829	4,339	3,919	3,733	4,422	3,985	4,329	344
Saudi Arabia	248	392	175	81	368	87	69	333	256	-77
Venezuela	267	173	187	521	120	353	253	240	416	176
Mexico	151	279	440	526	397	551	392	362	244	-118
Colombia	142	283	125	136	276	289	72	266	286	20
Iraq	277	397	213	209	229	212	180	152	218	66
Ecuador	118	103	103	69	0	0	147	103	0	-103
Nigeria	146	110	168	56	237	71	192	38	156	118
Brazil	227	348	251	178	248	280	233	129	138	9
Libya	0	204	0	32	50	189	56	86	30	-56
Top 10	5,657	6,333	5,491	6,147	5,844	5,765	6,016	5,694	6,073	379
Others	426	957	493	502	627	1,161	412	430	672	242
Total US	**6,083**	**7,290**	**5,984**	**6,649**	**6,471**	**6,926**	**6,428**	**6,124**	**6,745**	621

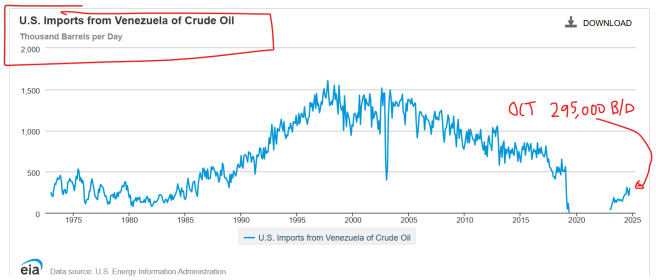
Source: EIA, SAF

Oil: Trump "we're going to probably stop buying oil from Venezuela"

US to stop buying oil from Venezuela

On Monday night, we were watching Trump on TV and we posted [LINK] "*Breaking! Trump just now "We're going to probably stop buying oil from Venezuela" Looks like supporting Rubio on Venezuela. Positive for Cdn #Oil. #OOTT."* Trump was very matter of fact about this, which will create a hole to fill for the US to replace heavy/medium sour barrels in the Gulf Coast. This shouldn't surprise as Secretary of State Rubio pointed to this policy last week and we were of the view that Rubio wouldn't have pointed to this policy view unless Trump was onside. This could be bad timing if Trump does this right away as the US refineries are soon to move into asphalt/paving season production where they ramp up medium/heavy sour share of refiner runs. Our post said it is positive for Cdn medium/heavy as Trump cutting ~300,000 b/d of Venezuela medium/heavy creates a market for someone to fill.

Figure 32: US oil imports from Venezuela



Source: EIA

01/15/25: Rubio wants to reexplore Chevron's Venezuela oil license

Here is what we wrote in last week's (Jan 19, 2025) Energy Tidbits memo about Rubio pointing to the US stopping Venezuela oil imports and why we thought he must have had Trump onside with that policy view. "*Rubio wants to reexplore Chevron's Venezuela oil license. Earlier in the memo, we noted Rubio's non-specific comments on a return to cutting Iran oil exports. Secretary of State nominee Marco Rubio has stayed out of the spotlight but had his Senate confirmation hearing on Wednesday. We posted [LINK] "Bullish for Cdn #Oil as Rubio points to less Venezuela heavy/medium oil to US. Re Cuba: Rubio says won't speak ahead of Admin decisions as Trump sets policy. BUT has no hesitation to say oil license to Chevron & others provided $ billions and "all that [licenses] need to be reexplored". Seems to*

Infer Trump is onside. Less VEN oil into US is positive for Cdn Oil prices. See @business transcript. #OOTT." We have looked at Rubio as a good pick for Secretary of State for Trump as he will be a careful speaker to not be too much offside Trump's views. On Cuba, Rubio said it was up to Trump. Late in the hearings, he is asked about Cuba. Rubio is Cuban American and has strong anti Cuba regime views. But he made a specific point of saying he didn't want to speak out on a position ahead of Trump decision. Ted Cruz, another Cuban American, asked if Rubio would commit to the view that Cuba has all the qualifications of having state sponsored terrorism activity. Rubio replies "Well, I would just say -- again, I don't want to speak ahead of the administration of these decisions. As I said, the president sets our foreign policy and my job is to execute it. That's how our system of government works." The reason we highlight this is that it seems to reaffirm our assessment of him as being careful to not get out ahead of Trump on major foreign policy items. His Cuba response makes us think Trump is onside Rubio on Venezuela. And Rubio was clear, he disagrees with the oil licenses to Chevron and others and wants them reexplored. As opposed to Cuba, Rubio had no hesitation to a clear foreign policy action. Rubio said "I was in strong disagreement with the Biden administration, because they got played the way that I knew they would get played. They entered into negotiations with Maduro. He agreed to have elections. The elections were completely fake. They leveraged migration against us to get those concessions, and now they (ph) have these general licenses where companies like Chevron are actually providing billions of dollars of money into the regime's coffers and the regime kept none of the promises that they made. So, all that needs to be reexplored." Trump can change his mind on a dime but Rubio seems to point to them to wanting to put an end to Chevron's oil license and that means over 250,000 b/d less Venezuela oil imports into the US. Ie. positive for WCS."

Norway oil production

Oil: Norway Dec oil production of 1.783 mmb/d is up +3.1% MoM, down -4.7% YoY

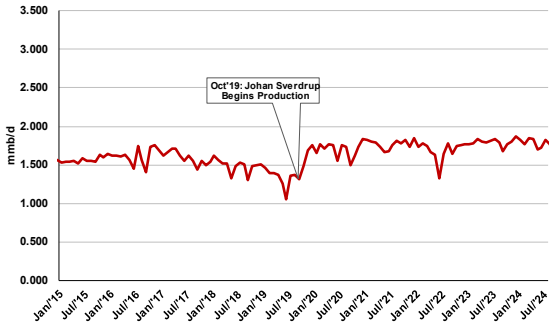
On Tuesday, the Norwegian Offshore Directorate (NOD) released it's December production figures [LINK]. It reported oil production of 1.783 mmb/d, up +3.1% from revised November figures of 1.729 mmb/d and up -4.7% YoY from 1.870 mmb/d in December 2023. December's production actuals came in -0.7% (-0.013 mmb/d) over the forecast volumes of 1.796 mmb/d. The NOD does not provide any explanation for any MoM changes, so we don't know if the MoM increases are temporary. But, as we have been highlighting since early 2024, Norway oil production is expected to peak in early 2025 with the start of decline at Norway's biggest oilfield, Johan Sverdrup, and then move into decline. Note that, prior to 2024, the Norwegian Offshore Directorate was called the Norwegian Petroleum Directorate.

Figure 33: Norway December 2024 Production

		Oil mill bbl/day	Sum liquid mill bbl/day	Gas MSm³/day	Total MSm³ o.e/day
Production	**December 2024**	**1.783**	**2.018**	**361.2**	**0.682**
Forecast for	December 2024	1.796	2.055	354.4	0.681
Deviation from forecast		-0.013	-0.037	6.8	0.001
Deviation from forecaset in %		-0.7 %	-1.8 %	1.9 %	0.1 %
Production	November 2024	1.729	1.971	360.8	0.674
Deviation from	November 2024	0.054	0.047	0.5	0.008
Deviation in % from	November 2024	3.1 %	2.4 %	0.1 %	1.2 %
Production	December 2023	1.870	2.122	382.8	0.720
Deviation from	December 2023	-0.087	-0.104	-21.5	-0.038
Deviation in % from	December 2023	-4.7 %	-4.9 %	-5.6 %	-5.3 %

Source: Norwegian Offshore Directorate

Figure 34: Norway Monthly Oil Production 2015-2024



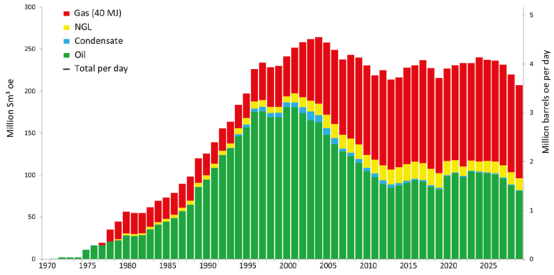
Source: Norwegian Offshore Directorate

01/09/25: Norway oil production plateau in 2025/26, then start to decline

As a reminder, Norway has forecasting that its oil production was peaking in 2025. Our Aug 25, 2024 Energy Tidbits noted their forecast for Norway total oil production to peak in 2025 and then decline. On Jan 9, 2025, Norway came out with a similar forecast. Here is what we wrote in our Jan 12, 2025 Energy Tidbits memo. "*Norway oil production plateau in 2025/26, then start to decline. On Thursday, we posted [LINK] "Norway's new fcast for peak #Oil #NatGas production. Oil. peak 2023 1.79 mmbd, plateaus 2023-26, then declines. to 1.40 mmbd in 2029. NatGas, peak 2024 12.00 bcfd, modest drop to plateau 2025-27, then decline to 10.72 bcfd in 2029. Decline accelerates as mostly older fields. #OOTT." (i) It is not a surprise to see this forecast, which is in line with Norwegian Offshore Directorate's Aug forecast. (ii) On Thursday, the Norwegian Offshore Directorate posted its "The Shelf in 2024", which included the NOD's forecast for oil, condensate, NGLs and natural gas production through 2025. Our post included a table we created from the NOD backup excel to give the actual forecast numbers. (iii) For oil, the NOD estimates peak oil was 2.02 mmb/d in 2023, but that is essentially unchanged with a plateau production thru 2026 at 2.00 mmb/d in 2024, 2.01 mmb/d in 2025 and 2.00 mmb/d in 2026. Then declines hit with 1.92 mmb/d in 2027, 1.78 mmb/d in 2028 and 1.66 mmb/d in 2029. (iv)*

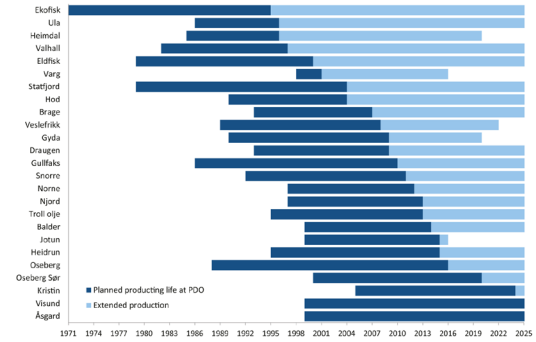
Natural gas. NOD forecasts peak natural gas production of 12.00 bcf/d in 2024, then down modestly to a plateau production of 11.64 bcf/d in 2025, 11.62 bcf/d in 2026, and 11.59 bcf/d in 2027. Then declines hit with 11.26 bcf/d in 2028 and 10.72 bcf/d in 2029. (v) The reason why declines start to kick in despite ongoing exploration and development is that a lot of the base production is old. Our post included the below NOD graph that NOD described as "The figure below shows a number of fields that are producing between 10 and 30 years longer than originally planned. Several of these fields will continue to produce until 2030, and some even to 2040. This provides a significant contribution to production and value creation on the shelf." So it's good news that technology and development is allowing longer life for old fields, but the reality is that the age of these fields will start to kick in. Our Supplemental Documents package includes excerpts from the NOD "The Shelf in 2024".

Figure 35: Norway's forecast oil and natural gas production thru 2029



Source: Norwegian Offshore Directorate

Figure 36: Norway's oil and gas fields, original planned life vs current life expectation



Source: Norwegian Offshore Directorate

10/24/24, Equinor, 755,000 b/d Johan Sverdrup to begin to decline in early 2025

As a reminder, Norway's largest oil field, the 755,000 b/d Johan Sverdrup, is operated by Equinor who has stated they expect Johan Sverdrup would come off plateau in early 2025 and then begin to decline. Here is what we wrote in our Oct 27, 2024 Energy Tidbits memo. "*Johan Sverdrup is Norway's biggest oilfield and it is currently at ~755,000 b/d, which is approx. half of Norway's total oil production. On*

Feb 8, 2024, we first tweeted how Aker BP, a partner in Johan Sverdrup, was the first to note that Johan Sverdrup was moving from plateau to decline in late 24/early 25 as water was starting to hit some wells. That view hasn't changed all year. Our view is simple – when a country's giant oilfield that accounts for half of a country's production, it normally means the country's total oil production will start to decline. It is why, since Feb, we have warned that Norway oil production is about to start to decline. On Thursday, Equinor held its Q3 call and it also reminded how the best insights come from the Q&A portion of conference calls. Equinor confirmed that they see the 755,000 b/d Johan Sverdrup oilfield will come off plateau in early 2025, which is the way to say Johan Sverdrup oil production will begin to decline in early 2025. On Thursday, we tweeted [LINK] "Norway on track for peak #Oil production in 2025 & then decline. @Equinor CEO confirms Norway's 755,000 b/d field "will be on plateau until early 2025" ie. after plateau is decline. Fits 👇08/21, 03/11 & 02/08 tweets, Norway sees its oil production peaking in 2025. #OOTT." In the Q&A, mgmt replied "Your second question, Henri, on Johan Sverdrup. Yes. So far, so good. We see that we are now in a position where we can say that the plateau, we will be on plateau until early 2025. I think it's very important for me to say that we are not surprised at all that we will come off plateau in 2025. It is a function of that we have invested in higher capaciy, the 755,000 barrels per day pushing cash flow and net present value higher. And that leads to that we will get off plateau earlier."

Russian refineries crude oil runs

Oil: Russian refineries processing hits 3-week high before impacts of recent fires

We have been surprised 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. It must be that the drone attacks haven't hit critical equipment that would take months to fix instead of a few weeks. Unfortunately, we never get any detail on what a drone hits at a refinery. In the last week, two Russian refineries were reported drone hits causing fires – at Saratove and Lukoil refinery in Volgograd. Bloomberg reported that, during the period of Jan 9-15, Russia's average crude processing rate fell to 5.45 mmb/d, which is down approx. 75,000 b/d vs the Dec average of approx 5.525 mmb/d. But Bloomberg also reported that Russian refinery runs reached 5.52 mmb/d for the Jan 9-15 week, which is the highest levels since mid-Dec. Bloomberg wrote ""*Russia's refineries processed a total of 5.52m b/d of crude on Jan. 9-15, according to a person with knowledge of industry data… The growth in Russia's seven-day refinery runs mainly came due to higher crude processing at Gazprom Neft's Omsk refinery in western Siberia and the independent Afipsky refinery in Russia's south, which in the previous seven days showed declines, the person said.*" Our Supplemental Documents package includes the Bloomberg report.

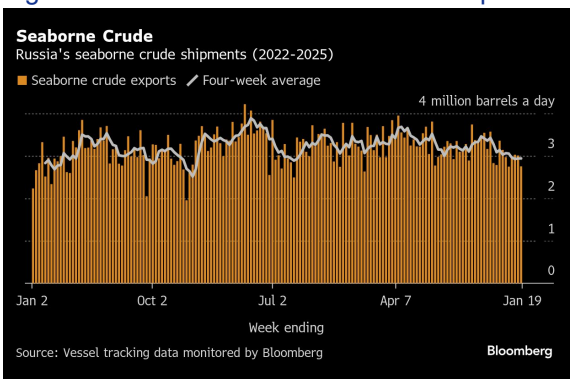
Russia's seaborne crude exports

Oil: Russia's seaborne crude shipments down ~260,000 b/d WoW

On Tuesday, Bloomberg released their weekly Russian Seaborne crude tracker, this week, titled *"Russian Oil Flows Stall as US Sanctions Start to Buffet Tankers"*. Exports last week saw its biggest drop since November, after President Biden imposed sweeping sanctions on Russia's oil trade before his departure from office. The daily crude flows were down 260,000 b/d WoW to 2.75 mmb/d for the week ended Jan 19, vs 2.75 mmb/d for the week ended Jan 10. Lower flows from the country's Black Sea, Arctic and Pacific ports were partly offset by an increase in shipments from the Baltic Sea port of Primorsk. The four-week average volumes

were unchanged from the previous week, at 2.940 mmb/d for the week of Jan 19. Bloomberg reported, "*The measures will be felt particularly strongly in Russia's Pacific flows. About three-quarters of ESPO cargoes shipped since the start of October were carried on vessels that have now been sanctioned, while the entire fleets of specialized shuttle tankers used by the Sakhalin 1 and Sakhalin 2 oil and gas projects have also been blacklisted. Ultimately, the impact on volumes will depend on how rigorously the sanctions are enforced by the incoming administration in Washington.*" Our Supplemental Documents package includes the Bloomberg report.

Figure 37: Russia's Seaborne Crude Shipments



Source: Bloomberg

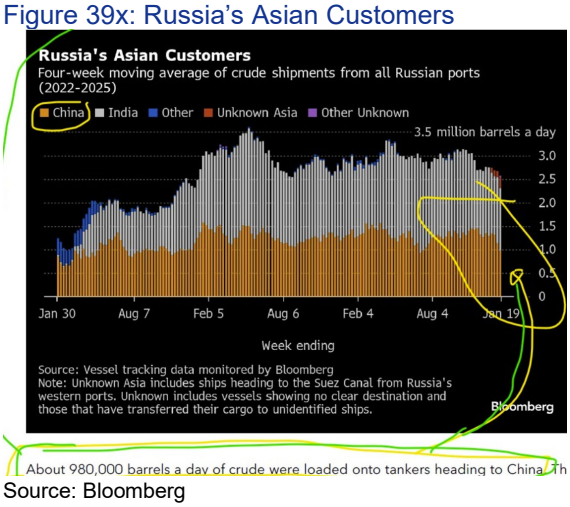
Russia oil exports to China decline with sanctions

On Wednesday, we posted [LINK] "*Looks like China is, at least temporarily, not letting many Russian sanctioned tankers directly unload in China. Down to 0.97 mmb/d for 4 wk ending Jan 19. Normally, crude markets find a work-around for sanctions. So question is what work-around can be found and how will that impact RUS oil shipments. Thx @JLeeEnergy. #OOTT."* Reports have been that China has been stopping some direct unloading of sanctioned Russia tankers at its port, and the Bloomberg estimates support that view. Note that the Bloomberg table says crude shipments to Asia but it is actually crude shipments to China. Our post included Bloomberg writing "*about 980,000 barrels a day were loaded onto tankers heading to China*". The 980,000 b/d ties to to the 0.98 mmb/d described as crude shipments to Asia. Bloomberg's crude oil shipments from Russia to China saw another significant drop off from its stable level over the few weeks span before the new year. Bloomberg highlighted the four-week average of Russia oil shipments to China were down to 0.980 mmb/d for the week ending January 19, a decline from last week's 1.130 mmb/d, which was upwardly revised by +0.05 mmb/d. Five weeks ago, on December 15, shipments were at 1.35 mmb/d. Below are the Bloomberg table and graph that we attached to our post.

Figure 38: Russian Crude Shipments to China

Source: Bloomberg

Figure 39x: Russia's Asian Customers



Source: Bloomberg

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

Here is what we wrote in last week's (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: Trump calls on OPEC and Saudi Arabia to lower oil prices

Trump on Saudi Arabia and OPEC

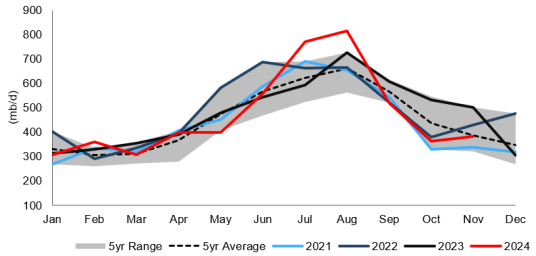
The negative to oil prices to end the week was driven by Trump's comments in his virtual address & Q&A at the World Economic Forum in Davos on Thursday. Trump highlighted his priority on getting oil prices lower and how he is going to ask Saudi Arabia to bring down the cost of oil. We don't think anyone knows how much MBS believes he owes Trump but we suspect that everyone believes MBS does feel obligated to some degree. However, we also believe Saudi Arabia has a lot of credibility on the line if they move away from their consistent approach and messaging that they want a stable market that works for buyers and sellers. It will be interesting to watch as OPEC JMMC meets on Feb 3. For Davos, Trump said "*And it's also reported today in the papers that Saudi Arabia will be investing at least $600 billion in America, but I'll be asking the Crown Prince, who's a fantastic guy, to round it out to around $1 trillion. I think they'll do that because we've been very good to them. And I'm also going to ask Saudi Arabia and OPEC to bring down the cost of oil. You got to bring it down, which, frankly, I'm surprised they didn't do before the election. That didn't show a lot of love by them not doing it. I was a little surprised by that. If the price came down, the Russia-Ukraine war would end immediately. Right now, the price is high enough that that war will continue. You got to bring down the oil price, you're going to end that war. They should have done it long ago. They're very responsible, actually, to a certain extent, for what's taking place. Millions of lives are being lost.*"

Oil: Saudi use of oil for electricity slightly up in Nov

Saudi oil use for electricity up in Nov

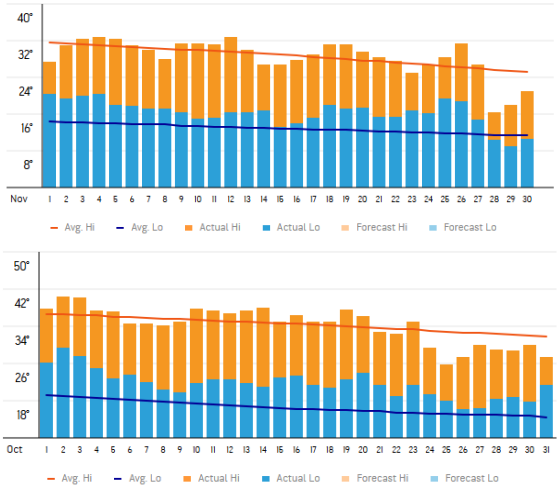
The key seasonal theme for Saudi oil exports is that, all things being equal, Saudi can export more oil in winter months as it uses less oil for electricity and, conversely, it would have less oil for export in summer months as it uses more oil for electricity i.e. air conditioning. Note that a normal peak to trough decline is ~400,000 b/d. If there is less oil used for electricity, then there is more oil for export and vice versa. The JODI data for Saudi Arabia oil supply and demand for November [LINK] was updated on Wednesday. Saudi uses significantly less oil for electricity after August ends and the shoulder season begins. November saw a slight increase in oil usage when compared to October, which saw a significant drop from September's direct use. The normal seasonal trend is for Saud oil consumption for electricity steadily to its trough in Feb. That wasn't the case for Nov, which saw a contra seasonal increase in oil used for electricity. Oil used for electricity generation in November was 382,000 b/d, (vs November 2023 of 501,000 b/d), October was 362,000 b/d, and September was 518,000 b/d (vs September 2023 of 606,000 b/d). Note that this year has exceeded the historical trough-to-peak swing of 400,000 b/d. The low was 307,000 b/d in March, and we saw 814,000 b/d in August. November in Riyadh saw daytime highs of 32-37°C, while the night cooled to 22-26°C. October saw daytime highs of 27-32°C, while the night cooled to 16-19°C. Another factor impacting the use of oil for electricity is that Saudi Arabia is increasing its use of natural gas for electricity. Below are the AccuWeather temperature maps for Riyadh for November and October.

Figure 40: Saudi Arabia Direct Use of Crude Oil for Electricity Generation



Source: JODI, SAF

Figure 41: Riyadh Temperature Recaps for November (top) and October (bottom)



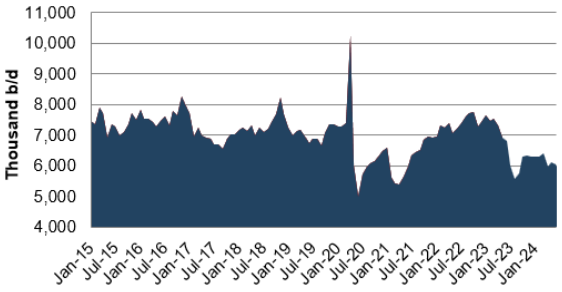
Source: Accuweather

Oil: Saudi net oil exports up +0.272 mmb/d to 6.060 mmb/d in November

Saudi net oil exports up MoM

As noted above, Saudi Arabia used +0.020 mmb/d MoM more oil for electricity, but also saw a MoM increase in exports and oil inventories primarily driven by significant less crude oil inputs in to refineries in Nov. JODI doesn't give explanations, but we expect that one of the reasons for less crude oil into refineries is Saud Arabia's fuel imports from Russia. Until recently, JODI did not have access to Saudi import data. But the oil import data is available, so we calculate net oil exports. In the shoulder season, as electricity demand falls from the August peaks, we expect to see net oil exports increase slightly. In November, the JODI data showed Saudi net oil exports were up +0.272 mmb/d MoM to 6.060 mmb/d. This comes as imports were up +0.09 mmb/d and exports were up +0.281 mmb/d. Below is our graph of Saudi Arabia monthly net oil exports.

Figure 42: Saudi Arabia Net Oil Exports (mb/d)



Source: JODI, SAF

2023/10/11: Saudi reminded oil exports are seasonal ie more in winter

There are always unusual events but, as a rule, there is a seasonality to Saudi oil exports. Here is what we wrote in the Nov 12, 2023 Energy Tidbits memo. "*We probably should have called it Saudi Oil 101, but we were a little surprised that Saudi Energy Minister felt the need to explain how there is seasonality to Saudi's oil exports because Saudi domestic consumption of oil has a seasonal pattern. So seasonally, there is more Saudi oil available for export in the fall than in the summer. On Friday, we tweeted [LINK] "Agreed, he is explaining Saudi Oil 101. Summer heat = more #Oil used to generate electricity for A/C ie. less for export. Aug 2023 was 726,000 b/d, +414,000 b/d vs Jan 2023. See 👇SAF 10/22/23 Energy Tidbits graph. Thx @SVakhshouri for flagging. #OOTT." Well known oil strategist Dr. Sara Vakhshouri tweeted "Saudi Energy Minister on #oil price drop: demand is healthy & speculators are to blame for the recent drop. OPEC exports don't indicate increased production. Shipments are seasonal, dipping in summer & rebounding in Sep & Oct; not a sign of output changes." This is the theme we highlight every month when we report on the monthly Saudi oil data for oil to refineries, production, exports, oil for electricity and oil into inventories. Our tweet showed our Oct 22, 2023 Energy Tidbits graph on how Saudi used 414,000 b/d more oil for electricity in Aug than it did in Jan because of the weather. The hot summers always drive up Saudi use of oil for electricity.*"

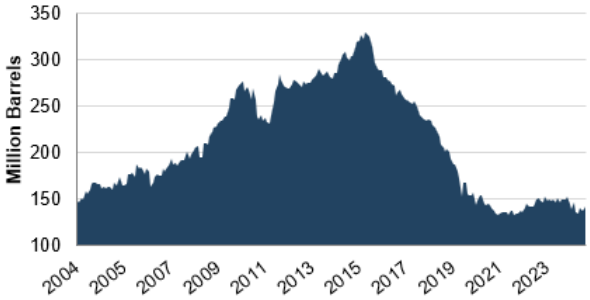
Oil: Saudi oil inventories build +3,900 mmb MoM in November

Saudi oil inventory data

Saudi crude oil inventories were up MoM, as demand was down for the month driven by lower refinery intake. The JODI data for Saudi oil stocks is 145.131 mmb on November 30, which is up +3.900 mmb MoM from 141.231 mmb on October 31. When we look at the components of the MoM changes for production, oil used for electricity, oil intakes into refineries and net oil exports, we would have expected to see a build in oil stocks of +3.870 mmb in November which is a difference of +0.030 mmb. For the math components. Saudi production in November was 8.925 mmb/d, down -0.047 mmb/d MoM vs 8.972 mmb/d in October i.e. this would have led to a +8.925 mmb/d build in inventories MoM. Saudi direct use of oil for electricity was 0.382 mmb/d in November, up +0.020 mmb/d MoM vs 0.362 mmb/d in October, this would lead to a -0.382 mmb/d MoM draw in oil inventories. Refinery intake of oil was 2.354 mmb/d in November and was down -0.383 mmb/d MoM vs 2.737 mmb/d in October, this would have led to a -2.354 mmb/d MoM draw in oil inventories. Net oil exports were 6.060 mmb/d in November, up +0.272 mmb/d MoM vs 5.788 mmb/d in October

i.e. would lead to a -6.060 mmb/d MoM draw in oil inventories. The net impact of the key components would have been a MoM build of +3.870 mmb in oil inventories in November vs the reported MoM build of +3.900 mmb.

Figure 43: Saudi Arabia Oil Inventories (million barrels)



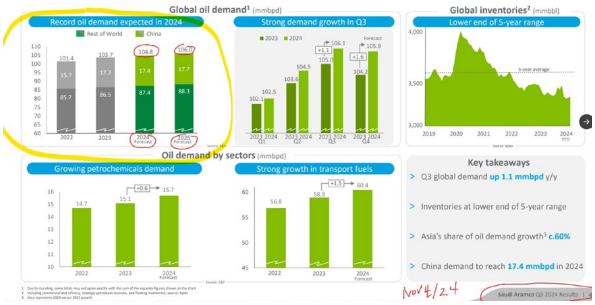
Source: JODI, SAF

Saudi Aramco CEO on oil markets

Oil: Saudi Aramco CEO "*started to see tightening in the [oil] market*"

On Tuesday, we posted [LINK] ""*we started to see tightening in the [oil] market" Saudi Aramco CEO Nasser. Positive given Q1 is normally the period that sees seasonal oil stock builds given Q1 oil consumption is seasonally low. Great interview @JoumannaTV #OOTT."* (i) It looks like Saudi Aramco made a tweak down in their oil demand forecast. Early Tues morning, we posted [LINK] "*Looks like Saudi Aramco CEO tweaks down #Oil demand forecast. 11/04/24 Q3: 104.8 mmb/d in 2024, +1.2 mmb/d YoY to 106.0 mmb/d. Today: 104.6 mmb/d in 2024, +1.3 mmb/d YoY to ~105.9 mmb/d. See 👇@marwastweets report. #OOTT."* The numbers came from a short Reuters reporting on comments by Saudi Aramco CEO Nasser on the sidelines at Davos. Our post noted how the Aramco CEO comments point to a very small tweak down in 2025 oil demand to ~105.9 mmb/d vs their Q3 call on Nov 4. 2024 forecast for oil demand of 106.0 mmb/d. (ii) Biden sanctions on Russian tankers is tightening the oil market. But then we saw the Bloomberg TV interview with Nasser that had the same numbers as in the Reuters report but much more color on oil markets so we made a transcript of Nasser's comments that were attached to our later Tues post. Bloomberg asked Nasser on the impact of the Biden sanctions. Nasser replied "*"Well, it's still too early. We understand from the news there is 186 tankers that will be impacted. The seaborne that comes from Russia is around 3.4 million barrels and the rest is piped. If you add to that, approximately seaborne production that will export from Iran of around 1.6 million barrels, so in total you/re talking about 5 million barrels per day. But for the Russian tankers that are impacted by the sanctions that impact the tanker, the volume that you're looking at is close to 2 million barrels per day. So, it's still at an early stage we will wait and see what is the impact of all of these things in the markets. But we started to see tightening in the market*." Below is Saudi Aramco's oil demand forecast from its Q3 call on Nov 4, 2024. Our Supplemental Documents package includes the transcript we made of Bloomberg's interview with Nasser.

Figure 44: Continued global oil demand growth driven by our key markets



Source: Saudi Aramco Q3 call

Oil: Saudi Aramco oil demand fits in the tighter range of demand forecasts for 2025

Tight range of oil demand YoY growth for 2025

After seeing the Saudi Aramco CEO oil demand forecast comments, we also posted [LINK] *"Saudi Aramco CEO forecast for #Oil demand fits within a tighter range of 2025 oil demand growth vs 2024 estimates. 2025 YoY Demand Growth. IEA +1.05. Russia +1.25. Saudi Aramco +1.30. EIA +1.39. OPEC +1.45. See my 👇comparison. #OOTT."* In 2024,most ignored the IEA demand forecasts as they were considered way too low and their practice would be a continuous tweak higher. And most also ignored OPEC demand forecasts for the opposite reason – they were way too high and would keep getting tweaked down. Adding Saudi Aramco CEO oil demand forecasts to the Jan updates by the EIA, IEA and OPEC, we continue to highlight there is a tighter range of oil demand YoY growth forecasts for 2025 and we have to believe this should reduce the debate on demand. It will never go away but the debate should be lessened with a tighter range of forecasts. Below is our excel table of the recent forecasts for YoY oil demand growth that range from IEA +1.05 mmb/d YoY to OPEC +1.45 mmb/d YoY. The Saudi Aramco forecast is for oil demand growth of +1.30 mmb/d YoY in 2025. Below is our excel table that we attached to our post.

Figure 45: Comparison of YoY oil demand growth forecasts

	YoYOil Demand Growth Forecast			
million b/d	2024 YoY	2025 YoY	2026 YoY	
EIAJan STEO	0.90	1,39	1.05	
EIADec STEO	0.89	1.29	-	
EIANov STEO	0.99	1.22	-	
EIAOct STEO	0.92	1.29	-	
EIASept STEO	0.94	1.52	-	
EIAAug STEO	1.14	1.61	IEAdemand (million b/d)	
			2924	2925
IEAJan OMR	0.94	1.06	102.901	103.956
IEADec OMR	0.84	1.08	102.807	103.887
IEANov OMR	0.92	0.99	102.817	103.807
IEAOct OMR	0.86	1.00	-	
IEASept OMR	0.90	0.95	-	
IEAAug OMR	0.97	0.95	-	
OPEC Jan MOMR	1.54	1.45	1.43	
OPEC Dec MOMR	1.61	1.45	-	
OPEC Nov MOMR	1.82	1.54	-	
OPEC Oct MOMR	1.93	1.64	-	
OPEC Sept MOMR	2.03	1.74	-	
OPEC Aug MOMR	2.11	1.78	-	
Russia (Novak Dec 25)	1.20	1.25	-	
Saudi Aramco CEO Jan 21/25	0.90	1.30		
Saudi Aramco Q3 Nov 4/24	1.10	1.20	-	
Saudi Aramco Q2	1.60	1.40	-	

Source: EIA, IEA, OPEC, Saudi Aramco, Russia via TASS

Oil: Saudi Aramco CEO, China oil consumption is growing driven by petrochemicals

Saudi Aramco sees growing China oil demand

Saudi Aramco CEO Nasser didn't specifically say that China car consumption of gasoline and gasoline had peaked, but he seemed to infer that in his comments to Bloomberg. But Nasser highlighted there is growth in China oil consumption, it's just driven by growth in petrochemicals. On Tuesday, we posted [LINK] "*Petrochemicals growth = Growth in China oil demand even if gasoline/diesel component is peaking. "The growth [in China oil demand] is still there. Instead of producing more gasoline and diesel, they are using the feedstock to produce more chemicals" Aramco CEO to @JoumannaTV #OOTT."* Our post included the transcript we made of Nasser's Bloomberg interview. Bloomberg's Joumanna Bercetche asked "*It's interesting what you say about transport fuel in China, because obviously, there there has been a big shift towards the usage of electric vehicles. Analysts are saying that we're getting close to peak oil demand when it comes to transport fuel. What do you see?"* Nasser replied "I *think in China, as I say, there is a huge growth even for electric vehicles. The liquid to chemical, our strategy is to go to 4 million by 2030. About 4 million barrels per day. A lot of it is going to into China, China. Why do they need the liquid to chemical as a feed. They need it because of electric vehicles. They need it for solar panels. They need it for carbon fibers. So, my point even for the [??] on going to electric vehicles, you need oil as a feed stock to produce the material that would be required for any transitions. So, the growth is still there. Instead of producing more gasoline and diesel, they are using the feed stock to produce more chemicals. You'll see a lot of the conversion of refineries in China, for example, a lot of the one that we're investing right now, the conversion of liquid to chemical is at 60 to 70%, compared to an average of about 10 to 12% integration in liquid to chemical around the world."* Bercetche followed up "*do you think the market was overstating the state of demand that is coming out of China? And the fact that people have been so bearish about some signals coming through there?"* Nasser replied '*No. We're still seeing good demand coming out of China. We're seeing it in 2024 we still anticipate, as I said, most of the growth, 1.3 million. 40% of that growth, will come from China and India. The rest is coming from the rest of the world. As I said, China, even when you talk about the move into electric vehicles and renewables and all of that, they need to feedstock to create the material that would be used in these electric vehicles and these carbon fibers and all of these things. So, we are seeing the demand, and demand is increasing year on year."*

Oil: Trump, US to go from defense to offense to hit Houthis capability

Trump on the Houthis

One of the overlooked items on Trump's view on the Houthis is that he seemed to clearly state the US was going to move from defense to offense against the Houthis. Rather the reports were all on the headline that Trump re-designates the Houthis as a Foreign Terrorist Organization. We thought there was much more to his Fact Sheet and that was Trump is saying the US will be going on attack mode against the Houthis. The US Houthi approach under Biden was defensive to protect shipping on the Red Sea with the defensive approach including hitting the Houthis drone capability. But it was always framed as a defensive approach and never the US was just going to wipe out any and all Houthis military capability. Trump has taken a totally different view and stated he will cooperate with its regional partners (i.e. Israel) to eliminate the Houthis capability, It sounds very much like an Israeli playbook. And for some reason this offensive approach was overlooked. Whereas, on Wednesday, we posted [LINK] "*Trump has had enough with the Houthis & spending $billion to defend Red*

Sea. Trump is not saying stop or else. Rather, Trump is moving to wipe out Houthis capabilities. New US policy "to cooperate with its regional partners to eliminate the Houthis' capabilities and operations, deprive them of resources, and thereby end their attacks on U.S. personnel and civilians, U.S. partners, and maritime shipping in the Red Sea" Also cutting off any USAID that indirectly gets to help Houthis. Helps lower cost of #Oil if get Red Sea open again. #OOTT." The Fact Sheet [LINK] included "• *Under President Trump, it is now the policy of the United States to cooperate with its regional partners to eliminate the Houthis' capabilities and operations, deprive them of resources, and thereby end their attacks on U.S. personnel and civilians, U.S. partners, and maritime shipping in the Red Sea."* There was more in the Fact Sheet but Trump has clearly warned they are prepared to go along with others like Israel in going on the offensive against the Houthis. Our Supplemental Documents package includes the Fact Sheet.

Houthis said, pre Trump return, won't attack US/UK if US stop bombing Yemen

Normally the Houthis leader makes a big speech on Fridays but, at least as of our 7am MT news cut off, we have not seen any reports of a Friday speech. So we haven't seen his response to Trump's Fact Sheet and how the US is switching from defense to offense vs the Houthis. Like Trump or not, give him credit for ignoring the Houthis quasi branch offering last week that they won't attack US/UK ships if they stop bombing the Houthis. Here is what we wrote in last week's (Jan 19, 2025) Energy Tidbits memo before Trump took office. "*Houthis saying they won't attack US/UK if US et al stop bombing Yemen. We read the Al Masirah and Saba lengthy reporting of the Houthis leader speech and we thought he wasn't specific on the Israel/Hamas ceasefire if he was saying they would be pausing attacks on Israel land, Red Sea shipping or both. Interestingly, the Houthis took a page out of Israel playbook and launched missiles at Israel at the USS Harry Truman yesterday, the day before the ceasefire was starting. But in the Al Masirah reporting of the Houthis attack on Israel, the Houthis spokesman seemed to imply Houthis wouldn't be attacking any Red Sea vessels if US, UK et al stopped attacking Yemen. Unfortunately, it wasn't 100% clear but he seemed to imply don't attack us and we won't attack any hostile forces. But does that include any vessel?? It's not clear. Al Masiriah reported [LINK] "The Yemeni Armed Forces warned hostile forces in the Red Sea against any aggression on Yemen during the ceasefire in Gaza. They emphasized that any aggression would be met with exceptional military operations against hostile forces, without limits or red lines."*

Oil: Libya oil production of 1.408 mmb/d is above Aug 1 levels

Libya oil production at 1.408 mmb/d

On Friday, the Libya National Oil Corporation posted [LINK] "*Libya's crude oil production today reached 1,408,275 barrels per day, and condensate production reached 51,064 barrels. Gas production indicators recorded a value of 211,328 barrels of equivalent. Total production reached 1,670,667 barrels per day. #NOC #OIL #LIBYA"*. The NOC reported total liquids production of 1,459,339 b/d. This is above the Aug 1 level of 1.279 mmb/d for oil + condensate before the interruptions started. Note that the NOC updates now give a split of oil vs condensate, after three months of combining the production items. The NOC also reported natural gas production, on a boe/d basis, was 211,328 boe/d, and for total oil, condensate & natural gas production of 1,670,667 boe/d.

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

Here is what we wrote in last week's (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: Trump says "would rather not" put tariffs on China

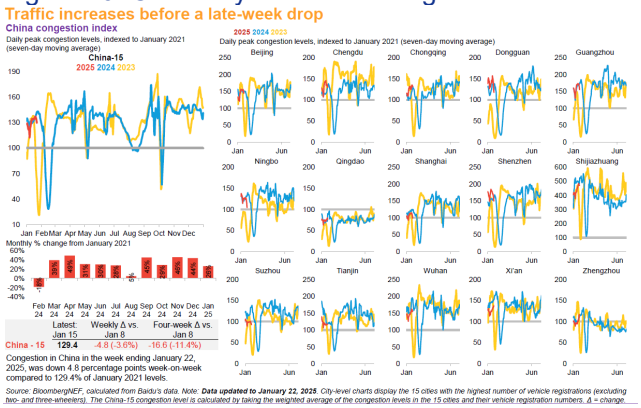
How hard will Trump be on China?

Last week's (Jan 19, 2025) Energy Tidbits memo highlighted there were more signal that Trump won't be as hard as feared on China. On Jan 14, we posted [LINK] "*Here's why China stocks up big. 👇@jendeben @SalehaMohsin Trump team looking at gradual tariff ramp on China to boost negotiating leverage & avoid inflation spike. Makes sense. Like Trump or not, his basic negotiating style tends to produce wins for him. Threaten actions that look a lose/BIG LOSE deal ie. some negative blowback to him. Then back off to a Win/Lose deal. #OOTT [LINK]."* Trump was interviewed by Fox News in the oval office. Bloomberg wrote "*President Donald Trump said he'd prefer not to have to impose tariffs on China, his latest dovish remark toward the world's second-biggest economy even as he continues to threaten sweeping action. "We have one very big power over China, and that's tariffs, and they don't want them," the US leader told Fox News host Sean Hannity in an interview that aired Thursday in the US. "And I'd rather not have to use it. But it's a tremendous power over China."*

Oil: Baidu China city-level road congestion in Jan 22 week showing Spring Festival

Spring Festival starts this week but, as noted in last week's (Jan 19, 2025) Energy Tidbits memo, the 40-day travel period has started. Spring Festival is earlier this year and this reflected in the earlier drop in China's city-level road congestion. On Thursday, BloombergNEF posted its China Road Traffic Indicators Weekly Jan 23 report, which includes the Baidu city-level road congestion for the week ended Jan 22. BloombergNEF reported Baidu city-level road congestion saw a decrease of -3.6% WoW to 129.4% of Jan 2021 levels. January 2025 data saw average daily peak congestion down -5.2% YoY when compared to January 2024. We noted in last week's memo that Chinese New Year and Spring Festival is early this year and that means China city-level road congestion will see 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 levels climb, then drop"*. Below are the BloombergNEF key figures.

Figure 46: China city-level road congestion for the week ended Jan 22



Source: Bloomberg

Oil: Reminder Chinese new year and spring festival is early this year

Chinese New Year is Jan 29

As a reminder, Chinese New Year is early in 2025 on January 29, whereas last year it was on Feb 10, 2024. This means all the normal city/economic activity slows down in January as opposed to the beginning of Feb. The Chinese New Year is also known as Lunar New Year or Spring Festival and normally includes at least a week of holidays starting with Jan 27 or 28 ie. the Shanghai stock market starts its week long New Year holiday days on Mon Jan 27. Spring Festival is the major holiday so many seem to take much more than a week of holidays.

Oil: China 40-day Spring Festival travel rush started on Tuesday Jan 14

Spring Festival travel rush

On Jan 14, we posted [LINK] "*Chunyun, 40-day Spring Festival travel started today, thru Feb 22. World's largest annual human migration. - 9 b inter-regional trips - 7.2 b road trips - 510 mm rail trips, 12.75 mm/d, +5.5% YoY - 90 mm air trips, 18,500 flights/day, +8.4% YoY. Also, won't be separate Jan economic data for many items, combined with Feb. #OOTT".* China's 40-day Spring Festival travel rush started on Tues Jan 14. Our post included Xinhua's Jan 13 report [LINK] that noted that the Spring Festival travel is set to begin with a record 9 billion inter-regional trips expected through the 40-day travel period. Xinhua wrote "*Chinese authorities expect an unprecedented 9 billion inter-regional trips during this year's chunyun, or Spring Festival travel rush. The 40-day travel period began on Tuesday and will continue through Feb. 22. More electric car owners and foreign tourists are expected to join the annual travel frenzy, traditionally featuring millions of migrant workers and others living far from their hometowns who head back to reunite with family and celebrate China's most important festival."*

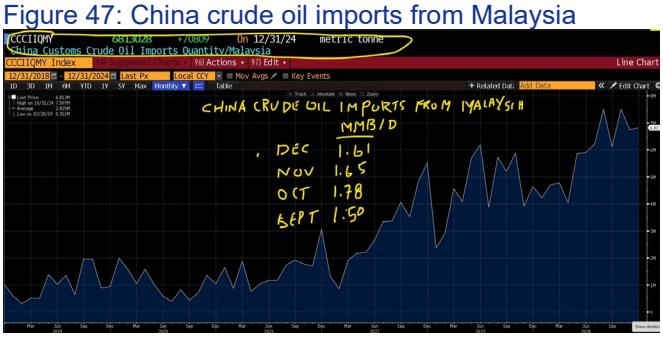
Oil: China continues importing Iran oil rebranded as Malaysia oil

China imports of "Malaysian" oil

On Tuesday, we posted [LINK] "*Iran #Oil keeps getting rebranded as Malaysia oil. China customs official data is zero oil imports from Iran since June 2022. BUT China oil imports from Malaysia 1.61 mmb/d in Dec yet Malaysia total country production is only 0.36 mmb/d. #OOTT."* Bloomberg had just posted the China customs data of crude oil imports by country for Dec. We checked Iran and there were no changes to China customs not showing any oil imports from Iran since June 2022. But then we looked as usual at Malaysia and the China

customs data shows China crude oil imports from Malaysia were 1.61 mmb/d in Dec, which followed 1.65 mmb/d in Nov, the record set in Oct of 1.78 mmb/d, 1.50 mmb/d in Sept, and 1.77 mmb/d in Aug. Our tweet also included the OPEC Monthly Oil Market Report Jan 2025, which included Secondary Sources estimate that Malaysia only produced 0.360 mmb/d in Dec, whereas China is importing oil from Malaysia that is equal to 4.5x times Malaysia total country production. Below is the Bloomberg graph of China oil imports from Malaysia that was attached to our tweet.

Figure 47: China crude oil imports from Malaysia



Source: Bloomberg

We had expected a larger MoM decline in China oil imports from Malaysia/Iran

We had actually expected to see a larger MoM decline in China oil imports from Malaysia/Iran based on the Kpler Dec 14 estimates. Here is what we wrote in our Dec 15, 2024 Energy Tidbits memo. "*Kpler China Nov oil + condensate imports from Iran -0.524 MoM to 1.31 mmb/d. Yesterday we posted [LINK] "Here's more support for why floating oil storage off Asia was jumped up in Oct/Nov. China imports of Iran crude oil + condensate hit 4-month low of 1.31 mmb/d, -0.524 mmb/d MoM. Thx @Kpler #OOTT." Note Kpler is referring to crude oil plus condensate barrels. It followed the same theme as Vortexa on reduced China oil imports from Iran due to wanting un-sanctioned tankers. Yesterday, Kpler posted [LINK] "US efforts to restrict Iranian oil flows are beginning to yield notable impacts. China's imports of Iranian crude #oil and condensate dropped sharply in November, hitting a four-month low of 1.31 million barrels per day. The significant 524 kbd month-on-month decline reflects the impact of geopolitical tensions, domestic energy shortages, and increased shipping challenges arising from stricter U.S. sanctions. Our analysis of the 147 tankers involved in Iranian crude shipments this year shows the disruption caused by the latest rounds of U.S. sanctions. This has resulted in a buildup of floating storage, primarily near Malaysia and Singapore." Below is the Kpler chart from this post. Our Supplemental Documents package includes the Kpler post."*

Oil: China oil imports 11.31 mmb/d in Dec, down -4.6% MoM and down -1.1% YoY

China oil imports

On January 18, the China's General Administration for Customs (GACC) released their data on China's oil and natural gas imports for December [LINK]. China's imports of crude oil in December were 47.84 million tons, or 11.31 mmb/d, a -4.6% decrease from 11.86 mmb/d in November, and down -1.1% YoY from 11.43 mmb/d in December 2023.

China oil production up +1.4% YoY in December to 4.23 mmb/d

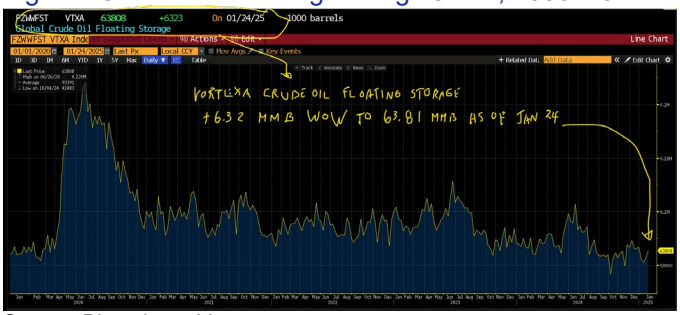
Similar to China's LNG imports, China's oil imports have been less because China has been increasing its domestic oil production., Here is what we wrote in last week's (Jan 19, 2025) Energy Tidbits memo. "*China's oil production up 1.4% YoY in December to 4.23 mmb/d. We have also been highlighting how China has been increasing its domestic oil production and that therefore reduces its oil import requirements. China's oil production increased by ~0.20 mmb from 2021 to 2023 and that has helped reduce some of its oil import needs. What is often overlooked is the fact that China is the 7th largest oil producer just behind Iraq. Last week, Bloomberg's CHENCOIL index (data pulled from National Bureau of Statistics) showed that China crude oil production was up +1.4% YoY in December to 4.23 mmb/d, up +0.06 mmb/d from 4.13 mmb/d in December 2023.*"

Oil: Vortexa crude oil floating storage est +6.32 mmb WoW to 63.81 mmb at Jan 24

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 Jan 18 at 9am MT. (i) Yesterday, we posted [LINK] *"Vortexa crude #Oil floating storage. Total est 63.81 mmb at Jan 24, +6.32 mmb WoW vs revised up by +5.40 mmb Jan 17 of 57.49 mmb. Asia +9.68 over past 2 wks to 32.74 mmb at Jan 24 as China had reportedly stopped taking some sanctioned tankers. Thx @vortexa @business #OOTT."* (ii) As of 9am MT Jan 25, Bloomberg posted Vortexa crude oil floating storage estimate for Jan 24 was 63.81 mmb, which was +6.32 mmb WoW vs revised up Jan 17 of 57.49 mmb. Note Jan 17 was revised +5.40 mmb vs 52.09 originally posted at 9am on Jan 18. (iii) Revisions. Jan 17 was revised +5.40 mmb, but the remaining prior six weeks were modest. The average revision for the prior seven weeks was -1.12 mmb. Here are the revisions for the prior seven weeks compared to the estimates originally posted on Bloomberg at 9am MT on Jan 18. Jan 17 revised +5.40 mmb. Jan 10 revised +1.33 mmb. Jan 3 revised +2.23 mmb. Dec 27 revised +0.40 mmb. Dec 20 revised -0.74 mmb. Dec 13 revised -0.62 mmb. Dec 6 revised -0.14 mmb. (iv) There is a wide range of floating storage estimates for the moving 7-week average, but a simple moving 7-week average to Jan 17 is 61.03 mmb vs last week's then 7-week moving average of 61,25 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) Jan 24 estimate of 63.81 mmb is -64.75 mmb vs the 2023 peak on June 25, 2023 of 128.57 mmb. Recall Saudi Arabia stepped in on July 1, 2023 with its voluntary cuts. (viii) Jan 24 estimate of 63.81 mmb is -2.85 mmb YoY vs Jan 26, 2024 at 66.66 mmb. Below are the last several weeks of estimates posted on Bloomberg as of 9am on Jan 25, Jan 18, and Jan 11.

Figure 48: Vortexa Floating Storage Jan 1, 2000 – Jan 24, 2025, posted Jan 25 at 9am MT



Source: Bloomberg, Vortexa

Figure 49: Vortexa Estimates Posted 9am MT on Jan 25, Jan 18 and Jan 11

Posted Jan 25, 9am MT

Date	Last Px
Fr 01/24/2025	63808
Fr 01/17/2025	57485
Fr 01/10/2025	52739
Fr 01/03/2025	55084
Fr 12/27/2024	66552
Fr 12/20/2024	65725
Fr 12/13/2024	65787
Fr 12/06/2024	73232
Fr 11/29/2024	66311
Fr 11/22/2024	69265
Fr 11/15/2024	48854
Fr 11/08/2024	62822

Jan 18, 9amMT

Date	Last Px
Fr 01/17/2025	52092
Fr 01/10/2025	51411
Fr 01/03/2025	52850
Fr 12/27/2024	66154
Fr 12/20/2024	66468
Fr 12/13/2024	66408
Fr 12/06/2024	73373
Fr 11/29/2024	66058
Fr 11/22/2024	69947
Fr 11/15/2024	48395
Fr 11/08/2024	63539
Fr 11/01/2024	61892

Jan 11, 9am MT

Date	Last Px
Fr 01/10/2025	55884
Fr 01/03/2025	54813
Fr 12/27/2024	66846
Fr 12/20/2024	66446
Fr 12/13/2024	67121
Fr 12/06/2024	74314
Fr 11/29/2024	65611
Fr 11/22/2024	69599
Fr 11/15/2024	47538
Fr 11/08/2024	62884
Fr 11/01/2024	61811
Fr 10/25/2024	57575

Source: Bloomberg, Vortexa

Vortexa floating storage by region

Oil: Vortexa crude oil floating storage WoW changes by regions

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 Jan 17 was revised up +5.40 mmb. The major revisions were Asia revised +3.55 mmb and West Africa revised +2.59 mmb. (ii) Total floating storage at Jan 24 of 63.81 mmb was +6.32 mmb WoW vs revised up Jan 17 of 57.49 mmb. The major WoW change was Asia revised +4.78 mmb. (iii) As we expected for the last couple weeks, Asia floating storage is moving higher with the then recent reports that China was being stricter in not taking sanctioned tankers. This would effectively strand some tankers until a plan can be executive to get that oil moving elsewhere or transferred into non-sanctioned tankers. Asia floating storage is now back over 30 mmb to 32.74 mmb on June 24. (iv) Jan 24 estimate of 63.81 mmb is -64.76 mmb vs the 2023 high on June 23, 2023 of 128.57 mmb. Recall Saudi Arabia started its voluntary 1 mmb/d production cuts on July 1, 2023. The major changes by region vs the June 23, 2023 peak are Asia -40.51 mmb and Other -15.03 mmb. (iv) Below is the table we created of the WoW changes by region posted on Bloomberg at of 9am MT yesterday. Our table also includes the "Original Posted" regional data for Jan 17 that was posted on Bloomberg at 9am MT on Jan 18.

Figure 50: Vortexa crude oil floating by region

Vortexa crude oil floating storage by region				Original Posted	Recent Peak	
Region	Jan 24/25	Jan 17/25	WoW	Jan 17/25	Jun 23/23	Jan 24 vs Jun 23/23
Asia	32.74	27.96	4.78	24.41	73.25	-40.51
North Sea	1.70	0.37	1.33	0.57	4.71	-3.01
Europe	2.37	0.98	1.39	2.06	6.05	-3.68
Middle East	6.80	6.20	0.60	6.73	6.59	0.21
West Africa	5.61	7.40	-1.79	4.81	7.62	-2.01
US Gulf Coast	0.29	0.49	-0.20	0.46	1.02	-0.73
Other	14.30	14.09	0.21	13.05	29.33	-15.03
Global Total	63.81	57.49	6.32	52.09	128.57	-64.76
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Jan 25						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

Oil: Bloomberg Oil Demand Monitor, *China Slowdown Eclipses Boost From Cold Snap*

Bloomberg oil demand monitor

The Bloomberg Oil Demand Monitor is a good recap of key oil demand indicators around the world. This week's report discusses the winter freeze stoking up consumption of heating fuels and forecasts showing China's role is waning in driving growth. Bloomberg noted that the Northern Hemisphere's cold spell has given oil demand a short-term, mild lift amid increases in heating fuel consumption. But the softer demand in China may suggest this uptick in demand is not sustainable, leading to overall growth similar to pre-pandemic rates. Bloomberg also did its monthly comparison of EIA, IEA and OPEC oil demand forecasts. OPEC+ has continued to take a more optimistic view compared to the IEA and EIA, with the organization's analysts seeing a demand growth of almost 1.50 mmb/d in 2025. The IEA pegged demand growth at 1.05 mmb/d for the year in its latest monthly report, while EIA sees 1.30 mmb/d. Additionally, the demand monitor highlights that China's oil demand fell more than 2% YoY and could be just 20% of the global oil demand growth in 2025, whereas it accounted for more than 60% in the pre-pandemic era. Bloomberg reported "*But the prospects for the year as a whole look subdued. While analysts at the Organization of the Petroleum Exporting Countries see demand growth of almost 1.5 million barrels a day in 2025, their counterparts in the consumer-focused agencies, the IEA and the US Energy Information Administration, take a gloomier view. The IEA pegged demand growth this year at 1.05 million barrels a day in its latest monthly report, a small downward revision from its December view. The EIA sees 1.3 million. … Apparent oil demand in China fell more than 2% year-on-year in December. Demand for refined products may drop 1.9% this year, a China National Petroleum Corp. research unit said in a report. Elsewhere, sales of diesel and gasoline by India's state-owned refiners fell 5.8% and 7.8%, respectively, in the first 15 days of January from a year earlier."* Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

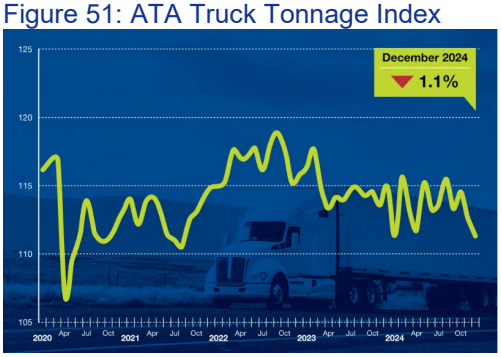
Oil: ATA Truck tonnage index in December down -1.1% MoM, -3.2% YTD

December Truck Tonnage down MoM

We look to items like truck tonnage for indicators on the US economy. The American Trucking Association (ATA) released its seasonally adjusted Truck Tonnage Index for December on Tuesday [LINK]. Truck tonnage contracted by -1.1% MoM and is down -3.2% YTD, pushing tonnage to its lowest since January 2024. Chief Economist Bob Costello noted *"For the first time since March and April truck tonnage contracted for two consecutive months. Tonnage fell 1.8% in November, bringing the two-month total decrease to 2.9%, pushing tonnage to its lowest level since January 2024. Sluggishness in factory output continues to weigh on freight volumes, but another drag on the index has been fleet growth at private carriers, which is holding back how much freight is flowing to for-hire carriers."* Trucking serves as an indicator of the U.S. economy, representing 72.7% of tonnage carried

by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 11.27 billion tons of freight in 2024. Motor carriers collected $906 billion, or 76.9% of total revenue earned by all transport modes. Our Supplemental Documents package includes the ATA truck tonnage index report.

Figure 51: ATA Truck Tonnage Index



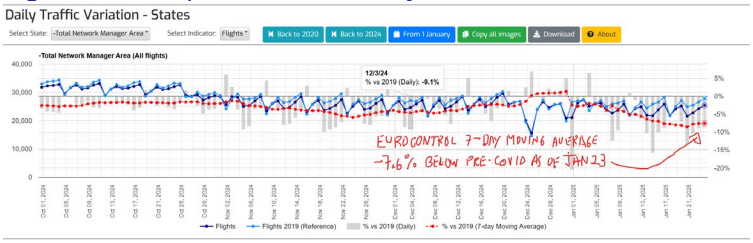
Source: ATA

Oil: Europe airports daily traffic 7-day moving average -7.6% below pre-Covid

Europe airports daily traffic

Yesterday, we posted [LINK] "*Xmas Europe air traffic +0.8% pre-Covid on Dec 26 didn't last. Air traffic vs pre-Covid is now -7.6% below re-Covid. 7-day moving average as of: Jan 23: -7.6% below pre-Covid. Jan 16: -7.6%. Jan 9: -4.2%. Jan 2: -2.6%. Dec 26: +0.8%. Dec 19: -2.4%. Dec 12: -3.6%. Dec 5: -4.0%. Nov 28: -4.3%. Nov 21: -5.5%/. #OOTT.*" The Xmas rush for the 7-day moving average as of Dec 26 was the first week above pre-Covid since the Jan 2024. Air travel always goes up for Xmas and it always seasonally drops after Xmas. But last year, it didn't drop as much and was actually above pre-Covid in Jan 2024. This year, there has been a big drop off since Xmas. The 7-day moving average was -7.6% below pre-Covid as of Jan 23 and was down as low as -8.6% in mid week. This follows -7.6% below as of Jan 16, -4.2% as of Jan 9, -2.6% as of Jan 2, +0.8% as of Dec 26, -2.4% below pre-Covid as of Dec 19, -3.6% as of Dec 12, which followed -4.0% as of Dec 5, -4.3% as of Nov 28, and -5.5% below as of Nov 21. Normally we try to pull the data early Saturday mornings for a consistent weekly comparison. Eurocontrol updates this data daily and it is found at [LINK].

Figure 52: Europe Air Traffic: Daily Traffic Variation to end of Jan 23



Source: Eurocontrol

Oil & Natural Gas: TIPRO Texas oil & gas jobs dropped in December

TIPRO December jobs update

On Friday, Texas Independent Producers and Royalty Owners Association (TIPRO) posted its monthly oil and gas jobs data for December [LINK]. TIPRO reported a MoM decline in jobs

in December following six consecutive months of growth. December jobs were down -700 jobs MoM vs the upwardly revised +300 jobs MoM in November. Direct Texas upstream employment totaled 195,500 in December, down -1,000 from the recent high in March 2024. TIPRO wrote, "*TIPRO's new workforce data still indicated strong job postings for the Texas oil and natural gas industry. According to the association, there were 9,012 active unique jobs postings for the Texas oil and natural gas industry last month, including 2,931 new postings. In comparison, the state of California had 3,221 unique job postings in December, followed by New York (2,318), Florida (1,627) and Colorado (1,493). TIPRO reported a total of 48,362 unique job postings nationwide last month within the oil and natural gas sector."* Our Supplemental Documents package includes excerpts from the TIPRO recaps for December.

Oil & Natural Gas: Halliburton sees its North America revenues down YoY in 2025

Halliburton CEO on North American revenues

One of the major oil questions for the rest of the decade is how much more can US oil and natural gas production can increase and when will it start to go into either plateau or decline. Halliburton reported Q4 on Wed and they had a clear view on US oil and gas revenues. It was lower in 2024 and is going lower in 2025. On Wed, we posted [LINK] "*Will US keep having increasing drilling/frack efficiencies sufficient to offset shale/tight decline rates and have #Oil #NatGas production growth? Halliburton Q4 just out: "expect 2025 to be sequentially softer in North America" which follows 2024 NA rev -8.3% YoY. #OOTT."* Halliburton's 2024 North American revenues were -8.3% YoY in 2024. And considering 2024 was another year of price increases, that means oil and gas activity was down even more YoY. And then Halliburton said it's going lower again in 2025. Halliburton CEO Jeff Miller said "*while we expect 2025 to be sequentially softer in North America, we begin the second half of this decade in a great position."*

Oil & Natural Gas: Financial institutions setting up teams to follow Trump

Teams are needed to follow Trump

Early Tuesday morning, we posted [LINK] "*Welcome to Trump 2.0. Like Trump or not, his presser had so many expected and unexpected tidbits that impacted markets. News/analysts will have to track everything he says as you will never know when he drop a market twist ie. 👇thinking of Feb 1 for Canada tariffs. #OOTT."* We were watching as much as we could from the Bloomberg TV and CNBC interviews with business leaders from Davos and one of the US banks highlighted how they set up a team of analysts to follow all the Trump actions. And after one week of Trump, we expect that the big banks and big sellside research firms will be doing something similar, certainly at least for the near term. Absent a team of people, it will be impossible for any one individual to follow and actually read all the detail for what Trump is doing. Our focus is try to drill down and actually read as much as we can and that we have to focus on energy, energy transition and capital market items.

Energy Transition: Trump revokes Biden EO 14057 on BEVs & carbon free electricity

Trump revokes Biden's flagship 14057

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: Trump pulls US out of Paris and stopping fund to UN climate acts

US to stop funding UN climate acts

We think most overlooked a significant part of Trump pulling the US out of Paris climate agreement – the US is stopping funding of any "purported financial commitments" made under the UN climate change. We probably shouldn't have been surprised that the only reporting was on how Trump's Day 1 actions included pulling the US out of the Paris climate agreement. The reality is that there was and still so much going on that most just noted the headlines. So, as expected, on Day 1, one of Trump's first executive orders was "*Putting America First in International Environmental Agreements*" [LINK], which was the executive order to pull out of Paris. The executive order said "*The United States Ambassador to the United Nations shall immediately submit formal written notification of the United States' withdrawal from the Paris Agreement under the United Nations Framework Convention on Climate Change.*" We read the executive order and people overlooked the significant part of funding. We believe this is huge to the Paris targets given that the US is the biggest funder for UN climate actions and the only way the COP conferences have got developing countries onside is the promise of hundreds of billion by the rich nations to fund the poor nations energy transition. And without the US funding leadership, there is no doubt a lot of the rich countries aspirations for poor countries energy transition have gone out the door. On Monday night, we posted [LINK] "*Ouch! UN loses its biggest funder for climate as Trump takes US out of Paris agreement. US "shall immediately cease or revoke any purported financial commitment made by the United States under the United Nations Framework Convention on Climate Change." #OOTT."* And then early Wed morning, we posted [LINK] "*Overlooked in Trump Day 1 actions. 👇Game changer to COP/UN climate action. Trump to stop US funding for UN climate actions. Last two COPs. Rich nations want poor nations to skip fossil fuels to go to renewables. Poor nations need rich nations big big money to do so. #Oil #NatGas #Coal will be needed & used for longer. #OOTT."* Trump's executive order wrote "*The United States Ambassador to the United Nations, in collaboration with the Secretary of State and Secretary of the Treasury, shall immediately cease or revoke any purported financial commitment made by the United States under the United Nations Framework Convention on Climate Change."* Our Supplemental Documents package includes the Executive Order.

Knock on impact of Trump stopping UN climate funding – big co's will follow

The other overlooked part of Trump stopping funding for UN climate actions is that we expect there will be other countries and big companies who will be reviewing the scope of their financial commitments to these UN climate actions. We find it hard to

believe everyone doesn't support the idea of cleaner air, water, etc. But, there is no doubt that big companies felt pressured, obligated, shamed, etc to make sure they put capital into UN climate actions. We believe Trump's changed position on US climate change will lead others to reduce or cut out their financial commitments to UN climate action. This is no different than what we are seeing with major financial institutions pulling out of the Climate Action 100+ group post the Trump election. Major companies want to be aligned with government leaders and that means they don't have to contribute unless they want to do it. On Wed, we posted [LINK] "*Overlooked knock on impact of 👇Trump revoking any financial commitments to UN climate fight. Some big US co's won't feel obligated to provide private capital for UN climate fight. Like how US banks have pulled out of Climate Action 100+ post Trump win. #Oil #NatGas #Coal will be needed/used for longer. #OOTT.*"

Trump moves against offshore wind

Energy Transition: Trump takes promised action against offshore windmills

Trump's move against offshore wind is another one of this action areas that has key overlooked impacts beyond the headline. The headlines from Trump's promised Day 1 action against offshore windmills was all on Trump was temporarily withdrawing all offshore federal lands for 90 days for any new offshore wind projects. On Monday, the White House posted [LINK] "*Temporary Withdrawal of All Areas on the Outer Continental Shelf from Offshore Wind Leasing and Review of the Federal Government's Leasing and Permitting Practices for Wind Projects*." We think that what is being overlooked in the offshore windmills headlines and in other actions is that Trump 2.0 administration is going to make sure areas like offshore wind are forced to cross every T and dot ever I in everything ie. using every tool in their toolbox to delay/defer offshore wind much like Biden did against oil and gas. And that this will also impact existing offshore wind projects. Early Tuesday morning, we posted [LINK] "*Offshore wind is like #Oil #NatGas was under Biden. Trump's offshore wind may not impact existing leases BUT what is stop federal agencies from making sure every T is crossed and I is dotted plus some roadblocks for offshore wind like Biden did for oil & gas? More #NatGas power will be needed to fill the gap. #OOTT.*" Reading Sec 2 of the Presidential Action makes it clear that offshore wind will be like oil and gas under Biden. "*Sec. 2. Temporary Cessation and Immediate Review of Federal Wind Leasing and Permitting Practices. (a) In light of various alleged legal deficiencies underlying the Federal Government's leasing and permitting of onshore and offshore wind projects, the consequences of which may lead to grave harm — including negative impacts on navigational safety interests, transportation interests, national security interests, commercial interests, and marine mammals — and in light of potential inadequacies in various environmental reviews required by the National Environmental Policy Act to lease or permit wind projects, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Energy, the Administrator of the Environmental Protection Agency, and the heads of all other relevant agencies, shall not issue new or renewed approvals, rights of way, permits, leases, or loans for onshore or offshore wind projects pending the completion of a comprehensive assessment and review of Federal wind leasing and permitting practices. The Secretary of the Interior shall lead that assessment and review in consultation with the Secretary of the Treasury, the Secretary of Agriculture, the Secretary of Commerce, through the National Oceanic and Atmospheric Administration, the Secretary of Energy, and the Administrator of the Environmental Protection Agency. The assessment shall consider the environmental impact of onshore and offshore wind projects*

upon wildlife, including, but not limited to, birds and marine mammals. The assessment shall also consider the economic costs associated with the intermittent generation of electricity and the effect of subsidies on the viability of the wind industry." Our Supplemental Documents package includes the Presidential Action.

Trump wants policy where no windmills are built

Trump has been clear since May that he was against offshore windmills. Here is what we wrote in our Jan 12, 2025 Energy Tidbits memo. "*Trump wants policy where no windmills are built. On Tuesday, we posted [LINK] "Offshore windmills lose, #NatGas wins under Trump. "green new scam". "they [offshore windmills] only work if you get subsidy". "many many times more expensive than clean natural gas" Trump today. What else buy #NatGas can scale up to provide 24/7 power in near term? Fits 👇11/06/24 post on Trump Day 1 promise on offshore windmills. Thx @business transcripts #OOTT." Trump held a big press conference on Tuesday and included a replay of his negative views on offshore windmills. This should not surprise anyone as his view hasn't changed. Trump said "And, you know, you can talk about windmills. They litter our country. They're littered all over our country, like dropping paper, like dropping garbage in a field. And that's what happens to them, because in a period of time, they turn to garbage. Most expensive energy ever. They only work if you get subsidy. The only people that want them are the people that are getting rich off windmills, getting massive subsidies from the U.S. government. And it's the most expensive energy there is. It's many, many times more expensive than clean natural gas. So, we're going to try and have a policy where no windmills are being built. You know, off the coast of New Jersey, they want to build like 200 windmills. The people are going crazy. Nobody wants them and they're very expensive. They don't work without subsidy. You don't want energy that needs subsidy."*

Energy Transition: BlackRock US AI datacenters to be heavily powered by natural gas

BlackRock AI to depend on natural gas

There was very important takeaway from BlackRock CEO comments on powering AI datacenters. They are being heavy powered by natural gas and supplemented by renewables and not the other around as the western leaders have been portraying. This is the reality – renewables aren't the baseload, they are added as much as they can but the baseload or what makes AI datacenters run is 24/7 natural gas or coal or nuclear or hydro. And for the short term, the only real fuel scale up is natural gas. No one should be surprised to see BlackRock CEO Larry Fink come out even more bullish on natural gas to power AI datacenters in the US. Our Jan 12, 2025 Energy Tidbits memo highlighted how BlackRock came out of the closet to finally use the words natural gas to power AI data centers after only using the code words "low-carbon" when everyone should have known they were using low-carbon because they didn't want to say natural gas. And that once they started to use the natural gas, it meant that their ongoing messaging would use natural gas. On Wednesday, Fink came out and used natural gas in a hugely bullish manner for the AI datacenter growth. On Wednesday, we posted [LINK] "*WOW! Bullish for #NatGas. BlackRock clearly says AI datacenter growth is heavily powered by 24/7 #NatGas. BlackRock CEO Fink on powering AI in US "But in the short run, let's be clear. it's going to be heavily powered by gas, natural gas in the US. It will be supplemented by renewables." 👇transcript. 01/09/25, dirty little secret revealed. BlackRock's 1st specific using the word #NatGas instead of "low-carbon" to power*

AI. Today, no doubt about it, BlackRock says AI in the US is going to be heavily powered by #NatGas. #OOTT." Fink was in Davos in a discussion on AI and made a point of highlighting natural gas will be what powers AI datacenter growth in the near-term and renewables playing the role of supplementing natural gas ie. renewables are not the baseload for AI datacenters. Fink was clear, hyperscalers want to "utilize" more renewables but "utilize" is the another way of saying they will use it where they can but it isn't baseload. Our post included our transcript where Fink said "*By no means. Every hyperscaler has long term aspirations to be utilizing more and more renewables. But in the short run, let's be clear. it's going to be heavily powered by gas, natural gas in the United States. It will be supplemented by renewables. And as I said, hopefully it raises a whole conversation about the role of nuclear in the future. It should be a conversation we are having today. We're going to need, unless fusion actually works and we have new sources of power….."* Our Supplemental Documents package includes our lengthier transcript.

01/09/25: BlackRock "*think oil and gas*" to meet growing AI energy demand

Here is what we wrote in our Jan 12, 2025 Energy Tidbits memo on BlackRock finally using the words natural gas instead of low-carbon to power the AI datacenter growth. "BlackRock "think oil and gas to meet growing AI energy demand. On Thursday, we posted [LINK] "*Finally, the dirty little AI secret is revealed. BlackRock's #1 theme for the game changing AI industrial revolution is financing the future, says "think solar farms, power grids, oil and gas". 1st time specifically naming oil and gas as a winner in the AI mega trend. BlackRock 2025 global outlook "Meeting growing energy demand (think solar farms, power grids, oil and gas) will generate investment of US$3.5 trillion per year this decade" Prior to this, only used deliberately vague "low-carbon" Bullish for value of #Oil #NatGas going forward. #OOTT."* (i) Positive for oil and natural ga as BlackRock finally comes out of the closet to say the words oil and gas in their key investor theme. As opposed to their purposely vague "low-carbon" words. This is their first mention of think oil and gas when thinking about the biggest transformation theme for capital allocation for the coming years. It's the first mention so look for them to start to include it in their regular disclosure. (ii) BlackRock posted its 2025 Global Outlook this week and highlighted its view that AI is driving a major industrial revolution. Their first theme is "*This fundamentally different landscape upends the nature of investing, in our view. We think investors can find opportunities by tapping into the waves of transformation we see ahead in the real economy, with AI and the low-carbon transition requiring investment potentially on par with the Industrial Revolution. That's why our first theme is financing the future*." And their "financing the future" page is where they finally specifically name oil and gas for the massive AI energy demand. They say "*Sizable capital will be needed as the transformation unfolds, and that investment is happening now. Major tech companies are starting to rival the U.S. government on research and development spending. But it's not just about the rise of AI and its buildout via data centers. Meeting growing energy demand (think solar farms, power grids, oil and gas) will generate investment of US$3.5 trillion per year this decade, according to the BlackRock Investment Institute Transition Scenario*." (iii) Prior to this disclosure, we have been highlighting how BlackRock has been using the vague "low-carbon" description. So now that they have admitted oil and gas, look for them to use the terms more in the future. We can't believe people didn't realize this long ago but we should now see more

investors accept oil and natural gas is key to the AI datacenter growth. Our Supplemental Documents package includes excerpts from the BlackRock 2025 Global Outlook.

12/09/24: Blackrock, $3.5T/yr in capex, incl low-carbon, to meet energy demand

Here is what we also wrote in our Jan 12, 2025 Energy Tidbits memo on BlackRock estimating $3.5T/yr in capex to meet AI energy demand. *"BlackRock, $3.5T/yr in capex, incl low-carbon, to meet energy demand. On Monday, before we saw the BlackRock 2025 Global Outlook, we posted [LINK] "dirty little secret. low carbon = natural gas. see 👇12/12/24 post. AI Datacenter massive increasing need for 24/7 power is bullish for #NatGas. #OOTT." Our Monday poste linked to our Dec 11, 2024 post on BlackRock's use of "low-carbon" instead of saying natural gas. Here is what we wrote in our Dec 15, 2024 Energy Tidbits memo. "BlackRock, $3.5T/yr in capex to meet growing energy demand. We have been big believers that the value of natural gas will be going much higher as the energy transition unfolds and that is even more so with the emergence of AI data centers that need 24/7 reliable power. So as we see this golden age or super cycle for AI data centers, we see that bringing a similar bullish view for natural gas. It may have taken most of 2024 but we are finally seeing more people realize that AI data centers need 24/7 power as their priority and that means natural gas and keeping coal and nuclear plants from being retired as the only ways to have new 24/7 power in scale for the next decade. So whenever we see bullish AI data center forecasts and the associated increase in electricity demand, it is a reminder of the bullish mid- and long-term demand for natural gas. On Wednesday, we posted [LINK] "AI Data Center 24/7 power need is bullish for #NatGas. Low-carbon = #NatGas. BlackRock "I and the low-carbon transition require investment potentially on par with the Industrial Revolution.... Plus, meeting growing energy demand will generate US$3.5 trillion of investment per year this decade,,,," #OOTT." BlackRock's weekly commentary on Dec 9 highlighted the AI data center growth and need for massive growth in energy demand and hopefully low carbon as a priority. But like we have said before, it's like a dirty little secret that companies wit BlackRock don't want to use the words fossil fuels including natural gas when talking about the big energy demand to fuel the massive growth in energy demand for AI data centers. So the reminder we always make is low-carbon means natural gas. BlackRock wrote "More broadly, we think investors can find opportunities by tapping into the transformation we expect in the real economy. AI and the low-carbon transition require investment potentially on par with the Industrial Revolution. Major tech companies are starting to rival the U.S. government on research and development spending. Plus, meeting growing energy demand will generate US$3.5 trillion of investment per year this decade, according to the BlackRock Investment Institute Transition Scenario. We see private markets playing a vital role in financing the future. Big spending on AI and the low-carbon transition plus rising geopolitical fragmentation is likely to cause persistent U.S. inflation pressures. And an aging workforce could start to bite as immigration slows, likely keeping wage growth too high for inflation to return to the Fed's 2% target." Our Supplemental Documents package includes the BlackRock weekly commentary."*

BlackRock's AI datacenter partnership to spend $100b, not $30b

On Wednesday in Davos, BlackRock CEO Larry Fink also made a point to highlight that its recent (Sept 2024) AI datacenter partnership with Global Infrastructure Partners, Microsoft and MGX would be spending $100b, not $30b in this AI datacenter growth plan. Fink reminded the $30b that everyone is using is only the equity component of their plan. On Thursday, we posted [LINK] "*BlackRock datacenter AI partnership to spend $100b, not $30b, "to make investments in new & expanded data centers..." Larry Fink just now to @andrewrsorkin $30b is the equity portion. There is debt capital required on top of that. 01/22/25 post 👇Fink said AI datacenter growth is heavily powered by 24/7 #NatGas! Bullish for #NatGas for coming years. #OOTT @SquawkCNBC."* Our post included the BlackRock Sept 18, 2024 press release that said "*The drive to develop more powerful AI capabilities will require significant infrastructure investment to support it. Today, BlackRock, Global Infrastructure Partners (GIP), Microsoft, and MGX announced the Global AI Infrastructure Investment Partnership (GAIIP) to make investments in new and expanded data centers to meet growing demand for computing power, as well as energy infrastructure to create new sources of power for these facilities. These infrastructure investments will be chiefly in the United States fueling AI innovation and economic growth, and the remainder will be invested in U.S. partner countries." "The partnership will initially seek to unlock $30 billion of private equity capital over time from investors, asset owners, and corporates, which in turn will mobilize up to $100 billion in total investment potential when including debt financing."* Our Supplemental Documents package includes the BlackRock release.

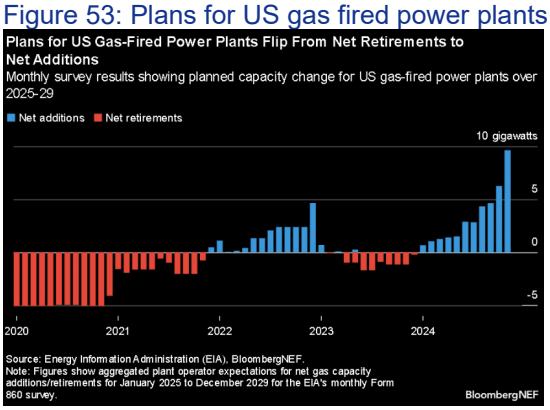
Energy Transition: AI datacenters growth = flip to big growth in US #NatGas power

Big growth in US #NatGas power plants ahead

On Thursday, we posted [LINK] "*Overlooked is that the plans are already put in motion for big immediate growth in #NatGas generation capacity in the US to power AI datacenters. See 👇01/12/25 post on about face from US net retirements of #NatGas to big growth. Fits BlackRock CEO Fink's 01/22/25 US AI datacenters to be heavily powered by #NatGas. See post [LINK]. AI datacenters growth for 24/7 power = #NatGas demand growth. #OOTT."* It may surprise many that BlackRock is coming out so heavily on natural gas for AI datacenters. But, we remind that plans are already in action by power developers to add a lot of natural gas power generation as soon as they can. And more natural gas power generation means more demand for natural gas supply. *H*ere is what we wrote in our Jan 12, 2025 Energy Tidbits memo on how US power players have accelerated plans to add big natural gas generation growth for AI data centers. *"AI datacenters growth = flip to big growth in US #NatGas power. One of our key energy themes for the last several years has been the increasing need for natural gas power generation as the Energy Transition would take way longer, cost way more and be a bumpy/rocky road. The need for natural gas generation has only massively increased with the rapid and massive growth in AI datacenters and their need for 24/7 power. Earlier this morning, we posted [LINK] "AI data centers growth for 24/7 power = #NatGas demand growth. No other reason to explain the about face from US retiring #NatGas power plants to massive planned additions of #NatGas power. Value of #NatGas is going higher. Thx @BloombergNEF David Mohammadi #OOTT." Yesterday, Bloomberg posted a short piece "US Gas-Fired Power Capacity Was Set to Drop. No More: BNEF Chart." And "As of the November 2024 survey, the US is expected to see 9.6 gigawatts of*

net gas capacity additions from January 2025 to December 2029. That's a significant change from earlier survey results, such as the 5GW of net retirements expected in2020, and the 1.7GW of net retirements expected as recently as mid-2023." We suspect there will be a longer piece this week on these numbers. But the short piece did not say what caused this abrupt change and we simply filled in the blanks by saying what else but AI datacenters need for 24/7 power could cause this. It is a massive increase in natural gas power generation plans. We look at this as being the icing on the cake for a an extended period of increasing need for natural gas power generation and has to point to increasing value of natural gas for the coming decade. Below is the BlooobergNEF graph that was attached to our post."

Figure 53: Plans for US gas fired power plants flip from net retirements to net additions



Source: BloombergNEF

Energy Transition: AI datacenters make the grid more exposed to interruptible power

Grid is 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."*

Expect electric utilities to step up forcing/requests to conserve power

One predictable item will be expecting electric power companies/utilities to step up encouraging/forcing regular grid customers to reduce consumption, change consumption patterns because there will be an increased exposure for the grid customers to more interruptible renewable power generation (wind and solar). The AI datacenters run 24/7 and no one expects that they will be asked to cut back or not run their AI datacenters in the early evening hours when people get home from work and have their peak electricity consumption. Or any other conservation/efficiency request from electric power companies/utilities. But with an increasing exposure of regular grid customers to interruptible renewable power, it means the power/utility companies will have to step up requests/forcing power consumption/efficiency. And they have those tools with smart homes to force less power consumption.

Energy Transition: Trump promotes coal power for US AI datacenter power

Trump on coal power for datacenters

Our view on powering AI datacenters massive rapid growth is that it's really natural gas and coal that have the potential to provide added 24/7 power in scale over the next several years. We have been big believers in SMRs or mini-nukes for 25 years but also have trouble seeing how they will scale up to add significant 24/7 power in the next 5 or even 10 years. Perhaps the most surprising Trump comment in his virtual appearance at Davos World Economic Forum was his comments on coal power for AI datacenters. We like everyone was watching Trump speak at Davos and heard his coal power for AI datacenters. On Thursday morning, we posted [LINK] "*What else besides #NatGas and #Coal can scale up to provide 24/7 power for massive AI electricity growth to 2030 to 2035? Just now, Trump suggests AI plants can use coal as a backup fuel. See 👇 @rachelmorison report. #OOTT."* Then later on Thursday when we saw the transcript, we posted [LINK] "*What else but #NatGas and #Coal can scale up to provide 24/7 power for AI datacenter needs in next 5-10 yrs? Trump's 👇coal comments remind of value for existing #Coal #NatGas generation that can expand. Yes, #Nuclear will happen but how much could be certain to be added by 2030 or even 2035? Thx @business transcripts. #OOTT."* Trump called using coal for backup power for AI datacenters but we suspect what the concept is that coal will provide 24/7 power guarantee. But most importantly, Trump said they will give rapid approvals for those who put datacenters by coal power generation. No question, Trump gave a boost for AI datacenters to work for new coal power generation. Here are Trump's comments on coal was "*It wasn't that they were not smart, cause they're the smartest, but I told them that what I want you to do is build your electric generating plant right next to your plant as a separate building, connect it. And they said, "Wow, you're kidding."And I said, "No, no, I'm not kidding." You don't have to hook into the grid, which is old and, you know, could be taken out. If it's taken out, they wouldn't have any way to get any electricity. So we are going to allow them to go in a very rapid base -- basis to build their plant, build the electric generating plant. They can fuel it with anything they want, and they may have coal as a backup. Good, clean coal" TRUMP: You know, if*

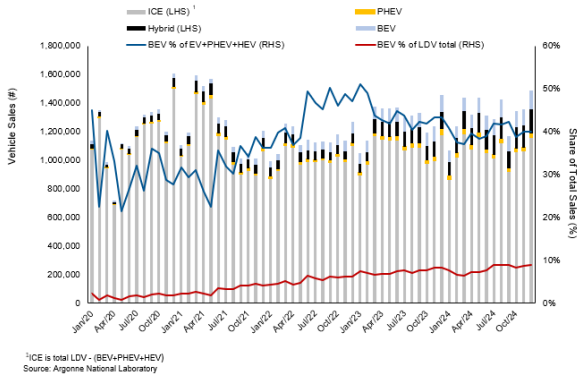
there were a problem with a -- with a pipe coming in, as an example -- you're going with gas -- oil and gas --and a pipe gets blown up or, for some reason, doesn't work, there are some companies in the U.S. that have coal sitting right by the plant so that if there's an emergency, they can go to that short-term basis and use our very clean coal. So that's something else that a lot of people didn't even know about. But nothing can destroy coal. Not the weather, not a bomb, nothing. It might make it a little smaller, might make a little different shape. But coal is very strong as a backup. It's a great backup to have that facility and it wouldn't cost much more money. And we have more coal than anybody. We also have more oil and gas than anybody. So, we're going to make so that the plants will have their own electric generating facilities attached right to their plant. They don't have to worry about a utility. They don't have to worry about anything. And we're going to get very rapid approvals."

Energy Transition: Dec better for US BEV sales, HEVs were the big winner in 2024

US car sales up MoM in December

Argonne National Laboratory posted its monthly US sales data for Light Duty Vehicles (LDVs) broken out into Battery Electric Vehicles (BEVs), Plug-in Electric Hybrids (PHEVs) and Hybrid Electric Vehicles (HEVs) for December, which then allows us to back into ICE sales [LINK]. (i) For EVs and hybrids, two 2024 trends were the slowing growth rate in EV sales, and HEVs taking more share from EVs. (ii). Hybrids are still showing the strongest YoY growth and taking share from EVs. Hybrids are now 51.0% of total EV + PHEV + Hybrid, whereas it was 39.2% in Jan 2023. December was a better month for BEVs, as they are slightly up +0.1% MoM in terms of % of EV + PHEV + HEV. In terms of % of total US LDV sales, BEV is up +0.2% to 8.9% of LDV's. (iii) Total US LDV car sales in December were up +128,853 cars or +9.5% MoM to 1,488,913 total car sales in December vs 1,360,060 in November. BEV: +14,463 or +12.3% MoM to 132,392 and 8.9% of total US. PHEV: +5,791 or +24.6% MoM to 29,304 and 2.0% of total US. HEV: +15,114 or +9.9% MoM to 168,277 and total 11.3% of total US. ICE: +93,485 or +8.8% MoM to 1,158,940 and 77.8% of total US. (iv) It was a better month for BEVs, which have been underperforming HEVs. PHEVs had a substantially better month after two months of slower growth. BEVs were up to 8.9% of total US LDV sales from 8.7% in November, matching the previous high for BEVs back in August 2024. This month also represented a MoM increase in ICE, and ICE sales represent 77.8% of total US car sales. Our Supplemental Documents package includes the data from Argonne.

Figure 54: US total monthly hybrid and electric vehicle sales vs LDV total



Source: Argonne National Laboratory

Energy Transition: ACEA, EU Dec BEV sales -10.2% YoY share still down in 2024

EU Dec BEV sales

As a reminder, EU Dec new car registrations do not include the UK. EU BEV sales were down -10.2% YoY in Dec, which followed -9.5% YoY in Nov, +2.4% YoY in Oct, +9.8% YoY in Sept, and the brutal -43.9% YoY in Aug. On Wednesday, we posted [LINK] "*EU BEV sales continue down YoY in Dec, HEV up big YoY. Reminder: HEV/PHEVs are really just more fuel efficient ICE. See 09/04/24 post. BEVs: Dec -10.2% YoY, YTD -5.9% YoY to 13.6 share vs 14.6%. PHEV Dec +4.9% YoY, YTD -6.8% YoY to 7.1% share vs 7.7%. HEV is big winner. Dec +33.1% YoY, YTD +20.9% YoY to 30.9% share vs 25.8%. Petrol Dec -1.8% YoY, YTD -4.8% YoY to 33.3% share vs 35.3%. Diesel Dec -15.0% YoY, YTD -11.4 YoY to 11.9% share vs 13.6%. Thx @ACEA_auto #OOTT."* The two key 2024 themes continue to play out: BEV sales are down YoY and HEV sales are the big winner taking share from all the other fuels. BEVs have been helped by reports of discounting BEVs to try to drive up sales to help auto manufacturers try to increase BEVs % of total car sales. BEV Dec sales of 144,367 were down -10.2% YoY but up MoM vs Nov sales of 130,757. The other big theme is HEVs continue to be up strong and taking share from all other fuel sources. HEV Dec sales grew +5.9% MoM and were up +33.6% YoY, bringing YTD Dec 31 HEV sales +25.8% YoY. After months of YoY declines, PHEV sales were up +4.9% YoY The other general economic theme is that EU total car sales of 910,505 were up +5.1% YoY and are only +0.8% for YTD Dec 31. Below is our table of the ACEO EU auto sales for Dec by fuel sources. Our Supplemental Documents package includes the ACEA Dec new car registrations.

Figure 55: EU Nov new car registrations by power source

EU Dec 2024 New Car Registrations by Power Source

	Volume Dec-24	Volumes Dec-23	% Change	Share Dec-24	Share Dec-23	YTD Dec 24	YTD Dec 23	% Change	Share YTD Dec 24	Share YTD Dec 23
BEV	144,367	160,764	-10.2%	15.9%	18.5%	1,447,934	1,538,106	-5.9%	13.6%	14.6%
PHEV	75,132	71,589	4.9%	8.3%	8.3%	758,944	814,294	-6.8%	7.1%	7.7%
HEV	305,922	229,909	33.1%	33.6%	26.5%	3,288,862	2,720,914	20.9%	30.9%	25.8%
Others	26,760	25,557	4.7%	2.9%	2.9%	326,145	321,622	1.4%	3.1%	3.0%
Petrol	269,260	274,093	-1.8%	29.6%	31.6%	3,542,755	3,721,990	-4.8%	33.3%	35.3%
Diesel	89,064	104,808	-15.0%	9.8%	12.1%	1,267,741	1,431,239	-11.4%	11.9%	13.6%
Total	910,505	866,720	5.1%	100.0%	100.0%	10,632,381	10,548,165	0.8%	100.0%	100.0%

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

Sources ACEA

Prepared by SAF Group https://safgroup.ca/insights/energy-tidbits/

Source: ACEA

01/16/25: ACEA to EU act now to prevent irreparable damage to EVs

No one should be surprised that, on Thursday, the ACEA (European Automobile Manufacturers' Association) posted its letter to EU leaders "*Act now to prevent irreparable damage to competitiveness as EV growth sluggish and trade tensions rise"* [LINK]. The ACEA has been warning the EU that the BEV mandates are not working and that there need to be changes as EU's BEV mandate, big changes and changes soon. (i) On Thursday morning, we posted [LINK] "*EU's BEV plan does not work warns @ACEA_auto again! "The European Green deal must be subject to a reality check and realignment" "A realistic pathway to decarbonising the automotive industry, one that is market driven, and not penalty driven" New BEV car registrations -6% YoY in 2024, "market share is also on a downward descent, declining by 1% to 13.6%" Demise of ICE & gasoline/diesel consumption will take longer than aspired in EU. #OOTT."* (ii) EU BEV adoption continues to get worse. ACEA wrote "*The most urgent action that the industry needs now is that the EU finds a solution for*

compliance burden relief for cars and vans on the 2025 CO2 target. Political action today could not be more critical, as the latest provisional figures indicate an almost 6% decline in new electric car registrations in 2024. Market share is also on a downward descent, declining by 1% to 13.6%—far from the sharp increase needed to meet stringent CO2 targets in the coming years." (iii) Need a market driven not a penalty driven solution for BEVs. ACEA wrote "*a realistic pathway to decarbonising the automotive industry, one that is market driven, and not penalty driven; find a solution to the disproportionate costs of compliance with the 2025 CO2 target for cars and vans*." (iv) ACEA also takes a shot at the EU's overall green deal. ACEA wrote "*The European Green Deal must be subject to a reality check and a realignment – to make it less rigid, more flexible and to turn the decarbonisation of the automotive industry into a green and profitable business model*." Our Supplemental Documents package includes the ACEO release.

11/13/24: ACEA, worsening EU EV outlook reinforces need for urgent action

Our Thursday post referenced the ACEA's Sept warning on the need for urgent action in the EU on the EV mandate. But that wasn't the only time the ACEA has warned the EU. Here is what we wrote in our Nov 24, 2024 Energy Tidbits memo. "*ACEA, worsening EU EV outlook reinforces need for urgent action. As noted above, on Thursday, the ACEA reported EU BEV sales in Oct were up +2.4% YoY but its YTD share was down to 13.2%. That was on Nov 19 so the ACEA obviously was rolling up the Oct sales in the week or so prior to that. So they knew the numbers and no surprised, on Nov 13, the ACEA wrote "New evidence of worsening outlook for electric vehicle market reinforces need for urgent action". We didn't see the ACEA Nov 13 call for urgent action on BEVs in EU until Wed. On Wed, we tweeted [LINK] "Can EU do something to fix stagnating #BEV sales? How long will it take to turnaround? "New evidence of worsening outlook for electric vehicle market reinforces need for urgent action" "All indicators point to a stagnating EU electric vehicle market, at a time when acceleration is needed." ACEA_auto #OOTT." The warnings are new ones from the ACEA. They are clear, the BEV market is stagnating in the EU. It's worth a read as the ACEA highlights stability is not enough, the BEV market needs more. And the costs of compliance in hitting the BEV sales targets is steep for car manufacturers. There are number of items that need to get the BEV market accelerating instead of stagnating including more EV market stimulus. Our Supplemental Documents package includes the ACEA urgent action release."*

09/19/24: ACEA, Urgent action needed as EU BEV Aug sales -43.9% YoY

Here is what we wrote in our Sept 22, 2024 Energy Tidbits memo on the ACEA's warning in Sept that urgent action was needed on the EU's BEV mandate. "*ACEA, urgent action needed as EU BEV Aug sales -43.9% YoY. No one should be surprised that, on Thursday, the ACEA (European Automobile Manufacturers' Association) posted its letter to EU leaders "Act now to prevent irreparable damage to competitiveness as EV growth sluggish and trade tensions rise" [LINK]. The ACEA has been warning the EU that the BEV mandates are not working and that there need to be changes as EU's BEV mandate, big changes and changes soon. (i) On*

Thursday morning, we posted [LINK] "EU's BEV plan does not work warns @ACEA_auto again! "The European Green deal must be subject to a reality check and realignment" "A realistic pathway to decarbonising the automotive industry, one that is market driven, and not penalty driven" New BEV car registrations -6% YoY in 2024, "market share is also on a downward descent, declining by 1% to 13.6%" Demise of ICE & gasoline/diesel consumption will take longer than aspired in EU. #OOTT." (ii) EU BEV adoption continues to get worse. ACEA wrote "The most urgent action that the industry needs now is that the EU finds a solution for compliance burden relief for cars and vans on the 2025 CO2 target. Political action today could not be more critical, as the latest provisional figures indicate an almost 6% decline in new electric car registrations in 2024. Market share is also on a downward descent, declining by 1% to 13.6%—far from the sharp increase needed to meet stringent CO2 targets in the coming years." (iii) Need a market driven not a penalty driven solution for BEVs. ACEA wrote "a realistic pathway to decarbonising the automotive industry, one that is market driven, and not penalty driven; find a solution to the disproportionate costs of compliance with the 2025 CO2 target for cars and vans." (iv) ACEA also takes a shot at the EU's overall green deal. ACEA wrote "The European Green Deal must be subject to a reality check and a realignment – to make it less rigid, more flexible and to turn the decarbonisation of the automotive industry into a green and profitable business model." Our Supplemental Documents package includes the ACEA release."

Figure 56: EU Aug new car registrations by power source

EU August New Car Registrations by Power Source						
	Aug-24	Aug-23	%Change	YTD Aug 24	YTD Aug 23	%Change
BEV	92,627	165,204	-43.9%	902,011	983,718	-8.3%
PHEV	45,590	58,660	-22.3%	501,266	527,697	-5.0%
HEV	201,552	189,114	6.6%	2,138,474	1,765,893	21.1%
Others	18,634	19,687	-5.3%	224,692	213,537	5.2%
Petrol	213,057	257,139	-17.1%	2,504,457	2,580,076	-2.9%
Diesel	72,177	98,008	-26.4%	909,592	1,007,279	-9.7%
Total	643,637	787,812	-18.3%	7,180,492	7,078,200	1.4%
Others incl fuel-cell electric vehicles, natural gas vehicles, LPG, E85/ethanol, and other fuels						
Sources ACEA						

Source: ACEA

Energy Transition: Germany BEV -38.6% YoY in Nov, -27.4% YoY for YTD Dec 31

Germany Dec BEV sales -38.6% YoY

No one should be surprised Germany BEV sales continue to suffer given all the negative comments from the German car manufacturers over the past several months. Germany BEV sales continue to be significantly down YoY at -38.6% YoY for Dec and -27.4% YoY for YTD Dec 2024. And they are the only fuel source that has lost market share YTD Dec 31. On Wednesday, we posted [LINK] "*Germany Dec BEVs keep losing share to PHEV, HEV, Petrol & Diesel. Reminder: HEV/PHEVs are really just more fuel efficient ICE. See 09/04/24 post. BEV Dec -38.6% YoY, YTD --27.4% YoY to 13.5% share vs 18.4%. PHEV Dec +6.8% YoY, YTD +9.2% YoY to 6.8% share vs 6.2%. HEV Dec +26.7%% YoY, YTD +13.7% YoY to 26.8% share vs 23.4%. Petrol Dec -7.4% YoY, YTD +1.4% YoY to 35.2% share vs 34.4%. Diesel Dec -17.0% YoY, YTD -0.7% YoY to 17.2% share vs 17.1%. Thx @ACEA_auto #OOTT.*" It's hard to ignore that BEV sales and share are down big in 2024, and all other

power sources have gained market share in 2024. Below is our table of Germany new car registrations by power sources for Dec and YTD Dec 31.

Figure 57: Germany Dec new car registrations by power source

Germany Dec New Car Registrations by Power Source

	Volume Dec-24	Volumes Dec-23	% Change	Share Dec-24	Share Dec-23	YTD Dec 24	YTD Dec 23	% Change	Share YTD Dec 24	Share YTD Dec 23
BEV	33,561	54,654	-38.6%	14.9%	22.6%	380,609	524,219	-27.4%	13.5%	18.4%
PHEV	19,103	17,894	6.8%	8.5%	7.4%	191,905	175,724	9.2%	6.8%	6.2%
HEV	70,570	55,687	26.7%	31.4%	23.0%	755,493	664,580	13.7%	26.8%	23.4%
Others	1,123	1,351	-16.9%	0.5%	0.6%	14,115	14,845	-4.9%	0.5%	0.5%
Petrol	69,333	74,894	-7.4%	30.9%	31.0%	991,948	978,660	1.4%	35.2%	34.4%
Diesel	31,031	37,403	-17.0%	13.8%	15.5%	483,261	486,581	-0.7%	17.2%	17.1%
Total	224,721	241,883	-7.1%	100.0%	100.0%	2,817,331	2,844,609	-1.0%	100.0%	100.0%

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

Sources ACEA

Prepared by SAF Group https://safgroup.ca/insights/energy-tidbits/

Source: ACEA

Energy Transition: UK Dec BEV sales +56.8% with big discount & ICE/HEV held back

UK Dec BEV sales +56.8% YoY

The big outlier in the ACEA Dec new registrations for BEV sales in the UK of 43,656 BEVs, which was +56.8% YoY. But we have been highlighting for months that we expected to see strong BEV sales in Nov and Dec as car manufacturers offer big discounts to try to get BEV to their 22% target of total sales. And, at the same time, some of the car manufacturers have held been holding back ICE and HEV sales to make it easier for EVs to get closer to the 22% target. On Wednesday, we posted [LINK] "*UK Nov BEV sales are deceiving. UK BEV Dec sales: A big month, +56.8% YoY to bring YTD +2.14% YoY. @ACEA_auto Big BEV discounting in 2024 got BEVs to 19.6% but still short of UK regulated BEVs to be 22% of 2024 total car sales. Note target is 28% in 2025. PLUS, See 10/16/24 tweet: @vertumotorsCEO, some car manufacturers rationing ICE & HEV to meet ZEV mandate. [LINK] HEVs 35.3% share YTD Nov. See 09/04/24 post, HEV PHEV are really just more fuel efficient ICE #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 have been holding back ICE and HEV deliveries to ensure BEV sales try to get as close as possible to the UK targeted minimum 22% of total car sales in 2024. 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. So weak demand for BEVs automatically translates into weaker ICE and HEV sales than demand. Below is our table of UK Dec new car registrations by power source for Dec and YTD Dec 31.

Figure 58: UK Dec new car registrations by power source

UK Dec New Car Registrations by Power Source

	Volume Dec-24	Volumes Dec-23	% Change	Share Dec-24	Share Dec-23	YTD Dec 24	YTD Dec 23	% Change	Share YTD Dec 24	Share YTD Dec 23
BEV	43,656	27,841	56.8%	31.0%	19.7%	381,970	314,687	21.4%	19.6%	16.5%
PHEV	12,716	12,162	4.6%	9.0%	8.6%	167,178	141,311	18.3%	8.6%	7.4%
HEV	46,292	41,838	10.6%	32.9%	29.7%	689,973	601,071	14.8%	35.3%	31.6%
Others	0	0	n/a	0.0%	0.0%	0	0	n/a	0.0%	0.0%
Petrol	34,820	54,360	-35.9%	24.7%	38.5%	658,853	774,484	-14.9%	33.7%	40.7%
Diesel	3,302	4,891	-32.5%	2.3%	3.5%	54,804	71,501	-23.4%	2.8%	3.8%
Total	140,786	141,092	-0.2%	100.0%	100.0%	1,952,778	1,903,054	2.6%	100.0%	100.0%

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

Sources ACEA

Prepared by SAF Group https://safgroup.ca/insights/energy-tidbits/

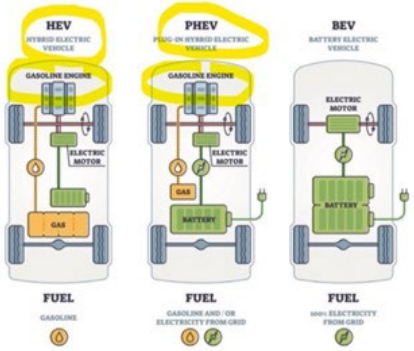
Source: ACEA

Energy Transition: HEVs & PHEVs are really just more fuel efficient ICE vehicles

HEVs/PHEVs are just fuel efficient ICE vehicles

The ACEA Dec new car registrations continue to show that the dominant trend in car sales has been the emergence of HEVs over the past year as the growth areas for cars in Europe. [Note that China is different as PHEVs dominate. See our 11/04/24 tweet [LINK] PHEVs are 60% of BYD's NEV New Energy Vehicles]. But what most forget is that HEV sales are 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 as BYD does in its NEV category. HEVs and PHEVs run on gasoline or diesel for likely at least half of the time for PHEVs 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. Note how much kms PHEVs drive on ICE mode vs battery mode is like a dirty little secret and we have only been able to find one PHEV player, Volvo, make a clear statement on this split. 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 59: HV vs PHEV vs BEV



Source: Engineering Infrastructure

Energy Transition: LG Energy, EVs market facing "unprecedented challenges"

EV market facing "unprecedented challenges'

2024 was a disappointing year for BEV sales around the world. We remind that China's NEV are dominated by PHEV and not BEVs. But it was a disappointing year with challenges and that message was reflected by EV battery maker, LG Energy in its Q4 call on Friday. On Friday, we saw the LG Energy (EV battery maker) Q4 call and we were a little surprised at the bluntness of their big picture commentary on the EV market on the Q4 call. They didn't pull any punches. On Friday, we posted [LINK] "*OUCH! LG Energy (EV battery maker) Q4 call quotes. "the ongoing geopolitical and policy uncertainties have made the battery market less predictable and the entire value chain is facing unprecedented challenges" "If we take about the full-year outlook for us, because there are a wide amount of variables within the market, I do believe it's a bit difficult to be very confident about how we see the future" And more. China is big EVs growth, but remember PHEVs are taking big share of EVs from BEVs. #OOTT."* Our post included a slide from the Q4 call slide deck that called it "*stagnant EV demand*".

Energy Transition: Fortescue CEO, green hydrogen demand hasn't emerged

Fortescue CEO on green hydrogen

We have been highlighting for years that green hydrogen doesn't come anywhere near close to being economic or expected to be economic. Fortescue Energy is the green energy arm of Australian miner, Fortescue, and Reuters reported on comments by CEO Mark Hutchinson on the sidelines in Davos. On Friday, we posted [LINK] "*If you're waiting for someone to pay you extra because it's green [hydrogen], forget it ... at the end of the day, the economics have to work" Fortescue Energy CEO. Green costs more than blue/grey & they can't attract buyers in scale. More #NatGas will be needed for longer. Thx @divyachowdhury @LPM94 #OOTT."* Hutchinson seemed to keep optimism that green hydrogen could work in the future as they get costs down. But until then, Reuters wrote "*"(The) green hydrogen, ammonia (sector) is not where we thought it would be," the CEO said on the sidelines of the World Economic Forum's annual meeting in the Swiss resort on Thursday "The demand hasn't emerged in the way it should, (but) over the next few years we're hoping demand will (rise) as prices come down," he said. "If you're waiting for someone to pay you extra because it's green, forget it ... at the end of the day, the economics have to work," he added."*

BNEF tripled its forecast cost to produce Green Hydrogen

No one should be surprised by the Fortescue comments because the cost to make green hydrogen keep going higher and higher. Here is what we wrote in our Dec 29, 2024 Energy Tidbits memo. "*BNEF triples its forecast cost to produce Green Hydrogen. We have been highlighting for years that we expect agencies and forecast groups to increase (hit) the costs of key energy transition items like Green Hydrogen. On Monday, we saw a massive change in message and a massive increase in costs to produce Green Hydrogen from BloombergNEF, who did an about-face from its history of forecasting declining costs to produce Green Hydrogen to one where they are tripling the future cost to produce Green Hydrogen. That is a WOW, moving from forecasting lower costs to a tripling of costs. On Monday, we posted [LINK] "Huge Green Hydrogen cost reality check! @BloombergNEF had in the past forecast steep declines in the price of green hydrogen....But in its forecast published Monday, the firm more than tripled its 2050 cost estimate, citing higher future costs for the*

electrolyzers themselves". If world wants hydrogen, it will have to be from #NatGas. Thx @DavidBakerSF Payal Kaur #OOTT" This was from its Monday report "Green Hydrogen Prices Will Remain High for Decades, BNEF Warns." Our Supplemental Documents package includes the Bloomberg report."

BNEF, Green Hydrogen costs 4X cost of hydrogen from natural gas

And the costs to make green hydrogen are nowhere near competitive. Here is what we wrote in our Dec 29, 2024 Energy Tidbits memo. "*BNEF, Green Hydrogen costs 4x cost of hydrogen from natural gas. We have also been highlighting the costs to produce Green Hydrogen as also multiples more than producing hydrogen from natural gas. BlombergNEF's revised view on the cost to produce Green Hydrogen now estimates Green Hydrogen costs 4X the cost to produce hydrogen from natural gas. The other problem is that, even though hydrogen from natural gas is way cheaper than green hydrogen, hydrogen from natural gas hasn't been able to attract long term customer buyers in size to give hydrogen developers the confidence to build sizeable hydrogen supply projects. On Monday, we posted [LINK] "Here's why Green Hydrogen projects are getting cancelled. Green hydrogen costs 4x more than hydrogen from #NatGas. Thx @MathisWilliam. That's bad enough. But @Equinor doesn't see blue hydrogen as being economic ie. no significant customer base. See 👇10/24/24 post. #OOTT." Bloomberg wrote "As a result, hydrogen produced using clean energy costs four times as much as that made from natural gas, according to BNEF. Hardly surprising, then, that the majority of projects don't have a single customer stepping up to purchase the fuel. And without willing buyers, there can be no output." Our Supplemental Documents package includes the Bloomberg report*.

Energy Transition: EIA reminds hydrogen is an energy carrier, not an energy source

Hydrogen is an energy carrier not a source

Whenever we talk to people on hydrogen and hear their views, it seems like many/most don't realize hydrogen is not an energy source and that hydrogen is an energy source. Here is what we wrote in our Jan 23, 2022 Energy Tidbits memo. "*EIA reminds hydrogen is an energy carrier, not an energy sources. On Friday, we tweeted [LINK] ""takes more energy to produce #hydrogen (by separating it from other elements in molecules) than hydogren provides when it is converted to useful energy" "an energy carrier that must be produced from another substance". nice to see @EIAgov give facts not fiction. #OOTT #NatGas." This follows the new Jan 20 update from the EIA "Hydrogen explained". Hydrogen is considered one of the must be a significant contributor to any and all plans to get to Net Zero. Our view is unchanged, we understand why the Net Zero side pushes it for items like heavy industry, but it seems to get overlooked that hydrogen is not an energy sources like natural gas or solar. Rather it is an energy carrier. The EIA stuck to the basics on hydrogen and didn't politicize their message in their Jan 20 update on hydrogen. The EIA explained this concept clearly. "Hydrogen is an energy carrier Energy carriers allow the transport of energy in a usable form from one place to another. Hydrogen, like electricity, is an energy carrier that must be produced from another substance. Hydrogen can be produced—separated—from a variety of sources including water, fossil fuels, or biomass and used as a source of energy or fuel. Hydrogen has the highest energy content of any common fuel by weight (about three times more than gasoline), but it has the lowest energy content by volume (about four times*

less than gasoline). It takes more energy to produce hydrogen (by separating it from other elements in molecules) than hydrogen provides when it is converted to useful energy. However, hydrogen is useful as an energy source/fuel because it has a high energy content per unit of weight, which is why it is used as a rocket fuel and in fuel cells to produce electricity on some spacecraft. Hydrogen is not widely used as a fuel now, but it has the potential for greater use in the future". Our Supplemental Documents package includes the EIA Jan 20 update Hydrogen explained. [LINK]"

Capital Markets: IFIC, mutual funds equity & balanced funds net sales in Dec

IFIC Cdn mutual fund data

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. Our Supplemental Documents package includes the IFIC release.

Figure 60: 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 61: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual Fund Net Sales / Net Redemptions ($ millions)

Asset class	Nov 2024	Oct 2024	Nov 2023	YTD 2024	YTD 2023
Long-term funds					
Balanced	493	(223)	(6,512)	(22,191)	(51,469)
Equity	678	(103)	(2,583)	1,245	(21,793)
Bond	1,984	3,125	(491)	23,809	5,609
Specialty	733	644	389	6,926	3,362
Total long-term funds	3,889	3,443	(9,197)	9,789	(64,290)
Total money market funds	685	62	1,124	2,848	13,777
Total	4,574	3,505	(8,073)	12,637	(50,513)

Source: IFIC

USDA CPI for food +2.9% YoY

Capital Markets: USDA Consumer Price Index for food flat MoM in Dec, +2.9% YoY

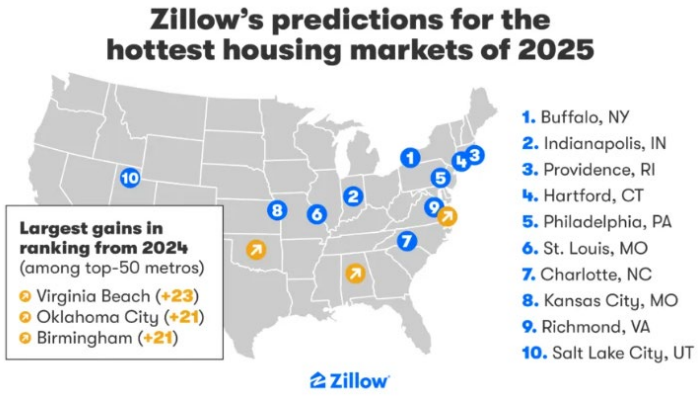
We believe the USDA consumer food price index is supposed to be a much better indicator for grocery store prices than the UN's food commodity price index. But we continue to believe that very few people would say their grocery cart bills are only +2.9% YoY. Rather grocery shoppers still have sticker shock on a lot of grocery staples and, as the grocery retailers highlight, consumers are always on the hunt for sale items and continue to trade down. On Friday, the USDA posted its December Consumer Price Index for food [LINK], which reported the Consumer Price Index for all food (CPI) was unchanged from November and up +2.9% YoY in December. The +2.9% YoY increase in the Consumer Price Index has a relative weighting for the various food categories. Beef and veal were up -0.2% MoM, +4.9% YoY, and are expected to increase +1.5% over 2025. Retail eggs are up +8.4% MoM and +36.8% YoY and are expected to increase +20.3% in 2025 (this increase is likely due to continued HPAI outbreaks). Dairy products were up +0.2% MoM, +1.3% YoY, and the full year forecast is that dairy products will increase +1.3% over 2025. It is important to note the USDA said that the *"UIn 2025, overall food prices are anticipated to rise at a rate similar to that of 2024 and at a slower pace than the historical average rate of growth. In 2025, prices for all food are predicted to increase 2.2 percent, with a prediction interval of -0.4 to 4.9 percent. Food-at-home prices are predicted to increase 1.3 percent, with a prediction interval of -2.7 to 5.5 percent. Food-away-from-home prices are predicted to increase 3.6 percent, with a prediction interval of 2.0 to 5.1 percent."*

Demographics: Buffalo predicted to be 2025's hottest housing market in the U.S.

Zillow Research released its outlook for the 2025 U.S. housing market predicting that Buffalo will once again be the nation's hottest housing market, reclaiming its position from last year [LINK]. The remainder of the top five cities are rounded out with Indianapolis, Province, Harford, and Philadelphia. The key factors that Zillow accounts for in the hottest housing markets is based off forecasted growth of home value, the recent housing market velocity, changes in the area's labour market, housing construction activity, and the number of homeowner households. Zillow had this to say about the nationwide market, *"Nationwide, Zillow forecasts relatively slow and steady growth for both home values and sales in 2025, though affordability and unpredictable mortgage rates will present familiar headwinds. Inventory should continue to recover from a deep pandemic-era deficit."* The map below

shows Zillow's predictions for the 2025 hottest housing markets. Our Supplemental Documents package includes the Zillow Research article.

Figure 62: Zillow's Hottest U.S. Housing Markets for 2025



Energy Tidbits: Thank you for all the great insights/feedback last year

Great insights from readers

I want to give a big thank you to all of the readers and Twitter/X followers who took the time to contact me with insights and feedback on my work. I have had a chance to meet and deal with financial people that I never knew in my years working in investment banking industry with GMP Securities/Griffiths McBurney & Partners. I haven't been able to squeeze in all the meetings when I travel but, hopefully, I can meet even more people in 2025 in my travels. It's been great to set up new relationships and to learn how different financial people look at markets and energy. it has hopefully helped broaden my perspective on issues.

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

@Energy_Tidbits on Twitter

Last week, 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: 1999 Avignonesi "Toro Desiderio"

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. Last night, I posted the wine of the week, which was 1999 Avignonensi "Toro Desiderio" Bordeaux Blend Toscana. It was always a reasonably priced great Tuscany wine. The 1999 was still drinking well although not quite as good as I remember the last time I drank the 1999 pre-Covid. I drank the great 2001 early last year and it was drinking very well. Down to 1 of each of the 1999 and 2001.

Figure 73: 1999 Avignonesi "ToroDesiderio" Bordeaux Blend Toscana

1999 Avignonesi "Toro Desiderio" Bordeaux Blend Toscana

93 **Wine Spectator**
Review Date: 09/2002

"Big and ripe red, with loads of black licorice, tar and sultanas. Full-bodied, with big, velvety, chewy tannins. Long, ripe fruit aftertaste. A blockbuster. Merlot and Cabernet Sauvignon. Best after 2005. 3,750 cases made. –JS

Source: SAF Group, K&L Wines

Las Vegas Raiders hire 73-yr old Pete Carroll as new head coach

I am sure I speak for all older people, it's pretty exciting to see a 73 year old hired as on a multi-year contract to be a head coach in the NFL. It's not a temporary fill-in interim position, it's a new hire. Yesterday, the Las Vegas Raiders posted that they hired Pete Carroll as their next head coach. Caroll is 73 years old and will be 74 when the NFL's 2025 season kicks off making him the oldest NFL head coach in history. Listening to the commentary of NFL analysts on sports channels, the comments are positive and have focused first and foremost on his proven track record as a winner in the NFL including Super Bowl. It makes sense as the NFL is the ultimate it's all about winning.

Lunar New Year greeting of wishing everyone happiness and prosperity

I am little disappointed I won't be in San Jose del Cabo for the Lunar New Year on Wed because there are normally some great fireworks displays on the beach. But I wish everyone a happy new year and happiness and prosperity in the Year of the Snake. Here is an excerpt from one of the many SCMP reports on the Year of the Wood Snake. "*The Wood Snake is a charming, intelligent and creative sign, but also secretive, cunning and sometimes ruthless. At the beginning of 2025, the world is still under the rulership of the outgoing and positive Dragon, and so a high-action period with plenty of activity is expected. Snake years are times when the world stops to think; on the international scene, governments may be using this time to build up resources for their arsenals. Mythology recognises the Snake as a creature of healing, which influences the physical body to shift to a more spiritual outlook. A great deal of quiet progress can be made in 2025 with the help of this planetary*

energy. Honour this transformative beginning every day with positive thoughts. The Snake year encourages protection, so create a safe space to work and live by practising good feng shui to feel safe and secure to enhance the year's energy. This is the year to make headway in methodical and strategic ways. There is no need to exhaust your energy: adopt the nature of the Snake with awareness and a greater sense of timing, ready to strike when the time is right to maximise the energy of the year. While the Year of the Snake will be less noisy than last year's Dragon year, it will be no less deadly. The Snake is a double-edged creature, embodying both wisdom and danger. While it offers opportunities for growth and insight, it will require careful navigation to avoid its hidden perils."