Energy Tidbits

February 16, 2025

Produced by: Dan Tsubouchi

Reminder: Big Risk to TTF LNG Prices IF Trump/Putin Deal for Ukraine Sees Russia Pipeline Natural Gas Back to Europe

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. Reminder, there is big risk to TTF natural gas and LNG prices if a Trump push to Russia/ Ukraine deal sees the return of Russian pipeline natural gas to Europe. [click here]

2. Coal looks to be the big winner under Trump's National Energy Dominance Committee. [click here]

3. Energy Transfer's 0.43 bcf/d direct natural gas supply deal with an AI data center bypasses the grid and they say is the first of many such deals to come. [click here]

4. Dominion Energy, the global leader for power to AI data centers, had 63.7% of its generation fueled by fossil fuels in 2023. [click here]

5. It's mid-Feb so the start of the normal ramp up in refinery crude processing season to provide summer peak gasoline/asphalt/jet fuel consumption so crack spreads increase & WCS less WTI diffs seasonally narrow. [click here]

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

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

Dan Tsubouchi
Chief Market Strategist
dtsubouchi@safgroup.ca

Ryan Dunfield
CEO
rdunfield@safgroup.ca

Aaron Bunting
COO, CFO
abunting@safgroup.ca

Ian Charles
Managing Director
icharles@safgroup.ca

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Natural Gas: -100 bcf draw in US gas storage, now -248 bcf YoY

-100 bcf draw in US gas storage

For the week ending Feb 7, the EIA reported a -100 bcf draw [LINK]. Total storage is now 2.297 tcf, representing a deficit of -248 bcf YoY compared to a deficit of -208 bcf last week. For much of 2024, storage figures exceeded the 5-year range but moved back into the 5-yr range as winter approached and continues to be within the 5-yr range. The week of Feb 7 saw storage at -67 bcf below the 5-yr average, up from last week's deficit of -111 bcf to the 5-yr average. Below is the EIA's storage table from its Weekly Natural Gas Storage report and a table showing the US gas storage over the last 8 weeks.

Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (02/07/24)		5-year average (2020-24)	
Region	02/07/25	01/31/25	net change	implied flow	Bcf	% change	Bcf	% change
East	468	507	-39	-39	542	-13.7	521	-10.2
Midwest	559	605	-46	-46	670	-16.6	631	-11.4
Mountain	193	200	-7	-7	179	7.8	137	40.9
Pacific	224	230	-6	-6	224	0.0	196	14.3
South Central	853	854	-1	-1	930	-8.3	879	-3.0
Salt	229	217	12	12	267	-14.2	249	-8.0
Nonsalt	624	638	-14	-14	663	-5.9	629	-0.8
Total	2,297	2,397	-100	-100	2,545	-9.7	2,364	-2.8

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
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
Jan/24	2,571	-321	-144	-111
Jan/31	2,397	-174	-208	-111
Feb/07	2,297	-100	-248	-67

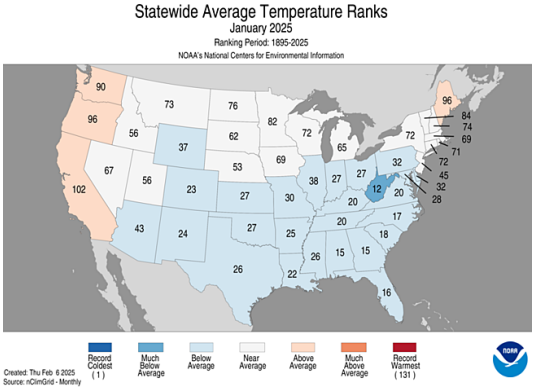
Source: EIA

Natural Gas: NOAA reported US Jan temperature was 33th coldest in 131 years

Cold Jan US temperatures

On Thursday, NOAA posted its recap of US temperatures for Jan, and it was the 33rd coldest Jan in the last 131 years and the coldest since 1988 despite a Jan record being set for hottest global temperatures. This is a driver for why we have observed HH prices above $4 with higher natural gas demand, especially compared to last year's warmer January where HH prices went below $2. The central and southern Rockies to the Mid-Atlantic and Southeast regions of the US were generally saw below-average temperatures throughout the month. Conversely, Alaska had a warm January, ranking the eighth warmest on record for the state. Below is a map of statewide average temperature ranks.

Figure 3: Statewide average temperature ranks



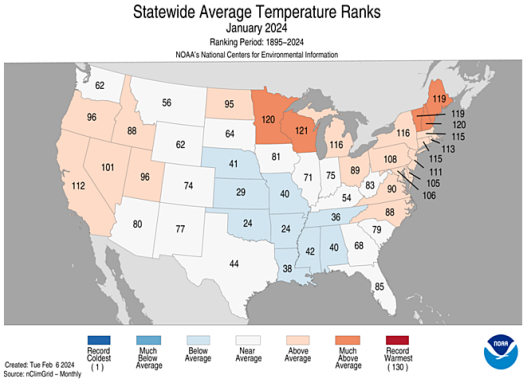
Source: NOAA

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

Jan 48th warmest for US in 130 yrs

Here is what we wrote in our Feb 18, 2024, Energy Tidbits memo, "*We have been highlighting the warmer than normal US temperatures so far this winter that has led to lower natural gas demand and the key driver for why HH prices went below $2 in Jan and have stayed there. On Thursday, the NOAA posted its national climate recap for Jan and Jan 2024 was the 48th hottest on record in the past 130 years, even with the extreme cold snap we had in the middle of the month. On Thursday, we tweeted [LINK] "ICYMI Here's key reason why HH #NatGas went below $2 in Jan. Even with Arctic freeze in mid-Jan, Jan was 48th warmest in last 129 yrs and, most importantly, NE US and Great Lakes was near record warmth. Nov 1-Jan 31, was 5th warmest in last 129 yrs. Thx @NOAA #OOTT". This follows Dec 2023, which was the hottest in 129 years. Below is the NOAA map showing Jan 2024 indexed average statewide temperatures for the last 130 years."*

Figure 4: NOAA Average Temperatures for Jan 2024



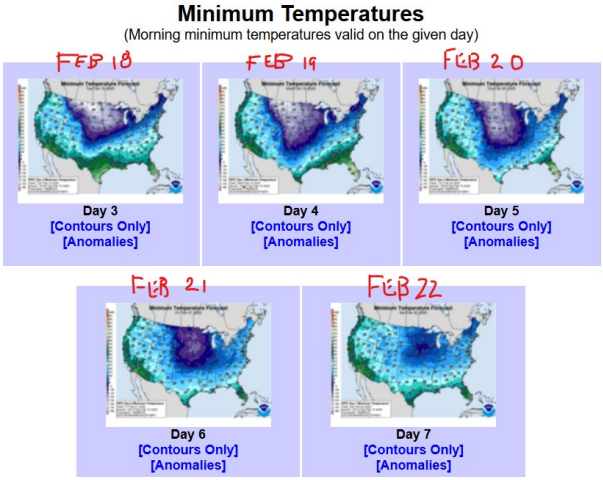
Source: NOAA

Natural Gas: NOAA 3-7 & 6-10 day calls for colder than normal temps in east Half US

NOAA 3-7 & 6-10 day temp outlook

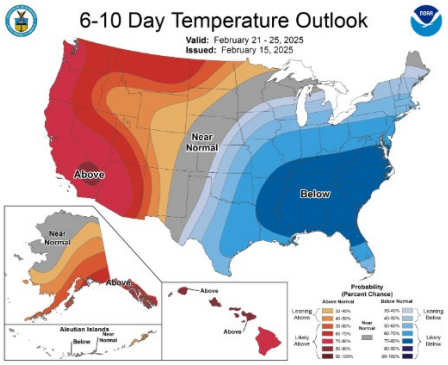
It's the 2nd half of Feb so US is past the normal peak of winter temperature driven natural gas demand. So colder than normal temperatures may not necessarily drive up natural gas prices provide some late winter support for natural gas. Yesterday, we posted [LINK] "*It's Feb 15 so past normal winter temperature peak for #NatGas demand. But @NOAA's updated 3-7 and 6-10 day temperature outlooks call for colder than normal temperatures in more populous east. May not drive up NatGas price but should help provide end of winter support. #OOTT.*" NOAA's Saturday updated near-term 3-7 and 6-10 day temperature outlook calls for colder than normal temperatures across most of the Lower 48 for the next week and then just so for the eastern half of the Lower 48. Our post included the below NOAA Feb 15 updated temperature maps for 3-7 and 6-10 days..

Figure 5: NOAA 3-7 minimum temperature outlook covering Feb 18-22



Source: NOAA

Figure 6: NOAA 6-10 day temperature outlook for Feb 21-25



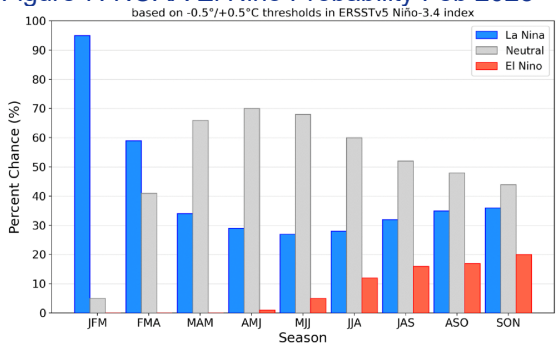
Source: NOAA

Natural Gas: NOAA early call is Neutral/La Nina conditions for Jul/Aug/Sep

El Nino/La Nina forecast for summer 2025

The major part of winter is now over so the El Nino/La Nina focus shifts to the summer and hurricane season. On Thursday, the NOAA posted the updated monthly El Nino/La Niña outlook, which is issued on the 2nd Thursday of every month [LINK]. For Jul/Aug/Sept, NOAA sees a Neutral/La Nina probability. NOAA wrote "Looking further ahead, there are no strong signals right now for next fall and ENSO-neutral is favored, but we do see a tilt in the odds toward La Niña over El Niño. There are some hints in the climate models in this direction, but it's too early to make a confident prediction (plus we are going through the infamous spring barrier when ENSO predictions are particularly challenging).." Below is a chart of El Nino/Neutral/La Nina probability forecasts for 2025. Below is a chart of El Nino probability forecasts for 2025.

Figure 7: NOAA El Nino Probability Feb 2025

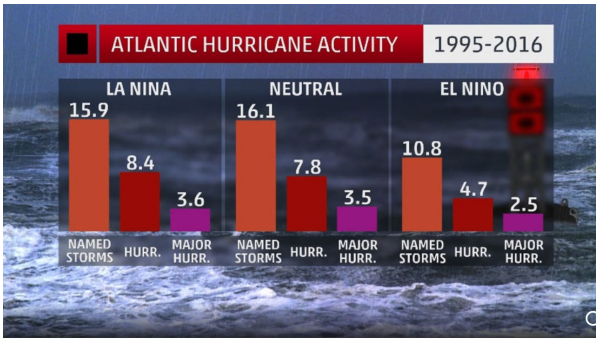


Source: NOAA

La Nina summers tend to have normal to above normal hurricane seasons

The Feb NOAA summer outlook for El Nino/La Nina conditions calls for Neutral/La Nina conditions in the summer and the peak Aug/Sep/Oct hurricane season. Weather is never 100% accurate but, historically, Neutral and La Nina conditions tend to have normal to above normal hurricane activity, whereas El Nino years tend to have lower hurricane activity seasons. Our May 24, 2020 Energy Tidbits memo include The Weather Channel Aug 28, 2018 story that had the below graphic.

Figure 8: Atlantic Hurricane Activity El Nino vs Neutral vs La Nina



La Niña and ENSO-neutral years have generally seen more named storms and hurricanes in the Atlantic, based on data from 1995-2016.

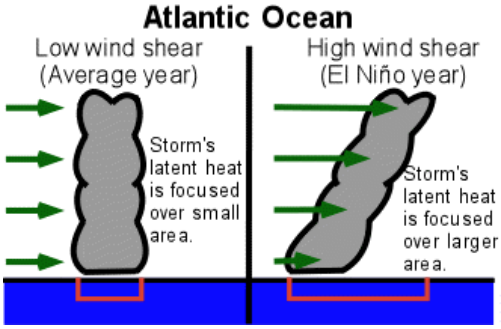
(Data from NOAA/CPC)

Source: Weather Channel

Whereas El Nino years tend to be low Atlantic hurricane years

Our prior Energy Tidbits over the years/decades noted that "*The hurricane forecasters note that warm El Nino years tend to have less hurricane activity in the Atlantic and Gulf of Mexico, but typically more hurricane activity in the Pacific. The primary explanation for the decline in hurricane frequency during El Niño years is due to the increased wind shear in the environment. It is commonly explained that "In El Niño years, the wind patterns are aligned in such a way that the vertical wind shear is increased over the Caribbean and Atlantic. The increased wind shear helps to prevent tropical disturbances from developing into hurricanes. In the eastern Pacific, the wind patterns are altered in such a way to reduce the wind shear in the atmosphere, contributing to more storms*". This is the common explanation, and we referenced the University of Illinois's description because they also had a good simple graphic (see below). We double checked the link this week, and it is still active after more than a decade, the University of Illinois explanation is found at: [LINK]

Figure 9: Early-March NOAA El Nino/La Nina Outlook



Source: University of Illinois

Natural Gas: EIA, Shale/tight gas production below 82.00 bcf/d, likely weather related

Shale/tight gas production

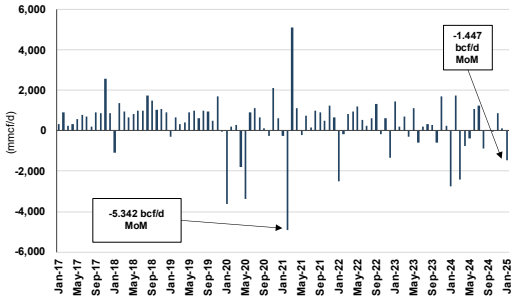
June 2024 marked the first month that the EIA stopped releasing its Drilling Productivity Report and began releasing shale/tight oil and natural gas data with the monthly Short Term Energy Outlook (STEO). (i) Please note this came with some major reporting changes, namely there are no longer monthly forecasts for tight gas production by basin. Previously, the EIA would provide an estimate of the current month tight/shale production (in this case January) and a forecast for the next month (in this case February). But now, the EIA only provides estimates for the just finished month for tight/shale. So, in the case of the new February report, there is only shale/tight for the just finished month, i.e., January (ii) On Tuesday, the EIA released its monthly STEO for Feb 2025 [LINK]. (iii) The key takeaway is that US shale/tight natural gas dipped below 82.00 bcf/d after six months of steadily being around 83 bcf/d. Nov was 83.24 bcf/d, Dec was 83.35, and now Jan was 81.91 bcf/d. (iv) Jan at 81.91 bcf/d is was the lowest since May 2024 levels of 80.78 bcf/d, and down YoY vs Jan 2024 of 82.71 bcf/d. The EIA doesn't provide any explanation but we suspect that there was a winter weather impact on the Jan numbers. (v) Note that the EIA revised their data for shale/tight gas production back to 2021 from Jan's STEO, and we have adjusted our table to reflect the updated data. For the last 12 months Jan 2024 thru Dec 2024, the EIA revises production figures each month, and the average revision during the Jan STEO was -0.79 bcf/d. The two areas with the most revisions are Haynesville and Permian. Our Supplemental Documents package includes excerpts from the EIA STEO.

Figure 10: EIA Major Shale/Tight Natural Gas Production

mcf/d	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Jan MoM%	Jan YoY%
Permian	17,182	17,891	18,087	18,386	18,171	18,670	19,080	19,362	19,527	19,677	19,767	19,871	19,419	-2.3%	13.0%
Haynesville	13,292	13,478	12,846	12,022	11,546	11,529	11,637	11,348	11,338	11,219	11,801	11,722	11,645	-0.7%	-12.4%
Marcellus	27,186	26,992	25,282	25,371	25,171	25,945	27,068	26,260	25,820	25,920	25,977	26,034	25,766	-1.0%	-5.2%
Utica	6,373	6,497	6,480	6,426	6,569	6,631	6,273	6,335	6,620	6,564	6,710	6,774	6,276	-7.4%	-1.5%
Eagle Ford	4,273	4,335	4,367	4,233	4,427	4,412	4,282	4,257	4,245	4,233	4,221	4,209	4,197	-0.3%	-1.8%
Bakken	2,301	2,583	2,599	2,661	2,689	2,677	2,657	2,714	2,731	2,624	2,659	2,664	2,669	0.2%	16.0%
Barnett	1,644	1,680	1,667	1,644	1,632	1,659	1,641	1,626	1,675	1,675	1,675	1,675	1,675	0.0%	1.9%
Fayetteville	774	846	844	777	825	814	812	810	808	806	804	802	772	-3.7%	-0.3%
Mississippian	2,389	2,508	2,343	2,353	2,333	2,290	2,287	2,236	2,235	2,226	2,217	2,207	2,198	-0.4%	-8.0%
Niobrara-Codell	2,628	2,781	2,820	2,742	2,748	2,719	2,734	2,747	2,747	2,747	2,747	2,747	2,746	0.0%	4.5%
Woodford	2,490	2,628	2,558	2,595	2,664	2,518	2,627	2,547	2,540	2,533	2,527	2,520	2,454	-2.6%	-1.4%
Rest of U.S.	2,174	2,244	2,171	2,084	2,153	2,145	2,144	2,137	2,146	2,165	2,139	2,128	2,089	-1.8%	-3.9%
Total	**82,706**	**84,463**	**82,064**	**81,294**	**80,928**	**82,009**	**83,242**	**82,379**	**82,432**	**82,389**	**83,244**	**83,353**	**81,906**	-1.7%	-1.0%

Source: EIA

Figure 11: MoM Change – Major Shale/Tight Natural Gas Production



Source: EIA

Natural Gas: EIA STEO immaterial increase to 2025 gas production forecast

EIA US natural gas production forecast

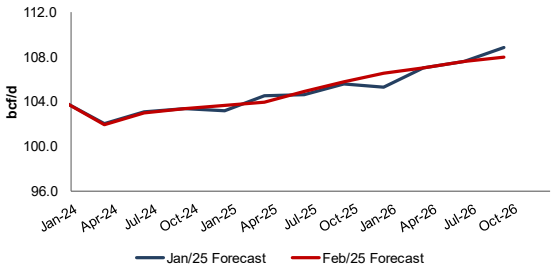
On Tuesday, the EIA released its monthly Short Term Energy Outlook for February 2025 [LINK]. (i) The EIA made an immaterial decrease to its 2024 US natural gas production estimate by -0.04 bcf/d, still at 103.1 bcf/d. On a full year average basis, this now gives a YoY decline of -0.5 bcf/d from 2023. The key reason for the YoY decline was the decision by a number of major natural gas producers such as EQT to shut-in natural gas last summer due to low prices. (ii) The EIA increased their 2025 forecast +$0.72/mcf to $3.93/mcf (from $3.21/mcf) and expect HH price to average around $4.35/mcf in 2026. The EIA wrote "*In our forecast, the Henry Hub spot price averages $3.70/MMBtu in 1Q25 and around $3.80/MMBtu for the year. We expect the Henry Hub price to average nearly $4.20/MMBtu in 2026. Weather is always a risk to our Henry Hub price forecast during the winter heating season. An additional risk over the forecast period includes timing of new liquefied natural gas production that developers expect to start up over the next two years. We expect China's imposition of tariffs on U.S. LNG to have a limited effect on U.S. LNG exports. With ample demand for LNG globally, we expect that any LNG not purchased by China would be imported elsewhere.*" (iii) The quarterly changes in natural gas production are as follows: Q1/24 flat at 104.0 bcf/d, Q2/24 flat at 102.0 bcf/d, Q3/24 -0.1 bcf/d to 103.0 bcf/d, and Q4/24 flat at 103.4 bcf/d. (iv) The EIA immaterially increased its 2025 forecast +0.1 bcf/d to 104.6 bcf/d, which, on a full year average basis, would be up +1.5 bcf/d YoY. The quarterly changes to 2025 are as follows: Q1/25 +0.5 bcf/d to 103.7 bcf/d, Q2/25 -0.6 bcf/d to 103.9 bcf/d, Q3/25 +0.3 bcf/d at 104.9 bcf/d, and Q4/25 +0.2 bcf/d 105.8 bcf/d.

Figure 12: EIA STEO Dry Natural Gas Production Forecasts

bcf/d	Q1/24	Q2/24	Q3/24	Q4/24	2024	Q1/25	Q2/25	Q3/25	Q4/25	2025	Q1/26	Q2/26	Q3/26	Q4/26	2026
Feb-25	104.0	102.0	103.0	103.4	103.1	103.7	103.9	104.9	105.8	104.6	106.5	107.0	107.6	108.0	107.3
Jan-25	104.0	102.0	103.1	103.4	103.1	103.2	104.5	104.6	105.6	104.5	105.3	107.0	107.6	108.9	107.2
Dec-24	104.0	102.0	103.2	103.5	103.2	103.2	104.0	103.6	103.9	103.7					
Nov-24	104.0	102.0	103.5	103.8	103.4	104.2	104.7	104.3	104.7	104.5					
Oct-24	104.1	102.0	103.9	104.0	103.5	104.2	104.8	104.5	105.0	104.6					
Sep-24	104.1	102.1	103.3	104.0	103.4	103.8	104.5	104.8	105.9	104.7					
Aug-24	104.0	101.7	103.6	103.8	103.3	103.5	104.4	104.8	105.9	104.6					
July-24	104.1	102.4	103.4	104.1	103.5	104.0	104.7	105.3	106.7	105.2					
June-24	103.9	100.4	101.4	102.5	102.1	102.9	104.3	104.7	105.7	104.4					
May-24	104.0	102.3	102.4	103.3	103.0	103.8	104.9	105.0	105.5	104.8					
Apr-24	103.9	103.0	103.4	104.0	103.6	103.9	105.0	105.0	105.7	104.9					
Mar-24	103.2	103.8	103.3	103.2	103.4	103.5	104.7	104.5	104.9	104.4					
Feb-24	103.5	105.0	104.4	104.7	104.4	105.5	106.7	106.5	107.2	106.5					
Jan-24	105.1	105.0	104.6	105.5	105.0	106.6	106.7	106.1	106.2	106.4					
Dec-23	104.8	104.8	104.7	105.3	104.9										
Nov-23	105.1	104.8	104.7	105.9	105.1										
Oct-23	104.7	104.8	104.8	106.1	105.1										
Sep-23	104.3	104.7	104.9	105.9	104.9										
Aug-23	104.0	103.9	104.0	104.6	104.1										
July-23	101.8	101.5	102.5	103.7	102.4										
June-23	102.8	102.8	103.0	103.6	103.0										
May-23	100.7	101.1	101.4	101.8	101.2										
Apr-23	101.2	101.5	101.8	101.8	101.6										
Mar-23	101.4	101.4	102.0	102.0	101.7										
Feb-23	101.2	101.6	102.0	101.9	101.7										
Jan-23	101.1	101.8	102.7	103.6	102.3										

Source: EIA, STEO

Figure 13: EIA STEO Natural Gas Production Forecasts by Month



Source: EIA, STEO

Natural Gas: EIA STEO forecasts storage -486.9 bcf YoY at 2.076 tcf to end winter 24/25

EIA January STEO storage forecast

The EIA STEO also includes its forecast for US gas storage. (i) This winter is a good example of why we always say we note that our bias is to not pay much attention to gas storage forecasts past the start of winter 2024-25 until we get into Dec. The reality is storage forecasts are all about how cold it is in Dec, Jan and Feb. And it's been a good end of Jan/start to July for weather driven natural gas demand. (ii) For example, the EIA Nov STEO posted in mid-Nov forecasts gas storage would exit winter 2024/25 at -320.1 bcf lower YoY (ii) The EIA reports that gas storage to start winter 2024/25, came in at 3.919 tcf for Nov 1, 2024, which is an increase of +177.2 bcf YoY. The February STEO is down vs the January STEO forecast of storage at 3.941 tcf for Nov 1, 2024. (iii) The most significant part of cold temperatures are over but Feb can be big so the Feb temperatures will determine if storage coming out of winter is high or low. But, for now, the EIA forecasts gas storage to end winter 2024/25 in April at 2.076 tcf, which would be -486.9 bcf lower YoY. This compares to the -320.1 bcf YoY from the Nov STEO. The key reason for less storage to end winter is that there has been more colder weather than last year's hot winter. The EIA assumes heating degree days will be +7% higher YoY during the upcoming winter. (iv) There is even more uncertainty as you look out to winter 2025/26. The February STEO forecasts winter 2025/26 storage to be 3.627 tcf for Nov 1, 2025, which would be a little lower than its forecast for Nov 1, 2024, at 3.919 tcf. Below is a table tracking the working gas inventory forecasts and actuals since 2017.

Figure 14: EIA STEO US Natural Gas in Storage (2017-2026)

US Working Natural Gas in Storage (billion cubic feet)

		Storage	2017-2026				
		Level	Low	High	Range	Average	Deviation
Mar 2017	4/1/2017	2,062.5	1,184.9	2,562.5	1,377.6	1,873.7	10.1%
Oct 2017	11/1/2017	3,816.5	3,236.3	4,012.7	776.4	3,624.5	5.3%
Mar 2018	4/1/2018	1,184.9	1,184.9	2,029.4	844.5	1,653.4	(28.3%)
Oct 2018	11/1/2018	3,236.3	3,236.3	4,012.7	776.4	3,624.5	(10.7%)
Mar 2019	4/1/2019	1,559.4	1,559.4	2,332.5	773.1	1,919.0	(18.7%)
Oct 2019	11/1/2019	3,610.0	3,501.1	3,931.6	430.6	3,663.5	(1.5%)
Mar 2020	4/1/2020	2,332.5	1,611.8	2,562.5	950.7	2,119.6	10.0%
Oct 2020	11/1/2020	3,931.6	3,501.1	3,931.6	430.6	3,725.4	5.5%
Mar 2021	4/1/2021	1,975.0	1,611.8	2,562.5	950.7	2,119.6	(6.8%)
Oct 2021	11/1/2021	3,532.8	3,501.1	3,931.6	430.6	3,725.4	(5.2%)
Mar 2022	4/1/2022	1,611.8	1,611.8	2,562.5	950.7	2,119.6	(24.0%)
Oct 2022	11/1/2022	3,501.1	3,501.1	3,931.6	430.6	3,725.4	(6.0%)
Mar 2023	4/1/2023	2,116.5	1,611.8	2,562.5	950.7	2,119.6	(0.2%)
Oct 2023	11/1/2023	3,742.2	3,501.1	3,931.6	430.6	3,725.4	0.5%
Mar 2024	4/1/2024	2,562.5	1,611.8	2,562.5	950.7	2,119.6	20.9%
Oct 2024	11/1/2024	3,919.4	3,501.1	3,931.6	430.6	3,725.4	5.2%
Mar 2025	4/1/2025	2,075.6	1,611.8	2,562.5	950.7	2,119.6	(2.1%)
Oct 2025	11/1/2025	3,627.3	3,501.1	3,931.6	430.6	3,725.4	(2.6%)
Mar 2026	4/1/2026	2,000.4	1,611.8	2,562.5	950.7	2,119.6	(5.6%)
Oct 2026	11/1/2026	3,497.9	3,501.1	3,931.6	430.6	3,725.4	(6.1%)

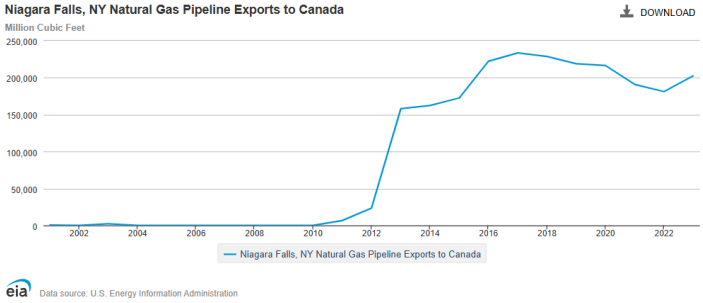
Source: EIA, STEO

Natural Gas: Trump wants Marcellus gas for New England, therefore not Ontario

Trump wants natural gas into New England

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

Figure 15: Niagara Falls, NY natural gas pipeline exports to Canada



Source: EIA

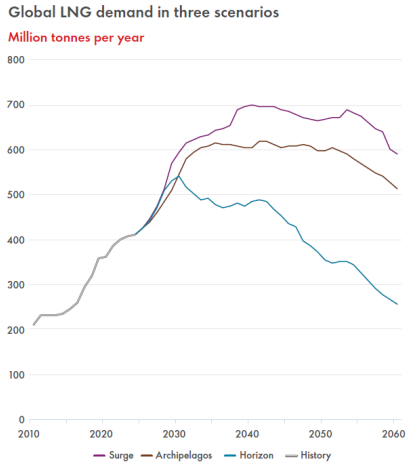
Natural Gas: Shell sees significant LNG demand growth, LNG Canada Phase 2 FID?

LNG Canada 1.8 bcf/d Phase 2?

Shell is holding its big LNG Outlook 2025 on Feb 25, but it looks like they gave away the LNG views in their just released Shell 2025 Energy Security Scenarios posted on Wed. Early Wed morning, we posted [LINK] "*Spoiler alert for Shell's LNG Outlook 2025 on Feb 25. "In all three scenarios, LNG shows significant [demand] growth in the near term". Shell 2025 Energy Security Scenarios. This demand outlook should be favorable for LNG Canada 1.8 bcfd Phase 2 FID in 2025. #OOTT #NatGas."* Our post included Shell's slide "LNG in three scenarios". And Shell is very bullish on LNG demand growth. We wish they would just use scenarios with normal names. Rather Shell has three scenarios. Horizon is really another way of saying Net Zero, it is the "rapid acceleration of the energy transition" that will sharply

reduce emissions to reach net zero by 2050 and limit global warming to 1.5C by end of the century. Archipelagos seems to be something like but not quite a business as usual case. Surge is "*an era of robust economic growth is ushered in by AI technologies that are welcomed and not overly challenged, with economic growth and AI infrastructure driving up energy demand.*" Here is what Shell wrote on LNG. "*In all three scenarios, liquefied natural gas (LNG) shows significant growth in the near term, fuelled by ongoing projects in Qatar and the USA, reaching around 550 million tonnes per year (mtpa) by the end of the decade. Divergence between the scenarios is a function of project timelines up until about 2030, but after that the scenarios diverge significantly as the different scenario drivers take hold.*" No surprise, the Net Zero type scenario shows LNG dropping steadily after 2030 to meet Net Zero emissions. But the other two scenarios see strong global LNG demand growth after 2030. It is why our post included the comment that this LNG demand growth outlook should be good for the potential of a FID for LNG Canada 1.8 bcf/d Phase 2. Below is the Shell Global LNG demand graph.

Figure 16: Global LNG demand forecast



Source: Shell 2025 Energy Security Scenarios

Natural Gas: Baker Hughes sees accelerated natural gas and LNG demand

Baker Hughes sees accelerated natural gas & LNG demand

Shell isn't alone in forecasting strong increases in global LNG demand thru 2030. Baker Hughes probably has the best insight on LNG as they are involved in most existing and being built LNG projects. Baker Hughes just came out with a very bullish near term LNG demand forecast. Here is what we wrote in last week's (Feb 7, 2025) Energy Tidbits memo. *"Baker Hughes sees accelerated natural gas and LNG demand. Baker Hughes held its Q4 call on Jan 31 so it got overlooked by many, other than the sellside analysts, because that was also the Trump tariffs on Canada, Mexico and China day. On Thursday, we posted [LINK] "Accelerated #NatGas & LNG demand. Baker Hughes Q4 call. "Boosted by this encouraging development [AI datacenter power], we believe that #NatGas and #LNG demand will demonstrate accelerated growth..." "For LNG, we still expect 100 MTPA of FIDS between 2024 and 2026, a level that would increase global capacity to our long-standing forecast of 800 MTPA by 2030". See 👇09/04/24 post, $BKR CEO reminded AI data centers need #NatGas. #OOTT." Baker Hughes CEO has been bullish on how AI data centers would drive*

natural gas and LNG demand. On the Q4 call, CEO Simonelli said that AI data centers are given another boost to natural gas and LNG demand that means accelerated demand growth and that LNG send-out capacity would reach Baker Hughes long-standing forecast to hit 800 MTPA of LNG send-out capacity by 2030 would be hit years earlier. Note Baker Hughes description of increasing power consumption is related to AI data centers. Baker Hughes said "Against this economic backdrop, we have seen increasingly positive trends for power consumption. Boosted by this encouraging development, we believe that natural gas and LNG demand will demonstrate accelerated growth, which will drive increasing demand for our gas-levered products and solutions in both OFSE and IET. According to Wood Mackenzie, demand for US natural gas is set to increase by approximately 20 Bcf per day or 18% by 2030, led by a continued increase in gas requirements for new LNG facilities and data centers. For LNG, we still expect 100 MTPA of FIDs between 2024 and 2026, a level that would increase global capacity to our long-standing forecast of 800 MTPA by 2030. Last year, there were 17 MTPA of Project FIDs. Accordingly, we anticipate more than 80 MTPA of FIDs in '25 and 2026. Our strong FID outlook is supported by a record year of offtake contracting last year, which totaled 92 MTPA and exceeded the prior record of 84 MTPA set in 2022."

09/04/24: Baker Hughes thinks govts don't realize the need fossil fuels

Baker Hughes CEO Lorenzo Simonelli has been warning on how western leaders haven't been realizing the increasing need for fossil fuels. Here is what we wrote in our Sept 8, 2024 Energy Tidbits memo. "*We thought Baker Hughes CEO Lorenzo Simonelli had a good way of describing how western politicians aren't coming out and saying the world needs fossil fuels for a long time but are accepting they need fossil fuels. Rather we hear politicians talk about energy security but not say that means having fossil fuels. Simonelli was on Bloomberg Surveillance on Wednesday morning and we tweeted [LINK] "Reality check by western govt on fossil fuels even if they don't admit it. "I think there is an understanding that it's not just about an energy transition. It's also about an energy expansion. And it's not about the fuel type, it's about reducing emissions" ie. why #NatGas is needed. $BKR CEO Simonelli to @FerroTV @annmarie. #OOTT." Here is the transcript we made of Simonelli's comments that was attached to our tweet. SAF created transcript of Baker Hughes CEO Lorenzo Simonelli with Bloomberg's Jonathan Ferro and Annmarie Hordern on Bloomberg Surveillance on Sept 4, 2024. Items in "italics" are SAF Group created transcript. Ferro: "do you feel like the attitude on fossil fuels has shifted in the last 12 months. Do you feel governments, particularly in the west, have had a reality check?" Simonelli "I think there is an understanding that it's not just about an energy transition. It's also about an energy expansion. And it's not about the fuel type, it's about reducing emissions. And that's where gas [natural gas] plays a key role because it is abundant, it is available and you need affordable secure reliable energy".*

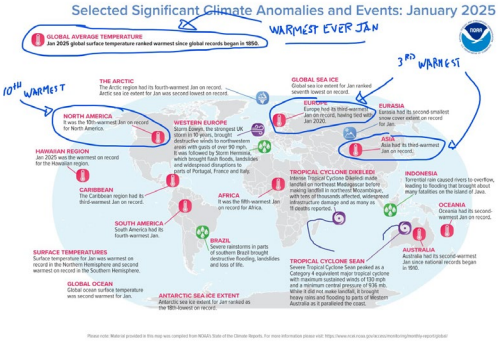
Natural Gas: NOAA, January 2025 was hottest average global temperature on record

Warmest January on record globally

On Thursday, we posted [LINK] "*Stronger underlying fundamental #NatGas demand than expected?? Solid HH TTF #NatGas & JKM #LNG prices considering it was a very warm Jan everywhere. Low EU wind generation in normal seasonally higher period, AI data center*

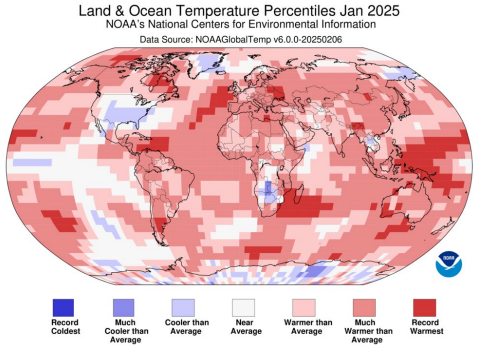
growth, BUT it was hottest Jan on record. #OOTT @NOAA". We should note that it must have been very warm in Canada as NOAA's global recap said it was the 10th warmest Januar for North America, but NOAA's national climate recap for the US said it was the 33rd coldest Jan in the last 131 years. On Wednesday, the NOAA posted its January recap for the global climate, which came in as the warmest January on record, coming above the record set in January 2024 [LINK]. The NOAA notes that the record is particularly notable because of it occurring under La Nina condition. Temperatures were above average across most of the global, but specifically saw increases over Alaska, much of Western Canada, and most of central Eurasia. The global ocean also recorded the second warmest temperatures on record in January. The NOAA wrote "*The January global surface temperature was 2.39°F (1.33°C) above the 20th-century average of 53.6°F (12.0°C) and 0.05°F (0.03°C) above the previous record set last year, making last month the warmest January on record. According to NCEI's Global Annual Temperature Outlook, there is a 7% chance that 2025 will rank as the warmest year on record."* Below is a map of the land & ocean temperature percentiles for December 2024.

Figure 17: Selected Significant Climate Anomalies and Events: Jan 2025



Source: NOAA

Figure 18: Land & Ocean Temperature Percentiles for Jan 2025

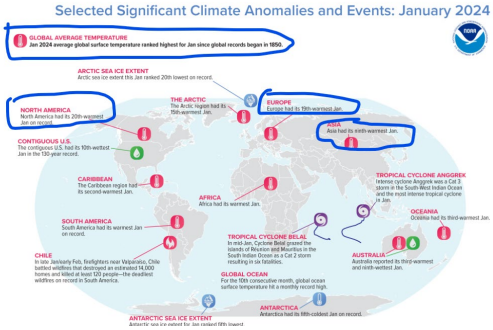


Source: NOAA

Jan 2024 was the previous hottest Jan average global temperature on record

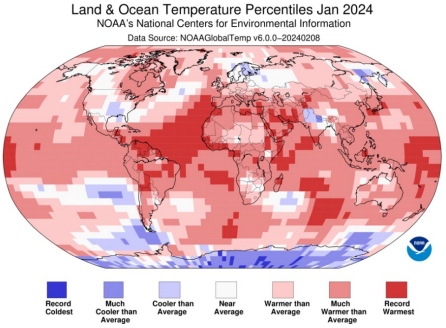
Here is what we wrote in our Feb 18, 2024, Energy Tidbits memo, "*On Thursday, we tweeted [LINK] "Here's key reason why global #LNG & #NatGas prices went down in Jan. 9th warmest Jan in Asia. 19th warmest Jan in EU. 20th warmest Jan in North America. Unfortunately, weak prices in late winter lead to stalled prices thru spring shoulder season. Thx @NOAA #OOTT." And [LINK] "Forgot to add the punch line - Jan 2024 was the hottest Jan for the world on record. #NatGas #OOTT #LNG." On Wednesday, NOAA posted its global climate recap for Jan, and it was another of the hottest winter month on record. And importantly, it was warm around the world. The 9th warmest in Asia. The 19th warmest in Europe. The 20th warmest in North America. Below are the NOAA graphics for Jan.*"

Figure 19: Selected Significant Climate Anomalies and Events: Jan 2024



Source: NOAA

Figure 20: Land & Ocean Temperature Percentiles for Jan 2024



Source: NOAA

Natural Gas: Is there stronger underlying fundamental global demand for natural gas

Stronger underlying gas demand?

Our above post on NOAA's global climate recap for Jan also asked "*Stronger underlying fundamental #NatGas demand than expected?? Solid HH TTF #NatGas & JKM #LNG prices considering it was a very warm Jan everywhere. Low EU wind generation in normal seasonally higher period, AI data center growth, BUT it was hottest Jan on record."* Natural gas prices in US and Europe and global LNG prices have been stronger than most expected, especially with NOAA's temperature Jan recap that it was the 3rd warmest January in Asia

and in Europe, and the 10th warmest in North America. Note North America seems inconsistent with NOAA's estimate that it was the 33rd coldest Jan in the US in 131 years. And it was the cold Jan that drove up HH prices. But our tweet asks if underlying global natural gas demand stronger than expected. We know it was low wind generation in Europe in Jan relative to seasonal expectations and data centers have been growing in Europe, but it just doesn't feel like enough to overcome the 3rd warmest Jan in both Europe and Asia. So we have to wonder if there is more underlying fundamental global demand for natural gas. Please note out later point in the memo on our longstanding concern that a Russia/Ukraine peace deal could lead to resumption of Russian natural gas pipeline exports to Europe and that would be a big negative to TTF and LNG prices.

Natural Gas: TotalEnergies supplying long-term 0.05 bcf/d LNG deal with GSPC

TotalEnergies / GSPC sign LT LNG supply deal

On Wednesday, TotalEnergies announced that the company signed a long-term LNG sales agreement with the Gujarat State Petroleum Corporation (GSPC) for 0.05 bcf/d for 10-years, starting in 2026 [LINK]. The LNG will be delivered in six cargoes a year to India's west coast, primarily servicing GSPC's industrial customers. The press release said "*During a ceremony held in New Delhi on the sidelines of the India Energy Week, TotalEnergies and the Gujarat State Petroleum Corporation Limited (GSPC), a state-owned oil and gas company, announced the signing of a long-term Sale and Purchase Agreement (SPA) for a term of ten years starting in 2026. Under this agreement, TotalEnergies will supply GSPC with 400,000 tons of liquefied natural gas (LNG), amounting to six cargoes per year.*" Senior Vice President LNG of TotalEnergies, Gregory Joffroy, said "*We are delighted to have been chosen by GSPC to supply them with LNG in India. This new deal underscores TotalEnergies' leadership in the LNG domain and commitment to India's energy transition and security of supply*". Our Supplemental Documents Package includes the TotalEnergies press release.

Natural Gas: ADNOC signs long-term 0.16 bcf/d LNG deal with Indian Oil

ADNOC / Indian Oil sign LT LNG supply deal

On Wednesday, ADNOC announced that the company signed a long-term LNG sales agreement with Indian Oil Corp. for 0.16 bcf/d for 14-years, with first deliveries to begin in 2026 [LINK]. The fuel will be supplied from ADNOC Gas' Das Island facility, which has production capacity of 0.79 bcf/d and is the world's third largest operating LNG plant. The press release said "*ADNOC Gas has signed a 14-year sales and purchase agreement with Indian Oil Corporation Ltd. for the export of up to 1.2 million mt/year of LNG to the state-owned Indian company, with first deliveries scheduled to start in 2026, ADNOC Gas announced Feb. 12, which coincides with the India Energy Week 2025.*" The CEO of ADNOC, Faema Al Nuaimi, said "*As a reliable and responsible supplier of lower-carbon gas, ADNOC Gas looks forward to supporting India's plans to make gas 15% of its primary energy basket by 2030*". Our Supplemental Documents Package includes the ADNOC press release.

There have been 28.22 bcf/d of long-term LNG supply deals since July 1, 2021

It's been a busy last five years of long-term LNG deals and, even though high-profile calls, such as the IEA are for peak natural gas consumption by 2030, buyers continue to lock up long-term LNG supply. This 5-year big wave of LNG deals started in July 2021, and we highlighted this in our July 14, 2021, 8-pg "*Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support for Brownfield LNG FIDs*". We continue to update that table, which now shows 28.22 bcf/d of long-term LNG deals since July 1, 2021. 64% of the deals have

been by Asian LNG buyers. Note in our non-Asian LNG deals, major LNG players (i.e. Chevron, Shell, etc.) are buying for their LNG portfolio supply. China has been particularly active in this space, accounting for 43% of all Asian LNG buyers in long term contracts since July 1, 2021. Below is our updated table of Asian and European LNG buyers new long-term supply deals since July 1, 2021.

Figure 21: Long-Term LNG Buyer Deals Since July 1, 2021

Long-Term LNG Buyer Deals Since July 1, 2021

Date	Buyer	Seller	Country Buyer / Seller	Volume (bcf/d)	Duration Years	Start	End
Asian LNG Deals							
Jul 7, 2021	CNOOC	Petronas	China / Canada	0.30	10.0	2022	2032
Jul 9, 2021	CPC	QatarEnergy	Taiwan / Qatar	0.16	15.0	2022	2037
Jul 9, 2021	Guangzhou Gas	BP	China / US	0.13	12.0	2022	2034
Jul 12, 2021	Korea Gas	QatarEnergy	Korea / Qatar	0.25	20.0	2025	2045
Sep 29, 2021	CNOOC	QatarEnergy	China / Qatar	0.50	15.0	2022	2037
Oct 7, 2021	Shenzhen	BP	China / US	0.04	10.0	2023	2032
Oct 11, 2021	ENN	Cheniere	China / US	0.12	13.0	2022	2035
Nov 4, 2021	Unipec	Venture Global LNG	China / US	0.46	20.0	2023	2043
Nov 4, 2021	Sinopec	Venture Global LNG	China / US	0.53	20.0	2023	2043
Nov 5, 2021	Sinochem	Cheniere	China / US	0.12	17.5	2022	2040
Nov 22, 2021	Foran	Cheniere	China / US	0.04	20.0	2023	2043
Dec 6, 2021	Guangdong Energy	QatarEnergy	China / Qatar	0.13	10.0	2024	2034
Dec 8, 2021	S&T International	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 10, 2021	Suntien Green Energy	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 15, 2021	SPIC Guangdong	BP	China / US	0.03	10.0	2023	2033
Dec 20, 2021	CNOOC Gas & Power	Venture Global LNG	China / US	0.26	20.0	2023	2043
Dec 29, 2021	Foran	BP	China / US	0.01	10.0	2023	2032
Jan 11, 2022	ENN	Novatek	China / Russia	0.08	11.0	2024	2035
Jan 11, 2022	Zhejiang Energy	Novatek	China / Russia	0.13	15.0	2024	2039
Feb 4, 2022	CNPC	Gazprom	China / Russia	0.98	30.0	2023	2053
Mar 24, 2022	Guangdong Energy	NextDecade	China / US	0.20	20.0	2026	2046
Mar 29, 2022	ENN	Energy Transfer	China / US	0.36	20.0	2026	2046
Apr 1, 2022	Guangzhou Gas	Mexico Pacific Ltd	China / Mexico	0.26	20.0	n.a.	n.a.
Apr 6, 2022	ENN	NextDecade	China / US	0.26	20.0	2026	2026
Apr 22, 2022	Kogas	BP	Korea / US	0.20	18.0	2025	2043
May 2, 2022	Gunvor Singapore Pte	Energy Transfer LNG	Singapore / US	0.26	20.0	2026	2046
May 3, 2022	SK Gas Trading LLC	Energy Transfer LNG	Korea / US	0.05	18.0	2026	2042
May 10, 2022	Exxon Asia Pacific	Venture Global LNG	Singapore / US	0.26	n.a.	n.a.	n.a.
May 11, 2022	Petronas LNG	Venture Global LNG	Malaysia / US	0.13	20.0	n.a.	n.a.
May 24, 2022	Hanwha Energy	TotalEnergies	Korea / France	0.08	15.0	2024	2039
May 25, 2022	POSCO International	Cheniere	Korea / US	0.05	20.0	2026	2036
June 5, 2022	China Gas Holdings	Energy Transfer	China / US	0.09	25.0	2026	2051
Jul 5, 2022	China Gas Holdings	NextDecade	China / US	0.13	20.0	2027	2047
Jul 20, 2022	PetroChina	Cheniere	China / US	0.24	24.0	2026	2050
Jul 26, 2022	PTT Global	Cheniere	Thailand / US	0.13	20.0	2026	2046
Jul 27, 2022	Exxon Asia Pacific	NextDecade	Singapore / US	0.13	20.0	2026	2046
Sep 2, 2022	Woodside Singapore	Commonwealth	Singapore / US	0.33	20.0	2026	2046
Nov 21, 2022	Sinopec	QatarEnergy	China / Qatar	0.53	27.0	2026	2053
Dec 26, 2022	INPEX	Venture Global LNG	Japan / US	0.13	20.0	n.a.	n.a.
Dec 27, 2022	JERA	Oman LNG	Japan / Oman	0.11	10.0	2025	2035
Jan 19, 2023	ITOCHU	NextDecade	Japan / US	0.13	15.0	n.a.	n.a.
Feb 7, 2023	Exxon Asia Pacific	Mexico Pacific Ltd	Singapore / Mexico	0.26	20.0	n.a.	n.a.
Feb 23, 2023	China Gas Holdings	Venture Global LNG	China / US	0.26	20.0	n.a.	n.a.
Mar 6, 2023	Gunvor Singapore Pte	Chesapeake Energy	Singapore / US	0.26	15.0	2027	2042
Apr 28, 2023	JERA	Venture Global LNG	Japan / US	0.13	20.0	n.a.	n.a.
May 16, 2023	KOSPO	Cheniere	Korea / US	0.05	19.0	2027	2046
Jun 1, 2023	Bangladesh Oil	QatarEnergy	Bangladesh / Qatar	0.24	15.0	2026	2031
Jun 21, 2023	Petro Bangle	Oman	Bangladesh / Oman	0.20	10.0	2026	2036
Jun 21, 2023	CNPC	QatarEnergy	China / Qatar	0.53	27.0	2027	2054
Jun 26, 2023	ENN LNG	Cheniere	Singapore / US	0.24	20.0	2026	2046
Jul 5, 2023	Zhejiang Energy	Mexico Pacific Ltd	China / Mexico	0.13	20.0	2027	2047
Aug 8, 2023	LNG Japan	Woodside	Japan / Australia	0.12	10.0	2026	2036
Sep 7, 2023	Petrochina	ADNOC	China / UAE	n.a.	n.a.	n.a.	n.a.
Nov 2, 2023	Foran	Cheniere	China / US	0.12	20.0	n.a.	n.a.
Nov 4, 2023	Sinopec	QatarEnergy	China / Qatar	0.39	27.0	2026	2053
Nov 27, 2023	Gunvor Singapore Pte	Delfin Midstream	Singapore / US	0.10	15.0	n.a.	n.a.
Dec 20, 2023	ENN	ADNOC	Singapore / UAE	0.13	15.0	2028	2043
Jan 5, 2024	GAIL	Vitol	India / Singapore	0.13	10.0	2026	2036
Jan 8, 2024	Shell	Ksi Lisims LNG	Singapore / Canada	0.26	20.0	2027	2047
Jan 16, 2024	ExxonMobil	Mexico Pacific Ltd	Singapore / Mexico	0.16	20.0	2024	2044
Jan 29, 2024	Excelerate	QatarEnergy	Bangladesh / Qatar	0.13	15.0	2026	2041
Jan 30, 2024	ADNOC	GAIL India	UAE / India	0.07	10.0	2024	2034
Feb 6, 2024	Petronet LNG	QatarEnergy	India / Qatar	0.99	20.0	2028	2048
Feb 19,2024	Deepak Fertilisers	Equinor	India / Norway	0.09	15.0	2026	2041
Feb 28, 2024	Kogas	Woodside	Korea / Australia	0.07	10.5	2026	2037
Feb 29, 2024	Sembcorp	TotalEnergies	Singapore / France	0.11	16.0	2027	2043
Apr 29, 2024	Kogas	BP	Korea / Singapore	0.12	11.0	2026	2037
May 26, 2024	AMNS	Shell	India / Canada	0.05	10.0	2027	2037
May 28, 2024	Hokkaido	Santos	Japan / Australia	0.05	10.0	2027	2037
Jun 4, 2024	IOCL	TotalEnergies	India / France	0.11	10.0	2026	2036
Jun 5, 2024	CPC	QatarEnergy	Taiwan / Qatar	0.53	27.0	2025	2052
Jul 11, 2024	CPC	Woodside	Taiwan / Australia	0.79	10.0	2024	2034
Aug 6, 2024	Osaka Gas	ADNOC	Japan / UAE	0.11	10.0	2028	2038
Aug 26, 2024	KPC	QatarEnergy	Kuwait / Qatar	0.39	15.0	2025	2040
Aug 26, 2024	POSCO International	Mexico Pacific Ltd	Korea / Mexico	0.09	20.0	2027	2047
Sep 2, 2024	BOTAS	Shell	Turkey / UAE	0.39	10.0	2027	2037
Sep 2, 2024	Indian Oil	ADNOC	India / UAE	0.13	15.0	2028	2043
Sep 17, 2024	JERA	Woodside Energy	JERA / Woodside	0.05	10.0	2026	2036
Sep 18, 2024	BOTAS	TotalEnergies	Turkey / France	0.15	10.0	2027	2037
Nov 4, 2024	Sinopec	TotalEnergies	China / France	0.26	15.0	2028	2043
Nov 4, 2024	Sinopec	TotalEnergies	China / France	0.26	15.0	2028	2043
Nov 14, 2024	GAIL	ADNOC	India / UAE	0.07	10.0	2026	2036
Dec 2, 2024	Shell	QatarEnergy	China / Qatar	0.39	n.a.	2025	n.a.
Dec 5, 2024	Petronas	ADNOC	Malaysia / UAE	0.13	15.0	2028	2043
Dec 5, 2024	Chevron	Sembcorp	Singapore / Singapore	0.08	10.0	2028	2038
Dec 5, 2024	Shizuoka Gas	Santos	Japan / Australia	0.05	12.0	2032	2044
Feb 12, 2025	GSPC	TotalEnergies	India/ France	0.05	10.0	2026	2036
Feb 12, 2025	Indian Oil	ADNOC	India/ UAE	0.18	14.0	2026	2040
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				**18.19**			

Long-Term LNG Buyer Deals Since July 1, 2021

Date	Buyer	Seller	Country Buyer / Seller	Volume (bcf/d)	Duration Years	Start	End
Non-Asian LNG Deals							
Jul 28, 2021	PGNiG	Venture Global LNG	Poland / US	0.26	20.0	2023	2043
Nov 12, 2021	Engie	Cheniere	France / US	0.11	20.0	2021	2041
Mar 7, 2022	Shell	Venture Global LNG	US / US	0.26	20.0	2024	2044
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
May 2, 2022	Engie	NextDecade	France / US	0.23	15.0	2026	2041
May 17, 2022	PGNiG	Sempra Infrastructure	Poland / US	0.40	20.0	n.a.	n.a.
May 25, 2022	RWE Supply & Trading	Sempra Infrastructure	Germany / US	0.30	15.0	n.a.	n.a.
Jun 9, 2022	Equinor	Cheniere	Norway / US	0.23	15.0	2026	2041
Jun 21, 2022	EnBW	Venture Global LNG	Germany / US	0.20	20.0	2026	2046
Jun 22, 2022	INEOS Energy	Sempra Infrastructure	UK / US	0.21	20.0	2027	2047
Jun 22, 2022	Chevron	Venture Global LNG	US / US	0.26	20.0	n.a.	n.a.
Jun 22, 2022	Chevron	Cheniere	US / US	0.26	15.0	2027	2042
Jul 12, 2022	Shell	Mexico Pacific Ltd	US / Mexico	0.34	20.0	2026	2046
Jul 13, 2022	Vitol	Delfin Midstream	US / US	0.07	15.0	n.a.	n.a.
Aug 9, 2022	Centrica	Delfin Midstream	UK / US	0.13	15.0	2026	2041
Aug 24, 2022	Shell	Energy Transfer	US / US	0.28	20.0	2026	2046
Oct 6, 2022	EnBW	Venture Global LNG	Germany / US	0.26	20.0	2022	2042
Dec 6, 2022	ENGIE	Sempra Infrastructure	France / US	0.12	15.0	n.a.	n.a.
Dec 20, 2022	Galp	NextDecade	Portugal / US	0.13	20.0	n.a.	n.a.
Dec 20, 2022	Shell	Oman LNG	UK/Oman	0.11	10.0	2025	2035
Jan 25, 2023	PKN ORLEN	Sempra Infrastructure	EU//US	0.13	20.0	2027	2047
Jan 30, 2023	BOTAS	Oman	Turkey / Oman	0.13	10.0	2025	2035
Mar 27, 2023	Shell	Mexico Pacific Ltd	UK / Mexico	0.15	20.0	2026	2046
Apr 24, 2023	Hartree Partners LP	Delfin Midstream	US / US	0.08	20.0	n.a.	n.a.
Jun 21, 2023	Equinor	Cheniere	Norway / US	0.23	15.0	2027	2042
Jun 22, 2023	SEFE	Venture Global LNG	EU//US	0.30	20.0	2026	2046
Jul 14, 2023	ONEE (Morocco)	Shell	Africa/US	0.05	12.0	2024	2036
Jul 18, 2023	IOCL	Adnoc	India/UAE	0.16	14.0	2026	2040
Jul 28, 2023	OMV	BP	Austira/UK	0.13	10.0	2026	2036
Aug 4, 2023	ConocoPhillips	Mexico Pacific Ltd	US/Mexico	0.29	20.0	2025	2045
Aug 22, 2023	BASF	Cheniere	Germany / US	0.10	17.0	2026	2043
Aug 30, 2023	Shell	Oman LNG	US / Oman	0.11	10.0	2025	2035
Oct 11, 2023	TotalEnergies	QatarEnergy	France / Qatar	0.46	27.0	2026	2053
Oct 18, 2023	Shell	QatarEnergy	Netherlands / Qata	0.46	27.0	2026	2053
Oct 23, 2023	ENI	QatarEnergy	Italy / Qatar	0.13	27.0	2026	2053
Oct 31, 2023	Vitol	Chesapeake Energy	Sweden / US	0.13	15.0	2028	2043
Nov 29, 2023	OMV	Cheniere	Netherlands / US	0.11	15.0	2029	2044
Dec 5, 2023	Woodside Energy	Mexico Pacific Ltd	Australia / Mexico	0.17	20.0	2024	2044
Mar 18, 2024	SEFE	ADNOC	Germany / UAE	0.13	20.0	2024	2044
Apr 17, 2024	Shell	Oman LNG	US / Oman	0.21	10.0	2025	2035
Apr 22, 2024	TotalEnergies	Oman LNG	France / Oman	0.11	10.0	2025	2035
May 8, 2024	EnBW	ADNOC	Germany / UAE	0.08	15.0	2028	2043
June 13, 2024	Saudi Aramco	NextDecade	Saudi Arabia / US	0.16	20.0	2028	2048
June 26, 2024	Saudi Aramco	Sempra Infrastructure	Saudi Arabia / US	0.66	20.0	2029	2049
July 23, 2024	Fluxys	ConocoPhillips	Belgium / US	0.10	18.0	2027	2045
Aug 5 2024	Galp	Cheniere	Portugal / US	0.07	20.0	2030	2050
Sep 19 2024	Uniper	ConocoPhillips	Germany / US	0.10	10.0	2026	2036
Sep 19 2024	Glencore	Commonwealth LNG	Switzerland / US	0.26	20.0	2026	2046
Sep 23 2024	SEFE	ConocoPhillips	US / European	0.09	10.0	2025	2035
Dec 16 2024	EnBW	ADNOC	Germany / UAE	0.08	15.0	2028	2043
Dec 20 2024	Energy Transfer	Chevron	US / US	0.26	20.0	2026	2046
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				**10.03**			

Total New Long Term LNG Contracts since Jul/21	**28.22**

*Excludes Asian short term/spot deals
*on Dec 20, 2021 CNOOC agreed to buy an additional 0.13 bcf/d from Venture Global for an undisclosed shorter period
Source: Bloomberg, Company Reports
Prepared by SAF Group https://safgroup.ca/news-insights/

Source: SAF

Natural Gas: India January natural gas production flat MoM, down -2.3% YoY

India natural gas production

India domestic natural gas production peaked in 2010 at 4.60 bcf/d, and then ultimately declined to average 2.80 bcf/d in 2020-2021. India returned to modest growth in 2021/2022, which was followed by several months of relatively flat production, but modest production growth returned in 2023. Recently, it has been back from flat to modestly down in 2024. On Thursday, India's Petroleum Planning and Analysis Cell (PPAC) released their monthly report for January's natural gas and oil statistics [LINK]. India's domestic natural gas production for January was 3.49 bcf/d, which was flat MoM from December. On a YoY basis, natural gas production was down -2.3% from 3.58 bcf/d in January 2024. Our Supplemental Documents package includes excerpts from the PPAC monthly.

Natural Gas: India LNG imports up +0.8% MoM to 3.47 bcf/d in January, up +26.4% YoY

India LNG imports

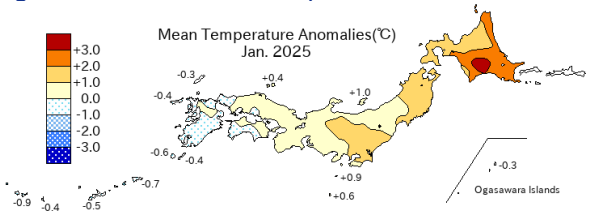
For the past several years, India has increased LNG imports to meet increasing natural gas consumption as domestic natural gas production has been mostly flat or decreased. But the overriding factor for India tends to be price; if price is high, India pulls back on LNG imports and will normally turn to coal. If prices are low, like was seen in 2024 for the most part, then India tends to pick up spot cargoes. India is an opportunistic LNG spot buyer. On Friday, India's Petroleum Planning and Analysis Cell (PPAC) released their monthly report for January's natural gas and oil statistics [LINK]. Over the past 3 years, India's LNG imports have declined from a 2020-2021 peak of 3.84 bcf/d in Oct 2020 to just 2.85 bcf/d in Jan 2021 and lower in 2022. January LNG imports were 3.47 bcf/d, which is up +0.8% MoM from 3.44 bcf/d in December. LNG imports are now up +26.4% YoY from 2.75 bcf/d in January 2024. Our Supplemental Documents package includes excerpts from the PPAC monthly.

Natural Gas: Japan warmer than normal temperatures in Jan

Japan January temperatures

On Friday, the Japan Meteorological Agency posted its climate recap for January [LINK], which was a warmer than normal January. The JMA reported that mean temperatures for northern Japan were significantly above normal with eastern Japan also having above normal temperatures. Conversely, the South saw temperatures below normal due to the regions being more affected by influx of cold air from Eurasia. Slightly below normal temperatures are positive but generally not a huge driver for electricity demand. The JMA wrote, "*Monthly mean temperatures were significantly above normal in northern Japan and above normal in eastern Japan, because the regions were less affected by cold air. On the other hand, monthly mean temperatures were below normal in Okinawa/Amami because the region was well affected by cold air associated with high-pressure systems extending from Eurasia.*" Below is a temperature map of Japan for January.

Figure 22: JMA Mean Temperature Anomalies January 2025



Source: Japan Meteorological Agency

Natural Gas: JMA forecasts colder than normal temps to end Feb

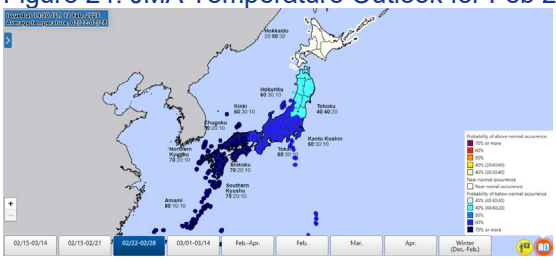
JMA temperature forecast for next 30 days

Feb is not a huge month for winter temperature driven electricity/natural gas demand but it's been a cold Feb in Japan and that does bring some increased temperature driven demand. The JMA next 30-day temperature forecast continues to call for colder than normal temperatures for Japan in the for Feb. On Thursday, the Japan Meteorological Agency (JMA) updated its temperature forecast for the next 30 days, Feb 15 – Mar 14, in Japan [LINK]. There is no JMA commentary on the forecasts. JMA is expecting colder than normal temperatures for the next two weeks throughout the southern and middle prefectures, while the northern prefectures are forecasted for normal to slightly above normal temperatures. We checked AccuWeather for Tokyo and for the period there are forecasted daily highs in the ~11C range but overnight lows around ~1C. This has the potential to drive some increased electricity and natural gas demand in the evenings and overnight. Below are the JMA temperature forecast maps for Feb 15-21 and Feb 22-28.

Figure 23: JMA Temperature Outlook for Feb 15-21

Source: Japan Meteorological Agency

Figure 24: JMA Temperature Outlook for Feb 22-28



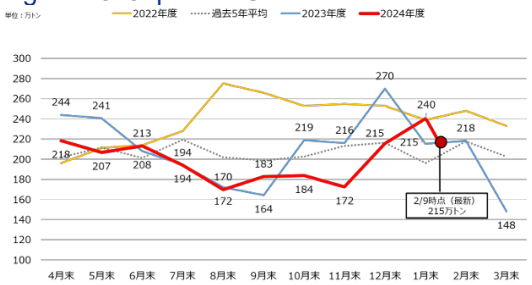
Source: Japan Meteorological Agency

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

Japan LNG stocks down WoW

Japan's LNG stocks are down WoW, up YoY, and are down when compared to the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on February 9 were at 103.3 bcf, down -10.8% WoW from 115.7 bcf on February 2, and down -1.4% from a year ago. Stocks are down compared to the 5-year average of 104.7 bcf. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 25: Japan LNG Stocks



Source: METI

Natural Gas: Big downside risk to TTF & LNG if Russia pipeline gas returns to Europe

Big risk to prices if Russia pipeline gas comes back

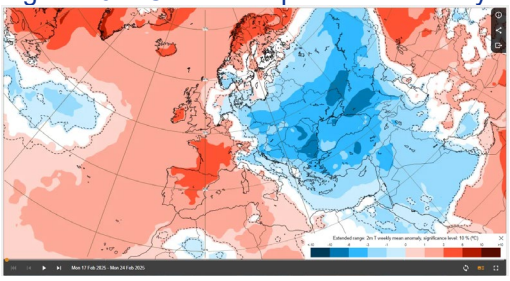
For the past few years we warned on how Germany cutting off Russian pipeline natural gas would hammer their industrial economy, thought they were the weak link to give so have been surprised Germany has hung in solidly with Ukraine and Europe on no Russian pipeline natural gas. And that a return of Russian pipeline natural gas would be a big negative to TTF and LNG prices. It's hard not to see the last few days reporting and not believe Trump and Putin have likely agreed on the outline of a deal and that there is big momentum to papering such deal to happen soon ie. within weeks and not months. Our view has been that we see the return of Russian pipeline natural gas and, pre-Trump, that would likely include some sort of allocation of revenues to help in some sort of Ukraine rebuild support. However, with Trump, we aren't convinced that Russia will be forced to contribute out of natural gas to some sort of rebuild. Regardless of the natural gas money split, we still expect a Russia/Ukraine peace deal will see the return of Russian pipeline natural gas to Europe as it will reduce energy costs and Europe needs all the help it can get to stimulate their economy. And if Russian pipeline natural gas comes back, it's a big negative to TTF and LNG prices.

Natural Gas: Some cold temps for next 4 days but then turning warmer in Europe

ECMWF Europe temperature forecasts

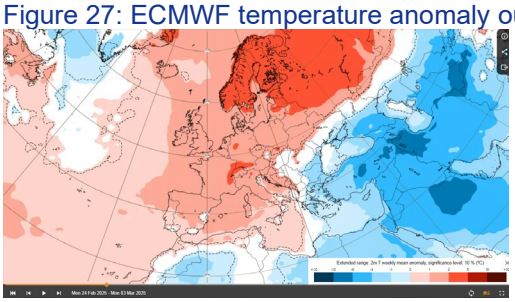
This will be the last very near-term Europe temperature forecast item for a couple months as it is moving into shoulder season and that means no significant weather driven natural gas demand and temperature variations won't have any significant impact on weather driven natural gas demand. Yesterday, we posted [LINK] "*It's Feb 15 so past normal peak winter temperature demand for #NatGas. @ECMWF updated outlook. Some temp demand for next week with colder than normal temp east of Italy/Germany. But then turn warmer than normal across most of western Europe. #OOTT.*" We checked AccuWeather temperature forecasts for Berlin and Vienna and the call for the next four days is overnight lows below 0c and daytime higher in the very low single digits Celsius. But then for the Feb 24-Mar 3 week, ECMWF calls for warmer than normal temps across most of Europe. Our post included ECMWF's Saturday updated near-term temperatures forecasts.

Figure 26: ECMWF temperature anomaly outlook for Feb 17-24



Source: ECMWF

Figure 27: ECMWF temperature anomaly outlook for Feb 24-Mar3



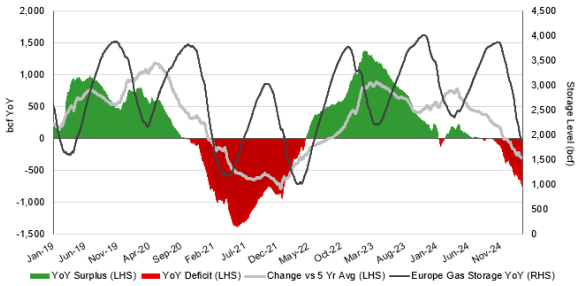
Source: ECMWF

Natural Gas: Europe storage down -4.1% WoW to 45.9% full, down -20.3% YoY

There have been gas storage draws in Europe, which has been increased by unseasonably low wind generation in many parts of Europe on multiple days in Jan and Feb. This has also led to very high coal generation to fill the low wind generation gap. And as a reminder, the YoY comparison is to a hot Feb 2024 in Europe. The good news for Europe was that storage was fairly full to start the winter. It would have been full if Europe had not cut back on LNG imports in Q2 and Q3 for fear of being full early. But with some colder temperatures and low wind in Dec, storage draws picked up. This week, on Feb 13, Europe storage was down -4.1% WoW to 45.9% vs 50.0% on Feb 6. Recall that winter 2023/24 was one of the hottest winters in Europe. Storage is now down -20.3% from last year's levels of 66.2% on Feb 13, 2024, and down against the 5-year average of 54.7%. Below is our graph of European Gas Storage Level.

Europe gas storage at 45.9%

Figure 28: European Gas Storage Level



Source: Bloomberg, SAF

Ukraine storage is currently 4.9% of total Europe gas storage volume

We have been breaking out Ukraine gas storage levels since the Mar/Apr Russian bombing of the Ukraine natural gas storage, which only impacted some above ground natural gas infrastructure. But it also reminded of the risk to Europe gas storage from Russia attacks. We broke out the Ukraine storage data from the above Europe data we monitor weekly from the GIE AGSI website [LINK], and, on Feb 13, natural gas in Ukraine storage was at 8.6% of its total capacity, down compared to 10.3% of its total capacity on Feb 6. Last winter, Ukraine storage as of Nov 1, 2023, was at 39.4%. Right now, Ukraine makes up about 4.9% 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 29: Ukraine Gas Storage Facilities as of June 2023

Source: Bloomberg

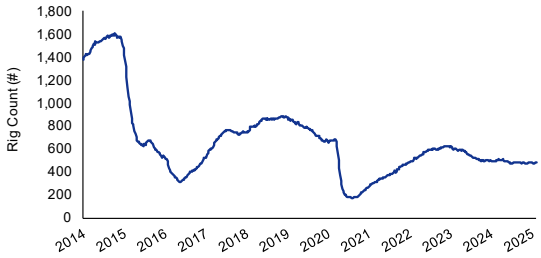
Oil: U.S. oil rigs up +1 rig WoW, continue recovery from previous cold impact

US oil rigs up WoW

Based on the reporting from comments by US oil and gas companies, we aren't expecting any big ramp up in rigs as the companies stay in their capital disciplined mode. On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Note Baker Hughes no longer breaks out the basin changes by oil vs gas rig type. (ii) Total U.S. oil rigs were up +1 rig WoW as of Feb 14. Total U.S. oil rigs are now down -16 oil rigs YoY to 481 rigs, which is

above the recent low seen in the week of Jan 24. (iii) Note we can see the basin changes but not by type of rig; the WoW changes at the major basins were as follows: Granite Wash +1 rig WoW, Permian +1 rig WoW, and Williston -1 rig WoW. (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 -36 rigs YoY to 582 rigs including US oil rigs down -16 rigs YoY to 481 rigs. And for the key basins, the Permian is -8 rigs YoY, Haynesville is -13 rigs YoY, DJ-Niobrara is -6 rigs YoY, Marcellus is -8 rigs YoY, Granite Wash is +4 rigs YoY, Eagle Ford is -4 rigs YoY, Barnett is +1 rig YoY, Ardmore Woodford is +1 rig YoY, Arkoma Woodford is -1 rig YoY, Cana Woodford is -2 rigs YoY, Mississippian is -2 rigs YoY, Utica is -2 rigs YoY, and Williston is -1 rig YoY. (v) U.S. gas rigs were up +1 rig WoW to 101 gas rigs and down -20 rigs YoY. We believe U.S. gas rigs will need to increase over the next several months as more U.S. LNG capacity comes onstream in 2025. Lastly, U.S. miscellaneous rigs were flat WoW at 6 rigs and +3 rigs YoY.

Figure 30: Baker Hughes Total US Oil Rigs



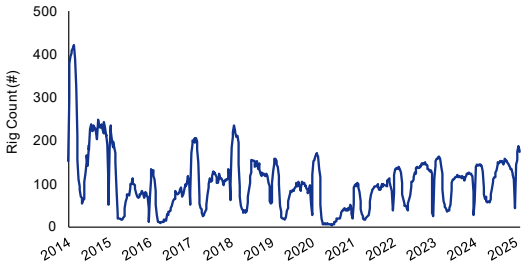
Source: Baker Hughes

Oil: Total Cdn oil rigs down -3 WoW on Friday, winter peak drilling looks over

Cdn oil rigs down -3 WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. This week's total oil and gas rig count was down -4 rigs WoW to 245 rigs on Feb 14 and are up +11 rigs YoY. This is not a surprise that Cdn rigs were down WoW, as it looks like winter season peak drilling has passed, and steeper declines should be coming in the next two weeks. Drilling declines started earlier this year, as we saw the peak at the end of Jan. We looked back over the past decade and the winter peak is normally around mid-Feb. Oil rigs are down -3 rigs WoW at 174, and up +30 rigs YoY. Gas rigs are down -1 rig WoW at 71 rigs and are down -19 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 31: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes

US weekly oil production

Oil: US weekly oil production up +0.016 mmb/d WoW to 13.494 mmb/d, up YoY

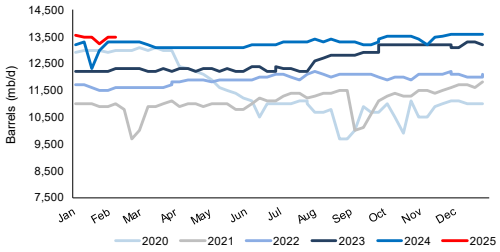
The EIA estimated US oil supply was slightly up after last week's recovery from the cold snap that hit the southern US at the end of Jan. We don't place as much emphasis on the EIA weekly oil supply estimates as others do because we recognize the near impossibility for anyone to post an accurate estimate 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. This week's estimate came in up +0.016 mmb/d WoW to 13.494 mmb/d for the week ending Feb 7. We had warned that the very cold temperatures (and even some snow) in the areas like Oklahoma and Texas was likely to temporarily impact production for the end of Jan. This is up +0.194 mmb/d YoY from 13.300 mmb/d for the week ended Feb 9, 2024.This week, the EIA's production estimates were up +0.016 mmb/d WoW to 13.494 mmb/d for the week ended Feb 7. Alaska production figures were flat WoW at 0.435 mmb/d, and the Lower 48 were up +0.016 to 13.059 mmb/d from 13.042 mmb/d last week. Below is a table of the EIA's weekly oil production estimates.

Figure 32: 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-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	01/24	13,240	01/31	13,478
2025-Feb	02/07	13,494								

Source: EIA

Figure 33: EIA's Estimated Weekly US Oil Production



Source: EIA

Oil: North Dakota Dec oil production down MoM to 1.191 mmb/d

North Dakota oil production

On Friday, the North Dakota Industrial Commission posted its monthly Director's Cut, which includes December's oil and natural gas production data as well as other data such as well completions, DUCs, number of producing wells, etc. [LINK]. North Dakota's oil production in Dec was up MoM -0.030 mmb/d to 1.191 mmb/d from 1.221 mmb/d in Nov and is down -6.6% YoY against 1.275 mmb/d in Dec 2023. The MoM decrease was expected as Dec production had been affected by winter colder temperatures. Dec well completions were down to 89 compared to Nov's 98 wells completed. Our Supplemental Documents package includes excerpts from the NDIC Director's Cut.

Figure 34: North Dakota Oil Production by Month

(b/d)	2018	2019	2020	2021	2022	2023	2024	YoY%
Jan	1,179,564	1,403,808	1,430,511	1,147,377	1,088,613	1,060,708	1,102,976	4.0%
Feb	1,175,316	1,335,591	1,451,681	1,083,554	1,089,091	1,158,837	1,252,102	8.0%
Mar	1,162,134	1,391,760	1,430,107	1,108,906	1,122,640	1,122,693	1,229,536	9.5%
Apr	1,225,391	1,392,485	1,221,019	1,123,166	900,597	1,133,435	1,243,678	9.7%
May	1,246,355	1,394,648	859,362	1,128,042	1,059,060	1,135,009	1,198,086	5.6%
June	1,227,320	1,425,230	893,591	1,133,498	1,096,783	1,166,604	1,186,394	1.7%
July	1,269,290	1,445,934	1,042,081	1,076,594	1,072,632	1,180,611	1,169,499	-0.9%
Aug	1,292,505	1,480,475	1,165,371	1,107,359	1,075,307	1,223,617	1,179,728	-3.6%
Sept	1,359,282	1,443,980	1,223,107	1,114,020	1,121,063	1,280,052	1,199,764	-6.3%
Oct	1,392,369	1,517,936	1,231,048	1,111,910	1,121,754	1,254,475	1,177,992	-6.1%
Nov	1,375,803	1,519,037	1,227,138	1,158,622	1,098,389	1,278,909	1,221,073	-4.5%
Dec	1,402,741	1,476,777	1,191,429	1,144,999	957,864	1,274,869	1,191,174	-6.6%

Source: NDIC, NDPA

Cold snap in Feb has shut in about 40-70,000 b/d b/d for about a week or so

We listened to the 22-min Feb 2025 Director's Cut monthly webcast on the North Dakota NDIC Director's Cut and NDPA Monthly report [LINK]. One of the question asked was how much North Dakota oil was shut-in due to the cold snap. NDIC Director Nathan Anderson said it was about 40-70,000 b/d. We assume he was just talking about oil and there would be a separate volume of shut-in natural gas. Then later in the Q&A, North Dakota Pipeline Authority Director Jusin Kringstad said the shut-in is typically for about a week.

Oil: North Dakota crude by rail down MoM to 126,763 b/d in December

North Dakota CBR

On Friday, the North Dakota Pipeline Authority posted its Monthly Update "*February 2025 Production & Transportation*" [LINK] containing December's data. Please note that we always go to the backup excel sheets from the North Dakota Pipeline Authority that provide low and high estimates for Williston crude by rail exports. While the NDPA's chart shows a high and

low estimate by month, we always take the midpoint when summarizing the update. In the backup excel, the NDPA estimates crude by rail in December from a low of 111,763 b/d and a high of 141,763 b/d for an average of 126,763 b/d. There was an upward revision to November figures, which previously had an average of 135,034 b/d, but is now 137,677 b/d. The NDPA did not comment on the MoM changes. Below is a chart showing the crude by rail volumes since 2014. Our Supplemental Documents package includes excerpts from the NDPA Monthly Update.

Figure 35: Estimated North Dakota Rail Export Volumes

Source: NDPA

Shale/tight oil production

Oil: US shale/tight oil production down below 8.9 mmb/d, likely weather related

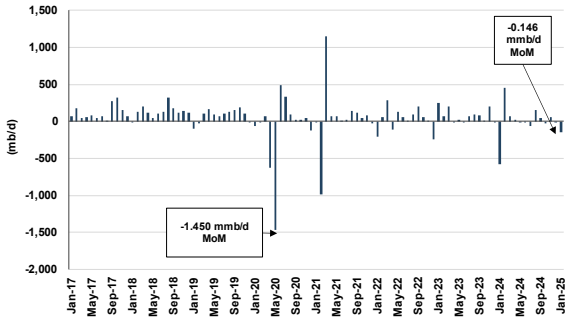
As mentioned earlier, the EIA combined its prior shale/tight oil information with its STEO, which was released on Tuesday [LINK]. (i) The EIA stopped forecasting future oil production by region and has updated their data for oil production from the major shale/tight oil and gas plays up to January. (ii) Note that the EIA revises their data for shale/tight oil production back to 2021 from January's STEO, and we have adjusted our table to reflect the updated data. However, the revisions for the last 12 months were mostly small increases with the average revision for the past 12 months being up +0.055 mmb/d. (iii) Shale/tight oil production in January was 8.865 mmb/d, down -1.6% MoM from December and up +6.4% YoY. The last time it was below 8.9 mmb/d was in July 2024 and was over 9.0 mmb/d in Nov and Dec. The EIA doesn't provide any explanation but we suspect that there was a winter weather impact on the Jan numbers. (iv) Note that shale/tight oil is approx. ~70% of total US production, so whatever the trends are for shale/tight oil are normally the trends for US oil in total. Below is our table of running STEO estimates of shale/tight oil production and our graph of MoM changes in major shale/tight oil production.

Figure 36: US Major Shale/Tight Oil Production

Thousand b/d	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Jan MoM%	Jan YoY%
Austin Chalk + Eagle Ford	1,056	1,016	1,070	1,091	1,134	1,165	1,155	1,129	1,173	1,181	1,180	1,179	1,178	1,178	0.0%	15.9%
Bakken	1,288	1,116	1,270	1,249	1,261	1,219	1,206	1,189	1,205	1,225	1,206	1,247	1,243	1,238	-0.4%	10.9%
Mississippian + Woodford	223	199	213	208	212	206	199	196	201	212	197	195	192	188	-2.1%	-5.5%
Niobrara	491	447	473	475	455	459	445	441	448	441	441	441	441	441	0.0%	-1.3%
Permian	5,506	5,238	5,439	5,508	5,493	5,482	5,515	5,518	5,579	5,579	5,591	5,601	5,597	5,469	-2.3%	4.4%
Rest of US L48	337	312	314	314	316	331	331	320	340	348	349	354	360	351	-2.5%	12.5%
Total	8,901	8,328	8,779	8,845	8,871	8,862	8,851	8,793	8,946	8,986	8,964	9,017	9,011	8,865	-1.6%	6.4%

Source: EIA, SAF

Figure 37: MoM Changes in US Major Shale/Tight Oil Production



Source: EIA, SAF

Oil: EIA DUCs flat MoM in January, DUCs down -10.7% YoY

DUCs flat MoM in January

We recognize that there are more longer, more productive wells being drilled but we still see a key risk to how much US oil production can sustainably grow in 2024 and 2025 is the need to increase rig counts (not have less frac spreads) to replenish the inventory of drilled uncompleted wells at higher levels and the challenge for oilfield services to add capacity to increase frac spreads and completions. The EIA's STEO [LINK] now contains the estimate of drilled uncompleted wells. (i) The EIA estimates DUCs were flat MoM, and down -10.7% YoY in January at 5,258 DUCs. Note that the EIA may revise their data for DUC wells back to 2021 in each STEO, and each month we adjust our table to reflect any updated data. (ii) To put the DUC figures in perspective, there were 9,757 DUCs in the height of the Covid slowdown in June 2020 when US production was approx. 10.6 mmb/d, 6,474 DUCs in January 2022 when US production was approx. 11.4 mmb/d, 6,261 DUCs in January 2023 when US production was approx. 12.6 mmb/d, 5,940 in January 2024 when US production was approx. 12.6 mmb/d, and now 5,258 DUCs in January 2025 with US production approx. 13.3 mmb/d. (iv) The largest YoY January DUCs declines were Eagle Ford down -45.6% YoY, Bakken down -16.8% YoY, and Permian down -13.9%. (v) Note that shale/tight oil is approx. ~70% of total US production, so whatever the trends are for shale/tight oil are normally the trends for US oil in total. Below is our table of running DUC Wells.

Figure 38: Estimated Drilled Uncomplete Wells in 2024/25

DUCs	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Jan MoM%	Jan YoY%
Appalachia region	813	829	834	830	825	823	816	802	795	784	774	766	758	753	-0.7%	-9.2%
Bakken region	392	424	427	428	415	388	378	369	359	350	341	333	326	319	-2.1%	-16.8%
Eagle Ford region	542	506	470	439	410	386	372	344	330	312	306	301	295	292	-2.0%	-45.6%
Haynesville region	751	761	763	761	749	742	742	746	744	742	740	739	741	742	0.3%	-1.3%
Permian region	1,031	1,024	993	1,004	951	932	951	873	855	858	862	874	888	900	1.6%	-13.9%
Rest of Lower 48 States, excluding GOM	2,367	2,396	2,400	2,396	2,394	2,386	2,346	2,319	2,291	2,277	2,270	2,261	2,255	2,252	-0.3%	-4.7%
Total	5,896	5,940	5,887	5,858	5,744	5,657	5,605	5,453	5,374	5,323	5,293	5,274	5,263	5,258	-0.2%	-10.7%

Source: EIA, SAF

Oil: EIA Feb STEO forecasts for 2025 US oil production is unchanged

EIA STEO US oil production

On Tuesday, the EIA released its Short-Term Energy Outlook for February 2025 [LINK], which included an immaterial decrease to its 2024 and a small increase to its 2025 oil production forecasts. (i) The February 2025 STEO forecasts for 2024 were unchanged and slightly increased for 2025 US oil production estimates vs the January STEO, which was

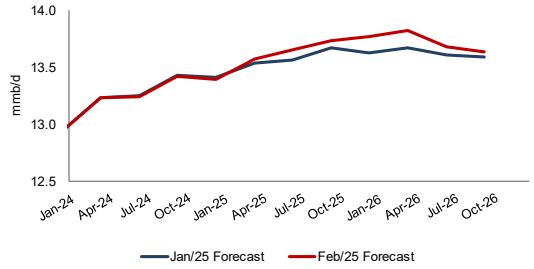
immaterially changed from December. (ii) The February STEO forecast for 2024 was unchanged at 13.21 mmb/d from the January STEO. The only revision was in Q4/24, which was down -0.01 mmb/d to 13.42 mmb/d. (iii) The EIA forecasts US oil production of 13.59 mmb/d for 2025, which is an increase of +0.04 mmb/d from the January STEO. The revisions by quarter were Q1/25 down -0.01 mmb/d to 13.40 mmb/d, Q2/25 up +0.03 mmb/d to 13.57 mmb/d, Q3/25 up +0.09 mmb/d to 13.65 mmb/d, and Q4/25 +0.07 mmb/d to 13.74 mmb/d. Below is our EIA STEO forecast comparison by month.

Figure 39: EIA STEO Oil Production Forecasts by Month

(million b/d)	Q1/24	Q2/24	Q3/24	Q4/24	2024	Q1/25	Q2/25	Q3/25	Q4/25	2025	Q1/26	Q2/26	Q3/26	Q4/26	2026
Feb-25	12.94	13.23	13.25	13.42	13.21	13.40	13.57	13.65	13.74	13.59	13.77	13.82	13.68	13.63	13.73
Jan-25	12.94	13.23	13.25	13.43	13.21	13.41	13.54	13.56	13.67	13.55	13.63	13.67	13.61	13.59	13.63
Dec-24	12.94	13.23	13.25	13.53	13.23	13.44	13.51	13.55	13.58	13.52					
Nov-24	12.94	13.23	13.27	13.47	13.23	13.46	13.53	13.54	13.60	13.53					
Oct-24	12.94	13.23	13.27	13.45	13.22	13.46	13.53	13.54	13.64	13.54					
Sep-24	12.94	13.22	13.38	13.47	13.25	13.45	13.60	13.73	13.89	13.67					
Aug-24	12.94	13.20	13.33	13.44	13.23	13.46	13.66	13.76	13.90	13.69					
July-24	12.94	13.21	13.32	13.10	13.25	13.52	13.72	13.84	13.98	13.77					
June-24	12.94	13.17	13.33	13.50	13.24	13.51	13.68	13.76	13.88	13.71					
May-24	12.96	13.10	13.25	13.50	13.20	13.55	13.73	13.76	13.87	13.73					
Apr-24	12.84	13.13	13.32	13.54	13.21	13.56	13.72	13.74	13.86	13.72					
Mar-24	12.91	13.13	13.25	13.47	13.19	13.49	13.66	13.68	13.78	13.65					
Feb-24	13.03	13.12	13.06	13.18	13.10	13.37	13.46	13.50	13.64	13.49					
Jan-24	13.27	13.22	13.15	13.21	13.21	13.36	13.44	13.43	13.53	13.44					
Dec-23	13.09	13.07	13.07	13.23	13.11										
Nov-23	13.06	13.08	13.11	13.35	13.15										
Oct-23	13.07	13.02	13.07	13.31	13.12										
Sep-23	13.03	13.09	13.15	13.36	13.16										
Aug-23	12.98	13.01	13.08	13.27	13.09										
Jul-23	12.67	12.71	12.88	13.13	12.85										
Jun-23	12.69	12.63	12.76	13.00	12.77										
May-23	12.63	12.58	12.68	12.85	12.69										
Apr-23	12.69	12.71	12.77	12.83	12.75										
Mar-23	12.58	12.58	12.64	12.71	12.63										
Feb-23	12.63	12.62	12.65	12.70	12.65										
Jan-23	12.63	12.72	12.86	13.03	12.81										

Source: EIA STEO

Figure 40: Estimated US Crude Oil Productions by Forecast Month



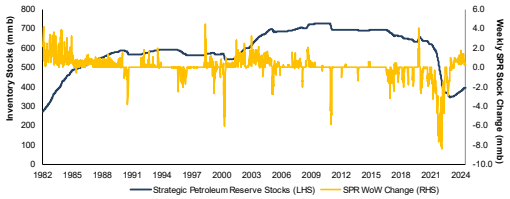
Source: EIA STEO

US SPR reserves

Oil: US SPR less commercial reserve deficit widens, now -32.547 mmb

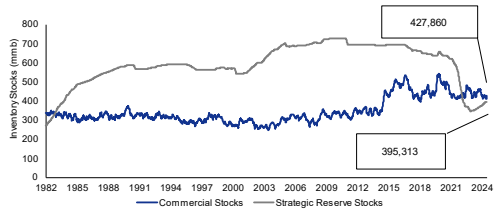
The SPR will be increasingly on the watch with Trump's stated plan to fill the SPR to the brim. The US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sep 16, 2022, week. This week, we saw a build on the SPR side and a build on the commercial side. The EIA's weekly oil data for Feb 7 [LINK] saw the SPR reserves increase +0.249 mmb WoW to 395.313 mmb, while commercial crude oil reserves increased +4.070 mmb to 427.860 mmb. There is now a -32.547 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 41: Strategic Petroleum Reserve Stocks and SPR WoW Change



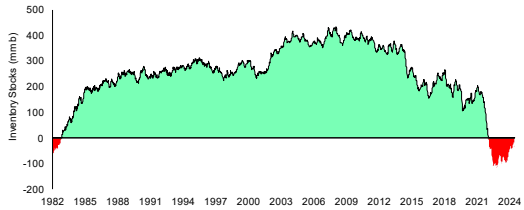
Source: EIA

Figure 42: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 43: US Oil Inventories: SPR Less Commercial



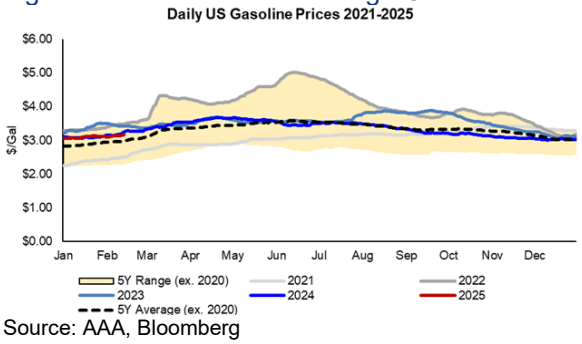
Source: EIA

US gasoline prices

Oil: AAA US national average gas price +$0.02 WoW, California +$0.26 WoW on Feb 15

Yesterday, we posted [LINK] "*AAA National average gasoline prices +$0.02 WoW to $3.16 on Feb 15, +$0.09 MoM & -$0.12 YoY. Another big WoW increase in California average prices at +$0.26 WoW to $4.84, +$0.45 MoM & +$0.20 YoY. Key factor is continued unplanned Martinez refinery down. Thx @AAAnews #OOTT."* Yesterday, AAA reported that US national average prices were $3.16 on Feb 15, which was +$0.02 WoW, +$0.09 MoM and -$0.12 YoY. The big news the last couple weeks was California gas prices up big again this week post the recent unplanned Martinez refinery being down. Yesterday, AAA also reported California average gasoline prices were $4.84 on Feb 15, which was +$0.26 WoW, +$0.45 MoM and +$0.20 YoY. Below is our graph of Bloomberg's National Average weekly gasoline prices.

Figure 44: AAA National Average Gasoline Prices



Source: AAA, Bloomberg

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

As we remind also on crack spreads and WCS less WTI differentials, there are normally seasonal trends. There are always unforeseen item that can impact the seasonal trends. But, on Thursday, AAA reminded that the seasonal trend for US gasoline prices is to move for the next few months. This shows up in our above US gasoline price graphs. AAA posted [LINK] "*Right on Cue: Seasonal Trends Nudge Gas Prices Higher. As spring approaches, refineries are beginning their transition to summer blend fuel, which often results in higher prices this time of year. This week, gas prices rose by a few cents, bringing the national average to $3.16 per gallon. Routine seasonal maintenance and an offline refinery in Northern California are putting additional strain on supply. These factors are pushing gas prices up, which means consumers may see higher prices at the pump as warmer months approach.*"

Oil: Crack spreads -$0.10 WoW to $21.96 on Feb 14, WTI -$0.26 WoW to $70.74

Crack spreads closed at $21.96

On Friday, we posted [LINK] "*321 crack spreads -$0.10 WoW to $21.96 on Feb 14. WTI -$0.26 WoW to $70.740. Cracks normally start their seasonal move up in mid Feb thru June for refineries to crank up processing for summer peak gasoline/jet fuel demand. Thx @business #OOTT.*" Crack spreads were -$0.10 WoW to $21.96 on Feb 14 and WTI was -$0.26 WoW to $70.74. It was a pretty calm week for both with no abnormal events. Overall, WTI continues weak driven by Trump's continued push on Saudi Arabia and OPEC to bring down the price of oil. He keeps pushing for lower oil prices. Our post noted that this mid-Feb is normally the time when crack spreads begin their seasonal move up was refineries move to process more oil for peak summer gasoline and jet fuel season. We have been highlighting that, for the past several months, for the most part WTI has been driven more by global factors and not crack spreads. Crack spreads $21.96 is well above the typical pre-Covid $15-20 range and in line with the normal seasonal move up in crack spreads. Crack spreads of $21.96 on Feb 14 followed $22.06 on Feb 7, $18.74 on Jan 31, $17.73 on Jan 24, $17.94 on Jan 17, $16.47 on Jan 10, $16.48 on Jan 3, $16.05 on Dec 27, $16.44 on Dec 20, $16.53 on Dec 13, $15.95 on Dec 6, $15.72 on Nov 29, $17.09 on Nov 22, and $17.99 on Nov 15.

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 $21.96 on Feb 14.

Figure 45: Cushing 321 Crack Spread & WTI Feb 14, 2015 to Feb 14, 2025

Source: Bloomberg

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

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

Figure 46: Cushing 321 Crack Spread – Seasonality to Feb 14, 2025 close

Source: Bloomberg

Oil: Surely Trump's Energy Dominance Committee say don't tariff Cdn oil & gas?

Trump's National Energy Dominance Committee

Earlier this morning, we posted [LINK] *"Winners/Losers from Trump Energy Dominance Council"*, which included "*Opening for council to formally advise Trump don't put tariffs on Cdn #Oil #NatGas #Uranium #Electicity "provide to the President a review of markets most critical to power American homes, cars, and factories with reliable, abundant, and affordable energy."* One of the to-do's for the Committee is to give Trump a review of markets critical cars with reliable affordable energy. Surely the Committee, headed by former North Dakota governor Burkum and secondly by former Liberty Energy CEO Wright, will highlight adding tariffs on Cdn oil, especially to US Midwest refineries, will only increase the price of gasoline, diesel, etc. We look at this Committee's mandate as setting up the reason for Trump to reconsider tariffs on oil and natural gas.

Oil: API still making case that Trump should not tariff Cdn oil

API pushes for no tariff on Cdn oil

Still a couple weeks to go before the 30 day pause on Trump's tariffs on Cdn oil and natural gas. We still don't think it is a guarantee that Trump will tariff Cdn oil given that the refineries in the Midwest and Rocky Mountains are reliant on Cdn oil that is imported via pipelines and the volumes and API/H2S quality of Cdn oil cannot be physically transported to these refineries to replace the Cdn oil. The major oil industry association in the US is the American Petroleum Institute (API) and the API keeps making the case to the Trump Administration of their Feb 1, 2025 position statement – there should be a full exclusion of Cdn oil imports from tariffs as it is needed for US refineries. Our post included a brief Bloomberg report that API CEO Sommers was still making the case for this exemption. On Friday, we posted [LINK] "*.@APIenergy CEO Sommers still making case that Trump tariffs should NOT include on CAN and MEX oil. 👇 @CrowleyKev. Fits API 02/01/25 statement. See 👇below Jan 31 post. Midwest & Rocky Mountains refiners & Cdn #Oil shippers are captive buyers & captive sellers. #OOTT."* The API's position statement reminded "*The U.S. is by far the world's largest oil producer, but U.S. refineries—primarily in the Midwest—rely on Canadian crude to produce the gasoline, diesel and jet fuel that's critical for transportation, agriculture and American consumers.*" Our Supplemental Documents package includes the API Feb 1 position statement.

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."

100% of landlocked US refineries are captive buyers for Cdn oil

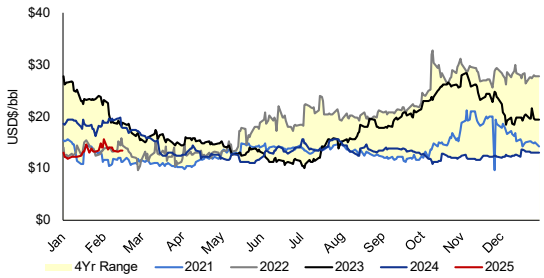
Our Friday post on API still making the case to exempt Cdn oil from tariffs forwarded our Jan 31, 2025 post [LINK] "Canada share of US #Oil imports. 100% of landlocked refineries in Midwest and Rocky Mountains. ie captive sellers/captive buyers. East Coast: CAN #2 at ~15%. Nigeria #1, LIbya #3. Gulf Coast: CAN #1 at 1/3, MEX #2, VEN #3, collectively ~75%. West Coast: CAN #1 at ~30%, Iraq #2. IF CAN get displaced on coasts, winner is Saudi & OPEC+ who have only real spare capacity. Thx @EIAgov. #OOTT." As noted above, the US Midwest really has no other replacement supply for its ~2.9 mmb/d of Cdn heavy/medium oil, which is 100% of Midwest refinery oil imports. Our Supplemental Documents package includes the EIA graphs of US oil imports by PADD in total and from Canada. Note these were as of Jan 31.

Oil: Cdn heavy oil differentials widened $0.35 WoW to $13.80 on Feb 14

WCS less WTI diffs narrow

The 30-day pause on Trump tariffs last week led to a return of WCS less WTI differentials to a more expected no-tariff range over the past few weeks. And normally, at this time of the year, we would be trotting out our normal commentary that Feb normally marks the start of the seasonal narrowing of WCS less WTI differentials as refineries in the US start to take more medium sour crude as they change their runs to produce more asphalt for the upcoming paving season. But the story for WCS less WTI differentials for the past three weeks was Trump's tariffs on Cdn oil and natural gas and then his 30-day pause on such tariffs. Trump's comments in prior weeks that he will be including Cdn oil and natural gas in the tariffs caused a big spike to the differential, but it then reverted back down two weeks ago after the U.S. decided to pause tariffs for 30 days. There have been relatively flat WCS less WTI differentials the last two weeks. WCS less WTI diffs widened $0.35 to close at $13.80 to close on Feb 14.

Figure 47: WCS less WTI differentials

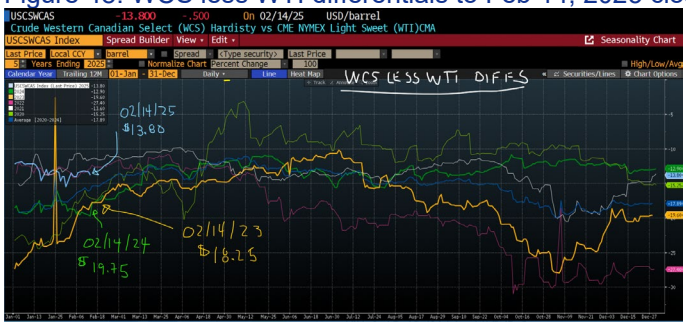


Source: Bloomberg

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

The start of TMX pipeline in June was the big expected positive for Cdn oil by keeping WCS less WTI differentials a lot narrower than what is normally seen in the normal seasonal widening in Sept/Oct/Nov. And it has continued to help in 2025 even in the face of Trump's on and pause tariffs. It is clear increasing tanker exports has worked and differentials did not widen as normally happens WCS less WTI differentials are approx. $5 narrower than seen over the past two years. However, we remind that WCS less WTI differentials normally seasonally narrow staring in Feb and continuing into June as refineries move into peak medium sour processing ahead of summer paving/asphalt season. This means the WCS less WTI gap vs last two years should start to narrow. On Friday, we posted [LINK] "*WCS-WTI diffs widened $0.35 WoW. Still way lower diffs since tanker exports increased with June TMX start. But gap is narrowing as this is the normal seasonal narrowing for WCS-WTI diffs as refiners look for more medium sour for paving season. WCS less WTI diffs: 02/14/25: $13.80. 02/14/24: $19.75/ 02/14/23: $18.25. 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. And it also shows how differentials normally narrow in Q1 every year as refiners start to process more medium/heavy as they look ahead to asphalt and paving season.

Figure 48: WCS less WTI differentials to Feb 14, 2025 close



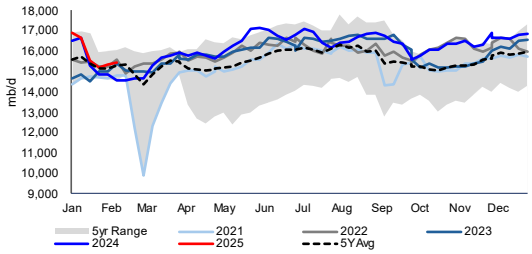
Source: Bloomberg

Oil: Refinery inputs up +0.082 mmb/d WoW to 15.431 mmb/d

Refinery inputs +0.082 mmb/d WoW

There was slight increase in refinery inputs, continuing from last week's turnaround after the very cold temperatures hit crude oil inputs into refineries.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/Feb for the normal winter turnarounds. And then leaving Feb is normally the start of the big seasonal increase in refinery throughput that continues into the summer. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended February 7 [LINK]. The EIA reported crude inputs to refineries were up +0.082 mmb/d this week to 15.431 mmb/d and are up +0.888 mmb/d YoY. Refinery utilization was up +0.5% WoW to 85.0% and was up +4.4% YoY.

Figure 49: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil: US net oil imports down -0.184 mmb/d WoW, oil imports were down -0.606 mmb/d

US net imports -0.184 mmb/d WoW

The EIA reported US "NET" imports down -0.184 mmb/d to 2.400 mmb/d for the week of February 7. US imports were down -0.606 mmb/d to 6.309 mmb/d, while exports were down -0.422 mmb/d to 3.909 mmb/d. Top 10 was down -0.544 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 down -0.145 mmb/d WoW to 3.918

mmb/d. We suspect weather has been a factor. Weekly imports have been higher for the past six months with the increased Cdn crude coming off TMX and hitting west coast US refineries. (ii) Saudi Arabia was down -0.108 mmb/d to 0.380 mmb/d. (iii) Mexico was up +0.333 mmb/d to 0.482 mmb/d. This is still well below historical levels. We don't have the historical data back that far. As a general rule, oil imports from Mexico have been significantly lower for the past years with the new Olmeca (Dos Bocas) refinery slowing ramping up in 2024 and Pemex's other refineries increasing crude oil processing. Assuming Pemex can ramp up Olmeca and continue to improve processing at the other refineries, Mexico should be able to process all its own oil production (ie. no exports) by the end of 2025. (iv) Colombia was flat at 0.150 mmb/d. (v) Iraq was down -0.053 mmb/d to 0.046 mmb/d. (vi) Ecuador was down -0.157 mmb/d to 0.000 mmb/d. (vii) Nigeria was down -0.065 mmb/d to 0.087 mmb/d.

Figure 50: US Weekly Preliminary Imports by Major Country

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

	Dec 13/24	Dec 20/24	Dec 27/24	Jan 3/25	Jan 10/25	Jan 17/25	Jan 24/25	Jan 31/25	Feb 7/25	WoW
Canada	4,339	3,919	3,733	4,422	3,985	4,329	3,716	4,063	3,918	-145
Saudi Arabia	81	368	87	69	333	256	471	488	380	-108
Venezuela	521	120	353	253	240	416	319	214	226	12
Mexico	526	397	551	392	362	244	521	149	482	333
Colombia	136	276	289	72	266	286	283	150	150	0
Iraq	209	229	212	180	152	218	336	99	46	-53
Ecuador	69	0	0	147	103	0	102	157	0	-157
Nigeria	56	237	71	192	38	156	92	152	87	-65
Brazil	178	248	280	233	129	138	114	254	217	-37
Libya	32	50	189	56	86	30	0	324	0	-324
Top 10	6,147	5,844	5,765	6,016	5,694	6,073	5,954	6,050	5,506	-544
Others	502	627	1,161	412	430	672	494	865	803	-62
Total US	**6,649**	**6,471**	**6,926**	**6,428**	**6,124**	**6,745**	**6,448**	**6,915**	**6,309**	-606

Source: EIA, SAF

Oil: Colombia oil production in December was 0.755 mmb/d, down -4.0% YoY

Colombia oil production

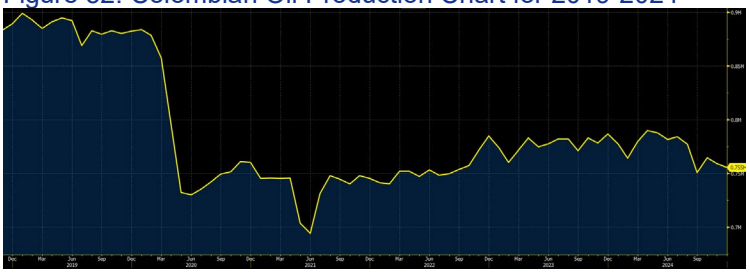
Ever since President Petro took office in Aug 2022, we have believed it would be very hard to see how Colombia oil production ever sustainably rallies anywhere back to 1.000 mmb/d or even 900,000 b/d. Despite stronger oil prices post Covid, Colombia oil production has been stuck below 800,000 b/d. On February 5, Hydrocarbons Colombia published Colombian production data for December [LINK]. Production in December was down -0.5% MoM to 0.755 mmb/d from 0.759 mmb/d in November. This puts December's production down -4.0% YoY vs 0.787 mmb/d in December 2023. Production is now -14.7% below pre-Covid levels of 0.886 mmb/d in 2019.

Figure 51: Colombian Oil Production

mmb/d	2016	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	0.986	0.860	0.860	0.899	0.884	0.745	0.740	0.774	0.778	0.5%
Feb	0.955	0.864	0.823	0.893	0.878	0.746	0.740	0.759	0.764	0.7%
Mar	0.917	0.804	0.856	0.885	0.857	0.745	0.751	0.771	0.780	1.1%
Apr	0.915	0.857	0.865	0.891	0.796	0.745	0.751	0.782	0.790	1.0%
May	0.904	0.851	0.866	0.895	0.732	0.703	0.746	0.774	0.788	1.7%
June	0.888	0.857	0.864	0.892	0.730	0.694	0.752	0.778	0.781	0.4%
July	0.843	0.856	0.860	0.869	0.735	0.731	0.748	0.782	0.784	0.3%
Aug	0.827	0.858	0.866	0.883	0.742	0.748	0.749	0.782	0.777	-0.7%
Sept	0.859	0.851	0.869	0.879	0.749	0.744	0.754	0.771	0.751	-2.7%
Oct	0.846	0.864	0.879	0.883	0.751	0.740	0.757	0.783	0.765	-2.4%
Nov	0.855	0.851	0.883	0.880	0.761	0.747	0.771	0.778	0.759	-2.4%
Dec	0.837	0.870	0.889	0.882	0.759	0.745	0.784	0.787	0.755	-4.0%

Source: Hydrocarbons Colombia, Bloomberg

Figure 52: Colombian Oil Production Chart for 2019-2024



Source: Bloomberg

Oil: Russian refineries processing falls WoW with ongoing drone attacks

Russian refineries crude oil runs

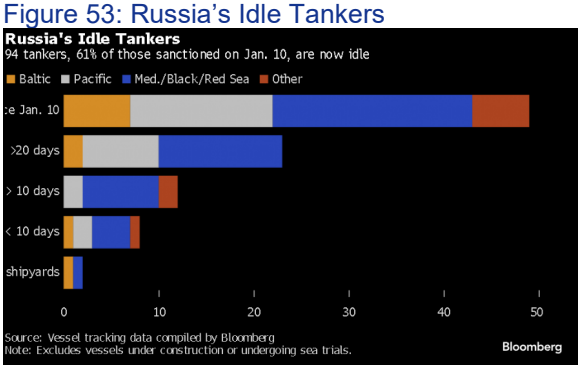
We have been surprised the last few weeks of how Russia has been able to keep its refineries going relatively well despite Ukraine drone attacks that even Russia local politicians admit hit the refineries. There were more drone hits on Russian refinery complexes last week, and Bloomberg's estimates show that Russia refinery processing have started to take a toll. Unfortunately, we never get any detail on how a refinery is impacted when a drone hits at a refinery. The previous week, the Lukoil's Volgograd refinery more than halved its processing rates after a drone attack, and the Ryazan refinery remains halted from the fires outbreaks that occurred at the end of Jan. This week, on Tuesday, it was reported that Russia's Saratov Region was hit by a Ukrainian strike resulting in a fire in the facility. Bloomberg reported that, during the period of Feb 1-5, Russia's average crude processing rate decreased to about 5.10 mmb/d, which is down more than -0.300 mmb/d below the level seen for most of Jan. Bloomberg wrote, "*Russian refineries processed about 5.1m b/d of crude in the first five days of February as Ukrainian drone attacks curbed throughput, according to a person with knowledge of industry data.*" Our Supplemental Documents package includes the Bloomberg article.

Oil: 94 sanctioned Russian tankers are now idle

Russia's increasing idle tankers

The reality is that oil has a way of working around sanctions but it takes time to figure out the new supply chain. The Biden Jan new sanctions are putting Russia in a work around position. And it has led to increasing floating oil storage and, at least for now, more idle Russian tankers and looking to be hitting its crude oil shipments. On Thursday, Bloomberg wrote "*About 60% — 94 out 154 — of the active tankers blacklisted by the outgoing Biden administration last month for their involvement in the Russian oil trade have stopped hauling barrels for Moscow or anyone else, ship-tracking data compiled by Bloomberg show. Another seven were under construction or undergoing sea trials*." Below is the Bloomberg graph.

Figure 53: Russia's Idle Tankers



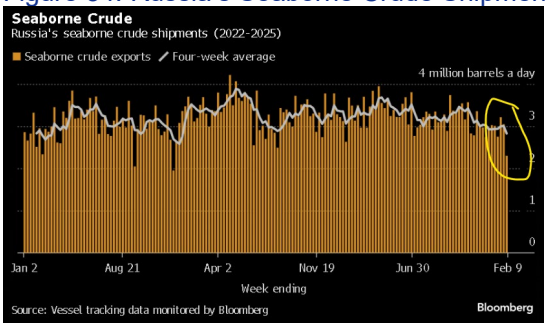
Source: Bloomberg

Russia's seaborne crude exports

Oil: Russia's seaborne crude shipments down ~25% WoW, lowest level in over 2 years

On Tuesday, we posted [LINK] "*Russia #Oil shipments getting hit by sanctions. Great charts 👇from @JleeEnergy. "Daily crude flows in the seven days to Feb. 9 fell by about 750,000 barrels, or 25%, from the previous week to 2.3 million." Feb 9 wk shipments to China down ~0.3 mmb/d vs Jan 5. #OOTT."* On Tuesday, Bloomberg released their weekly Russian Seaborne crude tracker, this week titled *"Russia's Sakhalin Island Oil Is Backing Up After US Sanctions"*. Russia exports have plunged, as the effects of the US sanctions have caused about 6.3 mmb of Russian Pacific crude to stay in floating storage. Crude shipments from Russia's Sakhalin Island have been the unable to discharge tankers and have been stationary for a least a week. The daily crude flows were down about -750,000 b/d WoW to 2.30 mmb/d for the week ended Feb 9. There was a five-day heavy storm at Kozmino that caused ships to move very slow and prevented them from waiting at the export berths for most of the week. The four-week average volumes were down by -180,000 b/d from the previous week's revised numbers to 2.83 mmb/d for the week of Feb 9. Bloomberg reported, "*Key Pacific grade ESPO is also being moved only on ships that haven't been blacklisted. But a five-day storm, with winds gusting at more than 40 miles an hour, severely hampered operations at the port last week. That cut Russia's total seaborne crude exports to their lowest in more than two years.*" Our Supplemental Documents package includes the Bloomberg report.

Figure 54: Russia's Seaborne Crude Shipments



Source: Bloomberg

Russia oil exports to China continue to decline since sanctions

Our above Tuesday post also noted "*Feb 9 wk shipments to China down ~0.3 mmb/d vs Jan 5*." We have been highlighting the reports in Jan that China had stopped some direct unloading of sanctioned Russian tanks and the Bloomberg Russian oil shipments to China show this is happening. Bloomberg's crude oil shipments from Russia to China have continued to report lower volumes of shipments since the US sanctions were implemented on Jan 10. Bloomberg highlighted the four-week average of Russia oil shipments to China were down to 0.99 mmb/d for the week ending Feb 9, a decline from last week's downwardly revised shipments of 1.05 mmb/d (was 1.07 mmb/d). In the beginning of the year, week ended Jan 5, shipments were at 1.320 mmb/d. Below are the Bloomberg table and graph that we attached to our post.

Figure 55: Russian Crude Shipments to China

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

4 weeks ending	China	India	Other	Unknown Asia	Other Unknown	Total
January 05, 2025	1.32	1.38	0.00	0.00	0.00	2.69
January 12, 2025	1.13	1.54	0.00	0.00	0.00	2.68
January 19, 2025	1.00	1.54	0.00	0.03	0.00	2.57
January 26, 2025	1.05	1.42	0.00	0.12	0.03	2.61
February 02, 2025	1.05	1.43	0.00	0.14	0.03	2.64
February 09, 2025	0.99	1.28	0.00	0.17	0.08	2.52

Source: Vessel tracking data compiled by Bloomberg — Bloomberg

Source: Bloomberg

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

Here is what we wrote in (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: OPEC MOMR no change to YoY oil demand growth in 2024, 2025 or 2026

OPEC Monthly Oil Market Report

On Wednesday, OPEC released its Feb Monthly Oil Market Report. (i) We thought the Feb MOMR was neutral or slightly positive vs the Jan MOMR. (ii) The most watched item in the IEA and OPEC monthly reports is what have they done with their oil demand growth forecasts. And for the OPEC Feb MOMR, there was no change to their oil demand growth forecasts in 2024, 2025 or 2026. (iii) On Wednesday, we posted [LINK] "*NO change in*

OPEC MOMR demand growth forecasts. OPEC +1.54 mmbd YoY in 2024, +1.45 mmbd YoY in 2025, +1.43 mmbd YoY in 2026. Reminder: less volatility/risk on demand forecasts with tighter range of forecasts for 2025. See 👇demand growth comp IEA Jan OMR +1.06 Aramco Jan +1.30. EIA Feb STEO +1.37. OPEC Feb MOMR +1.45. IEA OMR out tomorrow. #OOTT." The IEA OMR came out a day later and they increased their 2025 oil demand YoY growth from +1.06 mmb/d to +1.10 mmb/d. (iv) Non-DOC oil supply YoY growth was reduced for both 2025 and 2026. Feb MOMR forecasts non-DOC oil supply growth for 2025 of +1.01 mmb/d YoY to 54.21 mmb/d (was +1.10 mmb/d YoY to 54.28 mmb/d), and for 2026 of +1.00 mmb/d YoY to 55.21 mmb/d (was +1.10 mmb/d YoY to 55.38 mmb/d). (v) Global OECD oil + products stock still large deficit below the 2015-2019 average. Feb MOMR estimates Dec 31 at 172.1 mmb/d below the 2015-2019 average vs Jan MOMR had Nov 30 at 171.0 mmb below the 2015-2019 average. (vi) There was a minor increase in call on DOC crude in 2025 and in 2026. Our Supplemental Documents package includes excerpts from the OPEC Feb MOMR.

Feb MOMR forecasts draws on oil stocks in 2025 prior to DOC Apr 1 additions

The key table for what does OPEC's forecasts mean for oil markets is its forecast for "DoC supply/demand balance for 2025". This is a summary quarterly table for Feb MOMR's forecast for global oil demand less non-DoC liquids production less DoC NGL and non-conventionals production to give a call on DoC production compared to the current DoC production target. The balance represents either a draw on global oil stocks or how much oil DoC countries can add back to markets to balance. The purpose of the table is to show the available room for OPEC+ to add back barrels in 2025, which is scheduled to start on Apr 1, 2025. The Feb MOMR forecasts the draw on oil stocks/room for DoC to add more barrels at 1.0 mmb/d for Q1/25, 1. mmb/d for Q2/25, 2.0 mmb/d for Q3/25, and 2.7 mmb/d for Q4/25 based on DoC crude oil production of 40.9 mmb/d.

Figure 56: DoC supply/demand balance for 2025

Table 10 - 1: DoC supply/demand balance for 2025*, mb/d

	2024	1Q25	2Q25	3Q25	4Q25	2025	Change 2025/24
(a) World oil demand	103.7	104.2	104.3	105.5	106.7	105.2	1.4
Non-DoC liquids production	53.2	53.9	54.0	54.3	54.7	54.2	1.0
DoC NGL and non-conventionals	8.3	8.4	8.4	8.3	8.4	8.4	0.1
(b) Total non-DoC liquids production and DoC NGLs	61.5	62.3	62.4	62.6	63.1	62.6	1.1
Difference (a-b)	42.2	41.9	41.9	42.9	43.6	42.6	0.4
DoC crude oil production	40.9						
Balance	-1.4						

*Note: * 2024 = Estimate and 2025 = Forecast. Totals may not add up due to independent rounding.*

Source: OPEC.

Source: OPEC

OPEC highlights China gasoline/diesel consumption increases in 2025 & 2026

We have the same comment as we had in the Jan OMR, it seems like OPEC is trying to make sure markets see their view that they see growth in China road fuels consumption in 2025 and 2026. But OPEC notes that Dec 2024 was well below Dec 2023 driven by what they called strong baseline (Dec 2023) volumes. OPEC wrote *"Gasoline recorded the largest decline of 120 tb/d, y-o-y, down from a decline of 65 tb/d, y-o-y, observed in November, on the back of a strong baseline effect."* But,

looking ahead, OPEC sees modest growth in 2025 and 2026 in China road fuels consumption. OPEC wrote "*The road transportation sector is expected to remain healthy ….. is expected to bolster demand for gasoline and diesel, which is forecast to grow by 60 tb/d, y-o-y, respectively, in 2025."* And "*In 2026, economic activity in China is expected to improve further. Transportation activity is expected to remain healthy, while weakness in the construction sector is expected to subside. Combined with healthy petrochemical sector requirements, this is expected to support oil product demand growth of around 270 tb/d, y-o-y. In terms of products, strong petrochemical feedstock requirements are expected to lead to demand growth, with LPG /ethane and naphtha projected to grow by 85 tb/d, y-o-y, and 60 tb/d, y-o-y, respectively. Healthy air travel is expected to support jet/kerosene demand growth of around 80 tb/d, y-o-y. Furthermore, diesel, including transportation diesel and gasoline, are projected to expand by around 30 tb/d, y-o-y, respectively. The ´other products´ category is forecast to inch up by 16 tb/d, y-o-y. Only residual fuels are expected to contract."*

Oil: IEA Feb OMR, oil demand increased slightly, non-OPEC supply reduced slightly

IEA Oil Market Report

On Thursday, the IEA released its monthly Feb Oil Market Report. (i) We thought the numbers were slightly positive vs the Jan OMR as there was a minor increase in oil demand, non-OPEC supply forecast reduced slightly, and OECD oil stocks continue at low levels. (i) Early Thursday morning, we posted [LINK] "*Another IEA tweak higher in #Oil demand. IEA Feb OMR up to 103.998 mmb/d for 2025. if they had gone up another 0.002 mmb/d to 104.000 mmb/d, rounded YoY growth would have been +1.15 YoY and not +1.10 YoY. Also. IEA revised up 2023 ie. lowered YoY 2024 growth. See my table. Thx @business Kristian Siedenburg #OOTT".* (ii) Feb OMR forecasts oil demand +0.87 mmb/d YoY to 102.894 mmb/d in 2024 (was +0.94 mmb/d YoY to 102.901 mmb/d). The IEA noted they revised down their YoY growth for 2024 but they didn't note that they revised up 2023 oil demand, which had the effect of lowering the YoY 2024 demand growth. For 2025, Feb OMR forecasts oil demand +1.10 mmb/d YoY to 103.998 mmb/d (was +1.06 mmb/d YoY to 103.956 mmb/d). (iii) Feb OMR does not forecast peak oil demand yet with 2025 oil demand +1.10 mmb/d to 103.998 mmb/d. And this is up big from IEA's pre-Covid oil demand of 100.651 mmb/d in 2019. (iv) IEA warns that OPEC+ planned return of barrels starting April 1 are more than OPEC's expected demand growth, "*Fresh US sanctions on Russia and Iran roiled markets at the start of the year but they have yet to materially impact global oil supply. Iranian crude oil exports are only marginally lower while Russian flows, so far, continue largely unaffected. At the same time, non-OPEC+ oil supplies, led by the Americas, are set to expand by 1.4 mb/d this year – well above projected demand growth.*" (v) OECD stocks continued to decline below their five-year average. IEA wrote "*Global observed oil stocks fell 17.1 mb m-o-m to 7 647 mb in December, as crude oil stocks plunged by 63.5 mb and products stocks rose by 46.4 mb. OECD industry inventories continued to decline, by 26.1 mb to 2 737.2 mb, 91.1 mb below their five-year average."* (vi) IEA provided limited information on global crude oil stocks, following Jan OMR that warned of draws in Q1. Q1 is normally the period for global oil stocks to increase as oil demand is always a seasonally lower demand period relative to the preceding Q4. Feb OMR forecasts a draw similar to Jan and the Feb OMR highlighted "*Global observed oil stocks fell 17.1 mb m-o-m to 7 647 mb in December, as crude oil stocks plunged by 63.5 mb and products stocks rose by 46.4 mb. OECD industry inventories continued to decline, by 26.1 mb to 2 737.2 mb, 91.1 mb below their five-year average.*

Preliminary data show total global inventories falling a further 49.3 mb in January, led by a large crude stock draw in China." Our Supplemental Documents package includes the IEA release and Bloomberg reports.

What was missing from the IEA press release – negative messaging on oil

Similar to the change we saw in the IEA Jan OMR, we think one of the big positives from the IEA Feb OMR was that the IEA seemed to have moved away from their traditional negativity on oil. Rather, it seemed like the first time in years that they were letting the numbers speak for themselves and not just be negative for the sake of being negative on everything on oil. We believe this is due to the IEA having new US bosses, in particular new Energy Secretary Chris Wright, the former CEO of Liberty Energy who are one of the leading frack companies in the US. On Jan 15, we posted [LINK] "*Positive for #Oil.Is it new US boss, Trump designate oilman Chris Wright, or is the IEA less worried about #Oil demand, or some of both? Jan OMR release is missing normal highlighting negative comments on oil demand especially on China. Does this mean IEA won't be negative for the sake of being negative on oil ie. let the numbers speak for themself. Hopefully the release reflects the IEA tone in the paid report. Be positive for Oil tone and also positive for them if they go back to @NeilAtkinson58 days! #OOTT."* We don't have access to the full paid report so could compare the IEA commentary in the press releases. But our Jan 15 post included the Jan, Dec and Nov OMRs commentary and it is pretty clear the IEA has changed their tone. Our Dec 15, 2024 Energy Tidbits highlighted the Dec OMR and we noted "*The IEA messaging for December pivoted to be less extreme, and we think the numbers are fairly neutral when compared to the Nov OMR; we think this may be due to the upcoming Trump presidency. We note that their conclusions are not changed, rather they have toned down the messaging.*" The Jan OMR took it even further. We believe this is due to them having a new US boss, Chris Wright, who has the ability to call out any deliberate political messaging. Our Supplemental Documents package includes the IEA Jan, Dec and Nov commentary that shows this evolution.

Oil: Iran has no plans to shut down Strait of Hormuz if Iran oil exports continue

Iran on Strait of Hormuz

Oil markets ignored the warning from Iran last Sunday on what could hugely spike up oil prices – Iran said it could shut down the Strait of Hormuz if its oil exports were restricted. If the Strait of Hormuz was ever shut down, we would expect oil prices would immediately spike up $10 or $20 or who knows how much. Last Sunday afternoon, we posted [LINK] "*Iran no plans to shut down Strait of Hormuz as long as Iran oil exports continue. IRGC "We are militarily capable of closing the Hormuz Strait, but won't do that for now, as long as we are using the strait ourselves." @EIAgov, 20.9 mmbd or ~20% of world oil, condensate & petroleum products is shipped via Strait of Hormuz. Also 10 bcfd LNG. #OOTT."* Iran was responding to Trump's maixumum pressure on Iran and to cut its oil exports to zero. Tasnim (state media) reported on the comments by the IRGC Navy Chief, Alireza Tangsiri. Tangsiri reminded that Iran could close down the Strait of Hormuz if it wanted but didn't have any plans to do so as long as their oil exports weren't restricted. Ie. if US somehow shuts down Iran oil exports, then Iran would shut down the Strait of Hormuz. Tasnim wrote "*Asked about Iran's plans to retaliate the US' hostile actions, such as by closing the Hormuz Strait, he said any decision in this regard comes within the purview of top officials, while the naval forces will*

follow the orders. Highlighting the IRGC's conformity to the rules and orders issued by the commander-in-chief of the Iranian Armed Forces, the general said, "We are militarily capable of closing the Hormuz Strait, but won't do that for now, as long as we are using the strait ourselves." Our Supplemental Documents package incudes the Tasnim report. [LINK]

04/09/24: IRGC Tangsiri also said Iran could shut Strait of Hormuz if it wanted

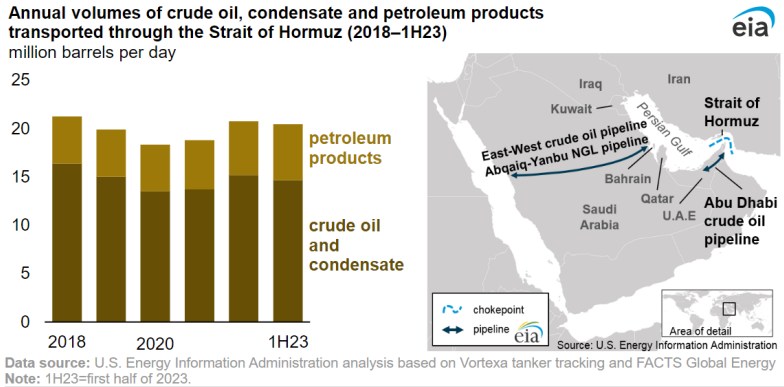
This is not the first time that IRGC Navy Commander Tangsiri warned Iran cold shut down the Strait of Hormuz if it wanted to do so. Here is what we wote in our Apr 14, 2024 Energy Tidbits memo. "*Iran reminds could shut Strait of Hormuz if it wanted. IRGC Iran's IRGC Navy Commander Admiral Alireza Tangsiri's April 9 interview had a number of Iran reminders/warnings. On Tuesday, we tweeted [LINK] "Worth a read: Iran IRGC navy comd interview. could shut Strait of Hormuz if they wanted. will be responding to bombing of consulate in Syria. warned neighbour countries with Israel relations - an attack on Iran better not start from there. Houthis make their own weapons. #OOTT." Tangsiri warned Iran could close the Strait of Hormuz if they want and that the Strait of Hormuz are "our waters". Tangsiri said " During talks with neighboring countries regarding the Strait of Hormuz, our message has always been that of peace and friendliness. Iran suffered under the oppression of a tyrant, so it revolted and offered martyrs in the quest for victory, but since then, we have been faced with the enmity of those same countries, as well as the United States and more. The US Army has now come to the Strait of Hormuz and the Persian Gulf, but they do not belong in our waters. We previously told our neighbors that the Persian Gulf and Oman's Sea are national concerns of both them and Iran and that Iran's security is theirs. We told them the West does not want this region to be stable or secure. The West considers these countries as a "milk cow", but when the milk runs out, as in oil and gas resources in the region, it would slaughter us. Therefore, we have always advocated for the security of the region, and have assured that we can host joint military exercises in the Strait, in collaboration with our brothers from the Persian Gulf's neighboring countries. We can maintain the region's peace and security. Our oil and gas terminals are close to those of the neighboring countries. If we really wanted to, we could close these waterways down."*

There are no workarounds to fully compensate for the Strait of Hormuz closure

The reason why the Strait of Hormuz is considered the most important chokepoint for oil and LNG is that there isn't a workaround, to the most part, if the Strait of Hormuz becomes closed. The Red Sea/Bab el Mandeb can be worked around, it just means a much longer voyage. Here is what we wrote in our Nov 26, 2023 Energy Tidbits memo. *"To dated, the market has been focused on the Strati of Hormuz risk as it is the most important world oil chokepoint. We have been more worried to date on interruptions via the Red Sea and Bab el Mandeb but have also been noting how the Strait of Hormuz is more significant to supply if any interruption. And we have been included the EIA's latest Strait of Hormuz blog, which is four years old. But on Tuesday, the EIA updated its Strait of Hormuz blog "The Strait of Hormuz is the world's most important oil transit chokepoint" [LINK]. "The Strait of Hormuz, located between Oman and Iran, connects the Persian Gulf with the Gulf of Oman and the Arabian Sea. The Strait of Hormuz is the world's most important oil chokepoint because large volumes of oil flow through the strait. In 2022, its oil flow averaged 21*

million barrels per day (b/d), or the equivalent of about 21% of global petroleum liquids consumption. In the first half of 2023, total oil flows through the Strait of Hormuz remained relatively flat compared with 2022 because increased flows of oil products partially offset declines in crude oil and condensate." "Between 2020 and 2022, volumes of crude oil, condensate, and petroleum products transiting the Strait of Hormuz rose by 2.4 million b/d as oil demand recovered after the economic downturn from the COVID-19 pandemic. In the first half of 2023, shipments of crude oil and condensates dropped because OPEC+ members implemented crude oil production cuts starting in November 2022. Flows through the Strait of Hormuz in 2022 and the first half of 2023 made up more than one-quarter of total global seaborne traded oil. In addition, around one-fifth of global liquefied natural gas trade also transited the Strait of Hormuz in 2022." Our Supplemental Documents package includes the EIA blog. "

Figure 57: Crude oil, Condensate & Petroleum Products Flows Thru Strait of Hormuz



Source: EIA

Figure 58: Volumes thru the Strait of Hormuz 2018-1H23

Volume of crude oil, condensate, and petroleum products transported through the Strait of Hormuz (2018–1H23)
million barrels per day

	2018	2019	2020	2021	2022	1H23
Total oil flows through Strait of Hormuz	**21.3**	**19.9**	**18.3**	**18.8**	**20.8**	**20.5**
Crude oil and condensate	16.4	15.0	13.5	13.7	15.2	14.7
Petroleum products	4.9	4.9	4.8	5.1	5.6	5.8
World maritime oil trade	**77.4**	**77.1**	**71.9**	**73.2**	**75.2**	**76.3**
World total petroleum and other liquids consumption	**100.1**	**100.9**	**91.6**	**97.1**	**99.6**	**100.3**
LNG flows through Strait of Hormuz (billion cubic feet per day)	**10.3**	**10.6**	**10.4**	**10.6**	**10.9**	**10.8**

Source: EIA

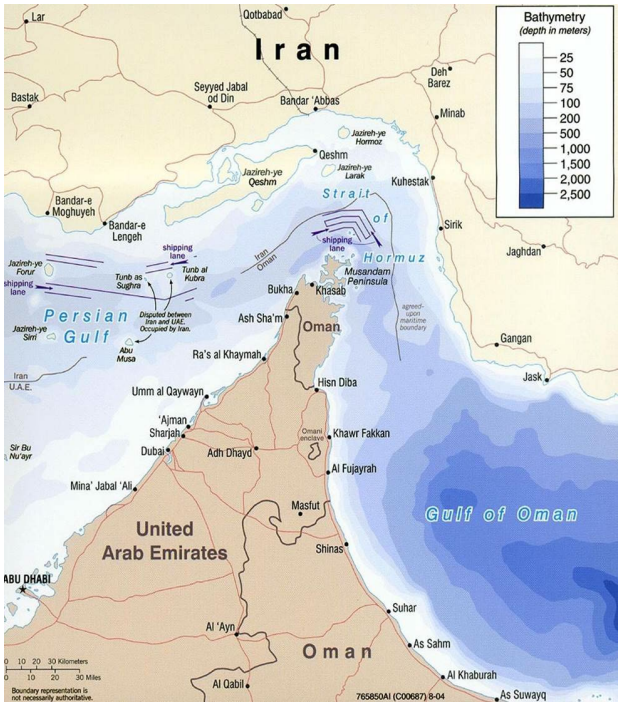
04/09/24: Iran Strait of Hormuz are "*our waters*", US says international waters,

There was one thing missing from Tangsiri's comments this week vs his comments on April 9, 2024. This week, Tangsiri did not remind that the Strait of Hormuz is in Iran waters. Here is what we wrote in our Apr 14, 2024 Energy Tidbits memo. "*Iran says Strait of Hormuz are "our waters", US says its international waters. IRGC Navy Commander made a point of calling the Strait of Hormuz "our waters". The US has never acknowledged that the Strait of Hormuz is Iran waters. Rather we have only ever see the US call the Strait of Hormuz as international waters. The US does not recognize Iran's claim to three small islands (Abu Mousa, Greater and Lesser Tunbs) that are right in the Strait of Hormuz. Whereas Iran has physical control and also claims territorial control. The Strait of Hormuz is located between Oman and Iran in the Persian Gulf, although Iran claims the Strait of Hormuz lies within Iranian territory due to its claim over the islands of Abu Mousa and the Greater and lesser Tunbs. These islands are strategically located at the west (north) side of the Strait of Hormuz and in theory provide support to Iran's territorial rights over part of the Strait of Hormuz. There is a long-standing dispute on the islands since the Nov 1971 Memorandum of Understanding signed between Iran and Great Britain. The MOU was signed by Great Britain since the UAE was not formally founded as a country until Dec 1971. UAE has claimed the islands as theirs from the start. The US and UK and others didn't make this an issue in the 70's because of their support for the Shah of Iran. But post the 1979 Iranian revolution, UAE has had strong support for their position. However, the UAE has not yet been successful in getting its claim to international courts."*

The significance of these islands is water depth for super tankers

Here is what we wrote in our April 26, 2020 Energy Tidbits memo. "*There is no dispute that the Strait of Hormuz is the most important oil transit chokepoint in the world. The logistical issue for tanker traffic comes because it is an extremely narrow traffic route at least for the greater water depths to allow ease of supertanker traffic. There are separate inbound and outbound shipping lanes plus a two-mile wide buffer zone. The below map [LINK] shows Abu Mousa, Greater and Lesser Tunbs and the water depths in the Strait of Hormuz*."

Figure 59: Strait of Hormuz – Abu Mousa, Greater and Lesser Tunbs



Source: Project/2000

Oil: Libya oil production of 1.409 mmb/d is above Aug 1 levels

Libya oil production at 1.409 mmb/d

On Friday, the Libya National Oil Corporation (NOC) posted [LINK] *"Production rates in oil fields Libya's crude oil production today reached 1,408,680 barrels per day, and condensate production reached 51,182 barrels. Gas production indicators recorded a value of 204,534 barrels of equivalent. Total production reached 1,664,396 barrels per day."* The NOC reported crude oil production of 1,408,680 b/d, amounting to total liquids production of 1,459,862 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, of 204,534 boe/d, and for total oil, condensate & natural gas production of 1,664,396 boe/d.

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

Here is what we wrote in our Jan 19, 2025 Energy Tidbits memo. "*Libya targets 1.6 mmb/d in 2025 and 2 mmb/d by 2028. We have been big believes for decades that there is big oil production growth potential in Libya if there is peace and access to foreign capital. So when we see the NOC saying they can get to 2 mmb/d in three years, we believe that is attainable as longer there is peace and access to capital. Yesterday, Libya held its Libyan Energy and Economy Conference 2025 in Tripoli. Yesterday, the NOC posted [LINK] "And moving forward to achieve the main goal of reaching a production of 2 million barrels per day within the next three years, if*

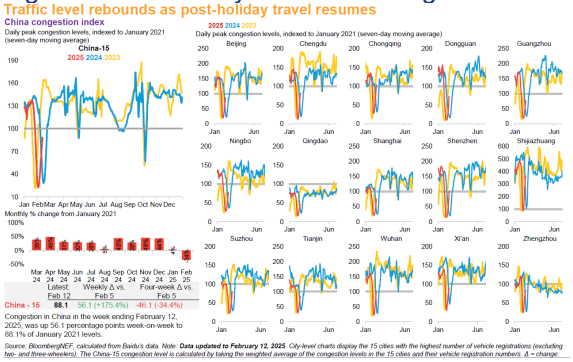
*sufficient funding is available to achieve this." Amena Bakr (Senior Research Analyst at Energy Intelligence) X/Twitter post [LINK] gave further color. "Under the current plan Libya hopes to boost its capacity to 1.6 million bpd by the end of this year, and 2 million bpd by 2028". It isn't clear if this is oil or oil + condensate, but condensate, if included would likely be under 100,000 b/d in total of the 2 mmb/*d."

China city-level road congestion

Oil: China city-level road congestion recovers after Spring Festival

The 40-day Spring Festival ended on Wednesday, and as expected, China city-level road congestion saw a big increase post-holiday as people are back to work. Spring Festival was earlier this year, and this was reflected in the earlier big drop in China's city-level road congestion than in 2024. On Thursday, BloombergNEF posted its China Road Traffic Indicators Weekly report, which includes the Baidu city-level road congestion for the week ended Feb 12. BloombergNEF reported Baidu city-level road congestion saw a huge increase of +175.4% WoW to 88.1% of Jan 2021 levels. January 2025 data saw average daily peak congestion down -19.0% YoY when compared to January 2024. We noted in previous weeks memos that Chinese New Year and Spring Festival is early this year and that means China city-level road congestion saw a huge decline in January and not in February as happened in 2024. Note that this report was formerly titled Road Traffic indicators, and is now China Road Traffic Indicators, but the content of the report is unchanged. BloombergNEF's report was titled "*Congestion recovers after Spring Festival"*. Below are the BloombergNEF key figures.

Figure 60: China city-level road congestion for the week ended Feb 12



Source: Bloomberg

Negative China steel indicators

Oil: Negative China steel indicators are back down to pre-Sept stimulus levels

Steel is always viewed as a key indicator for economies, especially in the case of China. On Tuesday, we posted [LINK] "*Negative China economic indicator. China steel industry activity indicators are back down to July/Aug levels ie. impact of China Sept stimulus actions didn't last, at least on the steel industry. Thx @BloombergNEF A Restauro, Peng Xu. #OOTT."* Bloomberg had posted its Industrial Metals Monthly, which tracks short term developments in iron ore, steel, copper, aluminum and other base metals. One of the many slides that we have included in prior Energy Tidbits memos is their China's steel industry activity slide. When you look back over the past five months, it showed the steel indicators jumped up post the Sept stimulus with strong Oct and Nov data but Dec was lower and Jan was down more

and back to the July/Aug pre-Sept stimulus data. Ie. the Sept stimulus impact, at least on steel, didn't last. Below is the China's steel industry activity chart attached to our post.

Figure 61: China's steel industry activity

Source: BloombergNEF

Oil: Less debate on 2025 oil demand as EIA, IEA and OPEC have a tighter range

Tight range of oil demand YoY growth for 2025

Yesterday, we posted [LINK] "*Less of debate on #Oil demand growth. Range of 2025 YoY oil demand growth forecast tightened further post the Feb forecast updates. Range now IEA low of +1.10 to OPEC high of +1.45 mmb/d YoY with EIA, Russia & Aramco in the middle, with an average of +1.30 mmb/d. #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 considered way too high and would keep getting tweaked down. With the Feb forecasts now completed, we see an even tighter range of oil demand YoY growth forecasts for 2025 with the IEA tweaking up its 2025 oil demand growth 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 table comparing oil demand growth forecasts that was attached to our post.

Figure 62: Comparison of YoY oil demand growth forecasts

Comparison of YoY Oil Demand Growth Forecasts

	YoY Oil Demand Growth Forecast		
million b/d	2024 YoY	2025 YoY	2026 YoY
EIA Feb STEO	0.90	1.37	1.04
EIA Jan STEO	0.90	1.39	1.05
EIA Dec STEO	0.89	1.29	-
EIA Nov STEO	0.99	1.22	-
EIA Oct STEO	0.92	1.29	-
EIA Sept STEO	0.94	1.52	-
EIA Aug STEO	1.14	1.61	-
		IEA demand (million b/d)	
		2024	2025
IEA Feb OMR	0.87	1.10	102.894	103.998
IEA Jan OMR	0.94	1.06	102.901	103.956
IEA Dec OMR	0.84	1.08	102.807	103.887
IEA Nov OMR	0.92	0.99	102.817	103.807
IEA Oct OMR	0.86	1.00	-	
IEA Sept OMR	0.90	0.95	-	
IEA Aug OMR	0.97	0.95	-	
OPEC Feb MOMR	1.54	1.45	1.43
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	-

Note IEA Feb OMR revised up 2023 demand 62,000 b/d to 102,028 kb/d from 101,966 kb/d
Note: Aramco CEO on Jan 21/25 based on Reuters reporting
Note: Russia, Novak est 2025 is 1.0 to 1.5 mmb/d
Source: OPEC, Saudi Aramco, IEA, EIA, Bloomberg, Reuters

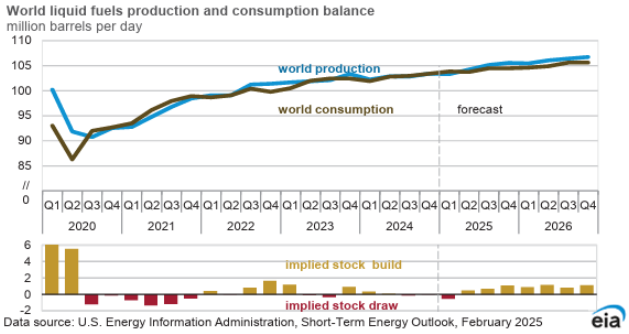
Source: EIA, IEA, OPEC, Saudi Aramco, Russia via TASS

Oil: EIA forecasts global oil stocks will continue to decline thru Q1/25

EIA global oil stock draws thru Q1/25

The EIA also expects global oil stocks to decline in Q1/25. On Tuesday, the EIA STEO also included their forecast for changes in global oil stocks [LINK]. (i) The EIA forecasts OPEC production in Jan 2025 at 32.64 mmb/d and for Jan 2026 at 32.92 mmb/d. The EIA has accounted for the extension of voluntary OPEC+ cuts. The EIA forecasts OPEC production is 32.36 mmb/d in Q4/24, this is expected to rise in 2025 by +0.45 mmb/d YoY to 32.79 mmb/d in Q4/25. The EIA forecasts OPEC+ total petroleum and other liquid fuels production is 42.24 mmb/d in Q4/24, in Q4/25 the EIA forecasts an increase of +0.90 mmb/d to 43.15 mmb/d. The EIA said, "*We still expect global growth in liquid fuels production during 2025 to be led by countries outside of OPEC+, increasing by 1.6 million b/d before slowing slightly in 2026 to growth of 1.0 million b/d. Growth outside of OPEC+ is driven by the United States, Canada, Brazil, and Guyana through 2026.*" (ii) The EIA forecasts continued global stock declines thru Q1/25. The EIA forecasts a draw on global oil stocks of -0.53 mmb/d in Q1/25 before returning to a build on oil stocks in Q2/25 and continuing through 2026. Below is the EIA STEO global oil inventory chart.

Figure 63: EIA STEO Global oil inventory change



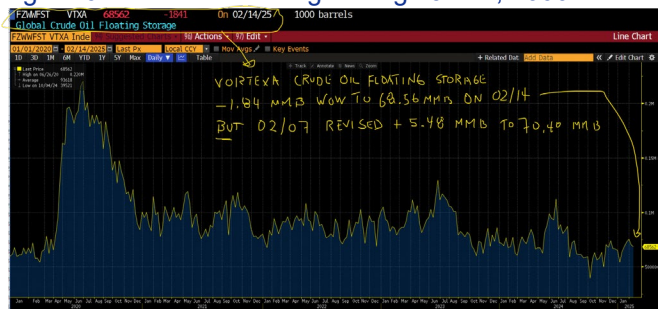
Source: EIA

Vortexa floating storage

Oil: Vortexa crude oil floating storage -1.84 mmb WoW to 68.56 mmb at Feb 14

We are referencing the Vortexa crude oil floating storage data posted on the Bloomberg terminal as of 9am MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments on the new estimates are compared to the prior week's Vortexa estimates posted on Bloomberg on Feb 8 at 9am MT. (i) Yesterday morning, we posted [LINK] "*Vortexa crude #Oil floating storage. Higher in Jan/Feb as China stopped unloading some sanctioned tankers. 68.56 mmb on Feb 14, -1.84 mmb WoW but Feb 7 of 70.40 mmb was revised +5.48 mmb.7-wk moving average creeping higher 67.59 mmb vs 66.80. Thx @vortexa @business. #OOTT.*" (ii) As of 9am MT Feb 15, Bloomberg posted Vortexa crude oil floating storage estimate for Feb 14 was 68.56 mmb, which was -1.84 mmb WoW vs revised up Feb 7 of 70.40 mmb. Note Feb 7 was revised +5.48 mmb to 70.40 mmb fvs 64.92 mmb originally posted at 9am MT on Feb 8. (iii) Revisions. Feb 7 was revised +5.48 mmb and the other prior six weeks were revised a mix of up and down revisions such that the average revision for the prior seven weeks was +0.30 mmb. Here are the revisions for the prior seven weeks compared to the estimates originally posted on Bloomberg at 9am MT on Feb 8. Feb 7 revised +5.48 mmb. Jan 31 revised -2.96 mmb. Jan 24 revised -1.27 mmb. Jan 17 revised +0.28 mmb. Jan 10 revised +4.25 mmb. Jan 3 revised -3.96 mmb. Dec 27 revised +0.27 mmb. (iv) There is a wide range of floating storage estimates for the moving 7-week average, but the big upward revisions led to an increase in the simple moving 7-week average to Feb 7 is 67.59 mmb vs last week's then 7-week moving average of 66.80 mmb. (v) Also remember Vortexa revises these weekly storage estimates on a regular basis. We do not track the revisions through the week. Rather we try to compare the first posted storage estimates on a consistent week over week timing comparison. Normally we download the Vortexa data as of Saturday mornings around 9am MT. (vi) Note the below graph goes back to Jan 1, 2020 to show the run up to Covid and then how Covid started to impact Covid in March/April 2020. (vii) Feb 14 estimate of 68.56 mmb is -60.82 mmb vs the 2023 peak on June 25, 2023 of 129.38 mmb. Recall Saudi Arabia stepped in on July 1, 2023 with its voluntary cuts. (viii) Feb 14 estimate of 68.56 mmb is +6.12 mmb YoY vs Feb 16 2024 at 62.44 mmb. Below are the last several weeks of estimates posted on Bloomberg as of 9am on Feb 15, Feb 8, and Feb 1.

Figure 64: Vortexa Floating Storage Jan 1, 2000 – Feb 14, 2025, posted Feb 15 at 9am MT



Source: Bloomberg, Vortexa

Figure 65: Vortexa Estimates Posted 9am MT on Feb 15, Feb 8 and Feb 1

Posted Feb 15, 9am MT

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

Feb 8, 9am MT

Date	Last Px
Fr 02/07/2025	64923
Fr 01/31/2025	78240
Fr 01/24/2025	74044
Fr 01/17/2025	68255
Fr 01/10/2025	59294
Fr 01/03/2025	58018
Fr 12/27/2024	64836
Fr 12/20/2024	66020
Fr 12/13/2024	68279
Fr 12/06/2024	75777
Fr 11/29/2024	69634
Fr 11/22/2024	72542

Feb 1, 9am MT

Date	Last Px
Fr 01/31/2025	63982
Fr 01/24/2025	68637
Fr 01/17/2025	61396
Fr 01/10/2025	55275
Fr 01/03/2025	51385
Fr 12/27/2024	64534
Fr 12/20/2024	65591
Fr 12/13/2024	64711
Fr 12/06/2024	71917
Fr 11/29/2024	65485
Fr 11/22/2024	68520
Fr 11/15/2024	47790

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage by region

Vortexa floating storage by region

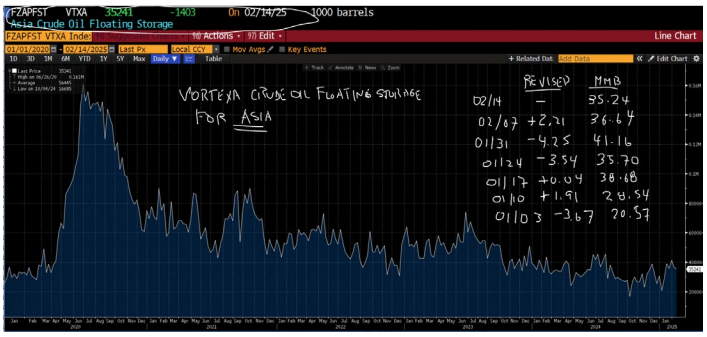
Bloomberg posts Vortexa crude oil floating storage in key regions, but not all regions of the world. The regions covered are Asia, North Sea, Europe, Middle East, West Africa and US Gulf Coast. We then back into the "Other" for rest of world. (i) As noted above, last week's Feb 7 was revised +5.48 mmb. All the regions were revised up modestly with the largest revision was Asia revised +2.21 mmb. (ii) As we expected for the last few weeks, the reports that China was being stricter in not taking sanctions tankers related to Russia oil trade was leading to increasing floating storage offshore Asia. The revisions were mostly down so it looks like there is a better handle on the floating storage but at much higher levels than in early Jan. The revisions to the prior weeks for Asia were Feb 7 revised +2.21 mmb, Jan 31 revised -4.25 mmb. Jan 24 revised -3.54 mmb. Jan 17 revised +0.04 mmb. Jan 10 revised +1.91 mmb. Jan 3 revised -3.67 mmb. (iii) Total floating storage at Feb 14 of 68.56 mmb was -1.84 mmb WoW vs revised up Feb 7 of 70.40 mmb. The major WoW changes were West Africa -2.44 mmb WoW, Middle East +1.63 mmb WoW and Asia -1.42 mmb WoW. (iv) Below is the table we created of the WoW changes by region posted on Bloomberg at of 9am MT yesterday. Our table also includes the "Original Posted" regional data for Feb 7 that was posted on Bloomberg at 9am MT on Feb 8.

Figure 66: Vortexa crude oil floating storage by region

Vortexa crude oil floating storage by region				Original Posted	Recent Peak	
Region	Feb 14/25	Feb 7/25	WoW	Feb 7/25	Jun 23/23	Feb 14 vs Jun 23/23
Asia	35.24	36.66	-1.42	34.45	74.06	-38.82
North Sea	1.59	1.59	0.00	0.65	4.71	-3.12
Europe	3.83	4.29	-0.46	2.89	6.05	-2.22
Middle East	9.65	8.02	1.63	7.79	6.59	3.06
West Africa	4.52	6.96	-2.44	6.37	7.62	-3.10
US Gulf Coast	2.12	0.85	1.27	0.68	1.02	1.10
Other	11.61	12.03	-0.42	12.09	29.33	-17.72
Global Total	68.56	70.40	-1.84	64.92	129.38	-60.82
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Feb 15						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

Figure 67: Vortexa crude oil floating storage for Asia thru Feb 14, 2025



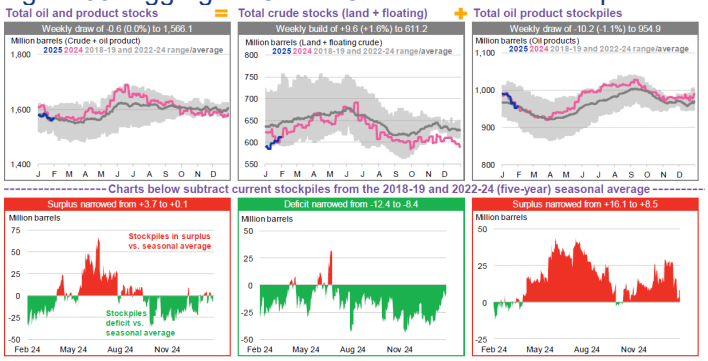
Source: Bloomberg, Vortexa

Global oil stocks

Oil: Global oil & product stocks surplus narrowed to +0.10 mmb from +3.70 mmb

On Monday, BloombergNEF posted its "*Oil Price Indicators*" weekly, which provides good charts depicting near-term global oil demand and supply indicators. (i) Note BloombergNEF uses different periods to determine the surplus/deficit, sometimes using a four-year average for 2018-2019 and 2022-2024, and other times using a five-year average for 2018-2019 and 2022-2024. In both cases they do not include 2020 and 2021 in the averages. (ii) The global stockpile for crude oil and products surplus narrowed to +0.10 mmb for the week ending January 31, from a surplus of +3.70 mmb for the week ended January 24. (iii) Total crude inventories (incl. floating) saw a build of +1.6% WoW to 611.20 mmb. (iv) Land crude oil inventories increased +1.0% WoW to 532.90 mmb, narrowing their deficit from -22.20 mmb to -20.10 mmb against the five-year average (2018-2019 and 2022-24). (v) The gasoil and middle distillate stocks were down -3.3% WoW to 223.20 mmb, with inventories flipping to a deficit of -5.40 mmb from a surplus of +2.00 mmb. Jet fuel consumption by international departures in the week starting February 10 is set to increase by +16,800 b/d WoW, while consumption by domestic passenger departures is forecasted to increase by +15,900 b/d WoW. Below is a snapshot of aggregate global stockpiles.

Figure 68: Aggregate Global Oil and Product Stockpiles



Source: BloombergNEF, US Energy Information Administration (EIA), PJK, IE Singapore, FEDCom/Platts, PAJ, Vortexa, Genscape. Note: As of the ***week ending January 31, 2025.***

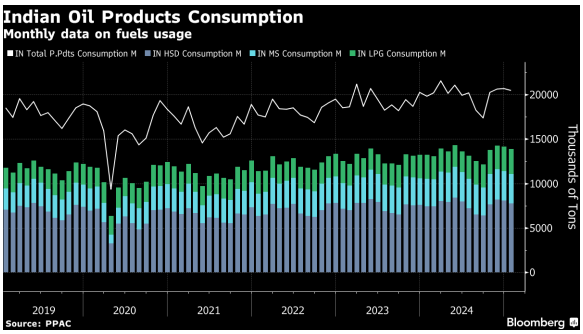
Source: BloombergNEF

Oil: Bloomberg Oil Demand Monitor, *Energy Majors See Ongoing Consumption Gains*

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 population and economic growth supporting fuel usage and India's oil demand last month showed YoY growth. Bloomberg noted that many major energy companies have shifted to upbeat tones on the outlook for oil demand this year and beyond, despite the potential for a trade war triggered by Trump's tariffs. Oil consumption is expected to expand through the 2030s with the catalysts being growth trends in population and economies. Additionally, the demand monitor highlights that India's oil demand rose 3.1% YoY in Jan, with gains in both gasoline and diesel. India's oil ministry unit also reports that oil consumption will rise by almost 5% for the fiscal year from April 1, amounting to a record 253 million tons for the year. Bloomberg reported "*Major energy companies have struck an upbeat tone on the outlook for oil demand this year and beyond, even in the face of the potential trade war triggered by President Donald Trump's salvo of tariffs. Oil consumption will continue to expand into the 2030s, amid population and economic growth and widespread gains in living standards, Shell Plc said Wednesday in a long-term energy outlook. … The oil makets have seen some supportive data in recent weeks. India's oil products consumption rose 3.1% year-on-year in January, with gains for both gasoline and diesel, according to provisional data published by an oil ministry unit. The nation sees refined oil product consumption rising by almost 5% to a record 253 million tons in the fiscal year from April 1, according to estimates published by the ministry."* Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 69: Indian Oil Products Demand



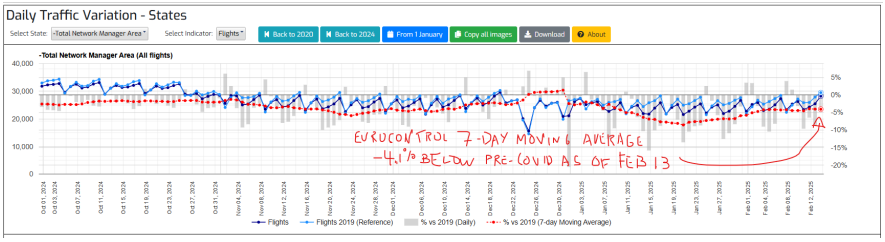
Source: Bloomberg

Oil: Europe airports daily traffic 7-day moving average -4.1% below pre-Covid

Europe airports daily traffic

Yesterday, we posted [LINK] "*"EU air traffic (arrivals/departures) is now -4.1% below pre-Covid. 7-day moving average as of: Feb 13: -4.1% below pre-Covid. Feb 6: -4.3%. Jan 30: -5.9% below pre-Covid. Jan 23: -7.6%. Jan 16: -7.6%. Jan 9: -4.2%. Jan 2: -2.6%. Dec 26: +0.8%. Dec 19: -2.4%. Dec 12: -3.6%. #OOTT."* Note the Eurocontrol air taffic is daily arrivals/departures data. The Xmas rush for the 7-day moving average as of Dec 26 was the first week above pre-Covid since the Jan 2024. Air traffic always goes up for Xmas and it always seasonally drops after Xmas. But in Jan 2024, it didn't drop as much and was actually above pre-Covid in Jan 2024. This year, there was a big drop off after Xmas. The 7-day moving average was -4.1% below pre-Covid as of Feb 13, which follows -4.3% as of Feb 6 ,-5.9% as of Jan 30, -7.6% as of Jan 23, -7.6% below as of Jan 16, -4.2% as of Jan 9, -2.6% as of Jan 2, +0.8% as of Dec 26, -2.4% as of Dec 19, and-3.6% as of Dec 12. 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 70: Europe Air Traffic: Daily Traffic Variation to end of Feb 13



Source: Eurocontrol

Oi & Natural Gas: Energy Sec Wright on US oil & gas growth, coal, wind & solar

Energy Secretary Wright on energy

There was a good Bloomberg interview with Energy Secretary Chris Wright on Tuesday wherein Wright covered a wide range of energy issue. (i) Later in the memo, we note his optimistic view on fusion. (ii) On Tuesday, we posted [LINK] "*Straight talk from Energy Sec Wright. See my 👇transcript. US #Oil production: not grow much in short run but can grow significantly in 5 or 10 yrs. US #NatGas production to grow dramatically in next 2/3 yrs. Coal will continue to be essential to US energy security for decades to come. Need to stop closure*

of coal plants. Wind/Solar. Not going to go down the road of Germany. Shouldn't subsidize technologies that ultimately just make energy more expensive. Thx @adsteel @scarletfu #OOTT." Our post included the transcript we made of Wright's comments. (ii) US oil growth not in short run, but absolutely in 5 or 10 years, whereas US natural gas growth is strong in short run. Wright said "*But I think it can grow meaningfully. It's probably not going to grow meaningfully in the short run, although our natural gas production I think is going to grow dramatically in the next 2 or 3 years. But if you look at 5 or 10 years, can American grow its oil production significantly? Absolutely*."" (iii) Need to stop closure of coal plants. Wright said " *"Look, coal has been essential to the US's energy system for over a hundred years. It's been the largest source of global electricity for nearly a hundred years. And it will be for decades to come. So we need to be realistic about that. Now, with coal, are we going to see a renaissance in surging coal production in the US? Not likely. But we're on a path to continually shrink the electricity we generate from coal, that's made electricity more expensive and our grid less stable. So I think the best we can hope for in the short term is to stop the closure of coal power plants. No one has won by that action."* (iv) Shouldn't subsidize solar and wind. Wright was asked if Trump moves were to stifle solar and wind. Wright replied "*Stifle might be the wrong word. But we shouldn't subsidize technologies that ultimately just make our energy more expensive and less reliable. I don't think you'll see policies that continue to go down that road*." And on the recent big solar plant failure that cost taxpayers a billion dollars "*And during its brief lifetime, it produced very unreliable expensive power. We don't want to do things like that. We want to focus on American consumers and not subsidizing this industry or that industry. We want the marketplace and consumers to pull what energy is in demand."* (v) Don't want to like Germany who spent half a trillion subsidizing renewable and "*they more than doubled their price of electricity. They actually shrunk the total amount of electricity the country produces by about 20%. And their industry is fleeing the country. That's the path the US was starting to go down. But that's the wrong path."*

Oil & Natural Gas: sector/play/market insights from Q4 calls

Sector insights from Q4 calls

Please note we ran out of time this weekend to write up all the Q4 calls that we reviewed as there was too much general news to follow so we didn't write up many energy company Q4 calls and will start doing for next week's memo. Q4 calls have ramped up for a big week of Q4 calls. This is our favorite time each time of each quarter as it is quarterly reporting and this is when we get the best insights into a range of oil and gas themes/trends, sectors and plays. As a reminder, our Energy Tidbits memo does not get into the quarterly results, forecasts, or valuation. Rather the purpose of highlighting a company is to note themes/trends and plays that will help shape a reader's investment thesis to the energy sector. In the conference calls, we also tend to find the best insights from the Q&A portion as opposed to the prepared remarks. Plus, we tend to get the best E&P sector insights from services, pipelines, refineries, and utilities

BP's new direction is "*all in service of growing cash flow and returns*"

BP reported Q4 on Tuesday. BP is the target of Elliott's public push for change. We couldn't help chuckle by the BP CEO statement in the Q4 release on what he laid out as a new direction that was now based on growing cash flow and returns. Surely someone within the big BP organization should have drafted it better or maybe that was the new CEO's personal words. But they should have realized it got people

chuckling as were they not looking for growing cash flow and returns. On Tuesday, we posted [LINK] "*WOW! bp's new direction. @bp_plc CEO "we now plan to fundamentally reset our strategy and drive further improvements in performance, all in service of growing cash flow and returns. It will be a new direction for bp..." IF SO, surely negative free cash flows of "Transition Growth Engines" is the starting point. Why not say need free cash flow of #Oil #NatGas to grow & will only spend in transition growth engines that can financially contribute? ie. spend less on hydrogen, EV charging & renewables? #OOTT."* We reviewed the Q4 call and BP didn't provide any details for the new direction. Rather they deferred all comments for two weeks until the strategy presentation. Our post noted that surely this meant less capital for EV charging, hydrogen and renewables & power if they are looking growing cash flow. We included the below slide from their Q4 slide deck that shows these areas are big negatives for cash flow. We write in the calculation for EBITDA less capex.

Figure 71: BP Q4 transition growth engines capex and EBITDA

Transition growth engines

BP Q4 SLIDES

$bn	Capex* FY23	Capex* FY24	EBITDA* FY23	EBITDA* FY24	EBITDA less CAPEX FY23	EBITDA less CAPEX FY24
Bioenergy	0.7	0.8	0.5[1]	0.7	-0.2	-0.1
Convenience	1.3[2]	0.5	0.8	1.0	-0.5	+0.5
EV charging	0.5	0.6	(0.3)	(0.2)	-0.8	-0.8
Hydrogen	0.2	0.3	(0.3)	(0.4)	-0.5	-0.7
Renewables & power	1.1	1.5	0.4	0.1	-0.7	-1.4
Total transition growth engines*	*3.8*	*3.7*	*1.0*	*1.2*	-2.7	-2.5

Source: BP

Hermes: Quiet luxury pricing power means they pass any tariffs to customers

One of the big retail trends over the past two years has been how the quiet luxury brands like Brunell Cucinelli and Hermes have outperformed the loud luxury brands like Gucci. And they keep cranking up prices because they can. Hermes had its Q4 call on Friday. We reviewed the Q4 call transcript but did not see the quotes reference by Bloomberg. Maybe it was just a poor transcript. Bloomberg reported Hermes will simply pass on any tariffs cost to its customers. Bloomberg wrote "*Speaking to the risk of US tariffs under the new Trump administration, Dumas said Hermès doesn't adjust its production according to tariffs. "When tariffs go higher, we'll increase prices as a consequence."*

PBF Energy: No idea for return of 156,000 b/d Martinez (California) refinery

PBF Energy held its Q4 call on Thursday. Earlier in the memo, we noted how the key reason for the big spike in California gasoline prices was the fire that led to an unplanned shutdown of its 156,000 b/d Martinez refinery. In the Q&A, mgmt confirmed the entire refinery was down and they are still yet to determine the full extent of the damage as they only have limited access to the point of origin until ongoing investigations are completed. So there is no idea when Martinez will be back up, which is why California gas prices spiked up. And as PBF said on the call "*The California market, with its unique specifications, is short refined products and*

thus relies on imports." Mgmt was careful to not give any estimates of how long given they haven't completed their assessment. But mgmt warned that Martinez being down now puts California in an short position and needing more imports. So they are falling behind where they should be. And that means problems in the fall when other refineries go down for turnaround. Mgmt said *"The situation is set to compound itself with the announced shutdown of the LA Basin refinery scheduled for this fall."*

Shiseido: "*Chinese consumers are spending less and saving more*"

Shiseido reported Q4 on Monday and highlighted the weakness in Chinese consumer. On Monday, we posted [LINK] "*Chinese consumers still holding back. "Chinese consumers spending less and saving more" "Drop in consumption by Chinese tourists continued" Shiseido Q4. Fits views such as 👇Maersk on weak China domestic demand. #OOTT."* The above quotes were from the Shiseido Q4 slides. In the Q4 report, Shiseido wrote " *China's cosmetics market suffered a prolonged downturn, weighed down by a decline in consumer spending an d rising household savings amid worsening economic sentiment.* " "*Net sales on a like for like basis decreased year on year in the Travel Retail Business due to lower shipping volumes which reflected the slowdown in consumer spending driven primarily by Chinese tourists, as well as in the China Business which was adversely affected by a persistent decline in consumption on the back of worsening economic sentiment.* "

Wyndham Hotels: hotels by data center project outperform by 500 basis points

Wyndham Hotels and Resorts held its Q4 call on Wednesday and highlighted how their hotels within 10 miles of data center projects were seen an uplift of 500 basis points vs the rest of the US portfolio.. On Thursday, we posted [LINK] "*Data Center projects = demand for nearby hotel rooms. 👇Wyndham Hotels Q4 call. Hotels within 10 miles of Top 10 data center projects that commenced in 2024 had 500 basis points uplift vs rest of US portfolio from increase demand & pricing power. #OOTT Thx @business."* CEO Ballotti said "*The surge in data center demand and construction has become a defining trend in the digital era, and Wyndham has dozens of hotels within a 10 mile radius of the top 10 data center projects that commenced in 2024 across the United States. These hotels saw an impressive year-over-year 04 RevPAR premium of nearly 500 basis points compared to the rest of our U.S. portfolio with about half of this market share gain coming from increased demand and the remainder resulting from improved pricing power driven by occupancy gains."*

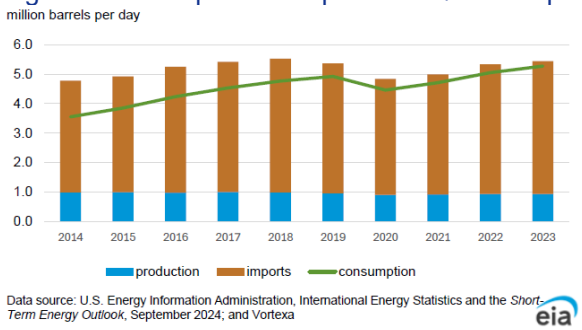
Oil & Natural Gas: EIA's updated India Country Analysis Brief

EIA's India country brief

We continue to recommend adding the EIA's country analysis briefs to reference libraries as good quick overview of key areas within each country's energy world. On Feb 6, the EIA updated its country analysis brief for India highlighting the country's growing energy demands and reliance on imports, as it is supposed to see the highest YoY growth in oil demand [LINK]. India was the 3rd largest energy consumer in the world in 2023, just behind the U.S. and China. Notably in 2023, India became the world's most populous country in the world with 1.44 billion people and was the 4th largest economy in the world. India's oil production remained stagnant at 0.939 mmb/d in 2023, with crude oil and condensate output declining to

an over 30-year low of 0.604 mmb/d due to aging fields and weather-related disruptions. Meanwhile, petroleum consumption has steadily increased, reaching 5.300 mmb/d in 2023, driven by demand for gasoline, diesel, and jet fuel. India imported a record 4.500 mmb/d of crude in 2023, making it the world's second-largest net importer, with Russia now accounting for 39.0% of supply, up from just 2.5% in 2021. Below is the EIA's petroleum and other liquids production, consumption, and imports, graph for India from 2014–2023, showing the upwards trend in Indian oil consumption since 2020. On the natural gas front, India consumed 2.2 tcf in 2023 with the industrial sector responsible for 67.0% of demand. India was the 4th largest global importer of LNG with 1.10 tcf of LNG imported, representing a +9.2% increase from 2020. The Middle East was the primary supplier, accounting for 66.3% of these imports. Note that one of the themes this week out of the India conferences is how India is going to crank up its LNG imports to 2030. This is a theme we have been following for years when India first announced they would get natural gas to 15% of its energy mix by 2030. Based on what little progress we have seen in the last years, it is nowhere near the potential to hit 15% by 2030. But the point is that there should still be strong growth in LNG imports to 2030. Our Supplemental Documents package includes the EIA country brief.

Figure 72: India petroleum production/consumption/imports (2014-2023)



Source: EIA

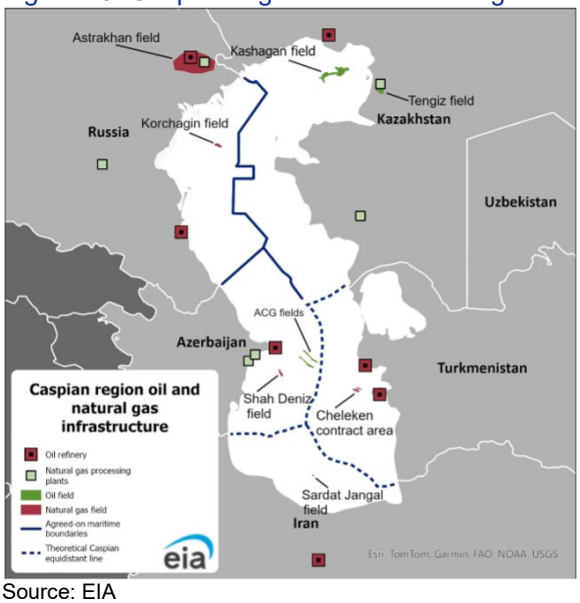
Oil & Natural Gas: EIA's updated Caspian Sea Region Analysis Brief

EIA's Caspian Sea brief

On Tuesday, the EIA updated its region analysis brief for Caspian Sea, highlighting the region's significant role in global energy production [LINK]. The Caspian Sea region is one of the oldest oil-producing areas in the world, with historical oil extraction records dating back hundreds of years. In 2023, the Caspian countries covered in the brief—Azerbaijan, Kazakhstan, Turkmenistan, and Uzbekistan—accounted for 3% of global energy production and 1% of global energy consumption, with Kazakhstan contributing nearly half of both metrics. The region's total crude oil and condensate production was led by Kazakhstan who produced 1.5 mmb/d in 2024, but it has missed its OPEC+ production targets for the several months. Azerbaijan's oil production has been declining since peaking at almost 1.0 mmb/d in 2009–2010 and it projects total petroleum liquids production to average a little over 0.60 mmb/d from 2024 to 2026. Notably, Azerbaijan's saw almost all of its oil and natural gas production come from offshore in the Capsian Sea in 2022. Turkmenistan has totaled an estimated 0.28 mmb/d in 2024, followed by Uzbekistan estimated to only have produced 0.06 mmb/d in 2024. On the natural gas front, Turkmenistan led with dry natural gas production of 3.0 tcf in 2023, with consumption of 1.6 tcf, setting a record-high for the country and making it

the world's 11th highest natural gas producer. This was followed by Uzbekistan at 1.5 tcf, Kazakhstan at 1.0 tcf, and Azerbaijan at its record-high 1.3 tcf with the Shah Deniz field being a significant contributor. Below is a map of the Caspian region's oil and natural gas infrastructure. Our Supplemental Documents package includes the EIA country brief.

Figure 73: Caspian region oil and natural gas infrastructure



Source: EIA

Energy Transition: Trump Energy Dominance positive for coal, negative wind solar

Trump National Energy Dominance Council

Earlier this morning, we posted [LINK] "*Winners/Losers from Trump Energy Dominance Council. #Coal big winner. one of the "amazing" energy assets, clearly the one referred to "the national security concerns with removing reliable and affordable energy sources;" "facilitating the reopening of closed power plants. #Wind #Solar loses, not in the amazing list. unsaid reference to cut renewable subsidies "on identifying and ending practices that raise the cost of energy" #Marcellus #NatGas wins "approving the construction of natural gas pipelines to, or in, New England, California, Alaska, and other areas of the country underserved by American natural gas; " Note the "or in". Eastern Canada loses if Marcellus NatGas can stay in US and doesn't get exported to eastern Canada. ie. ~0.6 bcf/d via Niagara Falls. Opening for council to formally advise Trump don't put tariffs on Cdn #Oil #NatGas #Uranium #Electicity "provide to the President a review of markets most critical to power American homes, cars, and factories with reliable, abundant, and affordable energy. #OOTT."* Earlier in the memo, we noted our post items on Marcellus gas wins if Trump gets natural gas pipelines to and in New England, how that should hurt Cdn Marcellus gas imports and how the Council will surely advise Trump not to tariff Cdn oil imports. Trump may not use the word coal, but it must be coal when he says "*facilitating the reopening of closed power plants".* Trump may not use the words wind and solar but he left them off the list of what he calls "amazing" US energy assets and he also referred to "identifying and ending practices that raise the cost of energy". That has to include subsidies for wind. There really is nothing that should surprise. It is worth a read. Our Supplemental Documents package

includes the Trump executive order.

Energy Transition: Energy Transfer 0.43 bcf/d natural gas direct supply to data center

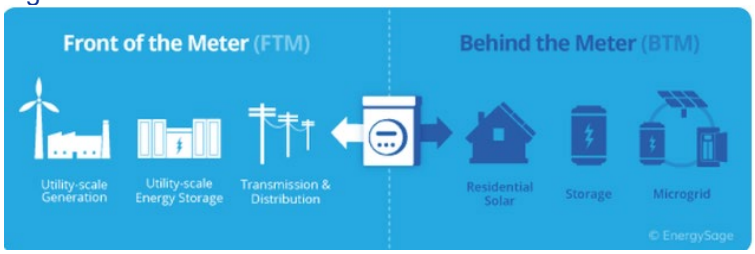
Natural gas bypass grid to data center

We are surprised that Energy Transfer's Feb 10 announcement didn't get more attention as we continue to be amazed that people are worried about natural gas or electricity bypassing the grid to go directly to AI data centers. On Monday, we posted [LINK] "*Breaking! Natural gas DIRECT supply to power AI data center. Energy Transfer 0.43 bcf/d of #NatGas to CloudBursts AI data center. Generate up to 1.2 GW of direct or behind the meter electric power. Other AI data centers will want their own 24/7 #NatGas power supply! #OOTT."* Energy Transfer's release title "*Energy Transfer and CloudBurst Sign Agreement for Natural Gas Supply to Data Center Project in Central Texas*" didn't' specify the key item of this deal – it is a direct supply of natural gas to an AI data center and this natural gas is not going to supply power for the gird but will go directly to the data center. This didn't seem to get attention. Plus we didn't see any focus on Energy Transfer expecting this to be the first of many such deals AND these deals will "*supply, store and transport natural gas to fuel data centers*…". On Friday, we posted [LINK] "*Overlooked? It's not just this is DIRECT supply of #NatGas to data center. ET says "first of many agreements to supply, STORE and transport natural gas to fuel data centers.." Sounds like ET will also dedicate #NatGas storage capacity to the data center deals." #OOTT."* We think it has been overlooked that Energy Transfer is indicating they are going to also dedicate natural gas storage capacity as part of these data center deals. It makes sense as it gives the data centers another layer of comfort for 24/7 natural gas power. Our Supplemental Documents package includes the Energy Transfer release.

What does "Behind-the-meter" mean?

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

Figure 74: Front of the meter vs Behind the meter



Source: energysage

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

24/7 power is bypassing the grid

Above, we highlight the Energy Transfer deal will see up to 0.43 bcf/d of 24/7 natural gas directly supply the AI data center and not be provided to gas utilities for the grid. We continue to be surprised that governments and people aren't concerned about the implications of the increasing deals that see 24/7 natural gas and electricity (ie. nuclear) will be delivered directly to AI data centers and bypass going into the grid. We think governments and people are blinded by the AI data centers highlighting their adding renewable power and forget they are taking 24/7 power either from the grid or bypassing the grid. The message tends to be how there will be way more renewable capacity added than electricity consumed. And that is very likely the case. But the capacity is intermittent and subject to more risk as seen in Europe this winter when wind generation is low in a seasonally high period. So there very well may be more "capacity" but that doesn't mean better reliability. Rather there is increased relative exposure to intermittent wind and solar and less relative availability of 24/7 power. There is only so much 24/7 power and the more that is siloed directly or indirectly for AI data centers means the rest of the grid customers are more exposed to intermittent wind and solar power generation. And it is difficult for the environmental groups to highlight this risk given their fundamental thesis is that renewable wind and solar can power the grid. Plus Energy Transfer highlights that this is the first of many such deals. Sooner or later, we have to believe (hope) people wake up to this development. Here are a few of our prior highlighting of this 24/7 power not gong into the grid.

08/01/24: Game changer, data centers want NatGas direct from TC pipeline

Here is what we wrote in our Aug 4, 2024 Energy Tidbits memo. *"Game changer, data centers want NatGas direct from TC pipeline. We were surprised that this game changer comment on natural gas for data centers from TC Energy Q2 call on Thursday morning didn't get attention. We suspect it was because it was a massive Q2 reporting day across all sectors and equities were crashing around the world and the comments were in the Q&A and not in the release or slides. (i) But it's why, on Friday morning, we tweeted [LINK] "Every man for himself. Game changer in the fast approaching fight for 24/7 reliable, affordable #NatGas power in the US. Data Centers need reliable 24/7 #NatGas so much, they will buy it from the gas pipeline before the gas gets to LDCs to generate power!! TC Energy Q2 Q&A "And as an alternative to citing these data centers behind LDCs, we're now seeing a much greater potential for data center operators to seek laterals off of our main line and to use that gas supply to fuel onsite power generation that they would build and or own themselves." Data centers will ensure their own 24/7 #NatGas power supply and let*

LDCs & their other customers deal the volatility from having more interruptible power supply. See 07/01/24 tweet Ford CEO warning on this concept. [LINK]. See 07/01/24 tweet Amazon/Constellation potential nuclear power deal. [LINK] Bullish #NatGas for coming years. #OOTT." (ii) Data centers need reliable 24/7 power to be able to go. TC Energy noted this in the above item that having the access to 24/7 natural gas is a roadblock to timely data center growth. (iii) Data centers want to take natural gas directly from TC Energy's mainline natural gas pipeline and not get from the LDC/utility. This is the game changer. In the Q&A, mgmt said data centers are now wanting to run laterals off the main line to their own power generation! They want to do like Amazon wants to do with nuclear power (see below item). So they would get the natural gas, build or have someone build a natural as power generation plant and get the reliable, 24/7 power source before it gets to a utility/LDC! So for anyone who doesn't believe data centers worry about securing reliable 24/7 natural gas power, think again. (iv) The TC Energy comments support our view that natural gas is the critical fuel for data center growth for the next decade. But the movement by data centers to take natural gas or nuclear before it can go on the grid sets up another of questions like the Ford CEO tweet noted below. Our Supplemental Documents package includes excerpts from the TC Energy Q2 call transcript and slides."

06/01/24: Will Amazon tie up 100% of 24/7 power from CEG's nuclear plant

Our Aug 1, 2024 TC Energy tweet linked our July 1, 2024 tweet on Amazing trying to tie up 100 of the power from a Constellation nuclear power, which would take that nuclear power from providing to the grid as it is now. Here is what we wrote in our July 7, 2024 Energy Tidbits memo. "*On Monday, we tweeted [LINK] "Game Changer! Smart move by Amazon IF can directly get 100% of clean 24/7 power from Constellation's nuclear power plant for AI data center. ie. get the 24/7 power before it goes into grid baseload power. What else but #NatGas #Coal if grid needs to replace 24/7 baseload power. Thx @Jennifer_Hiller @SebasAHerrera #OOTT." WSJ reported that Amazon was working to tie up 100% of the power generation from a Constellation nuclear power plant, which would mean that nuclear power generation won't be going into the grid for all customers, including Amazon. This fits with our views that the most profitable companies in the world, big tech players like Amazon, Microsoft, etc, will pay a premium to tie up clean energy and the result being higher costs to regular consumers and increasing grid stability risks. We continue to believe that they will push for mini nukes whenever they can come on for their AI data centers. That is assuming mini nukes can get over NIMBY resistance because they can be placed relatively close to where the tech companies want to put AI data centers. But that is a decade or more away. However, we hadn't played out this type of scenario that Amazon will go pay a premium to tie up existing nuclear power instead of the nuclear power going to the gid. What a smart move for Amazon. Get all the existing 24/7 nuclear power for themselves by paying a premium. The concern for the grid is that this would take away 24/7 power from the grid and leave the grid with a big hole in the grid's baseload 24/7 power, let alone 24/7 clean power. And this also fits our view that big winners for needing to replace 24/7 power for the grid will be natural gas and coal as 24/7 power can't be done with wind and solar. The question will be if big tech players will be allowed to cut out existing base load power generation from the grid by paying a premium. We still*

believe big tech will be looking to tie up or even possibly buy 24/7 power supply with the preference being tie-up instead of buy the fuel source. Our Supplemental Documents package includes the WSJ report."

06/01/24: Ford CEO, will society accept Amazon type deals on 24/7 power

Yesterday, we posted [LINK] "*Hmmm! Wonder what @Ford CEO @jimfarley98 thinks about $ET's 0.43 bcfd direct to data center/bypass grid & highlighting it was the 1st of many such deals to come. His 👇07/01/24 concerns to @JBoorstin on what happens to normal grid customers were post Amazon nuclear power deal & pre ET's 24/7 #NatGas deals. The more 24/7 #NatGas #Electricity that bypasses the grid, the greater the relative reliance for the rest of us on intermittent #Wind #Solar. Get ready for more efficiency/conservation tips, requests, etc. #OOTT."* Ford CEO Farley raised the concern on the grid following the Amazon deal to tie up nuclear power directly and not to the grid. We forwarded our July 1, 2024 post on Farley's concern. Here is what we wrote in our July 7, 2024 Energy Tidbits memo. "*Ford CEO Jim Farley had some great comments and key questions on the huge and rapid growth in AI data center electricity consumption in the US. (i) On Monday, we tweeted [LINK] "Lot to unpack here. "Our grid can't handle what we have today. Are we going to build 20% more power plants to handle all these AI data centers? Or are the companies going to start to create their own power centers? What do we feel as a society when a private company operates a private power plant?" Ford CEO Farley to @JBoorstin. Bottom line: 24/7 power becomes a critical resource, especially if its nuclear or hydro, that big tech will pay up to control/acquire ie. Amazon below. Big need for 24/7 also means more #NatGas #Coal #OOTT." (ii) "Are we going to build 20% more power plants to handle all these AI data centers?" Farley started with the big picture concern on AI data centers – the growth is huge. We don't think 20% more power plants is the number but his point is valid, the US will need way more power plants than expected if its to handle the growth in consumption. (iii) What happens if there are Amazon type deals that take 24/7 power off the grid? Farley didn't note Amazon's name as his comments were on Friday and the WSJ Amazon report was on Sunday. But his comments address the similar situation on how will society react if big tech companies create their own power centers and take power away from going into the grid. If we use the above Amazon example, how will people feel if Amazon takes 24/7 nuclear power from the grid for its AI data centers and that means the grid operators have to find replacement 24/7 power to maintain grid stability? This is why we think this Amazon situation is a big test. (iv) Our tweet included the transcript we made of comments by Ford CEO Jim Farley with CNBC's Julia Boorstin at the Aspen Ideas Festival on June 28, 2024. [LINK]. Items in "italics" are SAF Group created transcript. At 26:14 min mark, Farley "The other part of AI that we have to think about as a society is what are we going to do with all the data centers that process all this data. Our grid can't handle what we have today. Are we going to build 20% more power plants to handle all these AI data centers? Or are the companies going to start to create their own power centers? What do we feel as a society when a private company operates a private power plant? Can the electrons in the batteries of these vehicles be used to offset some of the future power train, power plant build-out requirements. I think so. Normally our customers charge at night, late*

at night. And I think the grid will hopefully get more intelligent where they will charge at 2 or 3 in the morning where the electrons are cheapest. And then they're going to have a lot of electrons when there's peak. And will we be able to sell those electrons back to the grid to reduce the requirement. I think we're going to have to struggle with problems like that with this AI explosion."

Energy Transition: Consumers will be increasingly asked for electricity conservation

Electricity conservation push

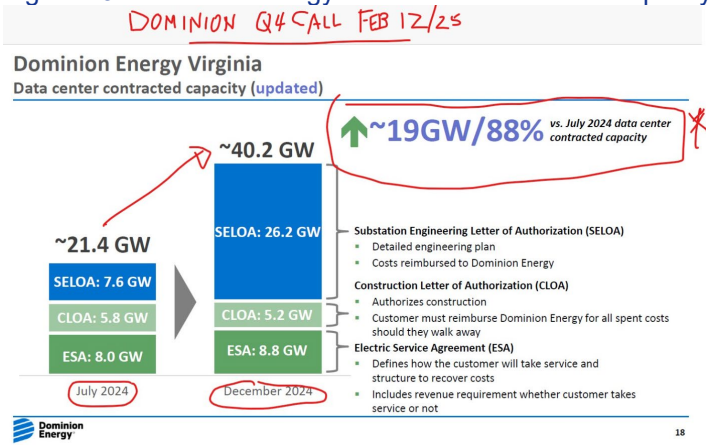
Long-term readers know that I have been following long-duration (multi-day not multi-hour) send-out capacity for battery electricity storage for over a decade as I think that will be the game changer for electricity. But we still have don't have multi-day send-out capacity. That means consumers should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

Energy Transition: Dominion's data center contracted capacity +88% in six months

Massive quick growth in Dominion's data center

Dominion Energy is the global leader in providing power for data centers and they just finished six months (H2/24) of huge growth in data center contracted capacity that was +~19 GW or +88% from July 2024 to Dec 2024. That is huge growth. On Wednesday, we posted [LINK] "*Fossil Fuels should win big as Dominion's Virginia data center contracted capacity is +88% or ~19GW from July 2024 to Dec 2024!. See my 👇11/02/24 post: D's Oct 2024 IRP. Fossil fuels incl purchases provided 63.7% of actual energy supplied to Dominion Virginia in 2023. #OOTT #NatGas #Coal.*" Dominion does not split out natural gas total supply for its data centers in its Q4call slides. Our post linked to our Nov 2, 2024 post that provided the detail on how much fossil fuels powered its electricity vs other fuels in 2023. 63.7% of actual energy supplied is from fossil fuels.

Figure 75: Dominion Energy data center contracted capacity July 2024 to Dec 2024



Source: Dominion Energy

Fossil fuels provided 63.7% of Dominion's power for data centers in 2023

Dominion may not want to specify how much natural gas and coal powers their AI data center capacity in their investor relations presentations but must do so in their filings with regulators. So we regularly go to their filed with regulators actuals to get those splits. Our above Wednesday post on Dominion forwarded our Nov 2, 2024 post on Dominion Energy's actual fuel consumption in 2023. Here is what we wrote in our Nov 3, 2024 Energy Tidbits memo. "*Fossil fuels provided 63.7% of Dominion's power for data centers in 2023. Bullish indicator for natural gas and coal from Dominion Energy, the global leader in providing power to data centers, from their Oct 15 filed 2024 Integrated Resource Plan. Dominion held its Q3 call on Friday. We flipped thru their Q3 slides and didn't see the words natural gas or coal, yet we know from our prior work. They also didn't mention natural gas or coal in their prepared comments and only did so when asked in the Q&A. So we went to their Oct 15 filed 2024 Integrated Resource Plan that shows the 2023 capacity by fuel and 2023 actual energy mix by fuel. And, similar to what we highlighted on their 2022 capacity and actual energy mix in our March 4, 2024 Energy Tidbits memo, Dominion's actual power supplied is primarily dependent on fossil fuels and then nuclear. And renewables were 10.9% of Dominion's power capacity in 2023 but only delivered 5.0% of the actual power. Reminder that capacity is what Dominion notes is "potentially available" and energy mix is the "sources of energy actually delivered." And Dominion noted that its power purchases were comprised of "existing contracts with renewable energy and fossil based PPAs". In their charts/tables, they specifically note Renewable purchases but then just put the rest in "Other Purchases", which must be the Fossil based PPAs. So even though they don't mention natural gas or coal Yesterday, we tweeted [LINK] "Numbers don't lie! Dominion's huge data center growth in 2020s/2030s is bullish for #NatGas #Coal. Fossil fuels provided 63.7% of $D's power in 2023. 2024 IRP: 2023 capacity vs % of actual energy supplied: Renewables incl purchases: 10.9% vs 5.0%. Nuclear: 16.6% vs 29.2%. Fossil Fuels incl purchases: 63.4% vs 63.7%. Pumped storage: 9% vs 3%. #OOTT." Even though*

Dominion doesn't want to mention fossil fuels, fossil fuels provided 63.7% of Dominion's total power. It is disappointing to see the machinations companies will go to avoid mentioning fossil fuels and, in Dominion's case, rounding up numbers to make renewables look a little better. Below is the table we created from Dominion's 2023 Integrated Resource Plan. Our column for actual energy mix adds up to 100.9% and that is because Dominion only provided rounded numbers for renewables instead of giving one decimal. So renewables are a rounded 8.0% but should have been 7.1% if Dominion had give one decimal like all other numbers. Our Supplemental Documents package includes the excerpts from the IRP that we attached to our tweet and that are the source of data for our table."

Figure 76: Dominion Energy 2023 Capacity & Energy Mix by Fuel Type

Dominion Energy 2024 Integrated Resource Plan Oct 15, 2024				
Fuel Source	Net Summer Capacity MW	% of Capacity	% of Actual Energy Mix	Actual vs capaicty
Nuclear	3,348	16.6%	29.2%	12.6%
Natural Gas	8,533	42.4%	36.0%	-6.4%
Pumped Storage	1,808	9.0%	3.0%	-6.0%
Coal	2,666	13.2%	5.0%	-8.2%
Oil	400	2.0%	0.0%	-2.0%
Renewable - solar, wind, hydro biomass	1,087	5.4%	3.0%	-2.4%
Energy Storage	20	0.1%	0.0%	-0.1%
Renewable Purchases	1,109	5.5%	2.0%	-3.5%
Other Purchases (Assume Fossil Fuels)	1,160	5.8%	22.7%	16.9%
	20,131	100.0%	100.9%	0.9%
1. The Energy Mix only provided rounded numbers for Renewables, Renewable Purchases and Pumped Storage				
2. Capacity represents "potentially avaialble contribution of ech type of generating resource"				
3. Power purchaes agreemens are "with renewable energy and fossil based PPAs"				
Source: Dominion Energy 2024 Integrated Resource Plan				
Prepared by: SAF Group https://safgroup.ca/insights/energy-tidbits/				

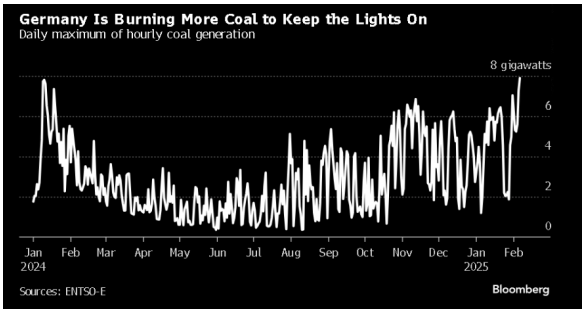
Source: Dominion Energy

Energy Transition: Low wind generation in Germany = coal plants at highest in a year

Coal is winning in Germany

For the past few months, we have been highlighting how low wind generation in Europe in a period when it is normally seasonally high has been a big plus to natural gas and coal that have had to step in to fill the gap. It seems like every week there is a report on low wind generation in Europe. On Tuesday, Bloomberg reported "*Germany is burning more coal to keep the lights on"* and we posted [LINK] "*Renewable = Intermittent Energy. Coal saving the day with Germany unseasonal low wind generation. Persistent windless weather led German coal plants to fill the gap, ramp up output to ~8.1 GW this Thurs, highest since Feb 2024" 👇@EamonFarhat. #NatGas also a big winner. #OOTT."* Our post included the below Bloomberg chart. Bloomberg wrote "*Germany's coal-fired power generation surged to the highest level in more than a year, as slumping wind speeds sap the country's renewable energy output. The persistent windless weather that has sent European power prices soaring this winter led German coal plants to ramp up output to fill the gap, reaching about 8.1 gigawatts this Thursday, the most since February of last year.* Our Supplemental Documents package includes the Bloomberg report.

Figure 77: Germany daily maximum hourly coal generation



Source: Bloomberg

Europe wind generation normally seasonally peaks in the winter

Bloomberg's Tuesday report on coal also noted how brutal Germany wind generation was this week and winter is normally the seasonal peak for wind generation. Bloomberg wrote "*Meanwhile, German wind farms produced only about 5 gigawatts on Wednesday, according to Bloomberg models. That's a fraction of a record above 53 gigawatts set in December 2023."* But this winter in Europe is a good reminder that weather is unpredictable as we are seeing with wind in Europe. Our Nov 3, 2024 Energy Tidbits memo highlighted how wind and solar have opposite seasonal peaks and trough. On Oct 31, 2024, we tweeted [LINK] "*Wind & Solar 101. EU wind has big gains from summer trough to winter peak vs solar has big losses from summer peak to winter trough. Offsetting seasonality means adding solar + wind capacity doesn't add 1 +1 in terms of actual generation in EU. But a modest net up in winter ie. less demand for #NatGas generation especially if hot winters like 22/23 & 23/24. Thx @BloombergNEF. #OOTT."* Our tweet included the below BloombergNEF wind generation outlook that shows the seasonality of wind generation and that wind generation peaks ion the winter at >2x summer trough. Yet, as noted above, wind generation this week was at the low for the year.

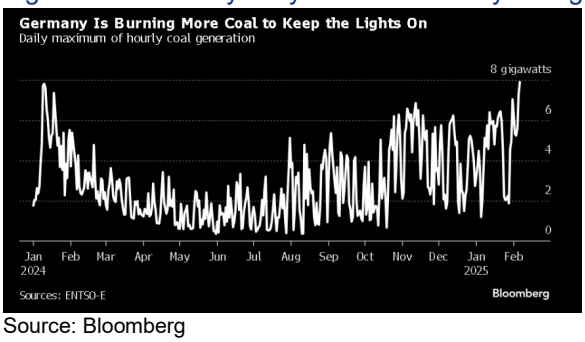
Energy Transition: Global wind turbine factory investment back to 2019 baseline

Baseline reset for global wind turbines

We believe one of the overlooked huge changes in the energy transition was how 2024 put a clear stop to the consistent theme of accelerating adoption of all the major energy transition items. We don't look at Trump as being the reason for that change. Rather we look at Trump as being the straw that broke the camel's back and he will cause a revisit of what is the baseline for all the key energy transition items. The resetting of baselines was happening and we don't believe the revised baseline for growth are being accepted. It doesn't mean there isn't going to keep being growth in the energy transition, just growth form a smaller baseline and at a slower rate of growth. This was picture was very clear looking at wind turbine capex. On Monday, we posted [LINK] "*What a difference a year makes! Yr ago, Energy Transition forecasts baseline was 2020-23 consecutive yrs of big YoY wind increases. But a huge 2024 reset of baseline back to 2019 & now only modest forward growth. #NatGas #Coal will be needed to fill the gap of lesser wind forecasts. Thx @BloombergNEF Samson Cheng. #OOTT."* BloombergNEF wrote "*Global investment in factories making wind turbine nacelles — the housings that contain generating components — has fallen sharply back to pre-2020 levels, as tight margins bedevil the industry. Major*

turbine makers like Goldwind Science & Technology Co., Shanghai Electric Wind Power Group Co. and Siemens Gamesa Renewable Energy SA are grappling with profitability challenges, leaving little room for further factory expansions. Wind nacelles are home to critical components like the generator and gearbox and account for 30-40% of a turbine's total cost. After surging at a compound annual growth rate of 85% from 2020 to 2023 peaking at $4.9 billion, factory investment plummeted 80% to $1 billion last year." The problem is that the energy transition assumed the big post Covid growth rates would continue and now there is a reset to the baseline and lower rates. There is a huge gap. And for electricity, it's why natural gas and coal should be the big winners for 24/7 power over the coming decade. Below is the BloombergNEF graph. Our Supplemental Documents package includes the BloombergNEF report.

Figure 78: Germany daily maximum hourly coal generation



Source: Bloomberg

Energy Transition: More offshore wind delays in Norway and EU

Offshore wind delays in Norway and EU

On Tuesday, we posted [LINK] "*Offshore wind delays in EU. Norway not moving in 2025 on offshore wind connected to hybrid grid (ie. to other countries like Germany) as needs state aid. Prioritize floating offshore wind with radial Ie. connected to Norway. Didn't say if radial also requires state aid, backup report is in Norwegian. Fits 👇02/06/25 Fiscal Policy Committee conclusions. #NatGas #Coal will be needed for longer for Germany. #OOTT."* It looks like the Norwegian govt was listening, at least partially, to the Feb 6 conclusions of the Fiscal Policy Committee. On Monday, Norway announced "*Offshore wind: Not moving forward with hybrid now, will prioritise floating offshore wind with radial*" [LINK] Norway highlighted "*We are currently facing high costs, both related to offshore wind production and associated grid solutions. It is clear from the report from Statnett that hybrid cables will not solve these challenges. Offshore wind production will be dependent on significant state support, regardless of which grid solution we propose," says Minister of Energy Terje Aasland*." Basically offshore wind needs "*significant*" state subsidies no matter if the offshore wind is connected to Norway or to other countries. We say partially listen because Norway has only paused offshore wind that was to be connected to a grid with other countries. They say they will prioritise offshore wind that connects to Norway but it isn't clear if that priories means they are moving ahead. The bottom line is that it means more delays to offshore wind in Norway and EU. Our Supplemental Documents package includes the Norway announcement.

02/06/25: Norway fiscal policy committee says pause offshore wind & more

Our post on the Norway offshore wind delays linked to our Feb 6, 2025 post on Norway's Fiscal Policy Committee's annual report that had a number of conclusions such as "*investment in offshore wind should be paused*". It's why we say Norway seems to have at least partially listened to the Fiscal Policy Committee conclusions as they recommended all offshore wind should be paused. Here is what we wrote in last week's (Feb 9, 2025) Energy Tidbits memo. "*Norway fiscal policy committee says pause offshore wind & more. It didn't get much press because we expect Norway to ignore the conclusions of its Fiscal Policy Committee. But the FPC's annual report to the Norway govt had conclusions for Norway to pause offshore wind, phase out CO2 and battery investment, not support the development of socio-economically unprofitable power production. Basically Norway should stop supporting unprofitable clean energy items like offshore wind. The FPC says "The mandate of the Advisory Committee for Fiscal Policy Analysis is to provide professional assessments and advice on the long-term sustainability of government finances, including whether the formulation of fiscal policy is compatible with such considerations." On Thursday, we posted [LINK] "Will Norway govt listen to their Fiscal Policy Committee suggestions for long term sustainability of govt finances: "investment in offshore wind should be paused" "CO2, the compensation & the govt's battery investment should be phased out" "not support the development of socio-economically unprofitable power production..." These are #EnergyTransition elements that are leading to more expensive & volatile energy prices. #OOTT." As we started off, the FPC report has received very little attention as most expect the Norway govt to ignore the conclusions. Our Supplemental Documents package includes the Fiscal Policy Committee release."*

Energy Transition: Union say Airbus is 5-10 yrs behind green hydrogen plane by 2030

Airbus green hydrogen plane delays

No one should be surprised to see any reports that point to the roll out of hydrogen, in particular green hydrogen, will take way longer than energy transition aspirations/plans to make any significant, not material, dent in fossil fuels consumption. Rather, as we have seen over the past year, it will be more reports and, eventually, admissions of a significant push back in timelines. Green hydrogen for commercial jets is an example. As of our 7am MT news cut off, we haven't seen official Airbus confirmation of how many years delay there will be to their target for green hydrogen planes by 2035. Last Sunday night, we posted [LINK] "*Jet Fuel for longer! Unions says @Airbus is 5-10 yrs behind in its target for planes to run on Green Hydrogen by 2035. Airbus says key reason is "the availability of hydrogen produced from renewable energy sources at scale, is slower than anticipated" See 👇 @bekammel report #OOTT."* Our post included Bloomberg's reporting "*The European planemaker was responding to a statement by French labor unions, which said that an entry into service of a hydrogen aircraft has been delayed by five to 10 years, from a previous goal of coming to the market by 2035."* Bloomberg quoted an Airbus statement that noted delay issues but did not comment on the 2035 target. Bloomberg wrote ""*We recognise that developing a hydrogen ecosystem — including infrastructure, production, distribution and regulatory frameworks — is a huge challenge requiring global collaboration and investment," Airbus said in a statement. "Recent developments indicate that progress on key enablers, particularly the availability of hydrogen produced from renewable energy sources at scale, is slower than*

anticipated." Our Supplemental Documents package includes the Bloomberg report.

Energy Transition: Energy Secretary Wright expects big advancement in fusion

Fusion faster than expected?

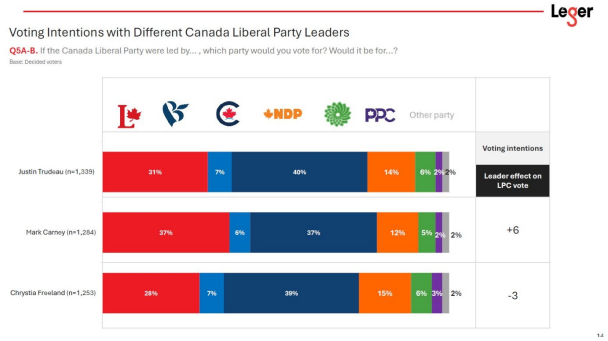
We aren't as optimistic as new Energy Secretary Wright but the 25+ years of Energy Tidbits memo have always put out items on both sides of the argument. The last thing we want to do is just comment on items to support our views. And, in this case, fusion is such a wild card. But the reason why we highlight it is that can have a material impact on fossil fuels consumption when fusion can become commercially available in scale. Even under Wright's optimistic view, it is likely at least a couple decades before it can be commercially available in scale. But if that visibility comes in a decade, it will impact the tail end/long term value of items like LNG and natural gas. On Tuesday, we posted [LINK] "*Potential Black Swan for long term #natgas #LNG. What if Energy Sec Wright is right & #Fusion proven to work & be visible to be commercialized in late 2030s? "also keep an eye on fusion… I went to MIT 40 years ago to work on fusion energy. We will see positive energy liberated from fusion machines in my tenure at the DOE. And commercial fusion may not be that far behind". Wright. See 👇my transcript. Thx @adsteel @scarletfu #OOTT."* Our post included the transcript we made of Wright's comments on Bloomberg. "*And probably, the technology we know of today that can most meaningfully grow is nuclear. Both these next generation small modular reactors, but also keep an eye on fusion. I went to college. I went to MIT 40 years ago to work on fusion energy. We will see positive energy liberated from fusion machines in my tenure at the DOE. And commercial fusion may not be that far behind. These aren't one year, two years from now but technology is moving fast and I think, as you look out several years in the future, nuclear's going to be on the rise."*

Capital Markets: Will Mark Carney call a snap Canada election if he wins Mar 9?

Potential Canada election in April

Yesterday, we posted [LINK] "*Next Canada election in late Apr? Reports Mark Carney to call snap election if he wins Mar 9 Liberal leadership. 👇@leger360 Feb 11 polls shows Liberals & Conservatives dead heat if he wins. Probably sees a short 37-day campaign lets him run as a mystery than history. #OOTT."* We had Cdn news on in the background yesterday morning and two of the stories were on how Mark Carney is expected to call a snap election if he wins the Liberal leadership on March 9 and how polls have shown a huge surge in Liberals support and that the Liberals/Conservatives are in a dead heat if Carney becomes leader. Our post included the Leger Feb 11 poll that was referenced showing the dead heat if Carney wins. In speaking with some of our political friends, they see the logic in Carney calling a snap election to build on the momentum shift and, with the Trump tariffs to be the huge focus of any election, it also means that voters won't be focusing on many items in Carney's background. Below is the Leger Feb 11 poll chart we attached to our post.

Figure 79: Voting intentions with different Canada Liberal Party Leaders



Source: :Leger

Capital Markets: Safe haven investors drive gold to $2,943 on Tuesday

Gold hits $2,943

It was another safe haven week for gold which was over $2,900 for most of Tues, Wed, Thurs and Friday, before closing at $2,883 on Friday. The high for the week was $2,943 on Tuesday. This is a follow up to the last two weeks that noted how gold has hit record highs in each of the last three weeks. We noted feedback from some older investors two weeks ago who described the uncertainty and daily ups and downs as welcome to Trump's world and they laughed. And they both said that there are too many events each day to follow and too much volatility to risk. We suspect they are far from alone and that the best evidence is how the search for safety has driven gold over $2,900. Gold had another good week and hit $2,943 on Tuesday before closing at $2,883 on Friday.

Figure 80: Gold hit $2,943 on Tuesday

Source: Bloomberg

Capital Markets: Australia new 2-yr ban on foreigners buying existing homes

Foreigners can't buy existing homes in AUS

There was a different approach by Australia on how to deal with the lack of affordable home. Earlier this morning, we posted [LINK] "*Australia announced 2-yr ban on foreigners buying an existing home. Can still buy a new home. Are there other countries that can afford to do this in some variation without hammering their economy? or will they be like Mexico with big tax on gains on a foreigner home sale?*" Our post reposted the Australian housing minister Clare O'Neil video announcing a 2-yr b an, effective Apr 1, on foreigners buying existing homes. Foreigners are still allowed to buy new homes. We don't recall seeing other developed countries doing something like this and it will be interesting to watch how social media picks

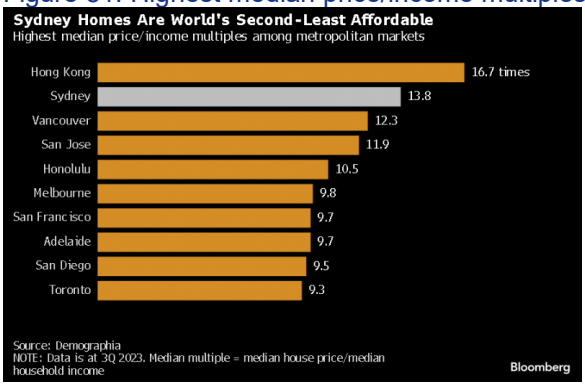
up on this and tries to pressure other countries to do something similar. We noted Mexico's approach is a little different, they have always prevented foreigners from a direct ownership of properties along the coast line forcing them to hold the interest in a trust structure and then heavily taxing any profits on the sale.

Capital Markets: Surprising list of highest median home price/income multiples

Highest median home price/income multiples

Yesterday, Bloomberg wrote on the Australia ban on foreigners buying existing homes. Their report included the below table. What jumped out is how come there is no New York or London or other really high priced cities. But the table is not a high price list. It is a list of the highest median house price/income multiples. So, it's a house price to income ratio. The report highlights Sydney is #2 but two Canadian cities are in the top 10. Vancouver at #3 and Toronto at #10. Hong Kong is #1.

Figure 81: Highest median price/income multiples among metropolitan markets



Source: Bloomberg

Demographics: JP Morgan CEO Dimon rants on Gen Z work ethics

Jamie Dimon on Gen Z

Anyone who has been in the investment bank/dealer business for more than 10 years knows there has been big changes in working habits and that is especially so for those who compare against the way things were in the decade leading up to the global financial crisis. There was huge money to be made for clients and for people working within the industry and everyone worked really long hours. So no one should be really surprised to see the reports of JP Morgan CEO Jamie Dimon comments to staff. Here are a few of the items from The Telegraph reporting. "'*I've had it': JP Morgan boss rails against Gen Z in expletive-laden outburst. Leaked recording of Jamie Dimon rant highlights growing frustrations over home working." "He criticised "zoomers" – a term for people born between the late 1990s and early 2010s – for spending all their time on the video app Zoom instead of physical offices.*
Mr Dimon said: "Don't give me this s--- that work-from-home Friday works. "I call a lot of people on Fridays, and there's not a goddamn person you can get a hold of. "I've had it with this kind of stuff." There was a lot more in The Telegraph reporting. Our Supplemental Documents package includes The Telegraph report.

Demographics: VP Vance tells the world coronavirus was created in Chinese lab

Coronavirus created in a Chinese lab

VP Vance made the major address at the Munich security conference. The major coverage of the Vance speech was on how he was lecturing Europe on they way they run their governments in particular on immigration. We watched the speech and no question he lecturing Europe. But there was also Vance reminding that the Coronavirus was created in a lab in China. We created a transcript of his comments." *We created a transcript of his exchange Bloomberg. Vance said " And in interest of commodity, my friends, but also in the interest of truth, I will admit that sometimes the loudest voices for censorship have come not from within Europe but within my own country, where the prior administration threatened and bullied social media companies to censor so called misinformation. Misinformation like for example the idea that coronavirus had likely leaked from a laboratory in China, our own government encouraged private companies to silence people who dared to utter what turned out to be an obvious truth."*

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

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

Misc Facts and Figures.

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

Wine of the week: 2006 Bibi Graetz "Testamatta" Toscana

In August, I started the wine of the week when I realized I had to get to opening up some wines bought 20 to 30 years ago that included some that, unfortunately, were getting past their prime. One of the negatives of the change in life from Covid was a huge absence of entertaining at home, which means there has been a big shortfall in wine drinking at our home. So am now making sure what, when I bought them 15-25 years ago, were some good wines and make sure bottles get opened especially as many are 20 to 40 years old. On Friday night, I posted the wine of the week, the 2006 Bibi Graetz "Testamatta" Toscana. It was a gift from well-known oilman, Coelacanth Energy CEO Rob Zakresky, that he bought in Italy around 2010. Rob knew I was and am a big fan of Sangiovese wines. I let it breath for a couple hours and it drank very well. Wine Spectator loved it that year with their 98 point rating and Robert Parker gave it a 94 point rating.

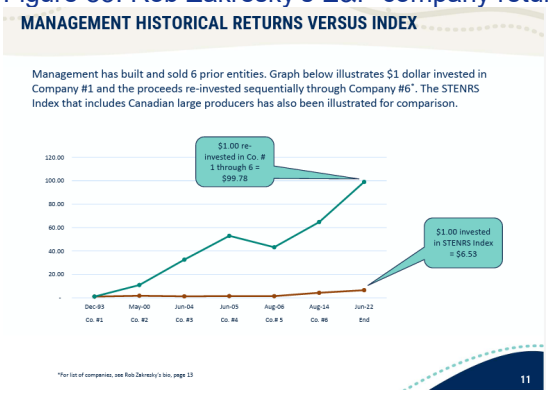
Figure 82: 2006 Bibi Graetz “Testamatta” Toscana

Source: SAF Group, K&L Wines

Oilman Rob Zakresky’s oil companies have done very well over the past 30 yrs

In the wine of the week, I noted that it was gift 15 years ago from Rob Zakresky. Rob Zakesky’s latest E&P company is called Coelacanth Energy and is his sixth E&P company over the past 30 years. In my investment banking career, I had the opportunity to be his banker in his first big raise when I was at then called ScotiaMcLeod in 1996/97 for his first E&P company, Bellator Exploration. I got to meet him when our then E&P analyst, Henry Cohen, told me there were good things happening at Bellator. We raised over $40 mm in that first big equity raise. And I was fortunate to have taken the lead banker relationships when I moved on to then First Marathon and then Griffiths McBurney/GMP Securities. So when I looked at his slide deck and saw the below slide from the Coelacanth slide deck, it was a reminder of what I have seen from him in his 30 years running E&P companes.

Figure 83: Rob Zakresky’s E&P company returns over 30 years.



Source: Coelacanth

Super Bowl Nashville Rub (GF) 🔥 Chicken Wings from Hudsons Canada’s Pub

Didn’t go to a Super Bowl party but went out for a pre-game lunch with friends to have some traditional Super Bowl snack food. Ended up at Hudsons Canada’s Pub and had their Nashville Rub (GF) 🔥 chicken wings and onion rings. Chicken wings are the most eaten food on Super Bowl Sunday so had to join the movement. Last week’s (Feb 9, 2025) Energy Tidbits memo The National Chicken Council’s 2025

Wing Report predicts Americans will eat 1.47 billion chicken wings today, a +1.5% increase from last year's Super Bowl's 1.45 billion wings eaten. They were supposed to be hot and they could have been much hotter. But they were extra crispy so were pretty good.

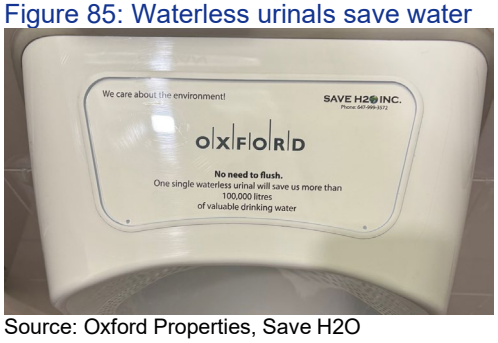
Figure 84: Nashville Rub (GF) 🔥 Chicken Wings

Source: SAF Group, Hugdsons Canada's Pub

One single waterless urinal can save 100,000 litres of valuable water

Don't know the math and con's but didn't realize the huge advantage of waterless urinals in water consumption savings and can't help wonder why, even in Canada, we don't have more of these. Had back-to-back-to-back coffee meetings so ended up using the public restroom in a Calgary office building food court. And saw the below sign that said "*No need to flush. One single waterless urinal will save us more than 100,000 litres of valuable drinking water*." For 15 to 20 years, I have highlighted clean water the likely major global issue this century. We are fortunate in Canada to be among the leading countries for fresh water but that doesn't mean we shouldn't be focused on conserving water or increasing the efficiency of water usage.

Figure 85: Waterless urinals save water



Source: Oxford Properties, Save H2O

Shandong amusement park tries to pass of a donkey for a zebravaluable water

We look at China's major news sites at least every couple days and will often see the humorous reports such as the Global Times Friday report [LINK] "*Shandong amusement park paints donkey as zebra to attract visitors. Recently, videos posted by netizens claimed that an amusement park in Zibo, East China's Shandong Province, was disguising a donkey as a zebra, sparking widespread discussion. In response, park staff confirmed that the "zebra" was indeed a donkey, and the move was intended to attract tourists. On a popular short video platform, an account*

repeatedly posted videos claiming that a zebra had been introduced to an amusement park in Zibo. However, as reported by CCTV News, the "zebra" in the videos closely resembled a donkey, with its stripes showing clear signs of being artificially applied." The report also wrote "*A staff member from the park confirmed that, after checking with management, the so-called zebra was indeed a donkey, with a sign clearly indicating that it was a donkey. "The owner did it just for fun," the staff member said."*

Figure 86: Donkey trying to pass as a zebra

Source: Global Times

Trump says paper straws sometimes explode

On Monday, Trump posted on his executive order against paper straws so the US can go back to plastic straws and part of his rationale is that sometimes paper straws explode. We posted [LINK] *"""we're going back to plastic straws. these things don't work... on occasions they break, they explode..." Trump on getting rid of paper straws. Trump supporter or not, most people will probably support the decision even if they haven't ever had an exploding paper straw. [LINK]."* We weren't alone in not hearing of exploding paper straws.