Energy Tidbits

March 16, 2025

Produced by: Dan Tsubouchi

IEA's Birol "*There would be a need for investment, especially to address the decline in the existing fields. There is a need for oil and gas upstream investments, full stop*."

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. IEA's Executive Director Birol came out with a clear view that there needs to be investment in oil and gas upstream, feels like a set up for pulling back on their peak oil demand by 2030 call. [click here]

2. OPEC mocks Birol on his "yo-yoing" for oil and gas investment and reminds the world needs to add ~5 mmb/d every year just to replace declines in existing fields. [click here]

3. Trump ordered the military to make decisive strikes on the Houthis that started last night, the Houthis vow a "professional and painful" response. [click here]

4. Overlooked grid stability risk. Hitachi Energy CEO reminds data centers are huge electricity consumers and have huge swings in very short time in power consumption i.e. swings of 200, 300 MW in ten minutes. [click here]

5. BNEF forecasts US gas storage will be below the bottom end of the 5-yr range in Q4/25 and in 2026. [click here]

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

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

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Natural Gas: -62 bcf draw in US gas storage, now -628 bcf YoY

-62 bcf draw in US gas storage

Winter is for the most part over so the draws from storage are more modest. For the week ending Mar 7, the EIA reported a -62 bcf draw [LINK]. Total storage is now 1.698 tcf, representing a deficit of -628 bcf YoY compared to a deficit of -585 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 Mar 7 saw storage at -230 bcf below the 5-yr average, up from last week's deficit of -238 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 (03/07/24)		5-year average (2020-24)	
Region	03/07/25	02/28/25	net change	implied flow	Bcf	% change	Bcf	% change
East	307	340	-33	-33	413	-25.7	378	-18.8
Midwest	370	396	-26	-26	563	-34.3	476	-22.3
Mountain	165	166	-1	-1	167	-1.2	111	48.6
Pacific	196	199	-3	-3	214	-8.4	170	15.3
South Central	660	658	2	2	969	-31.9	793	-16.8
Salt	161	150	11	11	293	-45.1	226	-28.8
Nonsalt	499	509	-10	-10	676	-26.2	567	-12.0
Total	1,698	1,760	-62	-62	2,326	-27.0	1,928	-11.9

Source: EIA

Figure 2: Previous US Natural Gas Storage

Previous 8 weeks (Bcf)				
Week Ended	Gas in Storage	Weekly Change	Y/Y Diff	Diff to 5 yr Avg
Jan/17	2,892	-223	-57	21
Jan/24	2,571	-321	-144	-111
Jan/31	2,397	-174	-208	-111
Feb/07	2,297	-100	-248	-67
Feb/14	2,101	-196	-386	-118
Feb/21	1,840	-261	-561	-238
Feb/28	1,760	-80	-585	-224
Mar/07	1,698	-62	-628	-230

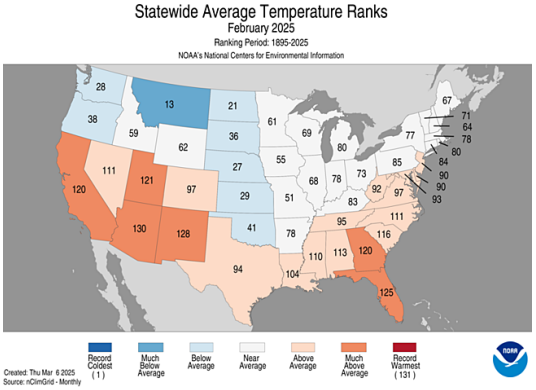
Source: EIA

Natural Gas: NOAA reported US Feb temperature was around average

Feb US temperatures

As noted below in the memo in a separate item, average temperatures over a month don't tell the full story for winter temperatures impact on natural gas. On Monday, NOAA posted its recap of US average temperatures over the month of Feb, and it ranked in the middle third of the last 131 years [LINK]. The historic average temperature in the US for Feb was 34.9°F, and this past Feb was +1.0°F above that average. The Pacific Northwest to central plains generally saw below-average temperatures throughout the month, while the Southwest, Gulf Coast, and Southeast were hit with above average temperatures. Arizona had its second warmest Feb on record, and Alaska had its third warmest Feb in its 101-year recording period. Below is a map of statewide average temperature ranks.

Figure x: Statewide average temperature ranks

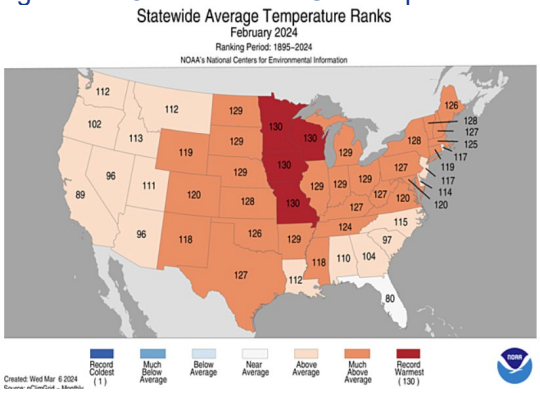


Source: NOAA

03/10/24: NOAA, 3rd warmest Feb on record, warmest winter on record for US

The reason why there was such a big YoY decline in gas storage in Feb was that Feb 2024 was the 3rd warmest Feb on record. Here is what we wrote in our March 10, 2024 Energy Tidbits memo. "*NOAA, 3rd warmest Feb on record, warmest winter on record for US. We started warning on the hot winter in Q4/23 with the reminder that it is always tough for natural gas markets to catch up from a warm start to winter. And that the only way that happens is if there is sustained cold weather in Jan and Feb. Unfortunately, the hot weather played out all winter. On Friday, the NOAA released their February recap for statewide average temperatures, which revealed February 2024 was the 3rd warmest the US has seen in the past 130 years. 4 other states saw their hottest February in recorded history as well. This comes after last February (2023) was labelled the 28th hottest since 1895. In a news release [LINK], the NOAA wrote "The average temperature of the contiguous U.S. in February was 41.1°F, 7.2°F above average, ranking third warmest in the 130-year record. February temperatures were above average across most of the contiguous U.S., while record-warm temperatures were observed across much of the Mississippi Valley and in parts of the Great Lakes and southern Plains. Minnesota, Wisconsin, Iowa and Missouri each had their warmest February on record…The meteorological winter (December–February) average temperature for the Lower 48 was 37.6°F, 5.4°F above average, ranking as the warmest winter on record. Temperatures were above average across a vast majority of the contiguous U.S. and near average along parts of the Gulf of Mexico. North Dakota, Minnesota, Iowa, Wisconsin, Michigan, New York, Vermont and New Hampshire each had their warmest winter on record." Note that NOAA's definition of winter is Dec-Feb. Below is a picture of statewide average temperature ranks in February*."

Figure 4: NOAA Historical US Temperature Ranks by State – February 2024



Source: NOAA

Natural Gas: Average temperatures over a month as seen in Feb don't tell the story

Average monthly temps don't tell the story

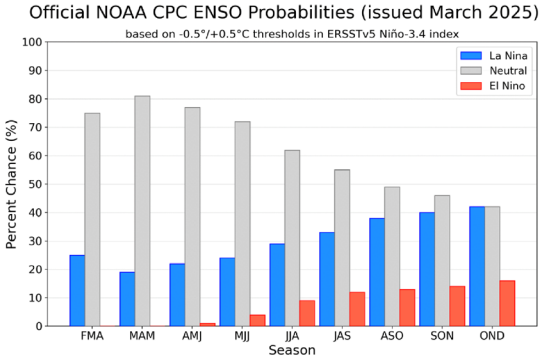
On Tuesday, we posted [LINK] "*Average temps over a month don't tell the full #NatGas story. @NOAA Lower 48 Feb temps, in middle 1/3 of historical temps. But bitter cold concentrated in a week across Lower 48 drove HH +$1 in Feb as storage deficit went from -248 bcf YoY on 01/31 to -585 bcf YOY on 02/28. #OOTT. Thx @AccuWeather."* Feb was a good month for natural gas prices and increasing YoY storage deficit. So, when we saw the NOAA Feb Lowr 48 temperature recap note that Feb temperatures were in the middle 1/3 of historical temps, we reminded that there was that week or so of bitter cold included in the overall average temperatures over Feb. And the bitter cold week across most of the Lower 48 was enough to be the catalyst to drive HH prices up in Feb. Our post included the AccuWeather monthly daily high/low temperatures for Chicago, New York and Houston that shows that week of well below normal temperatures. February was a good reminder that an month of average temperatures over a month can be a big catalyst to natural gas prices when there is a week of bitter cold within the average temperatures for a month. Our Supplemental Documents package includes the AccuWeather daily temperature graphs for Feb for Chicago, New York, and Houston.

Natural Gas: NOAA, early forecast of Neutral/La Nina conditions for Jul/Aug/Sep

Neutral/La Nina forecast for Summer 2025

Winter is to the most part 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 Nina outlook, which is issued on the 2nd Thursday of every month [LINK]. NOAA expects Neutral conditions to dominate with smaller probability for La Nina conditions to develop in the short-term and persist into the Northern Hemisphere summer. For Jul/Aug/Sept, NOAA sees a Neutral/La Nina probability. NOAA wrote, "*The forecast team concurs and predicts ENSO-neutral, with chances greater than 50% through July-September 2025. As is typical for forecasts made in the spring, there is large forecast uncertainty at longer time horizons, with no outcome exceeding a 50% chance (chances of El Niño are the lowest). In summary, ENSO-neutral is favored to develop in the next month and persist through the Northern Hemisphere summer (62% chance in June-August 2025).*" Below is a chart of El Nino/Neutral/La Nina probability forecasts for 2025.

Figure 5: NOAA El Nino Probability March 2025

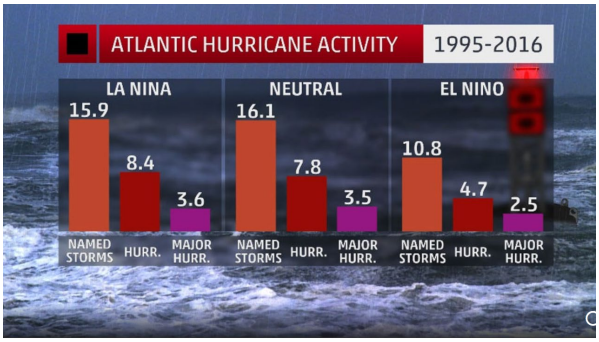


Source: NOAA

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

Here is what we wrote in our Feb 16, 2025, Energy Tidbits memo, "*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 6: Atlantic Hurricane Activity El Nino vs Neutral vs La Nina



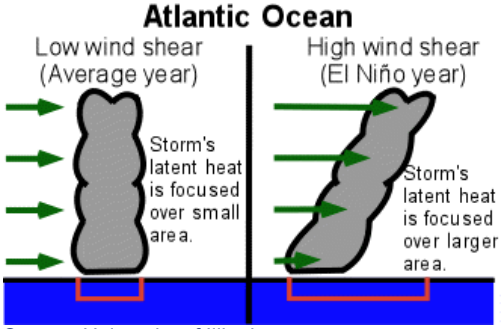
Source: Weather Channel

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 7: Early-March NOAA El Nino/La Nina Outlook



Source: University of Illinois

Natural Gas: EIA, shale/tight gas production rebounded above 83.00 bcf/d in Feb

EIA US natural gas production forecast

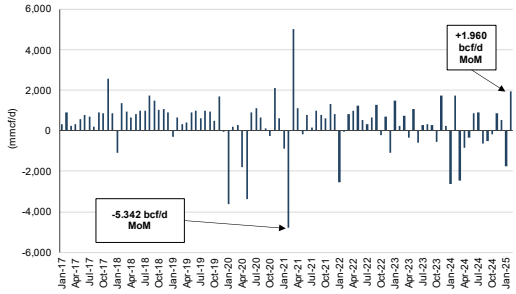
June 2024 marked the first month that the EIA stopped releasing its Drilling Productivity Report and began releasing shale/tight oil and natural gas data with the monthly Short Term Energy Outlook (STEO). (i) Please note this came with some major reporting changes, namely there are no longer monthly forecasts for tight gas production by basin. Previously, the EIA would provide an estimate of the current month tight/shale production (in this case February) and a forecast for the next month (in this case March). But now, the EIA only provides estimates for the just finished month for tight/shale. So, in the case of the new March report, there is only shale/tight for the just finished month, i.e., February. (ii) On Tuesday, the EIA released its monthly STEO for March 2025 [LINK]. (iii) The key takeaway remains that US shale/tight natural gas hasn't been able to break back up to Feb 2024 levels of 85.02 bcf/d. Rather it has poked above 83 bcf/d in three months but not reaching 84 bcf/d. (iv) Us shale/tight natural gas rebounded back to above 83.00 bcf/d after last month dipping to below 82.00 bcf/d. Dec's shale/ tight natural gas production was 83.16 bcf/d, Jan was 81.41 bcf/d, and now Feb was 83.37 bcf/d. (v) Feb was up 2.4% MoM and down -1.9% YoY vs Feb 2024 level of 85.02 bcf/d. The EIA doesn't provide any explanation but we expect the dip down was weather related. (vi) Note that the EIA revised their data for shale/tight gas production back to 2021 from Feb's STEO, and we have adjusted our table to reflect the updated data. For the last 12 months Feb 2024 thru Jan 2025, the EIA revises production figures each month, and the average revision from the Feb STEO was +0.065 bcf/d. The areas with the most revisions were Haynesville, Permian, and the rest of US. Our Supplemental Documents package includes excerpts from the EIA STEO.

Figure 8: EIA Major Shale/Tight Natural Gas Production

mcf/d	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Feb MoM%	Feb YoY%
Permian	17,182	17,903	18,106	18,423	18,228	18,730	19,144	19,450	19,442	19,693	19,793	19,852	19,455	19,981	2.7%	11.6%
Haynesville	13,244	13,439	12,762	11,898	11,435	11,395	11,534	11,302	10,961	10,855	10,876	11,424	11,070	11,151	0.7%	-17.0%
Marcellus	27,219	27,021	25,287	25,371	25,144	25,896	26,537	25,826	25,353	25,401	25,757	25,644	25,388	26,403	4.0%	-2.3%
Utica	6,428	6,553	6,535	6,447	6,586	6,651	6,307	6,449	6,806	6,362	6,630	6,911	6,427	6,555	2.0%	0.0%
Eagle Ford	4,247	4,307	4,334	4,191	4,388	4,363	4,242	4,177	4,155	4,181	4,159	4,144	4,091	4,173	2.0%	-3.1%
Bakken	2,302	2,583	2,600	2,662	2,690	2,679	2,658	2,708	2,733	2,626	2,657	2,581	2,581	2,477	-4.0%	-4.1%
Barnett	1,647	1,682	1,669	1,646	1,633	1,661	1,643	1,626	1,653	1,654	1,653	1,625	1,560	1,591	2.0%	-5.4%
Fayetteville	774	846	844	777	825	814	803	803	802	795	786	754	724	717	-1.0%	-15.2%
Mississippian	2,381	2,499	2,335	2,341	2,305	2,249	2,233	2,177	2,169	2,172	2,102	2,083	2,032	2,194	8.0%	-12.2%
Niobrara-Codell	2,624	2,775	2,815	2,738	2,745	2,716	2,731	2,746	2,660	2,709	2,731	2,636	2,649	2,687	1.4%	-3.2%
Woodford	2,486	2,623	2,545	2,572	2,632	2,485	2,602	2,497	2,523	2,560	2,600	2,601	2,549	2,549	0.0%	-2.8%
Rest of U.S.	2,746	2,788	2,709	2,624	2,760	2,586	2,697	2,727	2,713	2,770	2,882	2,905	2,887	2,895	0.3%	3.8%
Total	83,280	85,019	82,541	81,690	81,371	82,225	83,131	82,488	81,970	81,778	82,626	83,160	81,413	83,373	2.4%	-1.9%

Source: EIA

Figure 9: MoM Change – Major Shale/Tight Natural Gas Production



Source: EIA

Shale/tight gas production

Natural Gas: EIA STEO increase 2025 gas production forecast +0.6 bcf/d to 105.2 bcf/d

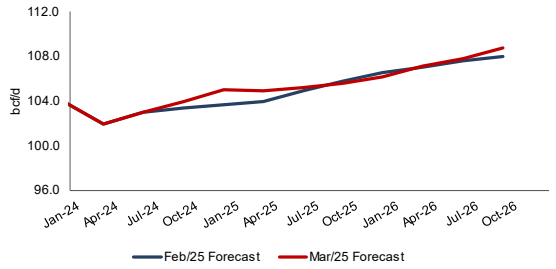
On Tuesday, the EIA released its monthly Short Term Energy Outlook for March 2025 [LINK]. (i) The EIA made an immaterial increase to its 2024 US natural gas production estimate by +0.15 bcf/d to 103.2 bcf/d. On a full year average basis, this now gives a YoY decline of -0.4 bcf/d from 2023. The key reason 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 +$0.42/mcf to $4.35/mcf (from $3.93/mcf) and expect HH price to average around $4.64/mcf in 2026. The EIA wrote "*The U.S. benchmark Henry Hub spot price averaged $4.19 per million British thermal units (MMBtu) in February, up from the January average of $4.13/MMBtu. The average price for the first two months of this year was more than $0.80/MMBtu higher than we forecast in October. Below-normal temperatures in both January and February led to increased consumption of natural gas to meet space heating demand, which resulted in more natural gas being withdrawn from underground storage than estimated in the October STEO… The Henry Hub price in this STEO averages around $4.20/MMBtu in 2025, which is 37% higher than we forecast in October. We expect the Henry Hub natural gas price to average $4.50/MMBtu in 2026 as global demand for liquefied natural gas (LNG) grows.*" (iii) The only quarterly change in natural gas production for 2024 was in Q4, increasing +0.5 bcf/d to 103.9 bcf/d. (iv) The EIA increased its 2025 forecast +0.6 bcf/d to 105.2 bcf/d from 104.6 bcf/d, which on a full year average basis would be up +2.0 bcf/d YoY. The quarterly changes to 2025 are as follows: Q1/25 up +1.3 bcf/d to 105.0 bcf/d, Q2/25 up +1.0 bcf/d to 104.9 bcf/d, Q3/25 up +0.3 bcf/d to 105.2 bcf/d, and Q4/25 down -0.2 bcf/d to 105.6 bcf/d.

Figure 10: 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
Mar-25	104.0	102.0	103.0	103.9	103.2	105.0	104.9	105.2	105.6	105.2	106.2	107.2	107.8	108.8	107.5
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 11: EIA STEO Natural Gas Production Forecasts by Month



Source: EIA, STEO

Natural Gas: EIA STEO forecasts storage -576.8 bcf YoY at 1.986 tcf to end winter 24/25

EIA March 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, as noted earlier in the memo, the surprise bitter cold across most of the Lower 48 for a week or so in Feb made a big dent in storage. (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 3.915 tcf for Nov 1, 2024, which is an increase of +172.6 bcf YoY. The March STEO is slightly down vs the February STEO forecast of storage at 3.919 tcf for Nov 1, 2024. (iii) As a result of the strong Feb, the EIA forecasts gas storage to end winter 2024/25 in April at 1.986 tcf, which would be -576.8 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 +10% higher YoY compared to last winter. (iv) There is even more uncertainty as you look out to winter 2025/26. The March STEO forecasts winter 2025/26 storage to be

3.531 tcf for Nov 1, 2025, which would be -384.1 bcf lower than its forecast for Nov 1, 2024, at 3.915 tcf. Below is a table tracking the working gas inventory forecasts and actuals since 2017.

Figure 12: 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	2,562.4	950.7	2,119.6	10.0%
Oct 2020	11/1/2020	3,931.6	3,501.1	3,931.6	430.6	3,724.5	5.6%
Mar 2021	4/1/2021	1,975.0	1,611.8	2,562.4	950.7	2,119.6	(6.8%)
Oct 2021	11/1/2021	3,532.8	3,501.1	3,931.6	430.6	3,724.5	(5.1%)
Mar 2022	4/1/2022	1,611.8	1,611.8	2,562.4	950.7	2,119.6	(24.0%)
Oct 2022	11/1/2022	3,501.1	3,501.1	3,931.6	430.6	3,724.5	(6.0%)
Mar 2023	4/1/2023	2,116.5	1,611.8	2,562.4	950.7	2,119.6	(0.1%)
Oct 2023	11/1/2023	3,742.2	3,501.1	3,931.6	430.6	3,724.5	0.5%
Mar 2024	4/1/2024	2,562.4	1,611.8	2,562.4	950.7	2,119.6	20.9%
Oct 2024	11/1/2024	3,914.9	3,501.1	3,931.6	430.6	3,724.5	5.1%
Mar 2025	4/1/2025	1,985.6	1,611.8	2,562.4	950.7	2,119.6	(6.3%)
Oct 2025	11/1/2025	3,530.8	3,501.1	3,931.6	430.6	3,724.5	(5.2%)
Mar 2026	4/1/2026	1,855.6	1,611.8	2,562.4	950.7	2,119.6	(12.5%)
Oct 2026	11/1/2026	3,410.1	3,501.1	3,931.6	430.6	3,724.5	(8.4%)

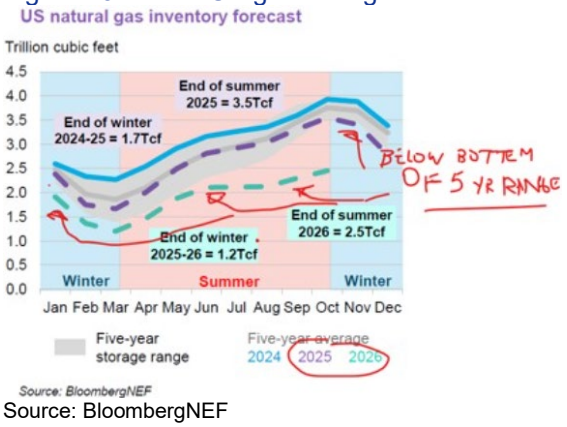
Source: EIA, STEO

Natural Gas: BNEF forecasts gas storage below bottom of 5-yr range in Q4/25 & 2026

BNEF bullish US gas storage forecast

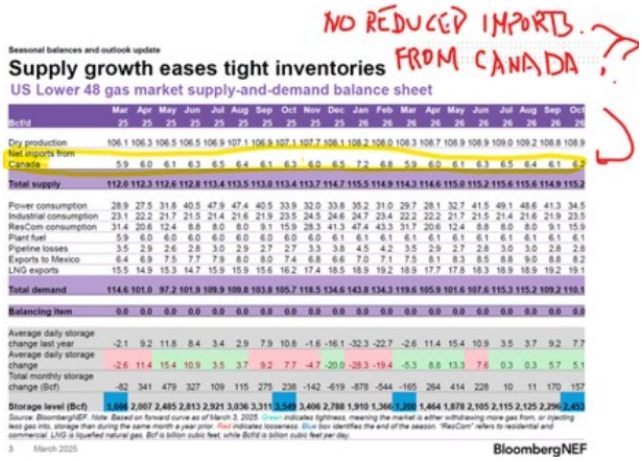
On Monday, we posted [LINK] "*Bullish #NatGas Forecast. Weather is always the big wildcard BUT BNEF forecasts storage below bottom end of 5-yr range in Q4/25. AND this assumes no real change in imports from CAN despite start of #LNGCanada 1.8 bcf/d in mid 2025 & Alberta demand from oil sands, data centers, etc. Thx @BloombergNEF #OOTT.*" BloombergNEF had just posted its "*US Gas Summer Outlook: Production Can't Keep Up With LNG".* And the key items we always look at is what does their model forecast for US gas storage levels as we look ahead to the winter. Their new forecast for US gas storage is a bullish indicator for HH prices going into the winter 2025/2026 ie. in Q4/25. Weather, in particular how cold or hot it is in the winter, is always the huge wildcard for natural gas price forecasts. And BNEF says up front that "*BNEF calculates 1,760Bcf of gas storage level variability attributable to weather between this month and the end of summer 2026."* That's really BNEF reminding that winter 2025/26 temperatures are a huge wildcard. Weather aside, there is a bullish case for natural gas going into winter 2025/2026. And BNEF highlights the key factors in its report tile saying "*Production Can't Keep Up With LNG*". BNEF forecasts higher production but also see LNG exports increasing at a greater level. And the key to their forecast is that US gas storage falls below the bottom end of the 5-yr range in Q4/25 and continues to be so in 2026. Being below the bottom end of the 5-yr range is a bullish indicator for HH prices. Plus one of the BNEF forecast model assumptions would provide addition upside. All forecast models are all about assumptions but one that jumped out at us as potential upside is their assumption that there is no real change to US natural gas imports from Canada. This means that the BNEF is assuming Cdn natural gas production is increasing enough to offset the start of LNG Canada 1.8 bcf/d Phase 1, increasing natural gas consumption from oil sands and electricity such that there is no impact on Cdn natural gas exports to the US. Below are the two BNEF exhibits attached to our post.

Figure 13: BNEF US gas storage forecast



Source: BloombergNEF

Figure 14: BNEF US supply/demand/storage forecast



Source: BloombergNEF

03/06/25: Big ramp in Cdn NatGas demand starts in 2025 with LNG Canada

We probably wouldn't have raised our questioning on the BNEF forecast assumption on US natural gas imports from Canada if we hadn't titled last week's (Mar 9, 2025) Energy Tidbits memo *"Bullish for Cdn Natural Gas: Tourmaline CEO Sees Cdn Natural Gas Demand +50%, +9 bcf/d to ~27 bcf/d in 2030*" that included the reminder that LNG Canada 1.8 bcf/d Phase 1 starts commercial deliveries in mid-2025. Here is what we wrote in last week's (Mar 9, 2025 Energy Tidbits memo) on Tourmaline CEO's view for a 50% increase in Cdn natural gas demand by 2030 with the first big step ups starting in 2025. "Tourmaline sees Cdn NatGas demand +50%, +9 bcf/d to 27 bcf/d in 2030. Tourmaline held its Q4 call on Thursday. We were surprised that

no one focused on CEO Mike Rose's very bullish Cdn natural gas demand comments in the Q&A. Rose sees added Cdn natural gas demand up 50% or ~9 bcf/d by 2030. That is huge, moving from ~18 bcf/d to ~27 bcf/d by 2030. Rose basically did the math for the in-progress or widely expected items and it totals up to an additional ~9 bcf/d of natural gas demand for Cdn natural gas. It's why, on Thursday night, we posted [LINK] "*Bullish for Cdn #NatGas. $TOU CEO has done the math. Stack up in progress + expected projects adds 9 bcfd of new NatGas markets for Cdn E&P. Half will be BC LNG if LNG Canada Phase 2 goes FID. Plus oil sands use of NatGas, data centers, pipelines, etc. Momentum on the added 9 bcfd starts is kick started in 2025 with LNG Canada 1.8 bcfd Phase 1. #OOTT.*" In the Q&A, Rose did not provide the detail but said "*We believe on the gas side, if you include LNG Canada Phase 1 and Phase 2, because it's not quite on stream yet, and build one additional pipeline, a little optimizing on existing pipelines, we can grow our overall Industry natural gas production Canada by 50% by 2030 and that doesn't include a whole bunch of other growth projects that you can dream about. We're advocating on our front for buildout on the natural gas side and long and short of it, it's apparent we need to look after ourselves and we have lots of ways to do it.*" Half of the 9 bcf/d will be from LNG Canada Phase 1 & Phase 2 (assuming Phase 2 gets FID), Cedar LNG, Woodfibre LNG and Tilbury Phase 2 LNG expansion. Rose highlighted pipeline expansions and one additional pipeline. And we understand the other factors are the continuing increased use of natural gas for power as oil sands production keeps increasing, and the ramping up of data centers. These seem to us to be either in-progress or widely accepted very near-term items that are going to be happening quickly ie. data centers. Items like more natural gas for oil sands power generation and data centers are happening. Plus our post highlighted that the big step change up in natural gas demand starts in 2025 with the start of commercial operations at LNG Canada 1.8 bcf/d Phase 1, which by itself, is ~10% of BC/Alberta natural gas production.

Natural Gas: Will Trump use national energy emergency to get NatGas pipelines in NE

Trump pushing to get Marcellus gas into NE US

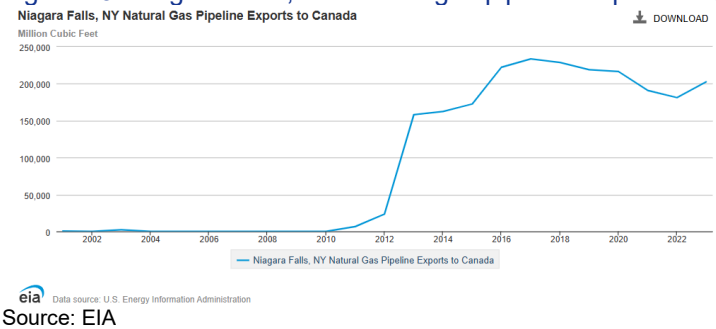
One of the overlooked Trump themes is how he declared or will declare national emergency for items like energy. We were thinking about this seeing Trump's push on NY Governor Hochul to get onboard with natural gas pipelines to the NE US. And our first thought was that he would use emergency powers to get it done if Hochul doesn't get onside. Recall that one of his day one actions was "Declaring a National Energy Emergency" that included taking actions on non-Federal Lands. Section 2 said "*Sec. 2. Emergency Approvals. (a) The heads of executive departments and agencies ("agencies") shall identify and exercise any lawful emergency authorities available to them, as well as all other lawful authorities they may possess, to facilitate the identification, leasing, siting, production, transportation, refining, and generation of domestic energy resources, including, but not limited to, on Federal lands*. " On Thursday, Trump posted *"If New York, Connecticut, and New England had their Pipelines, savings from Heating alone would go down $2,300 per family — When you add Air Conditioning, and other things, you would have a $5,000 savings per family. All we need is a simple approval from New York. Every other State in New England, plus Connecticut, wants this, in order to help the Environment, and save BIG money. We only need the final approval from New York State, whose people all want it. Otherwise, we'll have to use other authorities. New York State has held up this project for many years, but we won't let that happen any*

longer. We will use federal approval!

Trump wants Marcellus gas for New England, therefore not Ontario

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

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



Source: EIA

Natural Gas: GE Vernova will soon be in backorder to 2028 for gas turbines

Natural gas turbines to be in backorder

We have been highlighting our view that data centers can use as much renewable as possible but data centers will not be built without 24/7 power from nuclear, natural gas or coal. So, no one should be surprised to see the GE Vernova CEO Strazik comments this week of the massive demand for natural gas turbines, which has accelerated because of AI data centers. And that they will shortly be backordered through 2028 for gas turbines. Bloomberg interviewed Strazik on the sidelines at CERAWeek in Houston on Tuesday. Bloomberg wrote "*Many of the energy companies at the CERAWeek by S&P Global conference are customers of GE Vernova Inc., the maker of power-generation equipment. Some of those customers are having to wait patiently in line: Vernova's boss said Tuesday that his company's backlog of orders for gas turbines, power transformers and switchgear stretches into 2028."I would expect by the end of the summer, we will be largely sold out through the end of '28 with with this equipment," Chief Executive Scott Strazik said in an interview with Bloomberg Television's Alix Steel."*

12/10/24: GE Vernova CEO has highlighted data centers need 24/7 power

GE Vernova CEO StrazIk has always highlighted that data centers need 24/7 power and that natural gas is the winner. On Dec 10, 2024, Bloomberg wrote "*The head of GE Vernova Inc., which makes equipment for wind farms and gas-fired power plants, said electricity demand to run data centers is favoring the fossil fuel over the renewable energy source — at least, for now. Onshore wind orders remain "humble," Chief Executive Officer Scott Strazik told reporters Tuesday in New York, adding that he doesn't expect immediate improvement since data centers need the constant power generation that natural gas provides. "They're not building those data centers with an assumption for anything other than 24/7 power. Gas is well suited for that," Strazik said. Onshore wind orders, on the other hand, remain flat, and Strazik said he's "cautious" on when they'll improve. US demand for electricity had essentially been flat for decades, but the proliferation of data centers, new factories and electric vehicles has upended that trend/*

Southern reminds big value uplift to existing natural gas power plants

The GE Vernova CEO comments reinforce one of our key natural gas themes for the past few years or longer – existing, relatively new, expandable natural gas plants will have big uplift in value over the 2020s. This was long before the data center boom but was based on our several year old theme that the energy transition will take way longer, cost way more and be a bumpy/rock road. We have never bought into the energy transition assumption that wind and solar can replace the role of natural gas in providing reliable, affordable and available electricity. Here is what we wrote in our Mar 2, 2025 Energy Tidbits about Southern's Q4 call comments that fit our thesis. "*Southern reminds big value uplift to existing natural gas power plants. Yesterday, the WSJ report "AI Fever in Power Stocks Moves From Nuclear to Plain Natural Gas" [LINK] wrote "Next to existing nuclear power, new natural gas-fired power is the best bet for AI because it runs around the clock and can be built much faster than nuclear power." Don't disagree that new natural gas plants have those advantages. However, we think the WSJ missed what has an advantage over both – existing relatively new natural gas power plants that can be expanded. We highlighted this theme in last week's (Feb 23, 2025) Energy Tidbits memo with Southern's comments on their Q4*

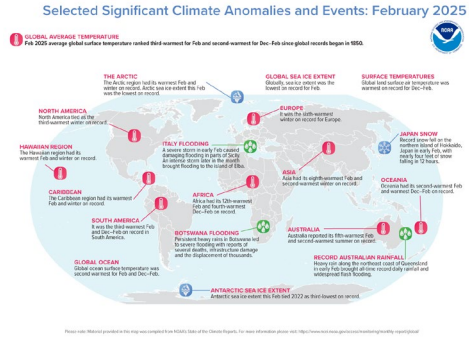
call. . Here is what we wrote "Southern reminds big value uplift to existing natural gas power plants. Even prior to the AI data center boost, one of our big themes for the past few years has been that existing natural gas power plants will see a value uplift as the energy transition was going to take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

Natural Gas: NOAA, Feb 2025 was 3rd warmest average global temperature on record

Feb global temps

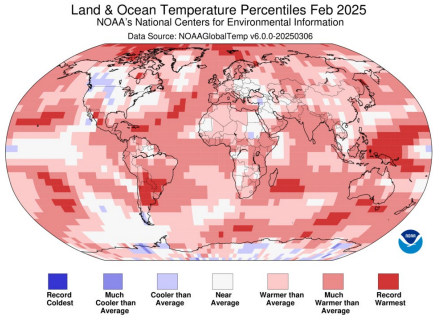
On Wednesday, the NOAA posted its February recap for the global climate, which came in as the third hottest average global for February on record [LINK]. Note that February 2024 set the record for the hottest February on record globally. The NOAA notes that temperatures were above average across most of the globe but have cooled in recent months with the presence of a La Nina episode. The Arctic had its warmest February and winter on record, and North America tied for its third warmest winter on record, despite temperatures being relatively low in western Canada and the central US during the month. The global ocean also recorded the second warmest temperatures on record in February. Additionally, ice extent globally and in the Arctic was the lowest on record. The NOAA wrote "*The February global surface temperature was 2.27°F (1.26°C) above the 20th-century average of 53.8°F (12.1°C), making it the third-warmest February on record. According to NCEI's Global Annual Temperature Outlook, there is a 4% chance that 2025 will rank as the warmest year on record."* Below is a map of the land & ocean temperature percentiles for February 2025.

Figure 16: Selected Significant Climate Anomalies and Events: Feb 2025



Source: NOAA

Figure 17: Land & Ocean Temperature Percentiles for Feb 2025

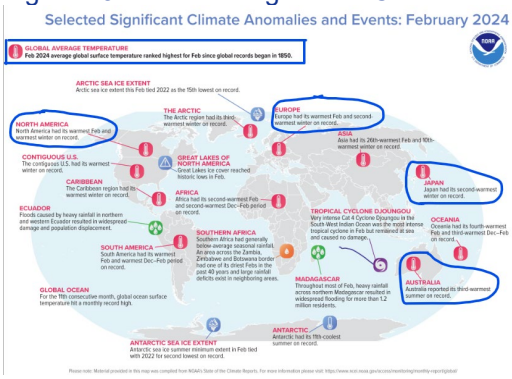


Source: NOAA

03/17/24: Feb 2024 had the hottest average global temperature on record

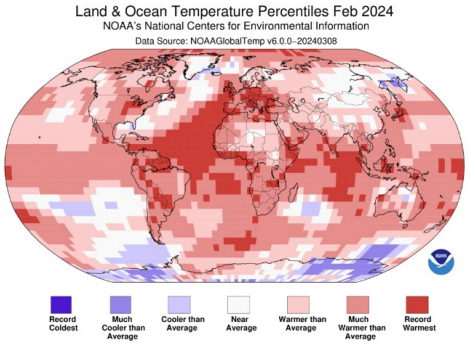
Here is what we wrote in our March 17, 2024, Energy Tidbits memo, "*On Thursday, the NOAA posted its global climate recap for Feb, and it was another month of the hottest winter month on record. And importantly, it was warm around the world. It was the warmest February on record for North America, South America and Europe. Since it is February, the NOAA's definition as the "end" of winter, we can also see records set for the overall winter. It was the warmest winter on record for North America, Europe, the Caribbean, and South America (summer). It was the third warmest summer on record for Australia and second-warmest Winter for Japan. Below are the NOAA graphics for Feb.*"

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



Source: NOAA

Figure 19: Land & Ocean Temperature Percentiles for Feb 2024



Source: NOAA

Natural Gas: TotalEnergies sees Mozambique LNG completion in 2030

Mozambique LNG completion date in 2030

One of the big holdups to TotalEnergies restarting its Mozambique LNG project has been waiting on the US Export-Import Bank board approval of its $4.7b loan that is to be the largest financing piece for the Mozambique LNG project. That hurdle is removed and we saw TotalEnergies CEO Pouyanne say something we haven't been seeing – he is giving an estimated completion date in 2030. Until now, we haven't seen him giving a completion date. We have to believe his now giving a completion date is pointing to a near-term decision to restart the project. On Wednesday, we posted [LINK] "*new completion date in 2030" for TotalEnergies Mozambique LNG with Exim loan approval. Don't recall seeing specific completion date till now ie. seems to infer TotalEnergies could/expects to make a restart decision soon? Thx @adsteel @pburkhardt @mattstephenhill #OOTT #LNG."* In his Bloomberg interview on the sidelines at CERAWeek, Bloomberg wrote *"it's just a matter to amend this contract to put a new completion data in 2030" to reflect the delays to the project, TotalEnergies Chief Executive Officer Patrick Pouyanne said in an interview at CERAWeek in Houston on Tuesday. "Now you have a functional US Exim – President Trump has decided to put in place a new board."*

France launches manslaughter probe vs TotalEnergies re Mozambique

We don't know how the TotalEnergies board views items like yesterday's news in whether that will impact the board's approval for a restart of the Mozambique LNG project. Yesterday, AFP (via Bloomberg) reported "*French prosecutors said Saturday they had opened a manslaughter investigation against energy giant TotalEnergies following a bloody 2021 jihadist attack in Mozambique. In October 2023, several survivors and relatives of victims of the attack near a major gas field in northern Mozambique launched legal action against the oil and gas giant, accusing it of failing to protect its subcontractors. The complainants welcomed the move. Nicholas Alexander, a South African attack survivor, said the complainants had feared that Total was "too big and too influential, too powerful" to be investigated over the attack. "So we're very happy that's gone ahead," he told AFP. "At this stage we just want a proper judicial inquiry and some clear answers," he said. The investigation into involuntary manslaughter and failure to assist persons in danger was launched on Friday, the prosecutor's office in Nanterre, west of Paris, told AFP. Islamic State-linked militants killed dozens of people when they attacked the port town of Palma in March 2021, sending thousands of people fleeing into the surrounding forest. The attack in Cabo Delgado province lasted several days. Some of the victims were beheaded. TotalEnergies halted its $20 billion LNG project after the attack but is hoping to restart it. "TotalEnergies will cooperate fully with this investigation," the company said on Saturday. It has earlier "strongly rejected" the accusations."* Our Supplemental Documents package includes the AFP report that was posted on Bloomberg.

TotalEnergies reps forced to flee meeting post angry residents confrontation

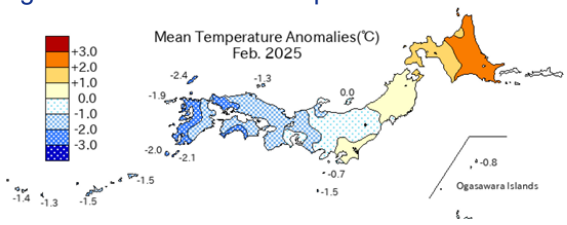
Based on the reporting, we don't expect this report will cause a delay to any TotalEnergies restart of its Mozambique LNG project unless it represents the tip of a bigger underlying local residents opposition to TotalEnergies. We read the local reporting referenced by the BBC and Bloomberg and it sounds like protests of some sort will be carrying on as there is a longstanding complaint that TotalEnergies hasn't paid the compensation for the transfer of land. On Friday, Bloomberg posted a BBC Monitoring of a report by Integrity Magazine (Mozambique) that *"TotalEnergies and Mozambican government representatives have been forced to flee a meeting in the northern Cabo Delgado province after being confronted by angry residents demanding financial compensation, privately-owned website Integrity Magazine reported on 14 March. The news site did not mention the date of the meeting in Quitunda village in Palma district, but said it was intended to address grievances related to land resettlement and financial compensation for communities affected by TotalEnergies's liquified natural gas (LNG) project in Cabo Delgado. Tensions escalated when residents started demanding that the company pay them the compensation owed for the expropriation of their land. Fearing for their safety, government officials and TotalEnergies representatives attempted to flee the venue, but were chased by a group of young residents on motorbikes. The officials only escaped due to the intervention of police, Integrity Magazine reported."* Our Supplemental Documents package includes the local reporting by Integrity Magazine.

Natural Gas: Japan was a little colder than normal in Feb

Japan February temperatures

It was a little colder than normal, on average, in Japan in Feb, which was positive to electricity/natural gas demand. On Friday, the Japan Meteorological Agency posted its climate recap for February [LINK]. The JMA reported that mean temperatures for western Japan and the southern islands were significantly below normal, due to strong inflows of cold air by the winter monsoon. Snowfall was above normal levels on the Sea of Japan sides of the country. The below normal temperatures in the west/south prefectures are positive but generally not a huge driver for electricity demand. Conversely, the northern prefectures saw above normal temperatures for the month. The JMA wrote, "*Monthly mean temperatures were significantly below normal in western Japan and Okinawa/Amami, Monthly snowfall amounts were significantly above normal on the Sea of Japan side of eastern Japan and above normal on the Sea of Japan side of western Japan."* Below is a temperature map of Japan for February.

Figure 20: JMA Mean Temperature Anomalies February 2025



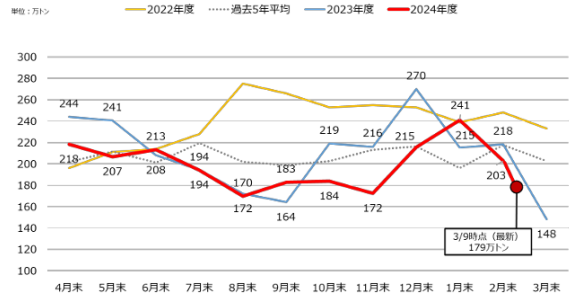
Source: Japan Meteorological Agency

Natural Gas: Japan LNG stocks down WoW, up YoY; down against the 5-yr avg

Japan LNG stocks down WoW

We should see some Japan spot LNG cargo buying in March with Japan LNG stocks dipping below the 5-yr range. Japan's LNG stocks are down WoW, up YoY, and down when compared to the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on March 9 hit its lowest point since September 2024 at 86.0 bcf, down -9.6% WoW from 95.1 bcf on March 2, and up +20.9% from a year ago. Stocks are down compared to the 5-year average of 97.5 bcf. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 21: Japan LNG Stocks



Source: METI

Trump teases on news for a RUS UKR deal

Natural Gas: Trump teases momentum on RUS/UKR deal on Monday

As of our 7am MT news cut off, there have been no Trump posts on Russia/Ukraine today. But Trump seemed to be teasing that there is some good news on the Russia/Ukraine deal that is coming on Monday. Yesterday morning, we posted [LINK] "*Trump teases on momentum for RUS/UKR deal on Monday. "we are trying to get that with Russia too. And I think thus far it's gone okay. We will know a little bit more on Monday, and that'll be, hopefully, good." Trump to @SharylAttkisson. "I think we've had some very good results, so you know, I haven't been able to say that the anybody else, I haven't wanted to say it until just before I came here, I got some pretty good news." Trump to Justice Dept via @business #OOTT."* Our post included the key quotes from the Baltimore Sun Thurs interview with Trump but posted yesterday and Trump's comments from his Justice Department speech. Trump would have made these teases post envoy Steve Wikoff's meeting with Putin on Thursday Moscow time. Moscow is seven hours ahead of eastern time. Our Supplemental Documents package includes the two reports.

Post US envoy meeting, Putin is cautiously optimistic for a Trump UKR deal

Putin fan or not, he seems to know how to message his views in ways that support or don't offend Trump but always pointing to more items on Putin's must have list. In this case, his messaging was positive for Trump's RUS/UKR deal push but also reminding that there is still work to be done. The big Russia/Ukraine potential deal meeting this week was when Trump envoy Steve Witkoff met with Putin in Moscow on Thursday. Early Friday morning, we posted [LINK] "*Momentum for Trump proposed RUS/UKR deal. "Of course, there are reasons to be cautiously optimistic" says Putin. TASS. "There is still much to be done, but the president has nevertheless identified with President Trump's position" Peskov via @AFP @business #OOTT."* Our Supplemental Documents package includes the TASS and AFP reports.

Not clear when Russian natural gas via Nord Stream will resume

We continue to believe that any Trump Russia/Ukraine deal will provide for the return of Russian pipeline natural gas to EU, including via the remaining undamaged pipeline of Nord Stream. So, we put it's not clear if Trump is yet onside with how to include. But at least as of now, Russia is now saying the return of natural as via Nord Stream isn't on the agenda for now for whatever that means. Note Russia was specific on speaking on Nord Stream and not on its other natural gas pipelines to EU. On Thursday, we posted [LINK] "*Breaking. Negative to TTF #NatGas and #LNG prices. "If the United States and Russia agree on cooperation in the field of energy, then the gas pipeline for Europe can be provided. And this will benefit Europe, because it will receive cheap Russian gas," Putin said. #OOTT."* Putin seemed to be inferring that the return of Russian pipeline natural gas would return to EU. Again, note Putin was speaking on Russian pipeline natural gas in total and not just Nord Stream. Early Friday morning, we posted [LINK] ""*It's off the agenda for now" Russia's Novak on resumption of Russia #NatGas pipeline exports to Germany via Nord Stream. @Reuters via TASS. Hard to see Putin agreeing to a Trump grand deal without some path to restoring #NatGas revenues. #OOTT."* Novak was specific

that it was Nord Stream natural gas that is "*off the agenda for now*". Our Supplemental Documents package includes the two TASS reports.

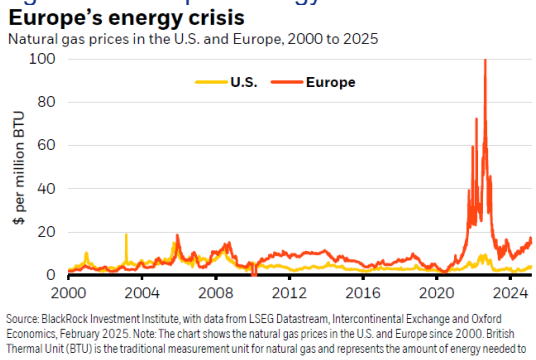
Big downside risk to TTF & LNG if Russia pipeline gas returns to Europe

Here is what we wrote in our Feb 16, 2025 Energy Tidbits memo. *"Big downside risk to TTF & LNG if Russian pipeline gas returns to Eruope. For the past few years we warned on how Germany cutting off Russian pipeline natural gas would hammer their industrial economy, thought they were the weak link to give so have been surprised Germany has hung in solidly with Ukraine and Europe on no Russian pipeline natural gas. And that a return of Russian pipeline natural gas would be a big negative to TTF and LNG prices. It's hard not to see the last few days reporting and not believe Trump and Putin have likely agreed on the outline of a deal and that there is big momentum to papering such deal to happen soon ie. within weeks and not months. Our view has been that we see the return of Russian pipeline natural gas and, pre-Trump, that would likely include some sort of allocation of revenues to help in some sort of Ukraine rebuild support. However, with Trump, we aren't convinced that Russia will be forced to contribute out of natural gas to some sort of rebuild. Regardless of the natural gas money split, we still expect a Russia/Ukraine peace deal will see the return of Russian pipeline natural gas to Europe as it will reduce energy costs and Europe needs all the help it can get to stimulate their economy. And if Russian pipeline natural gas comes back, it's a big negative to TTF and LNG prices."*

BlackRock highlighted potential catalyst RUS NatGas to Europe

Part of the reason why we continue to believe a Trump Russia/Ukraine deal will provide for the return of the Russia natural gas pipeline gas to the EU is that it is cheaper and will be a boost to the EU economy. BlackRock also highlighted Russia natural gas help/hurt to the EU economy. Here is what we wrote in our Mar 2, 2025 Energy Tidbits memo on BlackRock's recent highlighting the potential catalyst of the return Russian pipeline natural gas to Europe. "*BlackRock highlights potential catalyst RUS #NatGas to Europe. On Friday, we posted [LINK] "Positives & Negatives. Just like there is a big risk to TTF & LNG prices if Trump/Putin deal for Ukraine sees Russia pipeline #NatGas back to Europe. BlackRock upgrades Europe with key potential catalyst being a return of Russia #NatGas to boost Europe economy. #OOTT." This week, BlackRock upgraded its Europe weighting from underweight to neutral and they see several potential catalysts to turn around poor sentiment. The one potential catalyst they highlighted was natural gas. For years and before Russia invaded Ukraine, we have highlighted how high natural gas prices has been the big economic hit to Europe, in particular to Germany. BlackRock choosing to highlight natural gas reinforces that view. BlackRock wrote "One example: Possible de-escalation in the Ukraine war. Reduced reliance on Russian gas brought European energy prices down from 2022's highs. See the chart. A form of peace agreement could lower energy prices further, boosting European growth and lowering inflation. This is just one of several catalysts we think could broaden U.S. equity strength to Europe." Our Supplemental Documents package includes BlackRock's Feb 24 weekly investment commentary."*

Figure 22: Europe's energy crisis



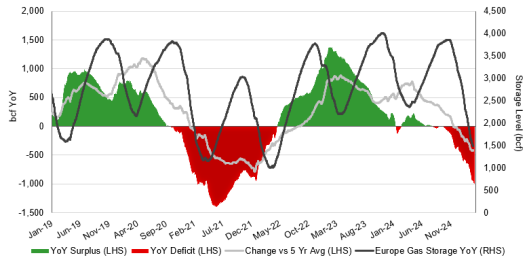
Source: BlackRock

Natural Gas: Europe storage down -1.3% WoW to 35.6% full, down -24.3% YoY

It has been a good Q1/25 so far for EU natural gas, which was helped by multiple periods of very low wind generation when wind generation is normally at its seasonal high in the winter. This has also been a big plus to coal generation in Germany to help fill the void. And as a reminder, the YoY comparison is to a hot Mar 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 Mar 13, Europe storage was down -1.3% WoW to 35.6% vs 36.9% on Mar 6. Recall that winter 2023/24 was one of the hottest winters in Europe. Storage is now down -24.3% from last year's levels of 59.9% on Mar 13, 2024, and down against the 5-year average of 46.4%. Below is our graph of European Gas Storage Level.

Europe gas storage at 35.6%

Figure 23: European Gas Storage Level



Source: Bloomberg, SAF

Ukraine storage is currently 3.0% of total Europe gas storage volume

We don't have detailed reports, but the reports last week were that there were multiple Russian missile attacks on Ukraine natural gas and energy infrastructure. 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 Mar 13,

natural gas in Ukraine storage was at 4.5% of its total capacity, down compared to 4.6% of its total capacity on Mar 6. Last winter, Ukraine storage as of Nov 1, 2023, was at 39.4%. Right now, Ukraine makes up about 3.0% 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 24: Ukraine Gas Storage Facilities as of June 2023

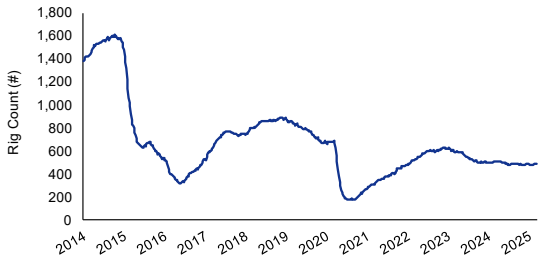
Source: Bloomberg

Oil: US oil rigs +1 rig WoW, down -23 rigs YoY; gas rigs down -1 rig WoW

US oil rigs up WoW

We have been highlighting the consistent comments from the service companies that they are expecting relatively flat or some small decline in US rig levels in 2025 as the oil and gas companies stay in their capital disciplined + return of capital to investors mode. We are a little surprised that oil rigs, in total, haven't yet declined with lower oil prices but expect to see some oil rig declines in the coming weeks. But the indicator for some response to oil price was Permian rigs -3 this week. 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 US oil rigs were up +1 rig WoW as of Mar 14. Total US oil rigs are now down -23 oil rigs YoY to 487 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: Permian -3 rigs WoW, Eagle Ford -1 rig WoW, Granite Wash +2 rigs WoW, and Williston +1 rig WoW. There must have been a rig added outside of the major basins to account for the total rig change for the week. (iv) The overlooked US 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 US gas and oil rigs are down -39 rigs YoY to 587 rigs including US oil rigs down -23 rigs YoY to 487 rigs. And for the key basins, the Permian is -15 rigs YoY, Haynesville is -11 rigs YoY, DJ-Niobrara is -6 rigs YoY, Marcellus is -7 rigs YoY, Granite Wash is +7 rigs YoY, Eagle Ford is -7 rigs YoY, Barnett is +1 rig YoY, Ardmore Woodford is +2 rigs YoY, Arkoma Woodford is -1 rig YoY, Cana Woodford is +1 rig YoY, Mississippian is -2 rigs YoY, Utica is -1 rig YoY, and Williston is flat YoY. (v) US gas rigs were down -1 rig WoW to 100 gas rigs and down -16 rigs YoY. We believe US gas rigs will need to increase over the next several months as more US LNG capacity comes onstream in 2025. Lastly, US miscellaneous rigs were flat WoW at 5 rigs and +2 rigs YoY.

Figure 25: Baker Hughes Total US Oil Rigs



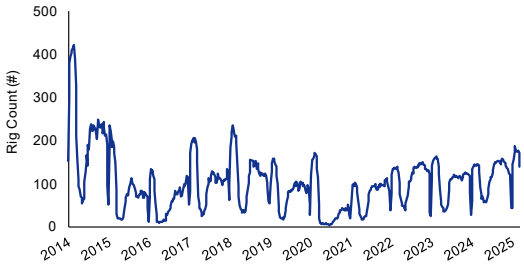
Source: Baker Hughes

Oil: Total Cdn oil rigs down -31 rigs WoW, in line with end of winter drilling season

Cdn oil rigs down WoW

Winter drilling season has ended, evident in the large WoW seen this past week. On Friday, Baker Hughes released its weekly North American drilling rig data. This week's total oil and gas rig count was down -35 rigs WoW to 199 rigs on Mar 14 and are down -8 rigs YoY. We expected to see the large decrease in rigs this week and expect another large decline next week. It was cold in Feb, which allowed companies to keep rigs going a little longer than normal and drill a couple extra wells to take advantage of stronger than expected natural gas prices into the end of Feb. But winter drilling season has pasted as we have entered in March. Oil rigs are down -31 rigs WoW to 139 and up +11 rigs YoY. Gas rigs are down -4 rigs WoW at 60 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 26: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes

Oil: US weekly oil production up WoW to 13.575 mmb/d, up YoY

US weekly oil production

The EIA estimated US oil supply was up from last week's numbers after the previous three weeks had seen immaterial increases. 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

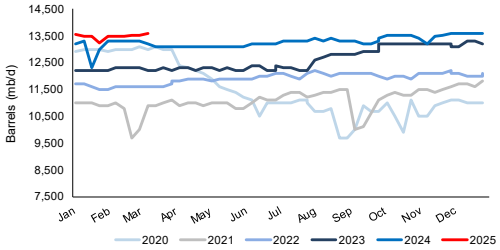
relatively small. The EIA does not provide any commentary. This week, the EIA's production estimate was up +0.067 mmb/d WoW to 13.575 mmb/d for the week ending Mar 7. This is getting close to the 2024 highs of 13.04 mmb/d in the Dec 13, 2024 week. This is up +0.475 mmb/d YoY from 13.100 mmb/d for the week ended Mar 8, 2024. Alaska production figures were down -0.005 mmb/d WoW at 0.439 mmb/d, and the Lower 48 were up +0.072 to 13.136 mmb/d. Below is a table of the EIA's weekly oil production estimates.

Figure 27: EIA's Estimated Weekly US Field Oil Production (mb/d)

	Week 1		Week 2		Week 3		Week 4		Week 5	
Year-Month	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
2023-Nov	11/03	13,200	11/10	13,200	11/17	13,200	11/24	13,200		
2023-Dec	12/01	13,100	12/08	13,100	12/15	13,300	12/22	13,300	12/29	13,200
2024-Jan	01/05	13,200	01/12	13,300	01/19	12,300	01/26	13,000		
2024-Feb	02/02	13,300	02/09	13,300	02/16	13,300	02/23	13,300		
2024-Mar	03/01	13,200	03/08	13,100	03/15	13,100	03/22	13,100	03/29	13,100
2024-Apr	04/05	13,100	04/12	13,100	04/19	13,100	04/26	13,100		
2024-May	05/03	13,100	05/10	13,100	05/17	13,100	05/24	13,100	05/31	13,100
2024-Jun	06/07	13,200	06/14	13,200	06/21	13,200	06/28	13,200		
2024-Jul	07/05	13,300	07/12	13,300	07/19	13,300	07/26	13,300		
2024-Aug	08/02	13,400	08/09	13,300	08/16	13,400	08/23	13,300	08/30	13,300
2024-Sep	09/06	13,300	09/13	13,200	09/20	13,200	09/27	13,300		
2024-Oct	10/04	13,400	10/11	13,500	10/18	13,500	10/25	13,500		
2024-Nov	11/01	13,500	11/08	13,400	11/15	13,201	11/22	13,493	11/29	13,513
2024-Dec	12/06	13,631	12/13	13,604	12/20	13,585	12/27	13,573		
2025-Jan	01/03	13,563	01/10	13,481	01/17	13,477	01/24	13,240	01/31	13,478
2025-Feb	02/07	13,494	02/14	13,497	02/21	13,502	02/28	13,508		
2025-Mar	03/07	13,575								

Source: EIA

Figure 28: EIA's Estimated Weekly US Oil Production



Source: EIA

Shale/tight oil production

Oil: US shale/tight oil production still right around 8.9 mmb/d

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 February. (ii) Note that the EIA revises their data for shale/tight oil production back to 2021 from February's STEO, and we have adjusted our table to reflect the updated data. However, the revisions for the last 12 months were mostly small decreases with the average revision for the past 12 months being down -0.011 mmb/d. (iii) The major takeaway for shale/tight oil remains stuck below 9 mmb/d other Nov that was 9.029 mmb/d. (iv) Shale/tight oil production in February was 8.890 mmb/d, up +1.3% MoM from January and up +1.2% YoY. Right around 8.9 mmb/d is the level for US shale/tight oil for the past 11 months. The EIA doesn't provide any explanation, but we suspect that there was a winter weather impact on the Jan and Feb numbers. (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 STEO estimates of shale/tight oil production and our graph

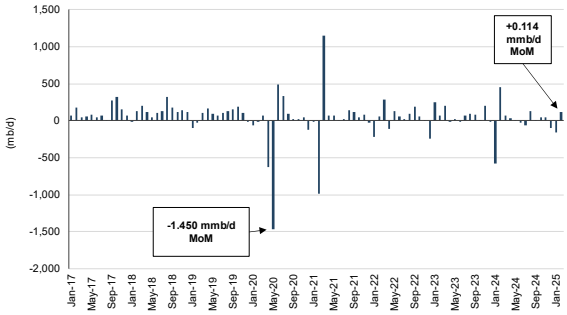
of MoM changes in major shale/tight oil production.

Figure 29: US Major Shale/Tight Oil Production

Thousand b/d	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Feb MoM%	Feb YoY%
Austin Chalk + Eagle Ford	1,010	1,063	1,082	1,123	1,155	1,136	1,116	1,141	1,144	1,144	1,127	1,101	1,093	1,129	3.3%	6.2%
Bakken	1,116	1,270	1,249	1,261	1,219	1,206	1,189	1,202	1,229	1,209	1,234	1,188	1,188	1,141	-4.0%	-10.2%
Mississippian + Woodford	199	213	207	210	204	195	192	196	208	209	216	209	203	213	4.9%	0.0%
Niobrara	447	471	473	455	458	445	441	448	441	457	468	445	441	444	0.7%	-5.7%
Permian	5,244	5,454	5,527	5,520	5,521	5,547	5,536	5,604	5,567	5,622	5,628	5,634	5,521	5,624	1.9%	3.1%
Rest of US L48	308	310	311	313	326	328	326	339	354	347	356	353	330	339	2.7%	9.4%
Total	**8,324**	**8,781**	**8,849**	**8,882**	**8,883**	**8,857**	**8,800**	**8,930**	**8,943**	**8,988**	**9,029**	**8,930**	**8,776**	**8,890**	**1.3%**	**1.2%**

Source: EIA, SAF

Figure 30: MoM Changes in US Major Shale/Tight Oil Production



Source: EIA, SAF

Oil: EIA DUCs flat MoM in February, DUCs down -11.7% YoY

DUCs flat MoM in February

We recognize that there are longer and more productive wells being drilled but we still see a key risk to how much US oil production can sustainably grow in 2025. There is still 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 (DUCs). (i) The EIA estimates DUCs were immaterially changed MoM, and down -11.7% YoY in February at 5,287 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; 6,561 DUCs in February 2022 when US production was approx. 11.5 mmb/d; 6,417 DUCs in February 2023 when US production was approx. 12.6 mmb/d; 5,989 in February 2024 when US production was approx. 13.1 mmb/d; and now 5,287 DUCs in February 2025 with US production approx. 13.5 mmb/d. (iv) The largest YoY February DUCs declines were Eagle Ford down -36.7% YoY, Bakken down -26.7% YoY, and Permian down -14.4%. (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 31: Estimated Drilled Uncomplete Wells in 2024/25

DUCs	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Feb MoM%	Feb YoY%
Appalachia region	823	831	827	823	821	814	800	793	782	771	764	756	750	747	-0.4%	-10.1%
Bakken region	424	431	432	419	392	382	373	363	354	345	337	330	323	316	-2.2%	-26.7%
Eagle Ford region	506	469	438	409	387	374	346	332	314	308	303	297	294	297	1.0%	-36.7%
Haynesville region	756	760	758	745	739	739	743	741	739	737	736	738	739	739	0.0%	-2.8%
Permian region	1,134	1,095	1,089	1,025	995	988	902	866	870	876	889	905	919	937	2.0%	-14.4%
Rest of Lower 48 States, excluding GOM	2,380	2,403	2,399	2,397	2,389	2,349	2,322	2,294	2,280	2,273	2,264	2,258	2,255	2,251	-0.2%	-6.3%
Total	**6,023**	**5,989**	**5,943**	**5,818**	**5,723**	**5,646**	**5,486**	**5,389**	**5,339**	**5,310**	**5,293**	**5,284**	**5,280**	**5,287**	**0.1%**	**-11.7%**

Source: EIA, SAF

Oil: EIA STEO forecast for 2025 US oil production slightly increased

EIA STEO US oil production

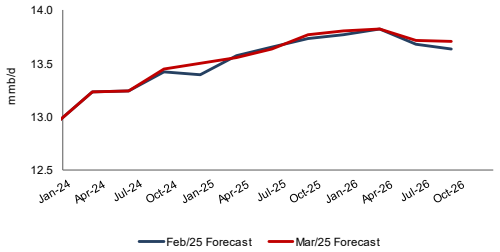
On Tuesday, the EIA released its Short-Term Energy Outlook for March 2025 [LINK], which included an immaterial change to its 2024 and a small increase to its 2025 oil production forecasts. (i) The March STEO forecast for 2024 edged up +0.01 mmb/d to 13.22 mmb/d from the February STEO. The only revision was in Q4/24, which was up +0.03 mmb/d to 13.45 mmb/d. (iii) The EIA forecasts US oil production of 13.61 mmb/d for 2025, which is an increase of +0.03 mmb/d from the February STEO. The revisions by quarter were: Q1/25 up +0.10 mmb/d to 13.50 mmb/d, Q2/25 down -0.02 mmb/d to 13.56 mmb/d, Q3/25 down -0.01 mmb/d to 13.64 mmb/d, and Q4/25 up +0.03 mmb/d to 13.77 mmb/d. Below is our EIA STEO forecast comparison by month.

Figure 32: 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
Mar-25	12.94	13.23	13.25	13.45	13.22	13.50	13.56	13.64	13.77	13.61	13.81	13.83	13.72	13.71	13.76
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 33: Estimated US Crude Oil Productions by Forecast Month



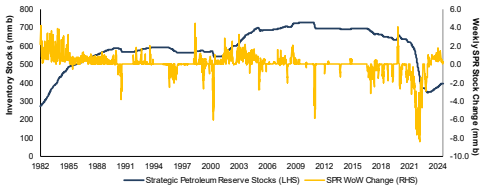
Source: EIA STEO

Oil: US SPR less commercial reserve deficit widens, now -39.635 mmb

US SPR reserves

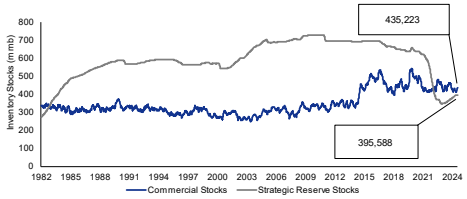
The SPR will be increasingly on the watch with Trump's stated plan to fill the SPR to the brim. The US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the week of Sep 16, 2022. This week, saw a build on the SPR side and a build on the commercial side. The EIA's weekly oil data for Mar 7 [LINK] saw the SPR reserves up +0.275 WoW to 395.588 mmb after four weeks of no changes to reserves, while commercial crude oil reserves increased +1.448 mmb to 435.223 mmb. There is now a -39.635 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 34: Strategic Petroleum Reserve Stocks and SPR WoW Change



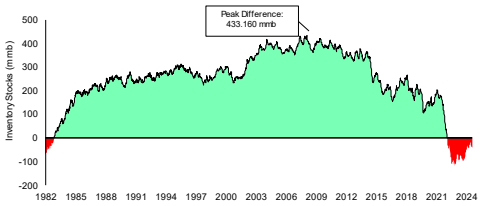
Source: EIA

Figure 35: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 36: US Oil Inventories: SPR Less Commercial



Source: EIA

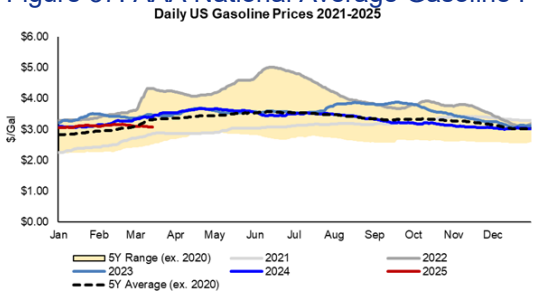
Oil: AAA US national average gasoline -$0.02 WoW, California -$0.06 WoW

US gasoline prices

The key factor for US gasoline prices is the weaker oil prices. As, so far there have been no real impacts from the upcoming Trump tariffs on imports of Cdn oil and petroleum products. Yesterday, we posted [LINK] "*Low oil prices = low gasoline prices. AAA National average*

gasoline prices -$0.02 WoW to $3.08 on Mar 15, -$0.08 MoM and -$0.36 YoY. California average gas prices are -$0.06 WoW to $4.66, -$0.18 MoM, =$0.23 YoY. Better but still >$4.47 on Feb 1, when Martinez refinery went down. Thx @AAAnews #OOTT." Low oil prices have been leading to lower gasoline prices. Yesterday, AAA reported that US national average prices were $3.08 on Mar 15, which was -$0.02 WoW, -$0.08 MoM and -$0.36 YoY. The negative for Californians over the past five weeks was the Feb 1 fire that led to an unplanned shut down of the Martinez refinery being down. The morning of Feb 1, AAA reported average California gas prices of $4.47 and two weeks later were $4.84 on Feb 15.. As noted later in the memo, there is still no forecast for when the Martnez refinery will return to operations. California gasoline prices had jumped up but it looks like California is somewhat adjusting its gasoline supply chain to recent pull back in gasoline prices over the last two weeks. We should note there is risk to California gasoline prices being hit right away by a Thursday incident at the 160,000 b/d Torrance Refinery in California. Yesterday, AAA also reported California average gasoline prices were $4.66 on Mar 15, which was -$0.06 WoW, -$0.18 MoM and -$0.23 YoY. Below is our graph of Bloomberg's National Average weekly gasoline prices.

Figure 37: AAA National Average Gasoline Prices



Source: AAA, Bloomberg

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

This year is a good reminder that oil prices are the key factor for gasoline prices as the weaker gasoline prices have been leading to lower gasoline prices and lower oil prices can work to offset the normal seasonal move up in gasoline prices in the spring. We are expecting the upcoming Trump tariffs to see an immediate shift up in gasoline prices in a number of regions such as the NE, Midwest and Rocky Mountains. And this should be happening at the time of year when US gasoline prices normally seasonally increase. Here is what we wrote in our Feb 16, 2025 Energy Tidbits memo reminding that this is the normal seasonal period for increasing gasoline prices. *"AAA reminds Feb is the normal start to seasonal increasing gasoline prices. As we remind also on crack spreads and WCS less WTI differentials, there are normally seasonal trends. There are always unforeseen item that can impact the seasonal trends. But, on Thursday, AAA reminded that the seasonal trend for US gasoline prices is to move for the next few months. This shows up in our above US gasoline price graphs. AAA posted [LINK] "Right on Cue: Seasonal Trends Nudge Gas Prices Higher. As spring approaches, refineries are beginning their transition to summer blend fuel, which often results in higher prices this time of year. This week, gas prices rose by a few cents, bringing the national average to*

$3.16 per gallon. Routine seasonal maintenance and an offline refinery in Northern California are putting additional strain on supply. These factors are pushing gas prices up, which means consumers may see higher prices at the pump as warmer months approach."

Oil: GasBuddyGuy sees tariff gasoline hits in NE, Great Lakes, Midwest, Rockies

GasBuddyGuy's initial call on tariffs hit

Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo on the estimates by GasBuddyGuy (Patrick de Haan) on what he sees the impact from adding tariffs on Cdn oil and gasoline imports once they kick in. "*GasBuddyGuy sees tariff gasoline hits in NE, Great Lakes, Midwest, Rockies. We follow GasBuddyGuy (Patrick de Haan) for his data and views on US gasoline prices. On Tuesday, we posted [LINK] "See 👇@GasBuddyGuy's initial call on impact on NE, Great Lakes, Midwest, Rockies #Gasoline prices from Trump 10% tariff on Cdn #Oil imports. My 👇03/02 post. US refineries in Midwest & Rockies get 100% of oil imports from CAN, East Coast refineries get 23% from CAN. #OOTT." We forwarded De Haan's post and he also posted his blog "Beyond Tariffs: US Refineries and the Continued Reliance on Canadian Crude". [LINK] De Haan estimates the regional gasoline price impacts. NE (Maine, Rhode Island, Connecticut, Vermont, New Hampshire, Massachusetts, and Upstate New York) to have the largest impact as they import fuel from Irving Oil refinery in Saint=John. If you're filling up in the Northeast, you'll see price increases first and more significantly, as a significant portion of this region's refined products comes directly from the Irving Oil refinery in Saint John. "By mid-March 2025, the Northeast could expect fuel prices—including gasoline, diesel, and other petroleum products—to be 20-40 cents per gallon higher. For a typical 15-gallon fill-up, that's an additional $3-$6 every time you visit the pump." Midwest (North Dakota, Minnesota, South Dakota, Nebraska, Iowa, Kansas, Missouri), it's a crude oil import so the flow thru to pump takes a little longer. He expects "gasoline and diesel prices to rise by 5-20 cents per gallon." Great Lakes (Michigan, Wisconsin, Illinois, Indiana, Ohio, Pennsylvania). It's also crude oil import so flow thru to pump takes a little longer. De Haan expects "Residents across these states should prepare for price increases of 10-25 cents per gallon for both gasoline and diesel". Rockies (Montana, Idaho, Wyoming, Colorado, Utah) is also an oil import so will see a time lag before hitting the pumps. De Haan expects "fuel price increases of 10-20 cents per gallon " Other Regions (South, Southeast, Mid-Atlantic, Southwest and West Coast), he sees "negligible impact to other regions of the U.S., which are less reliant on Canadian crude oil. But with the typical seasonal shift ahead of us, prices are likely to increase in the weeks ahead just as they do every year with rising demand and temperatures, planned refinery maintenance, and the transition to summer gasoline in process across the entire U.S." Our Supplemental Documents package includes the GasBuddyGuy blog."*

Oil: Crack spreads +$0.38 WoW to $23.31 on Mar 14, WTI +$0.14 WoW to $67.18

Crack spreads closed at $23.31

On Fri, we posted [LINK] "*321 crack spreads $0.38 WoW to $23.31 on Mar 14. WTI +$0.14 WoW to $67.18. WTI has been driven by views on economy. Reminder cracks normally start their seasonal move up in mid Feb thru June as refineries crank up processing for summer gasoline/jet fuel demand. Thx @business #OOTT."* Crack spreads were +$0.38 WoW to $23.31 on Mar 14 and WTI was +$0.14 WoW to $67.18. WTI Crack spreads of $23.31 are above the pre-Covid $15 to $20 range but the reality is WTI continues to be sub $70 with more concerns on economic growth in the US and around the world and the upcoming Apr 1

start of OPEC+ gradually adding back the voluntary cut barrels. Our post noted that mid-Feb is normally the time when crack spreads begin their seasonal move up as refineries move to process more oil for peak summer gasoline and jet fuel season. We have been highlighting that, for the past several months, for the most part WTI has been driven more by global factors and not crack spreads. Crack spreads o $23.31 are still solid and should, in theory incentivize refiners to try to get some more crude for refining and that, under normal times, would tend to drag up WTI. The typical pre-Covid range was $15-20. Crack spreads of $23.31 on Mar 14 followed $22.93 on Mar 7, $25.02 on Feb 28, $26.48 on Feb 21, , $21.96 on Feb 14, $22.06 on Feb 7, $18.74 on Jan 31, $17.73 on Jan 24, $17.94 on Jan 17, $16.47 on Jan 10, $16.48 on Jan 3, $16.05 on Dec 27, $16.44 on Dec 20, and $16.53 on Dec 13.

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

Crack spreads and WTI price movement to end the week reinforced that WTI is more impacted by global oil items than crack spreads. It hasn't been normal times for oil markets in the last several months with a wide range of global factors. So for the most part, the last several months are a good example that global oil and market items impact WTI more than crack spreads. But in normal times, broad market factors aside, we have focused on crack spreads for since the 90s as they are an unchanged fundamental of refineries – wide/high crack spreads provide incentives for refineries to buy more crude because there are big profit margins to be made. We track US crack spreads but there is also an influence on global refining capacity on US crack spreads as the increasing global refining capacity has also tended to have downward pressure on US crack spreads especially with demand being less than most expect. So if crack spreads are wide/high like right now, it is normally a positive for the very near term look ahead to WTI. Conversely, if crack spreads are narrow/low, it doesn't give refineries any real incentive to take more crude, which is normally softness for the very near term look ahead to WTI. People often just say "cracks", which refers to the 321 crack spread. This is the spread or margin that refiners make from buying crude at a certain price and then selling the finished petroleum products at their respective prices. The 321 crack spread is meant to represent what a typical US refinery produces. It assumes that for every three barrels of crude oil, the refinery will produce two barrels of gasoline and one barrel of distillates. So the crack spread is based on that formula and worked back to a crack spread per barrel. Below is the current 321 crack spread vs WTI that we put in our tweet where we marked the gaps where the crack spread normally drags up oil prices. 321 Crack spread closed at $23.31 on Mar 14.

Figure 38: Cushing 321 Crack Spread & WTI Mar 14, 2015 to Mar 14, 2025

Source: Bloomberg

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

Our Friday post highlighted "*Reminder cracks normally start their seasonal move up in mid Feb thru June as refineries crank up processing for summer 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 39: Cushing 321 Crack Spread – Seasonality to Mar 14, 2025 close

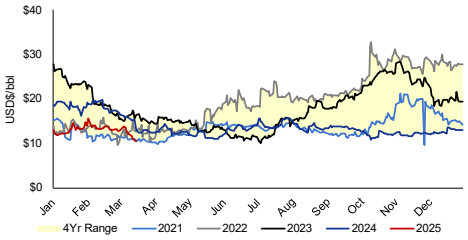
Source: Bloomberg

Oil: Cdn heavy oil differentials narrow $1.75 WoW to very low $10.40 on Mar 14

On Friday, we posted [LINK] "*WCS-WTI diffs narrow $1.75 WoW to very low $10.40. No Trump tariff impact. Still way lower diffs since tanker exports increased with June TMX start. Reminder. WCS less WTI diffs normally seasonally narrow in mid-Feb thru May as US refiners ramp up for peak asphalt/paving season. WCS less WTI diffs: 03/14/25: $10.40 03/14/24: $15.30 03/14/23: $16.90 Thx @garquake @business #OOTT*". The Trump tariffs switching from on and then paused last week haven't yet had any impact on WCS less WTI differentials. And we remind mid Feb is normally the start of the season for WCS less WTI differentials to narrow. Normally, at this time of the year, we would be trotting out our normal commentary that Feb normally marks the start of the seasonal narrowing of WCS less WTI

differentials as refineries in the US start to take more medium sour crude as they change their runs to produce more asphalt for the upcoming paving season. This week saw a narrowing to the WCS less WTI differentials extending from last week's trend. WCS less WTI diffs closed -$1.75 WoW to a very low $10.40 on Mar 14.

Figure 40: WCS less WTI differentials



Source: Bloomberg

WCS less WTI diffs normally seasonally narrow in mid-Feb thru May

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. Our Friday post, noted above, included "*Reminder. WCS less WTI diffs normally seasonally narrow in mid-Feb thru May as US refiners ramp up for peak asphalt/paving season."* And our post included the below chart that shows how WCS less WTI differential were low in the summer, stayed fairly flat in Aug/Sept/Oct/Nov/Dec whereas how differentials widened in Sept/Oct/Nov in 2022 and 2023. And it also shows how differentials normally narrow starting in mid-Feb thru May every year as refiners start to process more medium/heavy as they look ahead to asphalt and paving season.

Figure 41: WCS less WTI differentials to Mar 14, 2025 close

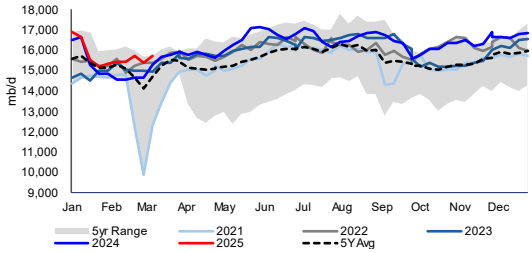
Source: Bloomberg

Oil: Refinery inputs up +0.321 mmb/d WoW to 15.708 mmb/d

Refinery inputs +0.321 mmb/d WoW

We have been highlighting that mid-February normally marks the start of refineries moving into a six-month period of increasing oil processing for the peak gasoline, diesel and jet fuel demand that happens every summer. There are always unplanned refinery items that impact crude oil inputs into refineries, but there are normal seasonal trends that refineries follow to provide the right fuels at the right time. Normally, late October marks the point when refineries have come out of fall turnarounds and are ramping up crude oil inputs as they change from summer to winter fuel blends. And in Nov/Dec, it is normally ramps up before we start to see refineries move into turnarounds starting in Jan/Feb for the normal winter turnarounds. And then leaving Feb is normally the start of the big seasonal increase in refinery throughput that continues into the summer, which we observed with this week's increase in inputs. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended March 7 [LINK]. The EIA reported crude inputs to refineries were down +0.321 mmb/d this week to 15.708 mmb/d and were up +0.050 mmb/d YoY. Refinery utilization was up +0.6% WoW to 86.5% and was down -0.3% YoY.

Figure 42: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil: Still no ETA for restart of 156,000 b/d Martinez (California) refinery

156,000 b/d Martinez refinery still down

As of our 7am MT news cut off, we have not seen any new posting by the Martinez Refining Company since its Mar 5 update on an ETA for when the 156,000 b/d Martinez refinery (California) will restart. This has been the reason why California gasoline prices spiked up in Feb. Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo. "*Still no ETA*

for restart of 156,000 b/d Martinez (California) refinery. On Wednesday, the Martinez Refining Company posted its update on the Feb 1 fire at its 156,000 b/d Martinez refinery (California) to the Hazardous Materials Programs Director. [LINK] The report is focused on updating on any hazardous materials. The report's closing paragraph was "MRC and contract personnel continue to monitor the scene of the incident, assess equipment damage, and ensure the general safety of the CFH area. Refinery operating units remain shut down while damage assessment continues, with the exception of required utility and environmental systems. At this time, the length of the operating units shut down arising from the incident cannot be reasonably estimated."

Oil: Not clear the impact from the Incident at 160,000 b/d Torrance (California) refinery

160,000 b/d Torrance (California) refinery incident

As of our 7am MT news cut off, we have not seen any update from the Torrance Refining Company or City of Torrence that updates what is happening since the Thurs release by the City of Torrence. But when we see a press release that says the refiner is "actively creating a repair plan", it suggests there could be some downtime or impact on refinery throughput. Repair plans says something has to be fixed. We just don't have any idea of what has to be fixed and what will the impact be. But it is a terrible time for any California refinery to have an issue given the unplanned shutdown of the Martinez refinery. On Thursday, the City of Torrance announced [LINK] "*At approximately 3:13 AM on Thursday, March 13th, the Torrance Fire Department was notified of a Refinery Report. The Torrance Refining Company Shift Safety Advisor reported a loss of steam that resulted in some unit shutdowns and slowdowns. The Torrance Refining company is assessing the impacts and are actively creating a repair plan.*"

Oil: US net oil imports up +0.503 mmb/d WoW, oil exports were down -0.846 mmb/d

US net imports up WoW

The EIA reported US "NET" imports were up +0.503 mmb/d to 2.180 mmb/d for the week of March 7. US imports were down -0.343 mmb/d to 5.470 mmb/d, while exports were down -0.846 mmb/d to 3.290 mmb/d. Top 10 was down -0.512 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 -0.416 mmb/d WoW to 3.675 mmb/d. This is not what we have seen lately as refineries have been cranking up Cdn imports ahead of any Trump tariffs. So, it is not clear if this was in response to Trump saying the tariffs were on, only to pull them back a day later. The big picture trend for US imports of Cdn oil over the past 9 months has been US oil imports from Canada have been higher post the startup of the TMX as more of the TMX crude has been hitting west coast US refineries. (ii) Saudi Arabia was up +0.074 mmb/d to 0.277 mmb/d. (iii) Mexico was up +0.005 mmb/d to 0.313 mmb/d. This is still well below historical levels. However, as noted in our Feb 23 memo, there is an oil quality issue that is causing some Mexico oil exports to be rejected by US refineries. Prior to this, oil imports from Mexico were much lower with the new Olmeca (Dos Bocas) refinery slowing ramping up in 2024 and Pemex's other refineries increasing crude oil processing. The current oil quality issue aside, assuming Pemex can ramp up Olmeca and continue to improve processing at the other refineries, Mexico should be able to process all its own oil production (i.e. no exports) by the end of 2025. (iv) Colombia was down -0.156 mmb/d to 0.071 mmb/d. (v) Iraq was up +0.124 mmb/d to 0.170 mmb/d. (vi) Ecuador was up

+0.118 mmb/d to 0.213 mmb/d. (vii) Nigeria remained at 0.000 mmb/d for the second week in a row.

Figure 43: US Weekly Preliminary Imports by Major Country

	Jan 10/25	Jan 17/25	Jan 24/25	Jan 31/25	Feb 7/25	Feb 14/25	Feb 21/25	Feb 28/25	Mar 7/25	WoW
Canada	3,985	4,329	3,716	4,063	3,918	3,653	3,818	4,091	3,675	-416
Saudi Arabia	333	256	471	488	380	277	252	203	277	74
Venezuela	240	416	319	214	226	198	276	189	148	-41
Mexico	362	244	521	149	482	553	445	308	313	5
Colombia	266	286	283	150	150	0	150	227	71	-156
Iraq	152	218	336	99	46	257	228	46	170	124
Ecuador	103	0	102	157	0	43	195	95	213	118
Nigeria	38	156	92	152	87	139	77	0	0	0
Brazil	129	138	114	254	217	155	171	418	198	-220
Libya	86	30	0	324	0	0	0	0	0	0
Top 10	5,694	6,073	5,954	6,050	5,506	5,275	5,612	5,577	5,065	-512
Others	430	672	494	865	803	545	307	236	405	169
Total US	**6,124**	**6,745**	**6,448**	**6,915**	**6,309**	**5,820**	**5,919**	**5,813**	**5,470**	-343

Source: EIA, SAF

US oil imports from Canada & Mexico

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

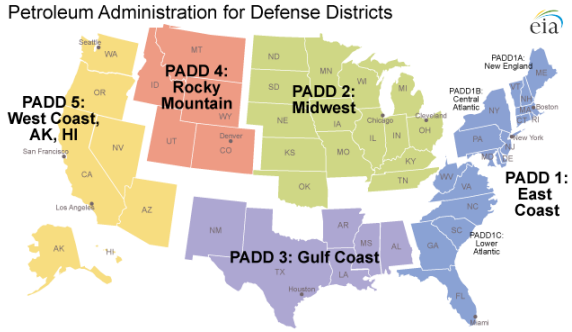
Here is what we wrote in our Mar 2, 2025 Energy Tidbits memo on how much oil will be impacted if US adds tariffs on Canada and Mexico oil. "*Trump tariffs to hit US oil imports of ~4.7 mmb/d of Cdn and Mexican oil. As of our 7am MT news cut off, the Trump tariffs on Canada and Mexico oil is still planned to start on Tues. On Friday, we reminded that these tariffs are going to hit a huge amount of US oil imports. It will impact Canada and Mexico oil imports into the US as follows: 195,000 b/d of East Coast PADD 1 oil imports of 622,000 b/d. 100% of Midwest PADD 2 oil imports of 2,940,000 b/d. 820,000 b/d of Gulf Coast PADD 3 oil imports of 1,539,000 b/d. 100% of Rocky Mountain PADD 4 oil imports of 273,000 b/d. 457,000 b/d of West Coast PADD 5 oil imports of 1,183,000 b/d. Note our post included Venezuela even though they aren't included in the Tues Trump tariffs, but Trump decided to not renew the Chevron Venezuela license which means that a six-month wind down period for Chevron in Venezuela started yesterday. We posted [LINK] "Here's where Trump tariffs on CAN & MEX #Oil on Mar 4 will hit. @EIAgov Dec oil imports by PADD & % of PADD imports. PADD 1: Can: 146 kbd, 23%. Mex: 49 kbd, 8%. Ven: 11 kbd, 2%. PADD 2: Can: 2,940 kbd,100%. PADD 3: Can: 431 kbd, 28%. Mex: 389 kbd, 25%. Ven: 289 kbd, 19%. PADD 4: Can: 273 kbd, 100%. PADD 5: Can: 444 kbd, 38%. Mex: 13 kbd, 1%. #OOTT." Our Supplemental Documents package includes the EIA graphs of oil imports by PADD for each Canada, Mexico and Venezuela*."

"PADDs" were created in WWII to ration gasoline

Our Feb 28, 2025 above post included the EIA's map showing the PADDs. PADD stands for Petroleum Administration for Defense Districts. And the defense is because the PADDs were created in WWII. The EIA writes "*The Petroleum Administration for Defense Districts (PADDs) are geographic aggregations of the 50 States and the District of Columbia into five districts: PADD 1 is the East Coast, PADD 2 the Midwest, PADD 3 the Gulf Coast, PADD 4 the Rocky Mountain Region, and PADD 5 the West Coast. Due to its large population, PADD 1 is further divided into sub-PADDs, with PADD 1A as New England, PADD 1B the Central Atlantic States, and PADD 1C comprising the Lower Atlantic States. There are two additional PADDs (PADDs VI and VII) that encompass U.S. Territories (these are not pictured on the map). The PADDs help users of EIA's petroleum data assess regional petroleum product supplies. During World War II the Petroleum Administration for*

War, established by an Executive order in 1942, used these five districts to ration gasoline. Although the Administration was abolished after the war in 1946, Congress passed the Defense Production Act of 1950, which created the Petroleum Administration for Defense and used the same five districts, only now called the Petroleum Administration for Defense Districts."

Figure 44: Petroleum Administration for Defense Districts



Source: EIA

Oil: US only gives Chevron 1 month, not 6 months, to stop Venezuela oil

Trump stops Chevron in Venezuela

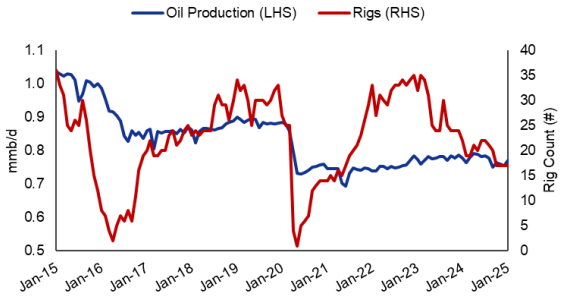
There is no change to last week's Trump surprise order for Chevron to stop its oil operations in Venezuela by Apr 3 and not six-months that was the terms for Biden approved license to Chevron. Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo. "*US only gives 1 month, not 6 months, to stop Venezuela oil. No one should have been surprised when Trump stopped Chevron's oil license in Venezuela last week. But Trump surprised this week on his order for Chevron to stop oil operations in Venezuela. Last week's (Mar 2, 2025) Energy Tidbits highlighted Trump was not renewing the Chevron license to operate in Venezuela and that this meant the six-month clock at started for Chevron to stop Venezuela operations. The Biden Chevron license provided a monthly renewal of the license and then a six-month wind down period if the license wasn't extended in any month. But this week, Trump changed made the six-month wind down period into a one-month wind down period. On Tuesday, the WSJ reported "The Treasury Department moved Tuesday to formally rescind a Biden-era license allowing Chevron to pump oil in Venezuela, giving the company 30 days to wind down operations as the Trump administration pressures President Nicolás Maduro."*

Oil: Colombia oil production in January was 0.770 mmb/d, down -1.0% 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. This week, Bloomberg updated Colombian oil production data for January. Production in January was up +1.9% MoM to 0.770 mmb/d from 0.755 mmb/d in December. This puts January's production down -1.0% YoY vs 0.778 mmb/d in January 2024. Production is now -13.1% below pre-Covid levels of 0.886 mmb/d in 2019.

Figure 45: Colombia Oil Production vs. Rig Count



Source: Hydrocarbons Colombia, Baker Hughes, Bloomberg

Oil: Russian refineries processing still at low levels to begin March amid drone attacks

Russian refinery runs

There were more drone hits on Russian refinery complexes to begin Mar, following the nearly daily Ukrainian drone attacks seen in Feb. But unfortunately, we never get any detail on how a refinery is impacted when a drone hits at a refinery. Russia's refineries were strategically targeted throughout Feb as Ukraine's government seeks to reduce Russia's energy revenue and supplies to the Russian army. These attacks have continued into Mar with Ukraine conducting an overnight attack on Mar 4, blowing up five Russian pipelines. On Mar 8, there were drone attacks targeted at the Kinef oil refinery, near St. Petersburg, that damaged one of the tanks at the facility and killed at least 12 people. This week, on Monday, there was drone attacks on two of the Rosenft oil refineries, but the extent of the damage has not yet been classified. Bloomberg reported that during the period of Mar 1-5, Russia's average crude processing rate was little changed at 5.14 mmb/d from the level seen during the Feb 20-26 period. This is down about -0.050 mmb/d below the level seen for most of Feb, when processing rates averaged around 5.20 mmb/d. If processing rates maintain at the same low levels for the rest of Mar, it would mark a five-month low for refinery runs. Bloomberg wrote, "*Russia's crude-processing rates remained under pressure in the first five days of March — averaging almost 5.14m b/d — amid repeated Ukrainian drone attacks on the nation's downstream facilities, according to a person with knowledge of industry data.*" Our Supplemental Documents package includes the Bloomberg article.

Oil: Urals oil price $60 lets legitimate Greek-owned tankers load Russia oil

Greek-owned tankers loading Russian oil

Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo. "*Urals oil price $60 lets legitimate Greek-owned tankers load Russia oil. We finally saw a good insight into why Russia tanker loadings, apart from weather factors, are up – the price of Urals oil is down below the price cap so legitimate tankers can load Russian oil. And because of this Greek-owned tankers loaded 40% of the Russian crude in Feb, the highest % in 19 months and sanctioned tankers loaded 38% of Russian crude which was the lowest in 12 months. And the reminder that if Urals price stays below the price cap, these increased loadings will impact supply On Thursday, we posted [LINK] "Great tanker insights for near-term holdback to #Oil prices from @Michellewb_ .Russian Urals oil price $60 in Feb, below price cap which meant "private Greek shipowners have come in and they have literally saved the day for the Russians because they don't need to source alternative tonnage". Greek tankers 40% of loadings, highest in 19 mths. Sanctioned tankers 38%, lowest in 12 mths. "These are*

extraordinary events and I think we have to quickly reassess oil flows, oil prices and what a potential lifting of the price cap means now." See my 👇transcript. #OOTT @sean_evers @gulf_intel." Our post included the SAF Group created transcript of comments by Michele Wiese Bockmann (Principal Analyst, Lloyd's List Intelligence) with Sean Evers (Founder & Managing Director, Gulf Intelligence) on Gulf Intelligence Daily Energy Markets podcast on March 3, 2025. [LINK] Items in "italics" are SAF Group created transcript. At 5:40 min mark, Evers asked about where the US sanctions are now in curtailing Russian oil supply. Wiese Bockmann "…. I've crunched February numbers and the extraordinary thing is that, because Urals crude has averaged $60 per barrel, $60 a barrel for most of February means that it was effectively under the price cap. And what's happened is that private Greek shipowners have come in and they have literally saved the day for the Russians because they don't need to source alternative tonnage. The price of Urals is more or less below the cap and so I analyzed the percentage of tankers by beneficial ownership that called there to lift Russian oil and products. And I found that. Hang on, I'm just going to refer to my notes here, so we had 40% of tonnage, the highest figure in 19 months, was Greek owned. And the dark fleet, the percentage that lifted was 38%, which was the lowest in 12 months. So, effectively, the lowering of the crude prices has all but rendered those sanctions ineffective. And then you remember, of course, that only the US ones were the stickiest. The EU and UK sanctions, while initially causing some difficulty for trading those that are sanctioned in the dark fleet, have since sort of recovered from that. So when you look at the prospects for a month long ceasefire, we can probably start talking about whether or not the G7 price cap, how much longevity does it have. These are extraordinary events and I think we have to quickly reassess oil flows, oil prices and what a potential lifting of the price cap means now."

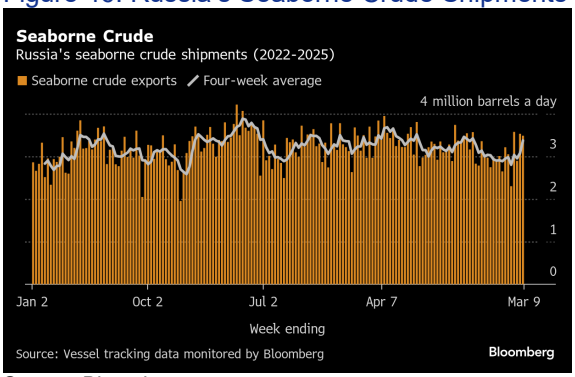
Oil: Russia's seaborne crude shipments remain up, signs of US sanctions faltering

Russia's seaborne crude exports

On Tuesday, Bloomberg released their weekly Russian Seaborne crude tracker titled "*Russian Oil Flows Surge in Sign US Sanctions Starting to Crumble*". There was a slight WoW decline in Russia oil shipments, while crude flows from all Russian ports in the four weeks to Mar 9 had its biggest gain since Jan 2023, increasing by about +0.300 mmb/d. Bloomberg wrote "*US sanctions on Russia's oil tanker fleet are showing signs of faltering, after a clutch of blacklisted vessels loaded cargoes for the first time in more than a year to drive up the country's crude shipments. Washington's measures have been instrumental in restricting Moscow's ability to ship its oil and raise funds for the war in Ukraine. But in recent days, three blacklisted vessels loaded cargoes of Russia's flagship Pacific grade and sailed from the country's main regional port. And satellite imagery suggests that more ships are leaving anchorages west of the port of Nakhodka, where they've idled since being sanctioned."* There was an approximate -0.045 mmb/d WoW decrease in daily crude flows, falling to 3.48 mmb/d for the seven days to Mar 9. Russian crude shipments from Novorssiysk fell to four, after the previous week's surge to six, but was offset by additional shipments from Primorsk and the Sakhalin 1 project. Four-week average flows saw its largest upward move since Jan 2023 at +0.300 mmb/d WoW to 3.37 mmb/d, the highest level in four months. Bloomberg also wrote, *"Less volatile four-week average flows moved sharply in the opposite direction after the very low flow seen in the week to Feb. 9 dropped out of the calculation. That resulted in a 300,000 barrel-a-day jump in flows from the previous week using this measure, the biggest upward move since Jan. 15, 2023. It took four-week average shipments to 3.37 million barrels a day, the highest level in four months."* Our Supplemental

Documents package includes the Bloomberg report.

Figure 46: Russia's Seaborne Crude Shipments



Source: Bloomberg

Russia oil exports to China maintain low volumes, down -0.23 mmb/d vs Jan 5

As mentioned in last week's memo, we expected increased unloading in China because of Urals price being below the price cap and allowing legitimate tankers to load Russian crude as those February loadings in Russia reach China in March. And it looks like a little more Russian oil is being unloaded in China. Prior to the recent decline in Urals price, we highlighted the reports in Jan that China had stopped some direct unloading of sanctioned Russian tanks, and this is evident in Bloomberg's Russian oil shipments to China. Bloomberg's crude oil shipments from Russia to China have continued to report lower volumes of shipments since the US sanctions were implemented on Jan 10. The four-week average of Russia oil shipments to China were 1.09 mmb/d for the week ending Mar 9, which is up from last week's upwardly revised 1.05 mmb/d (was 1.01 mmb/d). This is also down -0.23 mmb/d vs the four-week average on Jan 5 of 1.320 mmb/d. Below is the table from the Bloomberg article showing Russia's Asian customers.

Figure 47: 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
February 02, 2025	1.13	1.45	0.04	0.00	0.00	2.62
February 09, 2025	1.10	1.31	0.04	0.04	0.00	2.49
February 16, 2025	1.24	1.36	0.04	0.17	0.03	2.83
February 23, 2025	1.08	1.43	0.00	0.23	0.03	2.77
March 02, 2025	1.05	1.43	0.00	0.37	0.05	2.89
March 09, 2025	1.09	1.30	0.00	0.67	0.16	3.21

Source: Vessel tracking data compiled by Bloomberg
Bloomberg

Source: Bloomberg

Oil: OPEC March MOMR no change to YoY oil demand growth in 2024, 2025 or 2026

On Wednesday, OPEC released its March Monthly Oil Market Report. (i) We thought the Mar

OPEC Monthly Oil Market Report

MOMR numbers were neutral vs the Feb MOMR. There was no change to oil demand and non-DOC supply and oil stocks in Jan were basically flat with a slightly wider deficit to the 2015-2019 average. (ii) No change to oil demand forecasts. On Wednesday, we posted [LINK] "*No change to OPEC oil demand forecast in Mar MOMR vs Feb MOMR. 2024: +1.54 mmbd YoY to 103.75. 2025; +1.45 mmbd YoY to 105.20. 2026: +1.43 mmbd YoY to 106.63. See 👇, tighter range of oil demand forecasts for 2025 among EIA, IEA, @OPECSecretariat & Saudi Aramco. IEA Mar OMR Thurs #OOTT."* There was no change to the demand forecasts for the world in total for 2025 and 2026. But the demand forecasts for each year had some immaterial changes in the demand forecasts for some countries and regions. (iii) As we have been highlighting for the past few months, the big difference in the agency (EIA vs IEA vs OPEC) oil demand forecasts is that there is that there is a tight range of demand forecasts for 2025, which was not the case for their 2024 forecasts. (iv). There was no change to OPEC's forecasts for YoY growth in non-DOC [countries other than OPEC+ country producers] oil supply for 2025 and 2026. (v) The slight positive relative to the Feb MOMR is that the global oil stocks have a slightly wider deficit to the 2015-2019 average. This is a positive and what OPEC+ was trying to accomplish as Q1 is the seasonally low oil consumption period and that means oil stocks normally build. OPEC+ delayed the start of the return of the voluntary cuts until Apr 1 to help that. Mar MOMR "*Preliminary data for January 2024 shows total OECD commercial oil stocks up by 1.0 mb, m-o-m. At 2,738 mb, they were 188.1 mb below the 2015–2019 average.*" The Feb MOMR had Dec 2023 stocks at 172.1 mmb below the 2015-2019 average. Our Supplemental Documents package includes excerpts from the OPEC March MOMR.

Oil: IEA Mar OMR, small reduction to oil demand; non-OPEC supply reduced slightly

IEA Oil Market Report

On Thursday, the IEA released its monthly Mar Oil Market Report. (i) We thought the numbers were slightly neutral vs the Feb OMR, as there was a minor decrease in oil demand, non-OPEC supply forecast reduced slightly, and non-OECD oil supply tweaked up. (i) On Thursday, we posted [LINK] "*Slight reduction to IEA oil demand forecast in Mar OMR vs Feb OMR 2023: revised up to 102.048 mmbd (was 102.028) 2024: +0.83 mmbd YoY to 102.881 mmbd (was +0.87 to 102.894). 2025; +1.03 mmbd YoY to 103.912 mmbd (was +1.10 to 103.998). See range of oil demand forecasts among EIA, IEA, @OPECSecretariat & Saudi Aramco Thx @business Kristian Siedenburg #OOTT".* (ii) Mar OMR forecasts oil demand +0.83 mmb/d YoY to 102.881 mmb/d in 2024 (was +0.87 mmb/d YoY to 102.894 mmb/d). If the IEA hadn't revised up 2023 by 20,000 b/d, the 2024 demand growth would have been +0.85 mmb/d YoY and not +0.83 mmb/d YoY for 2024. For 2025, Mar OMR forecasts oil demand +1.03 mmb/d YoY to 103.912 mmb/d (was +1.10 mmb/d YoY to 103.998 mmb/d). (iii) Mar OMR does not forecast peak oil demand yet with 2025 oil demand +1.03 mmb/d to 103.912 mmb/d. And this is up big from IEA's pre-Covid oil demand of 100.651 mmb/d in 2019. (iv) There was a slight increase to OPEC+ oil supply growth. Bloomberg wrote, "*Non-OPEC supply 2025 was revised to 71.7m b/d from 71.6m b/d*". (v) IEA warns on the wildcard for tariffs, "*Equally, the scope and scale of tariffs remains unclear, and with trade negotiations continuing apace, it is still too early to assess the impact on the market outlook.*" (vi) Global oil stocks seemed to be positive, potentially supporting why OPEC+ is adding back barrels starting April 1, but it is hard to know for certain. There was little information on how Jan oil stocks compared relative to historical levels, as the IEA stating that Jan global oil stocks in total fell 40.5 mmb in Jan. However, Q1 is normally the period with seasonally lower oil

demand and oil stocks tend to build there after. This is part of the reason OPEC+ did not bring back supply in Q1/2025. "*Global observed oil stocks fell by 40.5 mb in January, of which 26.1 mb were products. Non OECD crude stocks plunged by 45.3 mb, dominated by China where imports declined. Total OECD stocks rose by 11.2 mb, boosted by a 25 mb build in industry crude inventories. Oil on water fell by 6.7 mb. However, preliminary data for February show total global oil stocks rebounded, lifted by an increase in oil on water*". (vii) The IEA says OECD oil stocks rose 11.2 mmb/d so non-OECD would have declined by 51.7 mmb. 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 Jan and Feb IEA OMR, we think one of the big positives from the Mar IEA OMR was that the IEA has seemed to move 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 continue to 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, with the Feb following a similar tone. 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.

Oil: OPEC+ to proceed with Apr 1 "*gradual & flexible*" return of voluntary cut barrels

OPEC+ Apr 1 return of barrels

There are three near-term holdbacks to oil sentiment: economic uncertainty from Trump tariffs, continued concern on the China recovery and OPEC+ schedule to start adding back voluntary oil cut barrels on Apr 1. Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo on OPEC+ adding back barrels. "*OPEC+ to proceed with Apr 1 "gradual & flexible" return of voluntary cut barrels. On Monday just after noon, we posted [LINK] "ICYMI. Brent dropped an hour ago as OPEC confirmed "to proceed with a gradual and flexible return of the 2.2 mbd voluntary adjustments starting on 1st April, 2025..." #OOTT." Just after 11am MT, OPEC posted its release [LINK] that it was, as per their plan, proceeding with "a gradual and flexible return of the 2.2 mbd voluntary adjustments starting on 1st April, 2025." OPEC proceeded with their previously announced plan "Taking into account the healthy market*

fundamentals and the positive market outlook." This was their previously announced plan but, in the last couple weeks, a number of the major sellside analysts came out with their view that OPEC was likely to push back the return of the barrels from April 1 to July 1. So, no surprise the immediate Brent oil price reducing was down ~$1 and Brent ended up down $1.50 to $71.62 on Monday. Our Supplemental Documents package includes the OPEC release."

Figure 48: OPEC phase out starting Apr 1, 2025

Country	2025									2026									Required Production Level as per 37th ONOMM (1)
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep - Dec	
Algeria	911	914	917	919	922	925	928	931	934	936	939	942	945	948	951	953	956	959	**1,007**
Iraq	4,012	4,024	4,037	4,049	4,061	4,073	4,086	4,098	4,110	4,122	4,134	4,147	4,159	4,171	4,183	4,196	4,208	4,220	**4,431**
Kuwait	2,421	2,428	2,436	2,443	2,451	2,458	2,466	2,473	2,481	2,488	2,496	2,503	2,511	2,518	2,526	2,533	2,541	2,548	**2,676**
Saudi Arabia	9,034	9,089	9,145	9,200	9,256	9,311	9,367	9,422	9,478	9,534	9,589	9,645	9,700	9,756	9,811	9,867	9,922	9,978	**10,478**
UAE	2,938	2,963	2,989	3,015	3,041	3,066	3,092	3,118	3,144	3,169	3,195	3,221	3,246	3,272	3,298	3,324	3,349	3,375	**3,519**
Kazakhstan	1,473	1,477	1,482	1,486	1,491	1,495	1,500	1,504	1,509	1,514	1,518	1,523	1,527	1,532	1,536	1,541	1,545	1,550	**1,628**
Oman	761	764	766	768	771	773	775	778	780	782	785	787	789	792	794	796	799	801	**841**
Russia	9,004	9,030	9,057	9,083	9,109	9,135	9,161	9,187	9,214	9,240	9,266	9,292	9,318	9,344	9,371	9,397	9,423	9,449	**9,949**

Source: OPEC

Novak reminded OPEC+ knows oil demand seasonally increases after Q1

Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo. *"Novak reminded OPEC+ knows oil demand seasonally increases after Q1. Russia Energy Minister Novak was asked about the OPEC+ decision to go ahead and add back the voluntary barrels starting Apr 1 and Novak reminded of the normal seasonal increase in global oil consumption in the spring and summer. Interfax reported "This [decision to increase] is primarily owing to the fact that this can only be done during periods of increased demand, and we are entering the spring-summer period of growth in demand, as auto transportation recovers, so there is an opportunity [to recover]," Novak explained." Global oil consumption follows normal seasonal patterns, just like seen in the US. The IEA Oil Market Report Feb 2025 is the most conservative of the agency forecasts for oil demand growth in 2025. Even still, the IEA demand forecasts are in line with Novak's comments – oil consumption seasonally increases in the spring and summer. The IEA Feb OMR forecasts Q2/24 oil consumption to be +1.1 mmb/d QoQ vs Q1/24. And Q3/24 oil consumption is forecast to be +1.1 mmb/d QoQ vs Q2/24."*

Oil: Iran Supreme Leader rejects any negotiations with the US

Iran rejects US negotiations

Last week, Trump highlighted his sending of a letter to Iran's Supreme Leader to negotiate. On Wednesday, the Supreme Leader said no thanks. They have no interest in having any negotiations with the Trump administration based on how Trump pulled out of the JCPOA. On Wednesday, we posted [LINK] "*Iran Supreme Leader rejects talks with US. ""Iran spent several years negotiating a nuclear deal, but the US president tore down the deal," Ayatollah Khamenei said, explaining more that "When we know that they do not comply with talks, there is no need for such talks." Mehr. #OOTT."* Our post included the Mehr (state media) reporting of Khamanei's comments. "*The Leader stressed that negotiations will not resolve any problems. "Iran spent several years negotiating a nuclear deal, but the US president tore*

down the deal," Ayatollah Khamenei said, explaining more that "When we know that they do not comply with talks, there is no need for such talks." "If we had wanted to acquire nuclear weapons, the United States could not have stopped us," the Leader said. He continued to warn the Americans against thinking about military actions against Iran, saying that any attack will receive a response that will inflict more losses on them. "Iran does not seek war, but if the Americans and their cohorts do a damn thing whatsoever, Iran's retaliation is decisive and definite, and the one who will be the loser would be America." "Iran is capable of dealing a blow to the aggressor and will definitely hit it back," Ayatollah Khamenei further said."

03/08/25: Trump said something to happen very very soon on Iran

Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo on Trump saying something is going to happen very, very soon on Iran. "*Trump something to happen very, very soon on Iran. Whether you are a Trump supporter or not, you have to acknowledge he tries to use words, implied threats and threats as his tool to get other to take action before he has to act on his big threat. We are seeing that in sanctions and NATO and Ukraine with the Europeans doing something no one thought they would do – truly crank up defense spending. And he does so by building momentum/attention to an issue by his continual verbally pushing on an issue. He tries to create a sense of urgency. In the case of Iran, he has implied he would be onside if Israel attacks Iran's nuclear facilities. So no one should be surprised by his comments on Friday on Iran that he is trying to create an urgency for Iran and saying something is going to happen very very soon. Earlier this morning, we posted [LINK] "Trump on Iran. "something is going to happen very soon, very very soon. You'll be talking about that pretty soon, I guess, and hopefully, we can have a -- a peace deal, you know, but I'm not speaking out of strength or weakness; I'm just saying I'd rather see a peace deal than the other. But the other will solve the problem." Thx @business #OOTT . Trump is creating momentum for a deal or he is warning or else. Our Supplemental Documents package includes the Trump Iran comments.*"

Are Trump's only options bullish for oil if Iran doesn't negotiate

It looks like Iran's Supreme Leader has thrown the ball back in Trump's court as to what to do next. Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo. "*Are Trump's only options bullish for oil if Iran doesn't negotiate. Earlier this morning, we were scanning Iran media and posted [LINK] "Bullish upside for #Oil? What are Trump's options to not let Iran go nuclear as Iran says 👇"become clear that lifting sanctions is possible through strengthening Iran and neutralizing sanctions.... by utilizing our vast domestic capacities..." Iran's strength depends on continued oil exports. So what options? cut Iran oil exports to cut cash flow? Israel bomb Iran nuclear facilities? Other? #OOTT." This was a statement today by Iran's parliamentary speaker so is after Trump's above Friday comments. The speaker was clear that strengthening Iran is the way to get sanctions lifted. He didn't say it directly, but strengthening Iran needs cash flow and Iran's cash flow depends on oil exports. If Iran wants strength and needs oil exports to continue strong, then it made us wonder what are Trump's options to make sure Iran can't get nuclear capability if Iran won't negotiate. We noted the two obvious ones – try to cut off Iran's cash flow*

by cutting off oil exports or by supporting/allowing Israel to bomb Iran's nuclear facilities. The cutting off oil exports to zero is what Trump signed off on Feb 4 in his maximum pressure on Iran. So it is his stated policy. And both of those would look to be potential upsides to oil prices. Mehr reported "The US seeks to impose its demands and disarm Iran, as outlined in the US policy document he has signed, he added. He further stressed that no negotiation under the shadow of threats, with an agenda of imposing new concessions, will lead to the lifting of sanctions, nor will it result in anything other than humiliating the proud Iranian nation. "Today, more than ever, it has become clear that lifting sanctions is possible through strengthening Iran and neutralizing sanctions. Therefore, we are not waiting for any letter from the United States and believe that by utilizing our vast domestic capacities and seizing opportunities to expand foreign relations with other countries, we can reach a position where the enemy has no choice but to lift sanctions within the framework of continued negotiations with the remaining parties to the JCPOA." Our Supplemental Documents package includes the Mehr report. "

02/04/25: Trump's maximum pressure on Iran, cut oil exports to zero

Here is what we wrote in our Feb 9, 2025 Energy Tidbits memo. "*Trump's maximum pressure on Iran, cut oil exports to zero. Earlier this morning, we posted [LINK] "Reminder: On Feb 4, Trump signed his stated policy of maximum pressure on Iran that included denying Iran of revenue and driving their oil exports to zero. See my Feb 4 post. [LINK] #OOTT." Recall that one of Trump's early actions was they he signed off on the maximum pressure on Iran campaign and to cut their oil exports to zero. Here is what we wrote in our Feb 9, 2025 Energy Tidbits memo. "Trump signs off on imposing maximum pressure on Iran & cut oil exports to zero. On Tuesday, we posted [LINK] "Trump Maximum Pressure on Iran. "Implement a robust and continual campaign, in coordination with the Secretary of the Treasury and other relevant executive departments or agencies (agencies), to drive Iran's export of oil to zero, including exports of Iranian crude to the People's Republic of China;" And more. #OOTT." There was no real reaction to oil prices with the signing of the executive order. We have saying foTumr months that Trump's quickest way to impact oil prices would e if he goes back to his first term playbook of cutting Iran and Venezuela oil exports to almost zero. Trump has surprised many, including us, on how he seems to have no interest in cutting Venezuela's oil exports. And, based on the conversations we had with investors and oil people, most don't expect him to cut Iran's oil exports to zero for fear of what it would do to oil price and gasoline prices. If you read the executive order, it certainly seems say the US will drive oil exports to zero. Our Supplemental Documents package includes the executive order.*"

Trump signaled he really preferred to do a deal with Iran

Here is another item from our Feb 9, 2025 Energy Tidbits memo on Trump's Iran comments. "*Trump signaled he really preferred to do a deal with Iran. We watched the CSPAN coverage of Trump signing the executive order imposing maximum pressure on Iran. One of the annoying things about the Trump Admin is that they never post things quickly. We understand the reason is they want eyes on the event and not having people read what is written. The Dept of Transportation suspending of funds for EV charging infrastructure on Thursday wasn't posted until Friday. Trump*

did the formal signing of the Iran executive order but the White House didn't post the executive order until hours later. Fortunately, we were able to watch the CSPAN coverage. So all we knew was that he signed he executive order and what he said at the live press coverage of the signing. There wasn't the actual executive order to read. And when we listened to Trump's comments, he really gave the impression that the last thing he wanted to do was actually act on the maximum pressure. Rather he pointed to wanting to meet with Iran President and cutting a deal. We suspect this is a great part of the reason why most don't think he will go full Admin 1 and cut Iran's oil exports to zero even if that is what the executive order ending up showing. We created a transcript of Trump's comments. A couple were "The Iran situation, hopefully, I am going to sign it. But hopefully, we're not going to have to use very much. We will see whether or not we can arrange or work out a deal with Iran. And everybody can live together." Then he confirmed he would speak with the Iran President. "Question "Mr. President, are you going to be engage in conversations with your counterpart?" Trump "I would". Our Supplemental Documents package includes the transcript we made of Trump's comments. "

Oil: Trump ordered decisive strikes against the Houthis

US attacks the Houthis last night

Yesterday afternoon, we posted [LINK] "*Breaking! Trump "ordered the United States Military to launch decisive and powerful Military action against the Houthi terrorists in Yemen." "Our brave Warfighters are right now carrying out aerial attacks on the terrorists' bases, leaders, and missile defense" #OOTT."* Trump had just posted that he ordered the military "*to launch decisive and powerful Military action against the Houthi terrorists in Yemen*." And that the US were then carrying out the strikes. Subsequently, the WSJ and others reported US officials indicate the strikes could last for days. This morning, Al Masirah (Houthi news) reported "*The American enemy launched an aggression with nearly 30 airstrikes on the capital, Sana'a, Saadah, Dhamar, Hajjah, and Al-Bayda*." CENTCOM posted some video clips and it is what one of our military friends has described as target practice as the Houthis don't have the capability to shoot down US rockets/missiles. So there is no doubt that the US hit what they wanted to hit so there has to be a big hit to Houthis military capability.

Houthis says "*professional and painful*" response to US attacks

Earlier this morning, we posted [LINK] "*Have to believe US's attacks last night hammered the Houthis capability. But Houthis haven't give up before so are going to try to do something and vow a professional & painful response. #OOTT."* The Houthis haven't given up before despite being bombed for years. So we have to believe their capabilities were hammered last night so we have to wonder exactly what they can do on sending a painful response. But also given their track record, we have to believe they will try to do something. PressTV (Iran state media) reported [LINK] "*Yemen's Supreme Political Council has condemned the deadly US aggression against the country in support of Israel, pledging that the nation will punish the criminal regime in a "painful" manner. It made the announcement on Sunday, a day after the United States carried out large-scale military strikes on the Yemeni capital of Sana'a and the provinces of Sa'ada, Dhamar, Hajjah, and al-Bayda. At least 31 people, mostly women and children, were killed in the aerial and naval attacks ordered by US President Donald Trump. The council said that targeting civilians proves the US's failure in confrontation, adding that the aggression will not*

deter Yemenis from supporting Gaza but will instead escalate tensions. "The punishment of the aggressors against Yemen will be carried out professionally and painfully, by the will of God," it warned."

Oil: Houthis say back to attacks in the Red Sea

Houthis say back to Red sea attacks

On Tuesday, we posted [LINK] "*Red Sea Houthis attacks watch back on! its 4-day deadline on Gaza has now expired. So Houthis expected to resume attacks in Red Sea. #OOTT."* On Mar 7, Houthis leader gave Israel four days to lift the siege on Gaza and allow humanitarian aid to enter Gaza. Our Tuesday post included the Al Masirah report that the Houthis four-day warning was on Mar 7 and then we saw reports on Mar 11 that the four-day deadline had expired and the Yemen will now resume its naval operations against Israeli ships in the Red Sea. As of our 7am MT news cut off, there have been no reports of any Houthis attacks in the Red Sea.

Oil: Still no final deal to resume Kurdish oil exports via Turkey

Still no Iraq Kurdistan final deal

As of our 7am MT news cut off, the latest update from APIKUR (the oil industry association for international oil companies operating in Kurdistan) is there is no change and no visibility to a deal to resume Kurdish oil exports via Turkey. Rather APIKUR reiterated the same issues – they don't have the required contract guarantees. On Monday, Rudaw reported [LINK] "*Myles Caggins, spokesperson for the Association of the Petroleum Industry of Kurdistan (APIKUR), told Rudaw English that oil producers "remain ready to resume exports as soon as we have new agreements for sales and lifting." "APIKUR appreciates the intent and statements from both Prime Minister Sudani and National Security Advisor Mike Waltz indicating the high priority of restoring oil exports through the Iraq-Turkey pipeline," Caggins said."* And ""*We are ready to meet with all parties," Caggins said*." Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo on APIKUR's position. "*Still no final deal to resume Kurdish oil exports via Turkey. There have been multiple prior occasions when Iraq said Kurdistan oil exports via Turkey was ready to resume only to find out the IOCs in Kurdistan still don't have an acceptable agreement. So, we are from the Show Me state when we saw the Iraq oil minister come out yesterday and say Kurdistan "oil exports may restart this month". Yesterday, we posted [LINK] "Too early to celebrate. Iraq oil minister says Kurdish "oil exports may restart this month". But 👇 @KarwanFaidhiDri also reports "Awadi said that they might need more meetings to "reach a final outcome," but that they are in the "final stages of resolving the disputes." #OOTT." The key to the Rudaw reporting is that the Iraq oil minister saying they might more meetings to reach a final outcome. Our concern is that the Kurdistan oil companies still have outstanding issues and, after two years, we have to believe they won't cave in until their issues are resolved. We don't know if that is leverage but the IOCs have had to deal with this for two years so why would they give in now? On Thursday, we posted [LINK] "Still no deal to restart Kurdistan #Oil via Turkey. "'Nothing achieved' in Baghdad meeting over Kurdistan oil exports: Source". 👇@KarwanFaidhiDri. Can't help wonder if it's been an Iraq tease until oil markets can handle KRG barrels on top of southern Iraq barrels? #OOTT." The long awaited meeting with the Kurdistan oil companies was apparently held and it didn't accomplish anything as to resolving the outstanding issues."*

IOCs in Kurdistan want guarantees they will get paid if oil exports resume

It seems like the big issues is still not resolved – the oil companies in Kurdistan still

don't assurances they will get paid and they will get paid their contract rate. Here is what we wrote in our Feb 23, 2025 Energy Tidbits memo included the then breaking news that Kurdistan and Iraq agreed on a deal to resume Kurdistan oil via Turkey and that it was to happen very quickly. However, we probably shouldn't have been surprised to see that things aren't as smooth as they should be. The restart hasn't yet happened. Yesterday, the Iraqi News Agency (state media) reported [LINK] Iraq is meeting with Kurdistan on Tuesday "*The ministry extended an invitation to the Ministry of Natural Resources in the region to attend in Baghdad next Tuesday for the purpose of discussing and debating issues related to the concluded contracts to reach understandings that contribute to developing the oil fields with the best international practices and in a manner that serves the national interest."* Some of the initial reports suggested Iraq invited the IOCs to meet but that looks to be an incorrect interpretation of what the Iraqi News Agency reported. Rather they reported "*The ministry stated in a statement, received by the Iraqi News Agency (INA) today, Saturday, that it "extended an invitation to international foreign companies under (APICOR) and contracted with the Kurdistan Regional Government to develop the region's fields*." And the IOCs yesterday came out clearly saying there are issues to be resolved. Earlier this morning, we posted [LINK] "*Can't blame them. IOCs in Kurdistan ".. the principles are we must have guarantees that these payments will occur". @apikur_oil Myles Caggins. Still no firm restart for Kurdistan #Oil via Turkey. #OOTT."* APIKUR is the industry association for the international oil companies operating in Kurdistan. Our post included the video of APIKUR reminding there are still outstanding issues including they "*must have guarantees that these payments will occur."*

Oil: Libya oil production of 1.380 mmb/d is above Aug 1 levels

Libya oil production at 1.380 mmb/d

On Monday, the Libya National Oil Corporation (NOC) posted [LINK] *"Oil, gas and condensate production rates over the past 24 hours. #NOC #OIL #LIBYA"*. The NOC reported crude oil production of 1,380,352 b/d and 53,279 b/d of condensates amounting to total liquids production of 1,433,631 b/d. This is above the Aug 1 level of 1.279 mmb/d for oil + condensate before the interruptions started and when the NOC stopped providing oil production updates for a few months. Note that the NOC has updated its posting format a few times since Jan, and it did not provide commentary on the changes in production like it did in a previous week's post. The NOC has also removed its total production figure that included oil, condensate, and natural gas production measured in boe/d.

Libya NOC restarts Mabrouk oilfield after 10-yr halt, to reach 25,000 b/d by July

For years, we have highlighted the any sustained peace between east and west Libya will lead to Libya ramping up oil production. We believe there is a lot of low-hanging fruit to add oil because the fighting/war has forced Libya to focus on doing what they can to maintain oil production rather than focusing on growth. We are still cautious as Libya still hasn't moved forward with the last-minute cancelled elections in Dec 2023. But, on Wednesday, the Libya NOC posted on Facebook "*Mabrouk Oil Operations Resumes Production at Mabrouk Field After a 10-Year Halt. Mabrouk Oil Operations has resumed production at the Mabrouk oil field after a 10-year hiatus, dating back to 2015. Production officially resumed on March 9, 2025, at a rate of 5,000 barrels per day (bpd), with a plan to increase production to 7,000 bpd by the*

end of this month. Exports to the Bahi field began on March 11, 2025, with production expected to reach 25,000 bpd by July 2025."

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

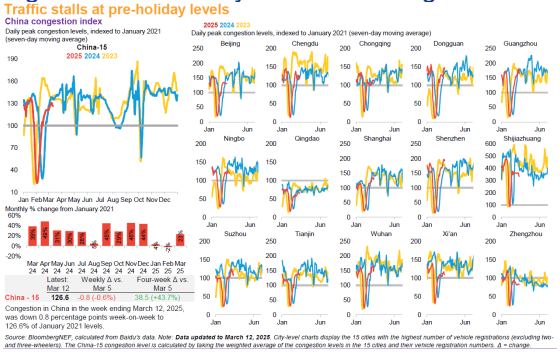
The restart of Mabrouk is a good example of low-hanging fruit and why can buy into their oil growth potential assuming there is no resumption of fighting between east and west Libya. Here is what we wrote in our Jan 19, 2025 Energy Tidbits memo. "*Libya targets 1.6 mmb/d in 2025 and 2 mmb/d by 2028. We have been big believers for decades that there is big oil production growth potential in Libya if there is peace and access to foreign capital. So when we see the NOC saying they can get to 2 mmb/d in three years, we believe that is attainable as longer there is peace and access to capital. Yesterday, Libya held its Libyan Energy and Economy Conference 2025 in Tripoli. Yesterday, the NOC posted [LINK] "And moving forward to achieve the main goal of reaching a production of 2 million barrels per day within the next three years, if sufficient funding is available to achieve this." Amena Bakr (Senior Research Analyst at Energy Intelligence) X/Twitter post [LINK] gave further color. "Under the current plan Libya hopes to boost its capacity to 1.6 million bpd by the end of this year, and 2 million bpd by 2028". It isn't clear if this is oil or oil + condensate, but condensate, if included would likely be under 100,000 b/d in total of the 2 mmb*/d."

Oil: China city-level road congestion -11.2% YoY, negative activity indicator

China city-level road congestion

The 40-day Spring Festival is behind us now, and China city-level road congestion has flattened to pre-holiday levels as people routines are back to normal now. But, as noted below, we have to wonder if the lower YoY city-level road congestion is reflecting less city economic activity. As expected, this week's traffic continued to flatten after the big spike seen at the end of January/ begin of February. On Thursday, BloombergNEF posted its China Road Traffic Indicators Weekly report, which includes the Baidu city-level road congestion for the week ended Mar 12. BloombergNEF reported Baidu city-level road congestion saw a small decrease of -0.6% WoW to 126.6% of Jan 2021 levels. March 2025 data saw average daily peak congestion down -11.2% YoY when compared to March 2024. March 2025 is post Spring Festival so should be normal levels. Last year, Lunar New Year was Feb 10 so city-level road congestion for the Mar 12 week was still reflecting some Spring Festival lesser city-level road congestion. So the week ended Mar 12 being -11.2% YoY would seem to be a negative economic indictor for city-level activity. 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 flattens at pre-holiday levels*". Below are the BloombergNEF key figures.

Figure 49: China city-level road congestion for the week ended Mar 12



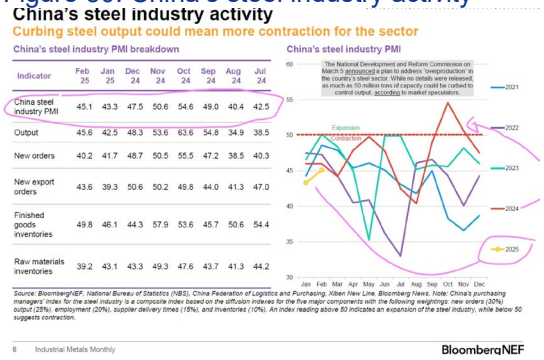
Source: BloombergNEF

Oil: Negative China steel indicators are once again below to pre-Sept stimulus levels

Negative China steel indicators

Steel is always viewed as a key indicator for economies, especially in the case of China. On Thursday, we posted [LINK] "*Negative indicator for China recovery - Steel PMI. China Sept stimulus boost to China steel industry PMI only lasted until Nov. But now, Jan/Feb 2025 steel PMI is lowest post Covid. And Trump tariffs on China should keep pressure on China economy. #OOTT Thx @BloombergNEF.*" BlooombergNEF 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 eight 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 Feb was up a bit but again still back below the pre Sept stimulus levels. The Sept stimulus impact didn't last. And our concern is that we still don't know the ultimate impact on the China from the Trump initial tariffs that started this week. But all we know is that adding tariffs on China will be negative. Below is the China's steel industry activity chart attached to our post.

Figure 50: China's steel industry activity



Source: BloombergNEF

Oil: OPEC continues to forecast increasing China YoY oil demand for 2025 & 2026

Increasing China oil demand

OPEC's March MOMR continues to highlight that OPEC sees continued YoY growth in oil demand in China for 2025 and 2026 driven by petrochemicals but also continued YoY growth

in diesel and gasoline for both 2025 and 2026. Their position remains different than many who have called that China has already reached peak gasoline and diesel demand. (i) For 2025, OPEC forecasts China oil demand +0.31 mmb/d YoY to 16.99 mmb/d. This includes YoY demand increases of +110,000 b/d YoY for LPG/ethane, +70,000 b/d YoY for naptha, +90,000 b/d YoY for jet/kerosene, +50,000 b/d YoY for gasoline, +40,000 b/d YoY for diesel. These are offset by YoY demand decreases of -20,000 b/d YoY for residual fuels and -30,000 b/d YoY or "other products". (ii) For 2026, OPEC forecasts China oil demand +270,000 b/d YoY to 17.25 mmb/d. This includes +85,000 b/d YoY for LPG/ethane, +60,000 b/d YoY for naptha, +80,000 b/d YoY for jet/kerosene, +30,000 b/d YoY for gasoline, +30,000 b/d YoY for diesel and +16,000 b/d YoY for "other products". The only down fuel is -30,000 b/d YoY for residual fuels.

Oil: A slightly wider range of EIA, IEA & OPEC oil demand growth forecasts

Wider range of oil demand YoY growth for 2025

The March monthly forecasts from the EIA, IEA and OPEC are in the books and one of our highlighted oil themes for 2025 has been that there is a tighter range of oil demand YoY growth forecasts. (i) Please note that the EIA and IEA YoY growth rates in oil demand for 2025 by the EIA and IEA were lowered but both had lower YoY growth rates for 2025 because they increased the 2024 or 2023 oil demand forecasts ie. a higher base level so lower YoY growth in 2025. (ii) Our Tues tweet on the EIA STEO [LINK] included the "*Reminder need to look at prior period changes to oil demand*." The EIA increased its 2024 YoY oil demand growth to +1.02 mmb/d YoY to 102.86 mmb/d (was +0.90 mmb/d YOY to 102.77 mmb/d). For 2025, the EIA forecast oil demand YoY growth of +1.27 mmb/d to 104.13 mmb/d (was +1.37 mmb/d YoY to 104.14 mmb/d). So lower YoY demand growth due to the higher 2024 starting point but the same oil demand in totaql. (iii) The IEA revised its 2023 oil demand +20,000 b/d to 102.048 mmb/d (was 102.028 mmb/d). The IEA lowered its oil demand YoY growth rates for 2024 to +0.83 mmb/d YoY (was +0.87) and for 2025 to +1.03 mmb/d YoY (was +1.10) so, in theory, the IEA's 2025 oil demand should have been 0.11 mmb/d lower but it was 0.086 mmb/d lower due to the increasing of its 2023 demand base. (iv) That aside, the results of the March forecasts is that there is a wider range of YoY oil demand growth for 2025. For 2025, the range of YoY oil demand growth rates is IEA +1.03 mmb/d YoY, EIA +1.27 mmb/d YoY, Saudi Aramco +1.30 mmb/d YoY and OPEC +1.45 mmb/d. The IEA does not yet forecast 2026. For 2025, the EIA forecasts demand +1.17 mmb/d and OPEC +1.43 mmb/d YoY. Below is our table of comparison of oil demand forecasts.

Figure 51: Comparison of YoY oil demand growth forecasts

Comparison of YoY Oil Demand Growth Forecasts

	YoY Oil Demand Growth Forecast			EIA demand (million b/d)		
million b/d	2024 YoY	2025 YoY	2026 YoY	2024	2025	2026
EIA Mar STEO	1.02	1.27	1.17	102.86	104.13	105.3
EIA Feb STEO	0.90	1.37	1.04	102.77	104.14	105.18
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	2026
IEA Mar OMR	0.83	1.03		102,881	103,912	-
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 demand (million b/d)		
				2024	2025	2026
OPEC Mar MOMR	1.54	1.45	1.43	103.75	105.20	106.63
OPEC Feb MOMR	1.54	1.45	1.43	103.75	105.20	106.63
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 Q4, Mar 4/25	0.90	1.30				
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 Mar OMR revised up 2023 demand 20,000 b/d to 102,048 kb/d from 102,028 kb/d						
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 mmfb/d						
Source: OPEC, Saudi Aramco, IEA, EIA, Bloomberg, Reuters						
Prepared by SAF Group https://safgroup.ca/insights/energy-tidbits/						

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

Oil: Is IEA setting up for a pull back on its BEV and peak oil demand by 2030 call?

IEA says more investment in oil and gas needed

We continue to expect the IEA to will be revising down their forecast for how much oil is displaced by BEVs by 2030, which means that the IEA will then have to push back their call for peak oil demand by 2030. This has been our view since we saw last April's IEA assumption that BEVs would displace 6 mmb/d by 2030 and that led to the IEA's call for peak oil demand by 2030. And we though IEA Executive Director Birol was setting the stage for a push back in their peak oil demand call. Like we will see in politicians and big company CEOs, Birol is highlighting themes that would be part of the building blocks for a change in his peak oil demand call. In this case, that there needs to be more oil and gas investment. And why would he making such a big emphasis if peak oil demand was about to start? We expect they will move to their oil call that it is peaking but there will be plateau as opposed to a decline. On Monday, we posted [LINK] "*Is 👇IEA need for investment "especially" in existing fields the set-up for IEA to pull back on their call for BEVs to displace ~6 mmbd by 2030 and their linked call for Peak Oil Demand by 2030? @MoEnergy_Saudi Abdulaziz & @aramco Nasser must be smiling. #OOTT Thx @TimoGard.*" Birol spoke at CERAWeek in Houston on Monday and he said *""I want to make it clear ... there would be a need for investment, especially to address the decline in the existing fields. There is a need for oil and gas upstream investments, full stop.*"

OPEC mocks IEA's "*severe yo-yoing*" of its need for oil investment

After seeing Birol's Houston comments about needing more oil and gas investment, OPEC posted a blog "*Another moment of truth for the IEA: Words matter on oil industry investments*" [LINK] that mocked the IEA's "severe yo-yoing" of the need for oil and gas investment but also reminded yo-yoing by the IEA and western

governments on the need for more oil and gas hurts the investment for oil and gas. OPEC gave some of the major recent IEA views on oil and gas investment. OPEC wrote "*On 7 March 2017, at CERAWeek, the Executive Director of the IEA said to the industry, "invest, invest, invest," adding: "We are advocating that the investments need to be made and need to be made without delay. If I had to underline one key word here, it would be investment for the upstream."* Then their big change four years ago of their public shift that western governments used to highlight it was the end of oil and gas. "*By May 2021, however, the IEA had changed its position. In launching the IEA Report, 'Net Zero by 2050: A Roadmap for the Global Energy Sector,' on 11 May, the IEA wrote: "There is no need for investment in new fossil fuel supply in our net zero pathway." In an interview with The Guardian, on 18 May 2021, the IEA Executive Director stated: "If governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now – from this year."* Then this week's "*However, the IEA executed something of a pleasant U-turn this week. On 10 March 2025, the IEA Executive Director told CERAWeek: "I want to make it clear ... there would be a need for investment, especially to address the decline in the existing fields. There is a need for oil and gas upstream investments, full stop.".* Our Supplemental documents package includes the OPEC IEA blog.

Oil: OPEC reminds IEA need to add 5 mmb/d of new oil every year to offset declines

IEA finally highlights decline rates

IEA Birol's flip flop back to the need for more oil and gas investment highlighted that this is needed to offset decline rates. As noted above, Birol said "*I want to make it clear ... there would be a need for investment, especially to address the decline in the existing fields. There is a need for oil and gas upstream investments, full stop.".* The OPEC IEA blog on yo-yoing also highlighted what is oil 101 – the world has to add new oil production every year just to offset existing declines. Oil declines is an oil fundamental, it is nothing new. It's just that it is always overlooked. Birol's Houston comments would have had more impact if he had added how much new oil production needs to be added to offset declines. But OPEC's IEA blog did give those numbers. It's why, yesterday, we posted [LINK] "*Overlooked #Oil Fundamental. Global oil production declines every year so need to add new oil supply every year just to keep oil supply flat. @OPECSecretariat reminds need to add ~5 mmb/d of new supply every year just to offset declines & keep global oil supply flat! Oil decline is a fundamental. It's nothing new. #OOTT."* OPEC wrote "*The investment needs of the industry are significant. OPEC forecasts that the oil sector requires cumulative investments of $17.4 trillion by 2050. This is to meet rising demand, and to counter decline rates, with the latter on average meaning we need to add around 5 mb/d every year just to stay at current overall supply levels."* Adding 5 mmb/d of new oil production is just to replace the declines in the existing global oil production base. We just don't know why this hasn't been the first item noted every time by the IEA when they look at their oil market views.

10/29/24: Saudi, upstream needs 60% of cash flow to offset decline rates

IEA's Birol highlighting the need for more upstream capex to offset existing declines is something industry has warned about for years. Here is what we wrote in our Nov 3, 2024 Energy Tidbits memo on Saudi Arabia Energy Minister Abdulaziz's warning that the upstream has to spend 60% of its cash flow to offset declines. "*Saudi Arabia, upstream needs 60% of its cash flow to offset decline rates. As noted later in the*

memo, I am not on the side that Trump's drill baby drill will lead to a big ramp up in US drilling and production and lower oil prices. So absent a Trump wildcard, oil markets for 2025 will continue to be worried about how Saudi et al can add back their voluntary cuts in the face of continued China economy weakness. It's why we said Saudi Energy Minister Abdulaziz warnings on decline rates is a post 2025 issue. On Monday, we tweeted [LINK] "THE #1 Overlooked #Oil supply fundamental post 2025 from Abdulaziz. "Well, there is something called natural declines. And if you don't attend to that, you lose over time. And if you don't continue spending 60% of an upstream company on maintaining potential, you lose that potential." At 6% average decline, world needs to add 6 mmbd of new oil supply to stay flat. May not be an issue for 2025 BUT becomes an increasing concern especially as these same people push out their peak oil demand forecasts. #OOTT." Abdulaziz warned that most overlook that oil production declines and that means upstream companies have to spend 60% of their cash flow just to maintain their productive capacity. This is the concept we have highlighted for decades – oil declines and every year oil companies have to add new production capacity just to stay flat. Our tweet included the transcript we made of Abdulaziz's comments. At 18:40 min mark, Abdulaziz "we are also committed to maintaining 12.3 million of crude capacity. We're proud of that, But look at what it takes to maintain that capacity. And there are so many people who claims to be understanding oil. If Saud Arabia has to go through these investments to maintain potential, I would tell some of the, well for the purpose of respect, I will tell those people who talk about, this country's going to increase this, this country's going to increase that, and the total number is 7 million. Well, there is something called natural declines. And if you don't attend to that, you lose over time. And if you don't continue spending 60% of an upstream company on maintaining potential, you lose that potential. However, there are good people that take these things slightly. But, anyway. as [xxx xxx] was saying once, in one of his [xxx] only time and patience will prove the country."

11/03/24: Abdulaziz points to Saudi oil decline is ~3.5%

The effective overall global oil decline rate of ~5% from the OPEC IEA blog is meant to weight average decline rates across the world. US shale has very high decline rate whereas countries like Saudi Arabia reportedly have a low decline rate. Here is another item from our Nov 3, 2024 Energy Tidbits memo on Saudi Arabia's oil decline rate. "*Abdulaziz points to Saudi oil decline is ~3.5%. On Friday, we tweeted [LINK] "Saudi Energy Minister straight talk points to approx 3.5% decline rate for Saudi oil productive capacity. Adding 550kbd Marjan/Berri, 600 kbd Zuluf & 75 kbd Damman for total 1.225 mmbd to maintain 12.3 mmbd MSC thru 2027. Consistent with my 👇05/07/24 tweet on Aramco Q1. #OOTT." Our Monday tweet on Saudi Energy Minister Abdulaziz's warning on decline rates included his slide on what Saudi is doing to maintain its 12.3 maximum sustainable capacity that included adding 550,000 b/d at Marjan/Berri in 2025, 600,000 b/d at Zuluf in 2026 and 75,000 b/d at Damman in 2027 for a total adds of 1.225 mmb/d to maintain its 12.3 MSC thru 2027 ie. infers an approx. 3.5% annual decline rate. Our tweet noted that this is the same as we tweed on May 7 on Saudi Aramco's Q1/24 disclosure."*

Figure 52: Saudi Arabia oil projects to maintain 12.3 mmb/d MSC

Source: Saudi Arabia Energy Minister

05/07/24: Aramco points to a 3.5% Saudi oil decline rate

As noted in our Nov 1, 2024 tweet, Saudi Energy Minister Abdulaziz listing of the projects to maintain Saudi Maximum Sustainable Capacity at 12.3 mmb/d are in line with Saudi Aramco Q1 disclosure. Here is what we wrote in our May 12, 2024 Energy Tidbits memo. "*Saudi Aramco reported Q1 on Tuesday. (i) Aramco didn't come out and talk about Saudi Arabia oil decline rates but in reading the Q1 highlights, the numbers seemed to point to an oil decline rate in Saudi Arabia of ~3.5%. (ii) On Tuesday, we tweeted [LINK] "#Oil 101: Need to add ~6-7 mmbd new oil supply/yr to stay flat. Aramco Q1 👇: Damman, Marjan, Berri & Zuluf to add 1.225 mmbd to "maintain MSC at 12.0 mmbpd". Saudi ~3.5% oil decline would fit Aramco 👇12/07/23 tweet global conventional + unconventional decline of 7%. #OOTT." (iii) in the Q1, Aramco highlighted they were given the directive to maintain MSC at 12.0 mmbpd. And "This directive will have no impact on announced, nearterm projects including the Dammam development and the Marjan, Berri, and Zuluf crude oil increments. Production from these projects will be used to maintain MSC at 12.0 mmbpd, which provides operational flexibility to increase production and supports Aramco's unique ability to rapidly respond to changing market conditions." So Damam, Marjan, Berri and Zuluf will maintain MSC at 12 mmb/d. (iv) Aramco then detailed these projects would add 1.225 mmb/d over 2025, 2026 and 2027. Adding 1.225 mmb/d over 3 years would effective offset 1.26 mmb/d assuming a 3.5% decline rate. That is just the math. Damman is to add 25 mb/d in 2024 and 50 mb/d in 2027. Marjan is to add 300 mb/d and Berri is to add 250 mb/d, both by 2025. Zuluf is to add 600 mb/d by 2026. (v) Our tweet linked to the below Dec 7, 2023 Saudi Aramco CEO view that overall global conventional + unconventional oil decline rate was 7%."*

12/07/23: Aramco global conventional + unconventional oil decline rate is 7%

There is no official overall decline rate although most seem to point to 4% to 5%. However, here is what we wrote in our Dec 10, 2023 Energy Tidbits memo. "*Aramco CEO global conventional + unconventional oil decline rate is 7%. We recognize that no one is really thinking about mid-term oil outlook given the oil price weakness now going into Q1/24. For months, we have been warning that the key factor driving why Saud would continue its voluntary 1 mmb/d cuts thru Q1/24 was that global oil demand is always seasonally down in Q1 every year vs the preceding Q4. That is*

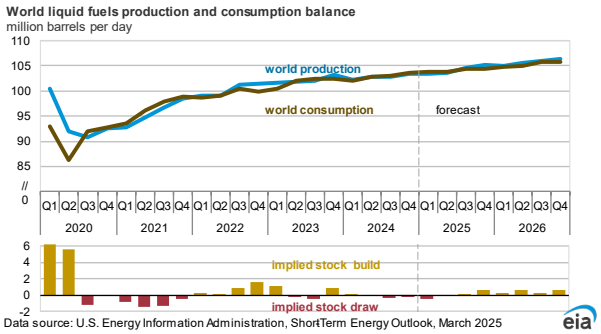
the big problem, the normal seasonal decrease in oil demand in Q1 vs Q4 that is approx. 1.5 mmb/d. So no one is focused beyond 2024 but, for those that care, on Thursday, we tweeted [LINK] "For anyone looking at #Oil in 2025+. #Aramco CEO "If you look at existing fields today & the level of maturity that we're seeing in conventional and unconventional resources, you're looking at a 7% decline" ie. 7 mmbd has to be replaced each yr to stay flat. Thx @jcgnana #OOTT." The headlines on the Platts story were "COP28: Saudi Aramco CEO says fossil fuel investment more viable than renewables to meet demand. HIGHLIGHTS Fossil fuel investment down 40% from 2014 levels: Nasser. Q4 2023 oil demand set to be higher than Q4 2019. Renewables, hydrogen not viable in the short term, he says." [LINK]. But what caught our eye were Nasser's comments on global oil declines. Platts wrote "Saudi Aramco's chief called for more investment in fossil fuels while dismissing the short-term viability of renewables due to what he suggested were higher costs and low demand for clean energy. "I think we need more investment," Nasser said citing a 40% decline in investment in fossil fuels from 2014 levels. "If you look at existing fields today and the level of maturity that we're seeing in conventional and unconventional resources, you're looking at a 7% decline," he added." Nasser is reminding the combined global conventional + unconventional oil decline rate is 7%, which means that, on a combined global basis, if spending were to stop oil production would be down 7 mmb/d. The reminder is that the first challenge for the global oil industry is to do the work to replace 7 mmb/d just so global oil production can stay flat. That is why there is the first capital every year to basic production maintenance, development drilling, field extensions, etc to replace the 7% decline. The 7% is an average decline rate across the world, which takes into account the way higher decline rates in the 13 mmb/d of US production."

Oil: EIA forecasts global oil stocks will continue to decline thru Q2/25

EIA global oil stock draws thru Q2/25

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 Feb 2025 at 32.67 mmb/d and for Feb 2026 at 32.56 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 slightly rise in 2025 by +0.03 mmb/d YoY to 32.39 mmb/d in Q4/25. The EIA forecasts OPEC+ total petroleum and other liquid fuels production is 42.22 mmb/d in Q4/24, and in Q4/25 the EIA forecasts an increase of +0.93 mmb/d to 43.15 mmb/d. The EIA said, "*Despite less production from Iran and Venezuela in this month's forecast, we still expect OPEC production will grow over the next two years. OPEC+ reaffirmed its commitment on March 3 to proceed with "a gradual and flexible return" of the 2.2 million barrels per day (b/d) voluntary adjustments starting on April 1, 2025. This announcement included the stipulation that the production increases could be paused or reversed subject to market conditions, which leaves some uncertainty about whether increases will materialize in line with the announcement."* (ii) The EIA forecasts continued global stock declines thru Q2/25. The EIA forecasts a draw on global oil stocks of -0.47 mmb/d in Q1/25 and a small draw of -0.05 mmb/d in Q2/25 before returning to a build on oil stocks in Q3/25 and continuing through the end of 2026. Below is the EIA STEO global oil inventory chart.

Figure 53: EIA STEO Global oil inventory change



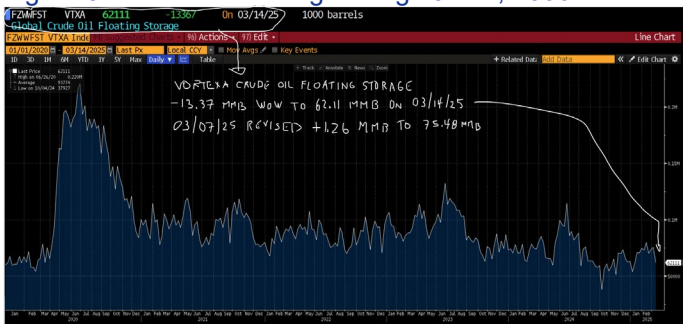
Source: EIA

Oil: Vortexa crude oil floating storage -13.37 mmb WoW to 62.11 mmb on Mar 14

Vortexa floating storage

We are referencing the Vortexa crude oil floating storage data posted on the Bloomberg terminal as of 9am MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments on the new estimates are compared to the prior week's Vortexa estimates posted on Bloomberg on Mar 8 at 9am MT. (i) Yesterday morning, we posted [LINK] "*Vortexa crude #Oil floating storage. 62.11 mmb on 03/14, -13.37 mmb WoW vs revised up 03/07 of 75.48 mmb. 7-wk moving average down to 72.72 mmb on 03/14, last 4 wks are 1st times >70 since Aug. Been ~2 mths since China stopped unloading some sanctioned RUS tankers. Asia is off from peak but still high ie. perhaps pointing to so so demand. Thx @vortexa @business #OOTT.*" (ii) As of 9am MT Mar 15, Bloomberg posted Vortexa crude oil floating storage estimate on Mar14 was 62.11 mmb, which was -13.37 mmb WoW vs revised up Mar 7 of 75.48 mmb. Note Mar 7 was revised +1.26 mmb to 75.48 mmb vs 74.22 mmb originally posted at 9am MT on Mar 8. (iii) Revisions. There was a mix of +/- revisions for the seven prior weeks, but they weren't big with the largest Jan 31 revised -3.08 mmb, such that the average revision for the prior seven weeks was -0.66 mmb. Here are the revisions for the prior seven weeks compared to the estimates originally posted on Bloomberg at 9am MT on Mar 8. Mar 7 revised +1.26 mmb. Feb 28 revised -2.33 mmb. Feb 21 revised -0.43 mmb. Feb 14 revised +1.47 mmb. Feb 7 revised -2.11 mmb. Jan 31 revised -3.08 mmb. Jan 24 revised +0.59 mmb. (iv) Even with Mar 14 coming at 62.11 mmb, the last four weeks have been the first time since Aug that the 7-week moving average is over 70 mmb. The 7-week moving average to Mar 14 is 72.72 mmb vs last week's then 7-week moving average of 74.69 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) Mar 14 estimate of 62.11 mmb is -70.23 mmb vs the 2023 peak on June 25, 2023 of 132.34 mmb. Recall Saudi Arabia stepped in on July 1, 2023 with its voluntary cuts. (viii) Mar 14 estimate of 62.11 mmb is -12.42 mmb YoY vs Mar 15, 2024 of 74.53 mmb. Below are the last several weeks of estimates posted on Bloomberg as of 9am MT on Mar 15, Mar 8, and Mar 1.

Figure 54: Vortexa Floating Storage Jan 1, 2000 – Mar 14, 2025, posted Mar 15 at 9am MT



Source: Bloomberg, Vortexa

Figure 55: Vortexa Estimates Posted 9am MT on Mar 15, Mar 8, and Mar 1

Posted Mar 15, 9am MT

Date	Last Px
Fr 03/14/2025	62111
Fr 03/07/2025	75478
Fr 02/28/2025	73780
Fr 02/21/2025	70291
Fr 02/14/2025	79627
Fr 02/07/2025	73036
Fr 01/31/2025	74740
Fr 01/24/2025	70961
Fr 01/17/2025	70921
Fr 01/10/2025	60934
Fr 01/03/2025	53763
Fr 12/27/2024	63353

Mar 8, 9am MT

Date	Last Px
Fr 03/07/2025	74215
Fr 02/28/2025	76111
Fr 02/21/2025	70716
Fr 02/14/2025	78464
Fr 02/07/2025	75146
Fr 01/31/2025	77833
Fr 01/24/2025	70368
Fr 01/17/2025	71148
Fr 01/10/2025	61133
Fr 01/03/2025	53477
Fr 12/27/2024	64271
Fr 12/20/2024	64144

Mar 1, 9am MT

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

Source: Bloomberg, Vortexa

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 Mar 7 was revised +1.26 mmb. There were no significant revisions in a region. (ii) There were no big revisions to Asia for the six prior weeks but the downward revisions to Feb 7 and Jan 31 took them below 40 mmb. Asia floating storage doubled in Jan when China surprised by becoming stricter on taking sanctioned tankers related to Russia from 19.04 mmb on Jan 3 reaching a high of a 42.51 mmb on Feb 14. Mar 14 of 28.77 mmb is the first time below 30 mmb since Jan 10. It's only one week and Mar 7 at 38.99 mmb was still high. Our concern is that the China sanctioned tankers immediate hit should have worked thru the system by now s the continued higher Asia floating storage would seem to be more reflective of demand. The 7-week moving average is now 36.19 mmb (was 38.41 mmb), but it includes the big weeks in the aftermath of the surprise China change. (iii) Total floating storage on Mar 14 of 62.11 mmb is -13.37 mmb WoW vs revised up Mar 7 of 75.48 mmb. The major WoW changes were Asia -10.22 mmb WoW, Middle East -4.17 mmb WoW and Other +2.82 mmb WoW. (iv) Below is the table we created of the WoW changes by region posted on

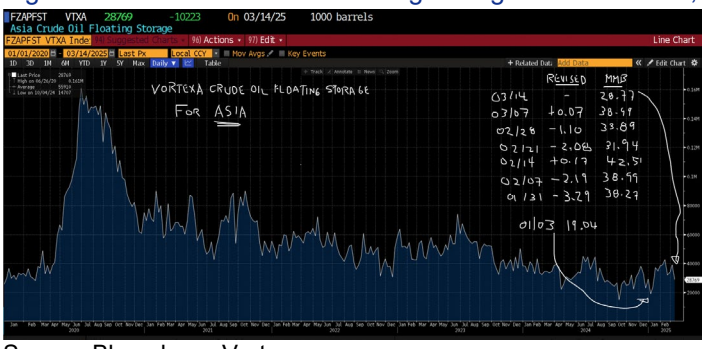
Bloomberg at of 9am MT yesterday. Our table also includes the "Original Posted" regional data for Mar 7 that was posted on Bloomberg at 9am MT on Mar 8.

Figure 56 Vortexa crude oil floating storage by region

Vortexa crude oil floating storage by region				Original Posted	Recent Peak	
Region	Mar 14/25	Mar 7/25	WoW	Mar 7/25	Jun 23/23	Mar 14 vs Jun 23/23
Asia	28.77	38.99	-10.22	38.29	74.06	-45.29
North Sea	1.06	0.01	1.05	0.19	6.79	-5.73
Europe	5.17	6.62	-1.45	6.63	6.05	-0.88
Middle East	8.80	12.97	-4.17	12.70	6.59	2.21
West Africa	5.14	7.16	-2.02	6.80	7.62	-2.48
US Gulf Coast	1.61	0.99	0.62	0.18	1.53	0.08
Other	11.56	8.74	2.82	9.43	29.70	-18.14
Global Total	62.11	75.48	-13.37	74.22	132.34	-70.23
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Mar 15						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

Figure 57: Vortexa crude oil floating storage for Asia Jan 1, 2020 thru Mar 14, 2025



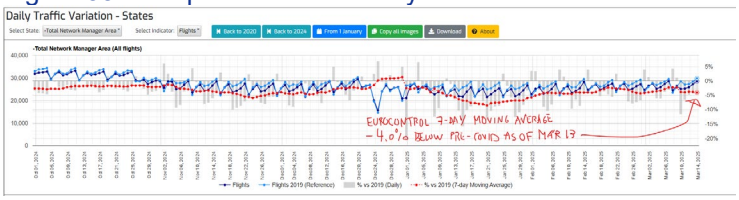
Source: Bloomberg, Vortexa

Oil: Europe airports daily traffic 7-day moving average -4.0% below pre-Covid

Europe airports daily traffic

Yesterday morning, we posted [LINK] *"EU air traffic (arrivals/departures) still stuck below pre-Covid. 7-day moving average as of: Mar 13: -4.0% below pre-Covid. Mar 6: -2.2%. Feb 27: -4.3%. Feb 20: -2.4%. Feb 13: -4.1%. Feb 6: -4.3%. Jan 30: -5.9% below pre-Covid. Jan 23: -7.6%. Jan 16: -7.6%. Jan 9: -4.2%. Jan 2: -2.6%. Dec 26: +0.8%. #OOTT."* Note the Eurocontrol air traffic is daily arrivals/departures data. The Xmas rush for the 7-day moving average as of Dec 26 was the only time above pre-Covid since Jan 2024 but it didn't last and went right back below pre-Covid in Jan 2025. Air traffic always goes up for Xmas and it always seasonally drops after Xmas. But in Jan 2024, it didn't drop as much and was actually above pre-Covid in Jan 2024. This year, there was a big drop off after Xmas. The 7-day moving average was -4.0% below pre-Covid as of Mar 13, which follows -2.2% as of Mar 6, -4.3% as of Feb 27, -2.4% as of Feb 20, which follows -4.1% as of Feb 13, -4.3% as of Feb 6 ,-5.9% as of Jan 30, -7.6% as of Jan 23, -7.6% below as of Jan 16, -4.2% as of Jan 9, -2.6% as of Jan 2, and +0.8% as of Dec 26. Normally we try to pull the data early Saturday mornings for a consistent weekly comparison. Eurocontrol updates this data daily and it is found at [LINK].

Figure 58: Europe Air Traffic: Daily Traffic Variation to end of Mar 13



Source: Eurocontrol

Oil: Delta Air Lines sees reduced consumer and corporate demand for air travel

Delta sees reduced air travel demand

It was a bad day for US airlines stocks on Monday and it was made worse Monday night whe Delta Air Lines posted updated guidance hammering its profit guidance basically in half even in the face of lower oil/jet fuel prices because of demand weakness from both consumers and companies. On Monday night, we posted [LINK] *"Weaker US consumer & corporate confidence & softer close-in demand drives Delta Air Lines profit warning more than offsetting lower jet fuel prices. Shares down 5.5% today, profit warning after close, now down 11.2% in after market. #OOTT."* Delta ended up being down 7.3% on Tuesday. It closed last Friday Mar 7 at $53.28, was down each day thru Thurs closing at $43.92 before being up on Friday to close at $46.75. Delta's warning on Monday night was simple – they are seeing less near-term *"consumer & corporate confidence"* and that is leading to *"softer close-in demand".* Delta had to come out with the reduced guidance on Monday night as they, along with the other US airlines, presented at US sell-side conference on Tuesday. All of the other major US airlines noted the weak current market, some also noted lowering capacity ie. less air travel than expected over the coming months.

American Airlines "*domestic weakness in March*"

American Airlines CEO Isom wasn't as specific as the other CEOs. Rather he noted the domestic air weakness but also his near term is tougher with the fallout from the Jan 29 Potomac River mid-air collision of American 5342 with the army helicopter. Isom said " But when you combine 5342 with the uncertainty in the economy right now and certainly the domestic weakness in March, that's the primary, those are the primary reasons behind our adjustments to revenue. 5342 is a big deal, economic uncertainty is a big deal and we have really seen some weakness in March. So that has led to the guide that we issued earlier today. And you've seen this ultimately it means that we have extended the projected loss for the quarter on a an EPS basis. This is disappointing. We had ended the fourth quarter with a lot of momentum coming into this and it's something that we're certainly focused on addressing as we go forward and improving results from here. And that's where I'll go. You've -- again, the quarter is incredibly difficult, incredibly difficult for American because of 5342 on top of everything else that's going on in the industry.

Southwest see domestic air demand softness running thru 2025.

Southwest Airlines CEO Jordan noted lowering their guidance included imp[acts from "*including a reduction in government travel, and the remaining two points are primarily due to softness in bookings and demand in large part due to the macro environment."* And then in the Q&A, Jordan replied *"But what we're seeing now is kind of a broad softness in the macro economy that is hard to attribute to any one*

thing. And again I just want to point out that we have run that trend through kind of through most of the second quarter and then a modest softening through the rest of the year. So the numbers that you see reflect that. But we've not run something significantly worse through our plan.

United Airlines see material short term impact, industry reducing capacity

United Airlines CEO Kirby said ""*Now in the near term, read the same newspaper, read the 8-Ks this morning. There's certainly --we have also seen weakness in the demand market. It started with government. Government is 2% of our business. Government adjacent, all the other consultants and contracts that go along with that are probably another 2% to 3%. That's running down about 50% right now. So a pretty material impact in the short term."* And then he highlighted industry will be reducing capacity. "*From an industry level, I expect that you're going to see probably modest supply changes in the very near term as we go through the summer, hope springs eternal, and it is the summer peak. I don't think you'll see huge changes. But I think by the time we get to August next year, just like we got to August of last year, there's going to be a huge --every analyst is going to be writing about the capacity cuts and the supply changes. It's just economics. Like I said on the last call that airlines were moving to their markets where they have a comparative advantage."*

Oil: If Trump tariffs delay adding new planes, it's positive for jet fuel demand

Trump tariffs to delay plane purchases

We were watching CNBC Squawk Box on Wednesday when AerCap CEO Aengus Kelly was talking about the impact of Trump tariffs and if reciprocal tariffs would have on new plane purchases. AerCap is the world's largest purchaser of commercial jets. He was pretty clear that the tariffs, in particular with reciprocal tariffs, could add $40 million to the cost of a Boeing commercial plane and that would mean there wouldn't be plane sales under a big hit to steel and other items under tariff. It's hard to know the ultimate impact on plane prices and for how long, but it looks like the uncertainty will cause delays in new plane purchases. And, if so, that means there will be, like seen over the past few years, older planes aren't getting put to pasture as quickly as some may hope and that means an aging fleet. And older planes are less fuel efficient than new planes. On Wednesday,, we posted [LINK] "*Trump tariffs are big disruption to airplane sales, question is for how long. @AerCapNV CEO to @Lebeaucarnews @SquawkCNBC. Means less new planes replacing old planes. See 👇12/10/24 post: global fleet already at record age 14.8 yrs & old planes are less fuel efficient. #OOTT #JetFuel."* Our post included the video clip we made of Kelly's comments. And our post linked to our Dec 10, 2024 post on the aging global fleet.

12/10/24: IATA, global airplane fleet average 14.8 yrs, oldest record average

Here is what we wrote in our Dec 15, 2024 Energy Tidbits memo. "*IATA forecat jet fuel consumption to be +0.40 mmb/d YoY to 6.99 mmb/d in 2025. We don't have a jet fuel forecast model, but we couldn't help think that the IATA's forecast for global jet fuel consumption to be +0.40 mmb/d YoY in 2025 seems conservative given the IATA's highlighting of an aging global air fleet and increasing demand for used planes. (i) On Tuesday, the IATA (International Air Transport Association) posted its global outlook. The headline is record air passenger and air cargo in 2024 and going higher in 2025. For 2025 vs 2024, the IATA forecasts passengers +6.7% YoY to*

5.221 million, flights +4.7% YoY to 40.0 million, passenger RPK +8.0% YoY, and cargo growth CTK +6.0% YoY. (ii) On Tuesday, we posted [LINK] "Anyone else surprised IATA only fcast jet fuel consumption +0.40 mmbd YoY in 2025 to 6.99 mmbd. Follows 2024 was +0.59 mmbd YoY to 6.59 mmbd. Air travel up again YoY to new record flying in 2025 AND IATA highlights global fleet average age now record high 14.8 yrs and increased demand for used planes. Old planes tend to be relative jet fuel guzzlers. #OOTT." (iii) We don't know their model, but we would have expected fuel efficiency would have been worse ie. more liters per passenger. Before we saw the fuel efficiency table below, the IATA highlighted the backlog of new plane deliveries, "high traffic demand, coupled with capacity constraints, has led to an increase demand for used aircraft, and in turn, to a significant decline int eh share of parked fleet, which dropped to 14%, the lowest since 2019." And they highlighted "The ongoing delays in deliveries have increased the average age of the global fleet to a record high of 14.8 years, compared to an average age of 13.6 years during 1990-2024". Having read these first, we would have expected fuel efficiency to be worse in 2025 and not better in 2025. An older fleet and more used planes would have normally pointed to less fuel efficiency and therefore more jet fuel consumption given increasing flights. And that is why we have to wonder if the IATA forecast for jet fuel consumption being +0.40 mmb/d YoY in 2025 is conservative. Our Supplemental Documents package includes excerpts from the IATA global outlook."

Figure 59: Global air industry statistics

Table 10: Industry statistics

Global airline industry	2019	2020	2021	2022	2023	2024E	2025F
Scgment passengers, million	4,560	1,779	2,304	3,472	4,439	4,893	5,221
O-D passengers, million	3,974	1,570	2,017	2,962	3,808	4,216	4,477
Flights, million	37.5	19.7	24.2	29.0	35.7	38.2	40.0
Passenger growth, RPK, % YoY	4.1%	-65.8%	21.8%	64.9%	36.8%	11.2%	8.0%
Cargo growth, CTK, % YoY	-3.2%	-9.9%	18.8%	-8.1%	-1.7%	11.8%	6.0%
Capacity growth, ATK, % YoY	3.3%	-44.3%	16.6%	19.7%	21.7%	9.9%	7.1%
Total load factor, % ATK	70.1%	59.8%	61.9%	67.2%	68.7%	69.6%	69.9%
Passenger load factor, % ASK	82.6%	65.2%	66.9%	78.7%	82.2%	83.0%	83.4%

Source: IATA

Figure 60: Key industry fuel metrics

Table 7: Key industry fuel metrics

Global airline industry	2019	2020	2021	2022	2023	2024E	2025F
Fuel spend, USD billion	190	80	106	215	269	261	248
% change YoY	1.5%	-58.0%	32.3%	103.6%	25.2%	-3.2%	-4.8%
% of operating costs	23.9%	16.1%	19.0%	29.6%	31.8%	28.9%	26.4%
Fuel use, billion gallon	98	52	62	76	92	101	107
% change YoY	2.2%	-45.9%	19.9%	22.9%	20.3%	9.8%	6.0%
Fuel efficiency, liter/100 ATK	0.24	0.23	0.24	0.24	0.23	0.23	0.23
% change YoY	-0.6%	-2.7%	3.0%	0.7%	-1.8%	-0.1%	-1.0%
Fuel consumption, liter per 100 km/passenger	4.2	3.6	3.5	4.8	4.3	4.2	4.1

Source: IATA

Oil & Natural Gas: Greenland new Prime Minister "*we don't want to be Americans*"

On Wednesday, Sky News reported on comments by Greenland's new Prime Minister Jens-Frederik Nielsen on the Trump's continued push for Greenland to become part of the US.

Greenlanders want to be Greenlanders

The new PM says Greenlanders want to be Greenlanders and not Americans or Danes. Sky News wrote "*With most Greenlanders opposing Trump's overtures, the campaign focused more on issues like healthcare and education than on geopolitics. But on Wednesday Nielsen was quick to push back against Trump, who last week told a joint session of Congress that the U.S. needed Greenland to protect its own national security interests and he expected to get it 'one way or the other.' 'We don't want to be Americans. No, we don't want to be Danes. We want to be Greenlanders, and we want our own independence in the future,' Nielsen, 33, told Britain's Sky News. 'And we want to build our own country by ourselves.' Greenland, a self-governing region of Denmark, has been on a path toward independence since at least 2009, when the government in Copenhagen recognized its right to self-determination under international law.*"

Trump tells Greenlanders he will make them rich

It looks like Trump's latest pitch to Greenland hasn't yet worked. Here is what we wrote in last week's (Mar 9, 2025) Energy Tidbits memo on his pitch. "*Trump tells Greenlanders he will make them rich. As we were watching the Trump SOTU address, we posted [LINK] "Trump supporter or not. He knows how to make a straightforward sales pitch to Greenlanders on why they should choose to join the US. "we will keep you safe. we will make you rich". Only ~60,000 Greenlanders to make rich. #OOTT." Trump featured his sales pitch to Greenland in the SOTU. He said "And I also have a message tonight for the incredible people of Greenland. We strongly support your right to determine your own future. And if you choose, we welcome you into the United States of America. We need Greenland for national security and even international security. And we're working with everybody involved to try and get it, but we need it really for international world security And I think we're going to get it. One way or the other we're going to get it. We will keep you safe. We will make you rich. And together we will take Greenland to heights like you have never thought possible before. It's a very small population, but very, very large piece of land and very, very important for military security." Our tweet reminded there are less than 60,000 Greenlanders. We thought it was a simple message to Greenlanders and a message consistent with Trump's view on money – if Greenlanders choose to join the US, the US will make them rich.*"

Trump wants Greenland, would be a big strategic deal

Here is what we wrote in our Dec 29, 2024 Energy Tidbits memo on Trump wanting Greenland. "*Trump wants Greenland, would be a big strategic deal. Early Monday morning, we posted [LINK] "Method to Trump madness! Greenland has huge strategic value for US is why Trump wants to buy Greenland again. US would control both ends of Northwest Passage and controlling major international shipping lanes has military and commercial value. See 08/18/2019 SAF Group Energy Tidbits memo. But expect Denmark/Greenlanders to reject. #OOTT." Last Sunday, Trump announced the appointment of his ambassador to Denmark and wrote ""For purposes of National Security and Freedom throughout the World, the United States of America feels that the ownership and control of Greenland is an absolute necessity." No surprise on Monday, Greenland Prime Minster Mute Egede rejected Trump's statement and wrote "Greenland is ours. We are not for sale and will never be for sale. We must not lose our long struggle for freedom." Trump raised interest in*

his first term and was rejected. Our post included what we wrote in our Aug 18, 2019 Energy Tidbits memo on Trump's first buy Greenland desire. It isn't an oil and gas upside, rather we see it as a hugely strategic position for the US as it would give the US control over both ends of the Northwest Passage. An, as seen elsewhere, controlling major shipping lanes is a strategic asset for both commercial and military reasons.".

Trump has always wanted to buy Greenland as it would be of strategic value

Here is what we wrote in our Aug 18, 2019 Energy Tidbits memo. *"Trump buying Greenland would be of strategic value. We recognize Trump was ridiculed for his asking his advisors about buying Greenland. We have no idea if Trump was truly serious about wanting to try to buy Greenland. Surely he would have expected Greenlanders to vote no especially as they are viewed as anti resource development. The primary reason being attributed for his interest is Greenland's mineral and oil potential. We would say no to oil and gas. its not that Greenland doesn't have oil and gas potential, its that it hasn't worked to date (albeit with only limited exploration wells) and the US doesn't need it. We were surprised that Trump defenders didn't try to stop the ribbing by noting Greenland as big strategic value to the US in a world of global warming. Not so much that Greenland would be accessible, rather Greenland's strategic location in a world of global warming and increasing ability for ships/tankers to move thru the Northwest Passage. If Greenland was the US, the US would effectively share the effective control at both ends of the Northwest Passage with Russia on one end and Canada on the other end. Not a bad positioning. As we have seen in 2019, effective control of major waterways has been a major issue in the Strait of Hormuz, Bab el Mandeb, Strait of Gibraltar, and Strait of Malacca.* "

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Figure 61: Northwest Passage

Source: Geology.com

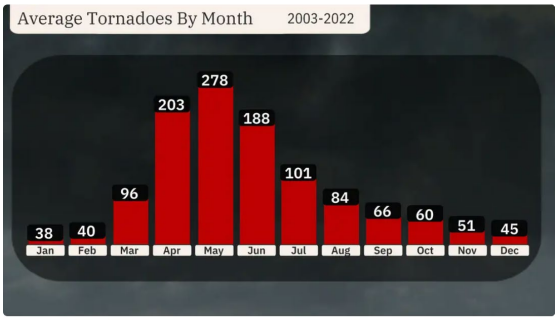
Oil & Natural Gas –March is start of ramp up to peak tornados in May

Tornados per month

We follow tornado activity as it can impact oil and gas onshore operations in Oklahoma and Kansas. As a rule, most of the key Texas oil and gas operations (Permian and Eagle Ford) tend to be west and/or south of major tornado activity. Normally we don't bring up tornadoes for another month or two but, yesterday's major tornado activity have brought tornadoes into

the spotlight. Here is what we wrote a year ago in our March 17, 2024 Energy Tidbits memo on tornado season. "*Normal peak tornado season is May. The Weather Channel provided an updated monthly distribution of tornadoes for the 20-year period 2003-2022. This is an update from what we included in our May 17, 2023 Energy Tidbits memo that had the monthly distribution for the 20-yr period 1991-2010. The distribution by month is the same: tornado activity really ramps up in April, peaks in May, is still high in June and then in July is below April levels. Below is the graph from The Weather Channel report*."

Figure 62: Monthly Tornado Averages 2003-2022

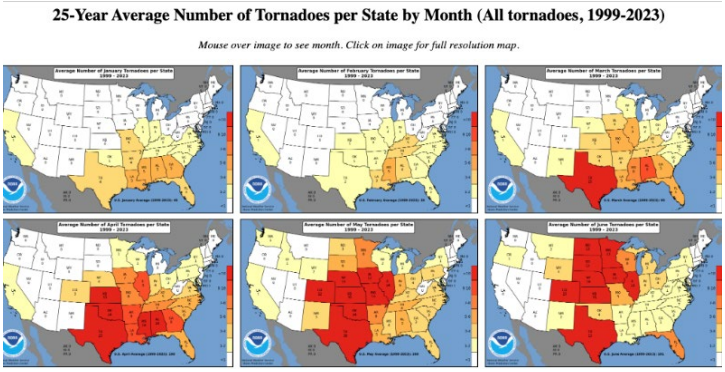


Source: The Weather Channel

25-year average number of tornadoes per state by month

Earlier this morning, we saw a good NOAA graphic that shows the 25-year average number of tornadoes per state by month as it really illustrates the tornado alley. It illustrates why Kansas, Oklahoma and Texas are the key normal tornado risk areas. Below we pasted NOAA's map for Jan thru June. https://www.spc.noaa.gov/wcm/

Figure 63: Average number of tornadoes per state by month



Source: NOAA

Tornados Enhanced Fujita Scale (EF Scale) Intensity & Rating

Here is another item from last year's March 17, 2024 Energy Tidbits memo. *"Tornados Enhanced Fujita Scale (EF Scale) Intensity & Rating. NOAA's National Weather Service has a recap of the Enhanced Fujita Scale (EF Scale) for the*

intensity and rating of tornadoes. [LINK]. NOAA explains "The Fujita Scale. Fujita Scale (or F Scale) of tornado damage intensity. The F Scale was developed based on damage intensity and not wind speed; wind speed ranges given are estimated, based on the extent of observed damage." But there is also the Enhanced Fujita Scale (EF Scale). NOAA explains "The Enhanced Fujita Scale or EF Scale, which became operational on February 1, 2007, is used to assign a tornado a 'rating' based on estimated wind speeds and related damage. When tornado-related damage is surveyed, it is compared to a list of Damage Indicators (DIs) and Degrees of Damage (DoD) which help estimate better the range of wind speeds the tornado likely produced. From that, a rating (from EF0 to EF5) is assigned. The EF Scale was revised from the original Fujita Scale to reflect better examinations of tornado damage surveys so as to align wind speeds more closely with associated storm damage. The new scale has to do with how most structures are designed."

Figure 64: Enhanced Fujita Scale (EF Scale) for Tornadoes

EF SCALE	
EF Rating	**3 Second Gust (mph)**
0	65-85
1	86-110
2	111-135
3	136-165
4	166-200
5	Over 200

Source: NOAA

Energy Transition: Grid stability risk as data centers have huge swings in electricity

Huge swings in data center power demand

Everyone may be talking about huge ramp up in data center power consumption but we can't recall seeing anyone talk about what is likely a bigger risk to grid stability – data centers have huge swings in electricity consumption within minutes depending on if they are working a learn vs don't learn operation. These are huge electricity consumers and have huge swings in electricity consumption with minutes. As Hitachi Energy CEO said, there can be swings of 200, 300 MW within a ten-minute period as data centers move from learn vs stop learn mode, and that these types of swings would not be acceptable form other grid customers. That's because huge swings in electricity consumption by huge electricity data center consumers will place huge stress on the grid to layer in these huge consumers with huge swings. It's a big reason why data centers can't rely on wind and solar. Sure they can have as much wind or solar as they can but they are intermittent and, with these huge electricity swings, it means data centers need 24/7 natural gas, coal and nuclear to provide for 24/7 power and use wind/solar whenever hey can. (i) On Thursday, we posted [LINK] "*Overlooked! Data centers are big AND also have huge swings in very short time in power consumption. "swings of 200, 300 MW in ten minutes... so we have now on the networks, renewable energy generations which is volatile, it depends on wind and sun. And we have volatility driven on the demand side by data center" @hitachienergy CEO , my 👇transcript. Big reminder why data centers must have baseload #NatGas, #Coal or #Nuclear. Lots more in the @IEA conference. #OOTT.*" And after an investor friend tell us they didn't see the linkage, on Friday, we posted [LINK] "*Overlooked risk to grid stability from #DataCenters. "Swings of 200, 300 MW in ten*

minutes" in a data center electricity consumption in learn vs stop learn mode. "Normal [grid] customers would get in real trouble with that". 👇@hitachienergy CEO. 24/7 #Coal #NatGas #Nuclear needed for data centers. #OOTT."

Hitachi Energy CEO's warnings on data center huge swings in electricity

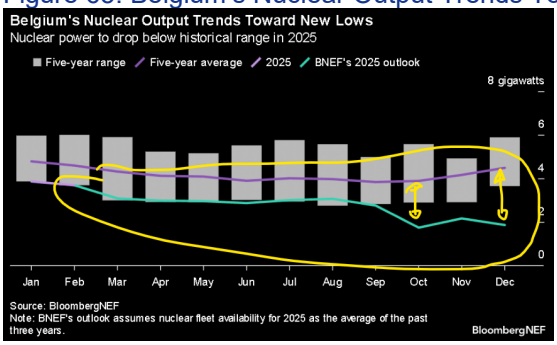
Our posts above included the transcript we made of Hitachi Energy CEO Andreas Schierenbeck warnings of these huge swings in electricity consumption by data centers depending if they were in learn or don't learn mode at the IEA's Global Conference on Energy & AI hosted by IEA Executive Director Fatih Birol on Mar 13, 2025. [LINK] Items in "*italics*" are SAF Group created transcript At 1:39:20 min mark, Schierenbeck "*The AI factories and data centers are adding a few more complexities than probably assumed. First of all, the size. The sheer size of these data centers are a complete different thing. We are seeing now proposals and things in planning going from 200, 500 MW to 1 GW, or even parks of multiple GW in planning for data center, which is quite significant. It's the size of big electrical generation, like a nuclear power plant or big parks. And there is another thing which is adding on top of that, AI factories are highly volatile. As they are starting to learn, they are ramping up their energy consumption in very short time to significant amounts of energy. And as they stop learning, this returns to a normal operation mode. Swings of 200, 300 MW in ten minutes is a behavior electrical operators don't appreciate very much. Normal customers would get in real trouble with that. But this is just a normal day what we would expect. And this volatility is actually adding to the volatility of renewables. So we have now on the networks, renewable energy generation which is volatile, it depends on wind and sun. And we have volatility driven on the demand side by data center*."

Energy Transition: Belgium will also rely more on natural gas with nuclear closures

Belgium will rely on natural gas

On Monday, we posted [LINK] *"#NatGas will be increasingly needed to save the day in Belgium when the wind doesn't blow & sun doesn't shine. Belgium going ahead with nuclear retirement so will need more #NatGas for 24/7 power. See 👇BloombergNEF Tatyana Davydenko report. #OOTT."* Belgium is pushing ahead with their retirement plans for its nuclear power plants and that means increasing reliance on natural gas for 24/7 power supply at times when the sun doesn't shine or wind doesn't blow. And, as we saw with Germany this winter, there were multiple periods of extremely low wind in what is normally the seasonally peak wind generation period and that meant Germany had to crank up coal and natural gas power. Our post included the below BloombergNEF graph and their report that said "*Belgium is set to rely more on gas for power generation, especially at times when wind and solar output falls, as it pushes ahead with plans to shut nuclear reactors this year. Nuclear power output is expected to fall to 3.1 gigawatts (GW) in March, 28% below the five-year average, following the closure of the Doel 1 reactor on Feb. 14. The country is set to retire two more reactors – Tihange 1 and Doel 2 owned by Engie — removing a combined 1.85GW of capacity by the end of 2025. The shutdowns are expected to lower average nuclear power output for 2025 to 2.8GW, from 3.4GW last year, according to BloombergNEF's latest outlook."* Our Supplemental Documents package includes the BloombergNEF report.

Figure 65: Belgium's Nuclear Output Trends Towards New Lows



Source: BloombergNEF

Energy Transition: Canada new PM Carney cuts consumer carbon tax

Carney cuts carbon tax

No one was surprised that the first cabinet action under new Liberal Prime Minister Mark Carney was to cut the consumer carbon tax effective Apr 1. He did not change their carbon tax on large emitters. What isn't clear is what will be the specifics of Carney's plan to address into what he previously called an improved and tightened system. It seems to most that Carney will be replacing the carbon tax in its name and form and be replacing it or folding it into his new non-specified carbon system. But, it is clearly an indicator for an election to be shortly called for him to try to present a simple message for Canadians – he cut the carbon tax and, at the same time, not have to defend what he plans to do on carbon. It will be his response to the opposition ads that call him "Carbon Tax Carney, he's just like Justin"

Energy Transition: Energy transition cartoons from the Australian Institute

Energy transition cartoons

We have to believe that, even if you don't' fully agree with a cartoon message, you have to appreciate that cartoons are like pictures and a picture is worth a thousand words. One of the Australian websites we check ever week or two is the Australian Institute and reviewed their Thursday report "Housing Affordability Crisis – Saving for a deposit forever". It's the same conundrum around the world for young people on how to save up money for a deposit to buy a home. After, we hit on their cartoons section and they have posted 2024 cartoons on coal plants and nuclear waste. Their March 28, 2024 cartoon "Saving the Planet: Two Simple Suggestions" and their March 16, 2024 cartoon "The Nuclear Fairy" are posted below.

Figure 66: Saving the Planet: Two Simple Suggestions

Source: Australian Institute

Figure 67: The Nuclear Fairy

Source: Australian Institute

Capital Markets: BofA highlights lower income consumer weakness

Lower income consumer weakness

We couldn't help wonder if the already hammered lower income consumer will have any impact on Trump's tariffs on Cdn energy that will lead to higher gasoline and electricity prices for American consumers. We were reminded of how US lower income consumers have been already hit hard by the BofA updated consumer report. The BofA noted lower income have actually seen an income decline and groceries are 23% of their budget. So Trump's tariffs on

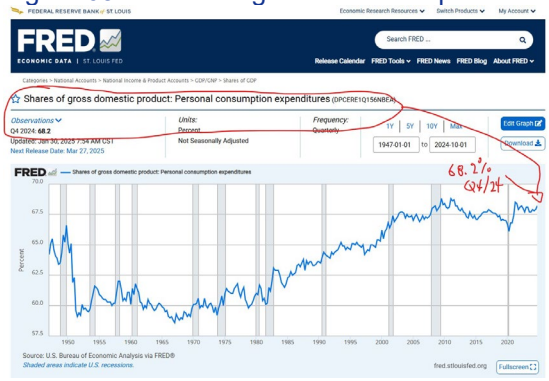
Cdn energy will impact his base. But we also wonder if Trump's anger at Canada will be more important than worrying about rising costs for his base. On Tuesday, we posted [LINK] "*New data point to make Trump think about exempting Cdn #Oil #PetroleumProducts #Electricity from tariffs. Lower income households wages dropped by ~1% , "1st time since the Institute's founding, that we see lower income wages growing more slowly than higher income wages". @BofA Liz Everett Krisberg to @BeckyQuick. Does Trump the populist really want to hit lower income with higher gasoline, electricity price now? #OOTT."* And [LINK] "*Another data point to make Trump think about exempting Cdn #Oil #PetroleumProducts #Electricity from tariffs to avoid hitting his working class base. "... lower income households because their necessity spending, groceries are 23% of the lowest quintile's budget" @BofA Liz Everett Krisberg to @BeckyQuick. Reminder this is for lowest quintile of the BofA card holders, not lowest quintile of population. #OOTT."* And [LINK] "*should have added. Or does his anger at Canada override any concerns any of his advisors may have had that it's the wrong time to hit his base with higher gasoline, food, etc prices? #OOTT."* Our posts included some iphone clips of BofA's Liz Everett Krisberg's comments on Squawk Box. The BofA Consumer Checkpoint report is a good consumer recap to read. Our Supplemental Documents package include the BofA Consumer Checkpoint for March .

Capital Markets: US personal consumption expenditures are 68% of US GDP

Consumer spending is 68% of US GDP

Long-time readers know that I have followed consumer spending for decades and the reason why I do so is simple – consumer spending in the west is the biggest driver of GDP. And anything that has a huge impact on GDP also has a huge impact on energy consumption. Personal consumption expenditures in the US are approx. 68% of the US GDP so any changes in consumer spending and sentiment can have a big and near-term impact on GDP. This is why the market story this week was really focused on negative consumer sentiment and views. So, on Thursday, we posted [LINK] "*The US consumer is 68% of US GDP. See 👇 @stlouisfed graph. It's why market focus is on how will Trump tariff chaos impact US consumer spending and sentiment. #OOTT."* Our post included the most recent Federal Reserve of St. Louis graph on "*Shares of gross domestic product: Personal consumption expenditures".*

Figure 68: Shares of gross domestic product: Personal consumption expenditures



Source: Federal Reserve of St. Louis

Capital Markets: One of my friend's take on why Buffett is sitting on >$300b cash

Warren Buffett quotes

One of my retired wealthy friends was giving me his take on why Warren Buffett has been sitting on such a huge amount of cash, over $300 billion, in Berkshire Hathaway and he gave me one of Buffett's many quotes as to why. The Buffett quote was "*We need a moderately-priced stock market… The market, like the Lord, helps those who help themselves. But, unlike the Lord, the market does not forgive those who know not what they do. For the investor, a too-high purchase price for the stock of an excellent company can undo the effects of a subsequent decade of favorable business developments."* I don't know when he made that quote but that was probably decades ago because cycles were years longer. Who knows if this is the reason, but I look at his quotes as food for thought. I don't agree with all of them but at least make me think. For those that don't follow Buffett, our Supplemental Documents package includes some of his quotes.

Capital Markets: India Feb vehicle sales, continued sign of lower growth in India

India vehicle sales in Feb

On March 7, the Federation of Automobile Dealers Associations (FADA) released India's vehicle sales for February [LINK]. (i) Recall India's economy grew 6.2% in the latest December quarter, which was higher than the 5.4% growth in the preceding September quarter but down from the 9.5% seen during the same period last year according to data from the National Statistical Office. Vehicle sales are just one indicator, but Feb's weaker India vehicle sales stir away from the growth seen in Jan that came after the downward trend in Nov and Dec sales. (iii) The FADA commentary from dealers reaffirms the same sentiment from Dec and Jan that they are cautiously optimistic on vehicle sales picking up in March. (iv) FADA doesn't provide a split of passenger vehicles into ICE, BEV, PHEV and HEV. India vehicles are dominated by 2W with over 71% of Feb sales, followed by PVs at 16%. (v) Total India Feb vehicle sales of 1,899,196 were -17.12% MoM and -7.19% YoY. The split by type was: 2W sales of 1,353,280 was -11.31% MoM and -6.33% YoY; 3W sales of 94,181 were -12.01% MoM and -1.92% YoY; PV sales of 303,398 were -34.88% MoM and -10.34% YoY; Tractor sales of 65,574 were -29.78% MoM and -14.50% YoY; and CV (commercial vehicle) sales of 82,763 were -16.76% MoM and -8.60% YoY. (vi) Note the weak Feb vehicle sales follow a stronger Jan vehicle sale that saw +30.47% MoM growth after brutal Dec sales and +6.63% growth from Jan 2024. Our Supplemental Documents package includes the FADA release.

Figure 69: India retail vehicle sales Feb 2025

All India Vehicle Retail Data for February'25

CATEGORY	Feb'25	Jan'25	Feb'24	MoM%	YoY%
2W	13,53,280	15,25,862	14,44,674	-11.31%	-6.33%
3W	94,181	1,07,033	96,020	-12.01%	-1.92%
E-RICKSHAW(P)	*32,361*	*38,830*	*36,548*	*-16.66%*	*-11.46%*
E-RICKSHAW WITH CART (G)	*6,401*	*5,760*	*4,442*	*11.13%*	*44.10%*
THREE - WHEELER (GOODS)	*10,829*	*12,036*	*11,030*	*-10.03%*	*-1.82%*
THREE - WHEELER (PASSENGER)	*44,522*	*50,322*	*43,932*	*-11.53%*	*1.34%*
THREE - WHEELER (PERSONAL)	*68*	*85*	*68*	*-20.00%*	*0.00%*
PV	3,03,398	4,65,920	3,38,390	-34.88%	-10.34%
TRAC	65,574	93,381	76,693	-29.78%	-14.50%
CV	82,763	99,425	90,551	-16.76%	-8.60%
LCV	*45,742*	*56,410*	*49,370*	*-18.91%*	*-7.35%*
MCV	*6,212*	*6,975*	*6,561*	*-10.94%*	*-5.32%*
HCV	*26,094*	*30,061*	*29,483*	*-13.20%*	*-11.49%*
Others	*4,715*	*5,979*	*5,137*	*-21.14%*	*-8.21%*
Total	**18,99,196**	**22,91,621**	**20,46,328**	**-17.12%**	**-7.19%**

Source: FADA Research

Source: FADA

Capital Markets: Safe haven investors drive gold to record $3,011, closing at $3,001

Gold closes over $3,000

Early Friday morning, we posted [LINK] "*Safe haven! Gold hits $3,000. +39% YoY. Gold's traditional safe haven play been playing out especially with the economic uncertainty post Trump inauguration.* It was another safe haven week for gold which hit a record $3,011 on Friday before closing at the first time over $3,000 at $3,001." Gold hit a new record high of $3,011 on Friday before closing for the first time ever of $3,000 at $3.001. This is a followup over the past four weeks when we noted feedback from some older investors 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 to now over $3,000.

Figure 70: Gold hit $3,000, chart as of 5:00am MT on Mar 14

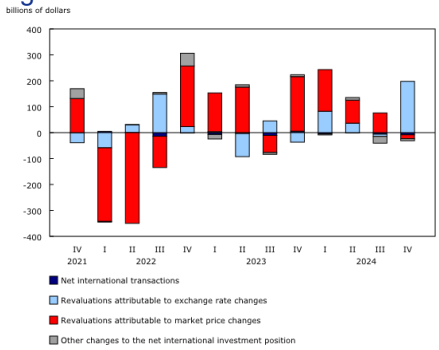
Source: Bloomberg

Capital Markets: StatsCan, net foreign asset position +$570.8bn YoY in Q4

StatsCan intl. investment position

The weaker Cdn dollar is hammering Cdns travelling to the US but it is a big win for the Cdn dollar value of Canada's net foreign assets. On Wednesday, Statistics Canada reported their international investment position for Q4 2024 [LINK]. StatsCan reported an increase of +$166.6bn in Canada's foreign net asset position in Q4 to $1,994.6bn, marking a fifth consecutive quarterly increase. The primary driver of the increase reflected the depreciating Cdn dollar when compared to the US dollar, which increased Canada's international assets more than its international liabilities. Notably, Canada's net foreign asset position increased by +$570.8bn YoY in 2024, led by the fluctuations in exchange rates adding +$308.1bn YoY. Q4 attributed a significant amount to this change, as Canada's international assets were up +$543.3bn (+5.5%) to $10,385.7bn at the end of Q4, where the exchange rate upward revaluation accounted for +$343.8bn of the change. At the end of the Q4, 68.8% of Canada's international assets denominated in USD versus 29.2% of its international liabilities, leading to the assets' being more sensitive to exchange rate fluctuations. StatsCan reported, "*Canada's international assets were up by $543.3 billion (+5.5%) to $10,385.7 billion at the end of the fourth quarter. The upward revaluation attributable to exchange rate changes (+$343.8 billion) as well as substantial acquisitions of foreign assets (+$162.2 billion) led the growth. The upward revaluation resulting from fluctuations in market prices (+$6.8 billion) had much less impact as the growth in foreign equity prices was moderated by the decline in prices of foreign debt instruments."*

Figure 71: Net international investment position contributors



Source: Statistics Canada

Capital Markets: Trump threatens 200% tariff on Europe wines & spirits

Trump 200% tariffs on EU wines, spirits

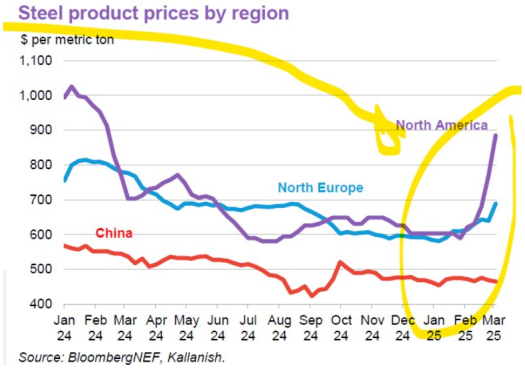
There are many areas to tariffs but one that got the media attention was Trump threatened to add 200% tariffs on French wines and other EU wines and spirits. As of our 7am MT news cut off, there has been no change to Trump's Thursday threat to add a 200% tariff on European wines and spirits if the EU did not remove their "nasty" 50% tariffs on US whisky that were done in response to Trump's new tariffs on the EU. On Thursday, we posted [LINK] "*Trump going to go nuclear on France, Italy, Spain wines, champagnes & alcoholic products. Threatens 200% tariff! Can't help wonder what will happen to the prices of great US wines if there is way less competition by having great EU wines prices go up big?"* The EU's retaliation against the Trump tariffs was to add tariffs on items like whisky as that will hurt states like Louisiana, the home state of Speaker Mike Johnson. In response, Trump posted on his Truth Social the 200% tariff. "*The European Union, one of the most hostile and abusive taxing and tariffing authorities in the World, which was formed for the sole purpose of taking advantage of the United States, has just put a nasty 50% Tariff on Whisky. If this Tariff is not removed immediately, the U.S. will shortly place a 200% Tariff on all WINES, CHAMPAGNES, & ALCOHOLIC PRODUCTS COMING OUT OF FRANCE AND OTHER E.U. REPRESENTED COUNTRIES. This will be great for the Wine and Champagne businesses in the U.S."*

Will US wines gap up in price as 200% tariffs hit EU wines?

We recognize that the purpose (or hope) of adding tariffs on imported US goods isn't to make the US imported goods way more expensive so US manufacturers can simply crank up their prices to something towards the new higher tariff-added price of the imported products. And having seen the BloombergNEF Industrial Metals Monthly on what has happened to US steel maker prices that rose sharply with the announcement of tariffs on all imported steel as US steelmakers cranked up prices. We then posted [LINK] "*US wine drinkers are hoping US wine makers don't crank up the prices like US steelmakers did by Trump tariff on imported steel. @BloombergNEF "US steelmakers are resorting to stockpiling and raising prices in response to the planned tariffs on imports".* BNEF wrote "*Price response – North American steel product prices rose to almost $900 per metric ton at the start of March from $771 per ton at the end of February. US steelmakers are resorting to stockpiling and raising prices in response to the planned tariffs on imports".* We

couldn't help wonder what US winemakers will do? Below is the BNEF steep price graph that went with the BNEF comment on the rising North American stee product prices.

Figure 72: Steel product prices by region



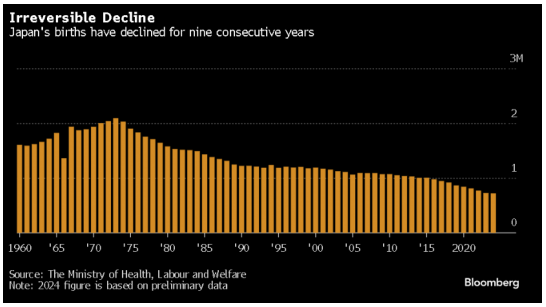
Source: BloombergNEF

Demographics: Japan has fewest births on record in 2024

Record low births in Japan

No one should have been surprised to see Bloomberg report that Japan reached another record low for births in 2024, falling -5.0% from 2023 to 720,988 births and missing the projected 779,000 births forecasted for the year. This continues a nine-year streak of declines and is the lowest point since records began in 1899, according to Japan's health ministry. Conversely, deaths rose +1.8% to a record high of 1.62 million in the same period, resulting in the largest ever annual total population decline. The population decline causes multiple social and economic challenges starting with the basic of how Japan copes with the growing social costs for its ageing population with an already declining pool of working taxpayers. And other linked basics – where do they get workers. Japan is not the only country facing problems with lower birth rates and Bloomberg highlights the other Asian posterchild for low birth rates – South Korea. And Japan is also facing the same pension crisis as other countries, people living longer and less contributors to the pension pool. Bloomberg wrote "*Japan's pension system is also under pressure, with fewer contributors and more recipients. In the past two decades, the number of those paying into it has fallen by about 3 million, while the number of recipients has risen by nearly 40%, according to the welfare ministry.* Below is a graph showing the decline in Japan's births over the past several decades from the Bloomberg report. Our Supplemental Documents package includes the Bloombeg report.

Figure 73: Japan's births 1960-2024



Source: Bloomberg

Global average birth rate driven by developing countries is 2.3 children/woman

Here is what we wrote in Nov 3, 2024 Energy Tidbits memo on global birth rates. "*All population forecasts call for increasing global population but that is really only because of developing growth rates in developing countries, in particular in Africa. The UN World Population Review 2024 [LINK] referenced World Bank data for 2022 , which estimates the global average in 2022 was 2.3 children per woman. But averages are deceiving. The developed countries most often highlighted for low birth rates in Asia are Taiwan at 1.09 and South Korea at 1.11. China is down to 1.5 and even India is only 2.1. Low birth rates iIn Europe are Italy at 1.24 and Spain at 1.29 . In North America, Canada is at 1.57 and US at 1.84. But then on the high end are developing countries Niger at 6.73, Angola at 5.76, DR Congo at 5.56, Mali at 5.45 and Benin at 5.39. Africa is driving world population growth, not Asia*."

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

In January, 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.

Jury orders Starbucks to pay $50mm to driver burned by lids not secure

On Friday, CNN, and others similarly, reported [LINK] "*A jury in California on Friday ordered Starbucks to pay $50 million in damages to a delivery driver who was severely burned by an improperly secured lid on hot beverages. Michael Garcia was*

picking up drinks at a drive-through in Los Angeles when he "suffered severe burns, disfigurement, and debilitating nerve damage to his genitals when hot drinks ultimately spilled" onto his lap, according to the lawsuit filed in California Superior Court in 2020. The lawsuit accused Starbucks of breaching its duty of care by failing to secure the lid." CNN also reported *"The lawsuit is reminiscent of a famous 1994 lawsuit against McDonald's in which a woman spilled hot coffee on her lap and suffered third-degree burns. The plaintiff in that case, Stella Liebeck, was originally awarded nearly $3 million."* For perspective, an inflation adjusted 1994 settlement of $3 mm would be approx. $6.5 mm in today's dollars.

Wine of the week: 2004 Château Léoville Poyferré

In August, I started the wine of the week when I realized I had to get to opening up some wines bought 20 to 30 years ago that included some that, unfortunately, were getting past their prime. One of the negatives of the change in life from Covid was a huge absence of entertaining at home, which means there has been a big shortfall in wine drinking at our home. So am now making sure what, when I bought them 15-25 years ago, were some good wines and make sure bottles get opened especially as many are 20 to 40 years old. On Friday, I posted the wine of the week, the 2004 Château Léoville Poyferré, St. Julien. It is a deuxiemes crus from the Left Bank. I decanted for a few hours and it was excellent. And reinforces what I see from great wines, they stay great for a long time. I don't feel any rush to drink any of the five remaining bottles.

Figure 74: 2004 Château Léoville Poyferré, St. Julien

2004 Léoville-Poyferré, St-Julien

93 RP | 93 WE | 92 DC | 90 ST

93 **Wine Advocate**
Review Date: 06/2007

"Along with Leoville Las Cases and a few others, this is among the stars of the appellation. Made in a more floral, supple, Margaux-like style, the deep ruby/purple-hued 2004 Leoville Poyferre exhibits sweet, broad flavors, and plenty of tannin lurking beneath the surface. However, the abundant cherry, black currant, licorice, and smoke notes obscure the tannic clout. This rich, powerful, broad beauty should be drinkable in 2-3 years, and last for two decades. Drink through 2027. (RP)

Source: SAF Group, K&L Wines

Corey Conners in the hunt at The Players Championship

It will be golf watching afternoon again today with the final round at The Players Championship with Cdn star golfer Corey Connors in in the hunt. Recall last week, he was 3rd going into the final round at the Arnold Palmer Invitational and ended up 3rd. Corey is sitting -8 and T5 with Rory McIlroy and Akshay Bhatia. J.J. Spaun is 1st at -12, followed by Bud Cauley at -11, and Lucas Glover & Alex Smalley at -9. On the TPC Sawgrass, anything can happen as seen yesterday with the wind blowing and the green running hard & fast. They moved the final rounds up because of a thunder storm risk in mid-afternoon. Winds may be down a bit but still strong. So assuming the course doesn't soften up much, there is a lot of trouble that can happen with good shots just being marginally off. No one should be surprised that Corey is in good shape as he plays well on tough course, especially ones that require you hit the

fairway given the deep rough. To show how TPC Sawgrass can hugely change a round. When I turned off the coverage Will Zalatoris was playing great, he was -3 thru 13 on the day to be T2 at -11 after 13 holes but went quadruple bogey on 14, double bogey on 15, par on 16, double bogey on 17, and bogey on 18 to finish at -2 and T33.