SAF GROUP

Energy Tidbits

March 3, 2024

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Trans Mountain Calls for Line-Fill in Apr/May Points to June Start for 590,000 b/d TMX Expansion

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

This week's memo highlights:

1. MEG CEO noted Trans Mountain called for 2.1 mmb of line-fill in each Apr and May, which points to start of 590,000 b/d TMX Expansion in June. [click here]

2. WSJ reports cuts to three to underwater internet cables in Red Sea led to sudden drop in service on Feb 24. [click here]

3. Trafigura highlights oil demand is stronger than expected with more upgrades to demand forecasts. [click here]

4. Dominion Energy highlights the stronger and faster than expected increase in electricity demand from data centers/AI and their need for 24/7 affordable power source. [click here]

5. Balanced and equity Cdn mutual funds continue to get hammered by net redemptions. [click here]

6. Please note that we had an early news cut off today at 5am MT.

7. 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.

8. 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: -96 bcf draw from US gas storage; now +248 bcf YoY surplus

-96 draw in US gas storage

There was a draw from gas storage in the US this week. For the week of February 16, the EIA reported a -96 bcf draw. Total storage is now 2.470 tcf, representing a surplus of +248 bcf YoY compared to a surplus of +265 bcf last week. Last month was the highest storage has been in 5 years, with the previous high being 3,460 bcf from 2020. Total storage is +498 bcf above the 5-year average, up from the +451 bcf surplus last week. Below is the EIA's storage table from its Weekly Natural Gas Storage report [LINK].

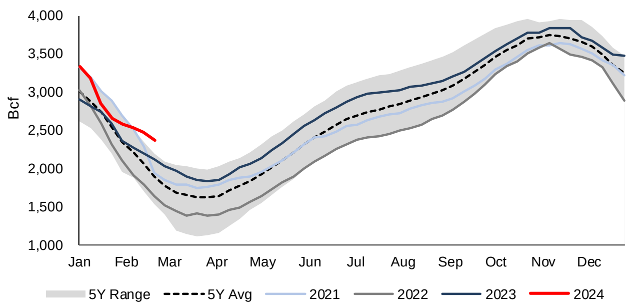
Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (02/23/23)		Historical Comparisons: 5-year average (2019-23)	
Region	02/23/24	02/16/24	net change	implied flow	Bcf	% change	Bcf	% change
East	453	505	-52	-52	455	-0.4	409	10.8
Midwest	600	631	-31	-31	548	9.5	482	24.5
Mountain	169	173	-4	-4	100	69.0	100	69.0
Pacific	217	217	0	0	100	117.0	160	35.6
South Central	935	944	-9	-9	923	1.3	725	29.0
Salt	275	278	-3	-3	261	5.4	203	35.5
Nonsalt	660	666	-6	-6	661	-0.2	522	26.4
Total	**2,374**	**2,470**	**-96**	**-96**	**2,126**	**11.7**	**1,876**	**26.5**

Totals may not equal sum of components because of independent rounding.

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



Source: EIA, SAF

Natural Gas: US Dec gas production was 106.5 bcf/d, +0.5 bcf/d MoM, +6.2 bcf/d YoY

US gas production 106.5 bcf/d in Dec

The warm winter so far around the world was the big reason for the holdback to HH and AECO natural gas prices, but the other significant, but lesser factor is the continued big YoY growth in US natural gas production. US natural gas production increased to over 103 bcf/d in May, then over 104 bcf/d in Aug, over 105 bcf/d in Nov, and now over 106 bcf/d in Dec. On Wednesday, the EIA released its Natural Gas Monthly [LINK], which includes its estimated "actuals" for December's dry gas production. Key items to note are as follows: (i) There were no material revisions to prior monthly production estimates. (ii) December's production of 106.5 bcf/d was +6.2 bcf/d YoY from December 2022 of 100.2 bcf/d, and up +0.5 bcf/d MoM vs November 2023 of 105.9 bcf/d. Overall, the average for 2023 natural gas production was 103.8 bcf/d, up +4.2 bcf/d from 2022's average. Our Supplemental Documents package includes excerpts from the EIA Natural Gas Monthly.

Figure 3: US Dry Natural Gas Production

bcf/d	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Jan	56.0	60.0	66.0	65.3	66.8	73.4	73.6	70.6	78.7	89.3	97.4	92.6	96.2	101.9
Feb	57.2	58.8	67.0	65.4	68.4	73.8	77.3	71.5	80.4	89.9	98.9	85.8	96.0	102.0
March	57.3	61.5	65.0	65.3	68.9	74.1	73.8	73.2	81.3	90.3	95.3	93.6	97.6	102.9
Apr	57.6	62.3	64.8	66.1	70.5	75.2	73.7	73.3	81.2	90.7	95.0	94.3	98.3	102.6
May	58.0	62.4	65.0	65.9	70.2	74.1	72.9	73.3	82.1	91.4	87.9	94.2	99.1	103.6
June	57.2	62.1	64.6	65.8	70.5	74.0	72.2	74.0	82.5	91.7	90.4	93.9	99.3	103.3
July	58.2	62.5	66.3	67.1	72.0	74.2	72.8	74.7	84.2	92.2	90.3	94.8	100.4	103.4
Aug	58.9	63.2	66.0	66.9	72.4	74.3	72.2	74.7	85.9	94.4	90.4	95.0	100.9	104.5
Sept	59.1	63.1	66.4	66.8	72.4	74.7	71.7	76.0	87.3	94.8	91.3	95.7	102.4	104.5
Oct	60.1	65.1	66.5	67.0	73.1	74.2	71.4	77.3	88.4	95.6	89.7	97.2	102.2	104.3
Nov	60.1	65.9	66.6	67.7	72.6	73.9	72.0	79.8	89.9	97.2	92.5	98.3	102.2	105.9
Dec	61.0	65.6	66.0	66.5	73.2	73.9	71.2	80.4	89.5	97.1	93.1	99.1	100.2	106.5
Average	58.4	62.7	65.9	66.3	70.9	74.2	72.9	74.9	84.3	92.9	92.7	94.5	99.6	103.8

Source: EIA, SAF

US December LNG exports

Natural Gas: US LNG exports up +6.0% MoM to 13.6 bcf/d in Dec; up +24.0% YoY

On Wednesday, the Department of Energy (DOE) posted its US LNG exports estimates for December 2023 [LINK]. Note, the DOE has changed the name from the LNG Monthly to the U.S. Natural Gas Imports and Exports Monthly. This is a reminder that the US LNG export data is available a day or two prior to the more commonly referenced US LNG exports from the EIA's Natural Gas Monthly. The EIA is a group under the Department of Energy. The data for LNG exports is either identical or just a rounding issue. US LNG exports were up MoM to 13.6 bcf/d in December from 12.9 bcf/d in November. US LNG exports have officially averaged 11.9 bcf/d per month over 2023, which is +1.3 bcf/d compared to 2022. The DOE did not comment on the MoM or YoY increases. Our Supplemental Documents package includes excerpts from the U.S. Natural Gas Imports and Exports Monthly.

Figure 4: US Monthly LNG Exports

(bcf/d)	2016	2017	2018	2019	2020	2021	2022	2023
January	0.0	1.7	2.3	4.1	8.1	9.8	11.4	10.9
February	0.1	0.9	2.6	3.7	8.1	7.4	11.3	11.7
March	0.3	1.4	3.0	4.2	7.9	10.4	11.7	11.8
April	0.3	1.7	2.9	4.2	7.0	10.2	11.0	12.5
May	0.3	2.0	3.1	4.7	5.9	10.2	11.3	11.8
June	0.5	1.7	2.5	4.7	3.6	9.0	10.0	10.9
July	0.5	1.7	3.2	5.1	3.1	9.7	9.7	11.3
August	0.9	1.5	3.0	4.5	3.6	9.6	9.7	11.4
September	0.6	1.8	2.7	5.3	5.0	9.5	9.8	11.6
October	0.1	2.6	2.9	5.7	7.2	9.7	10.0	12.4
November	1.1	2.7	3.6	6.4	9.4	10.2	10.1	12.9
December	1.3	2.7	4.0	7.1	9.8	11.1	11.0	13.6
Full Year	0.5	1.9	3.0	5.0	6.6	9.7	10.6	11.9

Source: EIA, DOE

Figure 5: US LNG and Natural Gas Exports Dec 2023 vs Dec 2022 and Nov 2023

Volume (Bcf)	**Monthly**			**Percentage Change**	
Mode of Transport	**Dec 2023**	**Nov 2023**	**Dec 2022**	**Dec 2023 vs. Nov 2023**	**Dec 2023 vs. Dec 2022**
Exports					
LNG by Vessel	422.8	386.2	339.6	9%	25%
Pipeline	286.5	268.4	258.6	7%	11%
Truck	<0.1	<0.1	0.2	-18%	-84%
LNG by ISO Container	<0.1	<0.1	0.2	32%	-68%
Total	**709.4**	**654.7**	**598.6**	**8%**	**19%**

Source: DOE

US to Mexico Dec natural gas exports

Natural Gas: US natural gas pipeline exports to Mexico down -5.6% MoM, +9.6% YoY
Also included in the DOE's U.S. Natural Gas Imports and Exports Monthly was a breakout of exports by destination. Natural gas and LNG exports to Mexico were down -5.6% MoM to 5.6 bcf/d in December from 6.0 bcf/d in November but is up +9.6% YoY from 5.4 bcf/d in December 2022. The DOE doesn't provide a split but based on its prior disclosures, it looks like essentially 100% of the exports are via pipeline, without any CNG/LNG in the mix, although once in a while there might be something. Please note that we will note if there are any CNG/LNG exports to Mexico more than a rounding. Below is a summary of natural gas via pipeine exports to Mexico from the US.

Figure 6: US Natural Gas Pipeline Exports to Mexico

(bcf/d)	2016	2017	2018	2019	2020	2021	2022	2023
January	0.9	4.3	4.7	5.3	5.4	5.6	5.7	5.5
February	3.4	4.6	5.0	5.1	5.3	5.4	5.5	5.5
March	3.4	4.5	5.2	5.1	5.6	5.9	5.5	5.8
April	3.5	4.2	4.7	5.0	4.6	6.1	5.9	5.6
May	3.7	4.3	4.9	5.6	4.7	6.2	6.0	6.2
June	3.8	5.3	5.5	5.8	5.4	6.6	6.2	6.8
July	4.0	4.8	5.6	6.2	5.8	6.4	6.1	6.8
August	4.4	4.6	5.6	5.9	6.1	6.3	5.9	6.9
September	4.2	4.5	5.4	5.8	6.2	6.0	5.6	6.7
October	4.2	4.5	5.1	5.7	6.2	6.0	5.5	6.5
November	4.4	4.8	4.9	5.4	5.6	5.5	5.4	6.0
December	3.8	4.5	4.9	5.2	5.3	5.4	5.1	5.6
Full Year	3.6	4.6	5.1	5.5	5.5	5.9	5.7	6.2

Source: DOE, SAF

Natural Gas: KOGAS & Woodside, Sembcorp & TotalEnergies sign LT LNG deals

2 Long-term LNG deals

There was a significant slowdown in long-term LNG deals in since the end of H1/22 compared to the activity seen from July 1, 2021 through June 30, 2022. That's because most, if not all the available long term LNG supply available before 2026 was locked up in the July 1, 2021 through June 30, 2022 rush. Since that first rush, there have been a lesser number of long term deals. The long-term deals now being done are generally for long-term supply starting in 2026 or later. There have been some very long-term LNG deals even out past 2050. And the big LNG suppliers have been stepping in more to lock up other long-term LNG supply to add to their supply portfolio to be able to use to supply to their customers. This week, there were 2 major long-term LNG deals. (i) On Wednesday, Woodside (Australia) announced they signed a 10.5-year LNG deal with KOGAS (Korea) [LINK], whereby KOGAS will purchase 0.07 bcf/d from Woodside beginning in 2026 to supply gas to Korea. KOGAS CEO Choi Yeon-hye said "*This SPA has enabled KOGAS to enlarge the customer base in the domestic power market, reinforcing our role as a leading natural gas supplier in Korea… By leveraging this SPA, we look forward to further expanding our business opportunities with Woodside in the LNG industry*". On Thursday, TotalEnergies (France) announced they signed a Sales and Purchase Agreement (SPA) with Sembcorp Fuels (Singapore), whereby Sembcorp will purchase up to 0.11 bcf/d from TotalEnergies for 16 years, starting in 2027. TotalEnergies in their press release stated "*By supplying this additional LNG supply to Singapore, TotalEnergies is contributing to the country's energy security and to its decarbonization goals. This deal also reflects TotalEnergies' commitment to supporting its customers in their transition to greater sustainability*". Our supplemental documents package contains the news releases.

There have been 21.48 bcf/d of long-term LNG supply deals since July 1, 2021

We first highlighted this abrupt shift to long term LNG supply deals in our July 14, 2021 8-pg "*Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs".* We included a table of the deals done in that short two week period. We continue to update that table, which now shows 21.31 bcf/d of long-term LNG deals since July 1, 2021. 64% of the deals have been by Asian LNG buyers, but we are now seeing rest of world locking up long term supply deals post Russia/Ukraine. Note in our non-Asian LNG deals will major LNG players (ie. Chevron, Shell, etc) buying for their LNG portfolio supply. China has been particularly active in this space, accounting for 53% of all Asian LNG buyers in long term contracts since July 1, 2021. Below is our updated table of Asian and Europe LNG buyers new long-term supply deals since July 1, 2021. Our Supplemental Documents package includes our July 14, 2021 blog.

Figure 7: Long-Term LNG Buyer Deals Since July 1, 2021

Long-Term LNG Buyer Deals Since July 1, 2021							
Date	Buyer	Seller	Country	Volume	Duration	Start	End
			Buyer / Seller	(bcf/d)	Years		
Asian LNG Deals							
Jul 7, 2021	CNOOC	Petronas	China / Canada	0.30	10.0	2022	2032
Jul 9, 2021	CPC	QatarEnergy	Taiwan / Qatar	0.16	15.0	2022	2037
Jul 9, 2021	Guangzhou Gas	BP	China / US	0.13	12.0	2022	2034
Jul 12, 2021	Korea Gas	QatarEnergy	Korea / Qatar	0.25	20.0	2025	2045
Sep 29, 2021	CNOOC	QatarEnergy	China / Qatar	0.50	15.0	2022	2037
Oct 7, 2021	Shenzhen	BP	China / US	0.04	10.0	2023	2032
Oct 11, 2021	ENN	Cheniere	China / US	0.12	13.0	2022	2035
Nov 4, 2021	Unipec	Venture Global LNG	China / US	0.46	20.0	2023	2043
Nov 4, 2021	Sinopec	Venture Global LNG	China / US	0.53	20.0	2023	2043
Nov 5, 2021	Sinochem	Cheniere	China / US	0.12	17.5	2022	2040
Nov 22, 2021	Foran	Cheniere	China / US	0.04	20.0	2023	2043
Dec 6, 2021	Guangdong Energy	QatarEnergy	China / Qatar	0.13	10.0	2024	2034
Dec 8, 2021	S&T International	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 10, 2021	Suntien Green Energy	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 15, 2021	SPIC Guangdong	BP	China / US	0.03	10.0	2023	2033
Dec 20, 2021	CNOOC Gas & Power	Venture Global LNG	China / US	0.26	20.0	2023	2043
Dec 29, 2021	Foran	BP	China / US	0.01	10.0	2023	2032
Jan 11, 2022	ENN	Novatek	China / Russia	0.08	11.0	2024	2035
Jan 11, 2022	Zhejiang Energy	Novatek	China / Russia	0.13	15.0	2024	2039
Feb 4, 2022	CNPC	Gazprom	China / Russia	0.98	30.0	2023	2053
Mar 24, 2022	Guangdong Energy	NextDecade	China / US	0.20	20.0	2026	2046
Mar 29, 2022	ENN	Energy Transfer	China / US	0.36	20.0	2026	2046
Apr 1, 2022	Guangzhou Gas	Mexico Pacific Ltd	China / Mexico	0.26	20.0	n.a.	n.a.
Apr 6, 2022	ENN	NextDecade	China / US	0.26	20.0	2026	2026
Apr 22, 2022	Kogas	BP	Korea / US	0.20	18.0	2025	2043
May 2, 2022	Gunvor Singapore Pte	Energy Transfer LNG	Singapore / US	0.26	20.0	2026	2046
May 3, 2022	SK Gas Trading LLC	Energy Transfer LNG	Korea / US	0.05	18.0	2026	2042
May 10, 2022	Exxon Asia Pacific	Venture Global LNG	Singapore / US	0.26	n.a.	n.a.	n.a.
May 11, 2022	Petronas LNG	Venture Global LNG	Malaysia / US	0.13	20.0	n.a.	n.a.
May 24, 2022	Hanwha Energy	TotalEnergies	Korea / France	0.08	15.0	2024	2039
May 25, 2022	POSCO International	Cheniere	Korea / US	0.05	20.0	2026	2036
June 5, 2022	China Gas Holdings	Energy Transfer	China / US	0.09	25.0	2026	2051
Jul 5, 2022	China Gas Holdings	NextDecade	China / US	0.13	20.0	2027	2047
Jul 20, 2022	PetroChina	Cheniere	China / US	0.24	24.0	2026	2050
Jul 26, 2022	PTT Global	Cheniere	Thailand / US	0.13	20.0	2026	2046
Jul 27, 2022	Exxon Asia Pacific	NextDecade	Singapore / US	0.13	20.0	2026	2046
Sep 2, 2022	Woodside Singapore	Commonwealth	Singapore / US	0.33	20.0	2026	2046
Nov 21, 2022	Sinopec	QatarEnergy	China / Qatar	0.53	27.0	2026	2053
Dec 26, 2022	INPEX	Venture Global LNG	Japan / US	0.13	20.0	n.a.	n.a.
Dec 27, 2022	JERA	Oman LNG	Japan / Oman	0.11	10.0	2025	2035
Jan 19, 2023	ITOCHU	NextDecade	Japan / US	0.13	15.0	n.a.	n.a.
Feb 7, 2023	Exxon Asia Pacific	Mexico Pacific Ltd	Singapore / Mexico	0.26	20.0	n.a.	n.a.
Feb 23, 2023	China Gas Holdings	Venture Global LNG	China / US	0.26	20.0	n.a.	n.a.
Mar 6, 2023	Gunvor Singapore Pte	Chesapeake Energy	Singapore / US	0.26	15.0	2027	2042
Apr 28, 2023	JERA	Venture Global LNG	Japan / US	0.13	20.0	n.a.	n.a.
May 16, 2023	KOSPO	Cheniere	Korea / US	0.05	19.0	2027	2046
Jun 1, 2023	Bangladesh Oil	QatarEnergy	Bangladesh / Qatar	0.24	15.0	2026	2031
Jun 21, 2023	Petro Bangle	Oman	Bangledesh / Oman	0.20	10.0	2026	2036
Jun 21, 2023	CNPC	QatarEnergy	China / Qatar	0.53	27.0	2027	2054
Jun 26, 2023	ENN LNG	Cheniere	Singapore / US	0.24	20.0	2026	2046
Jul 5, 2023	Zhejiang Energy	Mexico Pacific Ltd	China / Mexico	0.13	20.0	2027	2047
Aug 8, 2023	LNG Japan	Woodside	Japan / Australia	0.12	10.0	2026	2036
Sep 7, 2023	Petrochina	ADNOC	China / UAE	n.a.	n.a.	n.a.	n.a.
Nov 2, 2023	Foran	Cheniere	China / US	0.12	20.0	n.a.	n.a.
Nov 4, 2023	Sinopec	QatarEnergy	China/Qatar	0.39	27.0	2026	2053
Nov 27, 2023	Gunvor Singapore Pte	Delfin Midstream	Singapore / US	0.10	15.0	n.a.	n.a.
Dec 20, 2023	ENN	ADNOC	Singapore / UAE	0.13	15.0	2028	2043
Jan 5, 2024	GAIL	Vitol	India / Singapore	0.13	10.0	2026	2036
Jan 8, 2024	Shell	Ksi Lisims LNG	Singapore / Canada	0.26	20.0	2027	2047
Jan 16, 2024	ExxonMobil	Mexico Pacific Ltd	Singapore / Mexico	0.16	20.0	2024	2044
Jan 29, 2024	Excelerate	QatarEnergy	Bangladesh / Qatar	0.13	15.0	2026	2041
Jan 30, 2024	ADNOC	GAIL India	UAE / India	0.07	10.0	2024	2034
Feb 6, 2024	Petronet LNG	QatarEnergy	India / Qatar	0.99	20.0	2028	2048
Feb 19,2024	Deepak Fertilisers	Equinor	India / Norway	0.09	15.0	2026	2041
Feb 28, 2024	Kogas	Woodside	Korea / Australia	0.07	10.5	2026	2037
Feb 29, 2024	Sembcorp	TotalEnergies	Singapore / France	0.11	16.0	2027	2043
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				**13.75**			

Long-Term LNG Buyer Deals Since July 1, 2021							
Date	Buyer	Seller	Country	Volume	Duration	Start	End
			Buyer / Seller	(bcf/d)	Years		
Non-Asian LNG Deals							
Jul 28, 2021	PGNiG	Venture Global LNG	Poland / US	0.26	20.0	2023	2043
Nov 12, 2021	Engie	Cheniere	France / US	0.11	20.0	2021	2041
Mar 7, 2022	Shell	Venture Global LNG	US / US	0.26	20.0	2024	2044
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
May 2, 2022	Engie	NextDecade	France / US	0.23	15.0	2026	2041
May 17, 2022	PGNiG	Sempra Infrastructure	Poland / US	0.40	20.0	n.a.	n.a.
May 25, 2022	RWE Supply & Trading	Sempra Infrastructure	Germany / US	0.30	15.0	n.a.	n.a.
Jun 9, 2022	Equinor	Cheniere	Norway / US	0.23	15.0	2026	2041
Jun 21, 2022	EnBW	Venture Global LNG	Germany / US	0.20	20.0	2026	2046
Jun 22, 2022	INEOS Energy	Sempra Infrastructure	UK / US	0.21	20.0	2027	2047
Jun 22, 2022	Chevron	Venture Global LNG	US / US	0.26	20.0	n.a.	n.a.
Jun 22, 2022	Chevron	Cheniere	US / US	0.26	15.0	2027	2042
Jul 12, 2022	Shell	Mexico Pacific Ltd	US / Mexico	0.34	20.0	2026	2046
Jul 13, 2022	Vitol	Delfin Midstream	US / US	0.07	15.0	n.a.	n.a.
Aug 9, 2022	Centrica	Delfin Midstream	UK / US	0.13	15.0	2026	2041
Aug 24, 2022	Shell	Energy Transfer	US / US	0.28	20.0	2026	2046
Oct 6, 2022	EnBW	Venture Global LNG	Germany / US	0.26	20.0	2022	2042
Dec 6, 2022	ENGIE	Sempra Infrastructure	France / US	0.12	15.0	n.a.	n.a.
Dec 20, 2022	Galp	NextDecade	Portugal / US	0.13	20.0	n.a.	n.a.
Dec 20, 2022	Shell	Oman LNG	UK/Oman	0.11	10.0	2025	2035
Jan 25, 2023	PKN ORLEN	Sempra Infrastructure	EU//US	0.13	20.0	2027	2047
Jan 30, 2023	BOTAS	Oman	Turkey / Oman	0.13	10.0	2025	2035
Mar 27, 2023	Shell	Mexico Pacific Ltd	UK / Mexico	0.15	20.0	2026	2046
Apr 24, 2023	Hartree Partners LP	Delfin Midstream	US / US	0.08	20.0	n.a.	n.a.
Jun 21, 2023	Equinor	Cheniere	Norway / US	0.23	15.0	2027	2042
Jun 22, 2023	SEFE	Venture Global LNG	EU//US	0.30	20.0	2026	2046
Jul 14, 2023	ONEE (Morocco)	Shell	Africa/US	0.05	12.0	2024	2036
Jul 18, 2023	IOCL	Adnoc	India/UAE	0.16	14.0	2026	2040
Jul 28, 2023	OMV	BP	Austira/UK	0.13	10.0	2026	2036
Aug 4, 2023	ConocoPhillips	Mexico Pacific Ltd	US/Mexico	0.29	20.0	2025	2045
Aug 22, 2023	BASF	Cheniere	Germany / US	0.10	17.0	2026	2043
Aug 30, 2023	Shell	Oman LNG	US / Oman	0.11	10.0	2025	2035
Oct 11, 2023	TotalEnergies	QatarEnergy	France / Qatar	0.46	27.0	2026	2053
Oct 18, 2023	Shell	QatarEnergy	Netherlands / Qata	0.46	27.0	2026	2053
Oct 23, 2023	ENI	QatarEnergy	Italy / Qatar	0.13	27.0	2026	2053
Oct 31, 2023	Vitol	Chesapeake Energy	Sweden / US	0.13	15.0	2028	2043
Nov 29, 2023	OMV	Cheniere	Netherlands / US	0.11	15.0	2029	2044
Dec 5, 2023	Woodside Energy	Mexico Pacific Ltd	Australia / Mexico	0.17	20.0	2024	2044
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				**7.73**			

Total New Long Term LNG Contracts since Jul/21	**21.48**
*Excludes Asian short term/spot deals	
*on Dec 20, 2021 CNOOC agreed to buy an additional 0.13 bcf/d from Venture Global for an undisclosed shorter period	
Source: Bloomberg, Company Reports	
Prepared by SAF Group https://safgroup.ca/news-insights/	

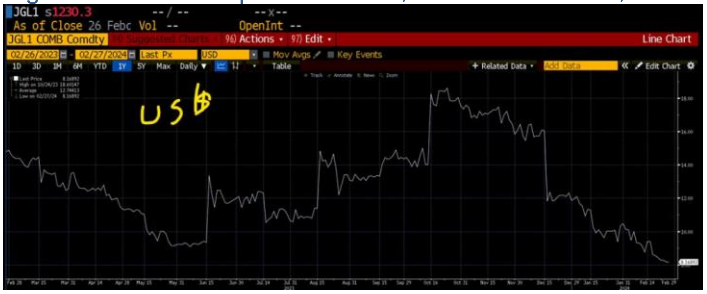
Source: SAF

Record low JKM LNG futures

Natural Gas: Fears on weak LNG & natural gas prices for months is playing out

There are certain key fundamentals for natural gas but the #1 fundamental is that a very hot winter impacts natural gas prices thru shoulder season. Unfortunately, our fears of two months are playing out in that the very warm Dec that ran into Jan was setting up, unless there was sustained cold to end Jan and for Feb, the risk that weak global LNG and European natural gas prices would continue well thru shoulder season. And with the US increasing linked to LNG markets, it would be a push back on HH natural gas prices thru shoulder season. This very negative scenario is playing out. On Monday, we tweeted [LINK] "*Record low JKM #LNG futures will keep pressure on US HH #NatGas prices. Prior to Feb, JKM low was $9, approaching $8 vs >$14 yr ago. Reminds a hot winter will keep pressuring LNG #NasGas prices at least thru shoulder season. Thx @SStapczynski daily LNG Wrap. #OOTT."* The chart hasn't changed much to close the week. But the point to note is that JKM near term futures are in the $8. Plus we didn't put in our tweet, it's happening way earlier than normal – in Feb! That is showing the weakness is happening earlier. Our tweet included the JKM futures for April delivery was $8.125 and May delivery was $8.050 to close on Feb 23. Below are the two JKM graphs we included in our tweet that show JKM for the last year and the last 5 years.

Figure 8: JKM LNG prices Feb 26, 2023 thru Feb 27, 2024



Source: Bloomberg

Figure 9: JKM LNG prices Feb 26, 2019 thru Feb 27, 2024

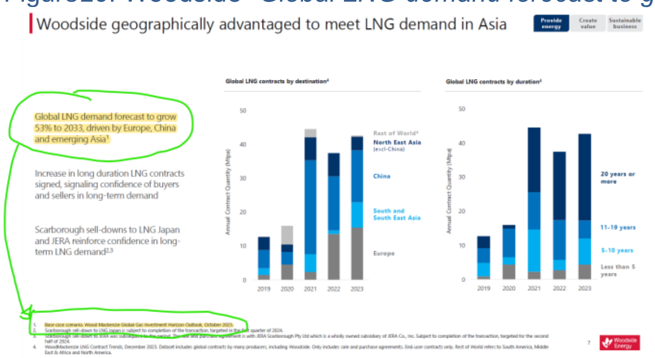
Source: Bloomberg

Woodside on LNG demand

Natural Gas: Woodside/Wood Mackenzie fcast global LNG demand growth 53% to 2033

On Tuesday, Woodside Energy held it's Q4 call and one of the big headlines was on their prepared remarks "*At the same time, the fundamentals of long-term LNG demand remain strong. Global demand for LNG is forecast to grow 53% in the coming decade between now and 2033. This demand is expected to emerge from China and Southeast Asia, markets our* *assets are geographically advantaged to supply"* All the reporting was how Woodside is very bullish on the outlook for LNG. We wanted to see if Woodside provided any more color. It turns out that wasn't a Woodside forecast, rather the footnote to the below slide noted that it was a Wood Mackenzie forecast from Oct. It's why we tweeted [LINK] "*Don't think it's unreasonable given all recent issues with Offshore Wind, Solar, etc But worth noting Woodside's "Global #LNG demand forecast to grow 53% to 2033, driven by Europe, China and emerging Asia" is "Base case scenario. Wood Mackenzie Global Gas Investment Horizon Outlook, October 2023." #NatGas #OOTT."* To be fair, we have to believe Woodside believes in the Wood Mackenzie forecast or else they wouldn't have included it. We don't think it's unreasonable given how the key elements to replacing natural gas aren't working as per the energy transition aspirations, we don't think it's an unreasonable forecast. Below is the Woodside/Wood Mackenzie slide.

Figure10: Woodside "*Global LNG demand forecast to grow 53% to 2033"*



Source: Woodside Energy Q4 call slides

Natural Gas: No big surprises from yesterday's GECF Algiers Declaration

GECF Algiers Declaration

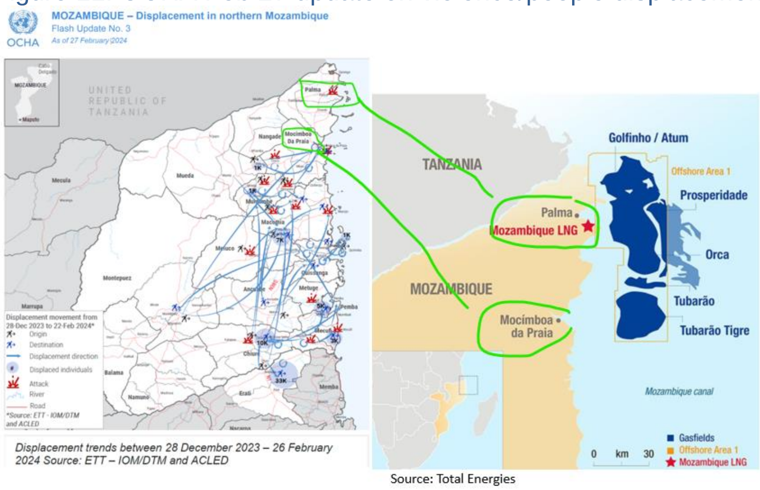
It doesn't get much attention, but the Gas Exporting Countries Forum concluded their 7th GECF summit yesterday with its "*Algiers Declaration: Natural Gas for a Secure and Sustainable Future".* [LINK] The GECF member countries are Algeria, Bolivia, Egypt, Equatorial Guinea, Iran, Libya, Nigeria, Qatar, Russia, Trinidad and Tobago, the United Arab Emirates and Venezuela. In addition, the GECF had Observer Members in Angola, Azerbaijan, Iraq, Malaysia, Mauritania, Mozambique, and Peru, and Guest Countries, including Italy, Oman, Senegal, and Tunisia. There didn't seem to be any big surprises in their Algiers Declaration ie. they are against price caps on natural gas. The GECF reinforced the fundamental role for natural gas in "*satisfying rising global energy needs, and securing universal access to affordable, reliable, sustainable, and modern energy for all*" and "*The contributions of eco-friendly natural gas in addressing climate change challenges, and its importance in achieving just, equitable, orderly, inclusive and sustainable energy transitions, while taking into account national circumstances, capabilities and priorities, and that economic growth, social progress."* The GECF also confirmed their rejection "*of any use of climate change as justification to implement measures that hinder investments in natural gas projects and create any means of arbitrary discrimination or disguised restriction in direct contravention of international trade rules*", "*of any artificial interventions in natural gas markets, including attempts to alter the price discovery and risk management functions of markets, as well as the imposition of politically-driven price caps, which can only aggravate market tightness and discourage investments required to satisfy growing global energy demand*." There are more items but, again, shouldn't be any big surprise. Our Supplemental Documents package includes the GECF's Algiers Declaration.

Natural Gas: Risk to further delay to restart TotalEnergies Mozambique LNG?

Risk to TotalEnergies Mozambique LNG restart?

On Tuesday, we tweeted [LINK] "*Risk to further delay at $TTE Mozambique LNG restart? Still ~60 km south of TTE's Palma, but 👇@UNOCHA 02/27, "confrontations between non-State armed groups (NSAGs) & the Security Defence Forces scaled-up, violent attacks against civilians occurred", 72k people displaced. #OOTT."* Our tweet highlighted that the ramp up in violence and displacement of people is still ~60 km of TotalEnergies and ExxonMobil's onshore liquefaction. But, in reading the UNOCHA Feb 27 update, we have to wonder if there is a risk to the revised expected timing for a restart to TotalEnergies Mozambique in the summer. Recall that October, TotalEnergies CEO Pouyanne expected the restart would be for the end of 2023. TotalEnergies has to be watching and hoping that the Increasing violence and people displacement in Cabo Delgado province, not get closer to its Mozambique LNG onshore/loading facilities location. OCHA (United Nations Office for the Coordination of Humanitarian Affairs) Feb 27 Flash Update No. 3 Displacement in northern Mozambique wrote "*A total of 71,681 people have been displaced since 22 December due to attacks or fear of attacks by non-State armed groups (NSAGs), the majority (69 per cent) are women (14K) and children (35K)."* The update and map note that the impact is up to Mocimboa da Praia so south of Palma, which is where the TotalEnergies Mozambique LNG and Exxon's Rozuma LNG will have their onshore liquefaction facilities and loading terminals. Palma is approx. 60 km north of Mocimboa da Praia. So still ~60 km south of Palma but we have to believe any shift in violence north to close to Palma has the risk to cause further delays to the restart of TotalEnergies Mozambique LNG. Our Supplemental Documents package includes the OCHA Feb 27 update.

Figure 11: OCHA Feb 27 update on violence/people displacement



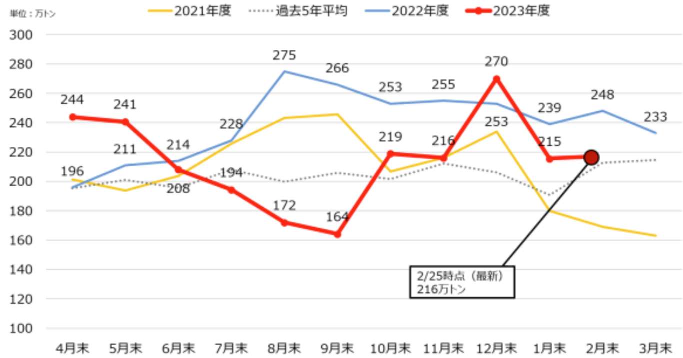
Source: UNOCHA, TotalEnergies

Natural Gas: Japan LNG stocks up WoW, down YoY, above 5-year average

Japan LNG stocks up +3.4% WoW

Japan LNG stocks are below 2023 levels and above the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on Feb 25 were 103.7 bcf, up +3.4% WoW from Feb 18 of 100.4 bcf, and are down -12.9% YoY from 119.1 bcf a year earlier. Stocks are now above the 5-year average for the end of February of 102.3 bcf. We aren't surprised to see the build in inventory as this last week JMA forecasted very warm weather across all of Japan. METI did not comment on the WoW increase. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 12: Japan LNG Stocks

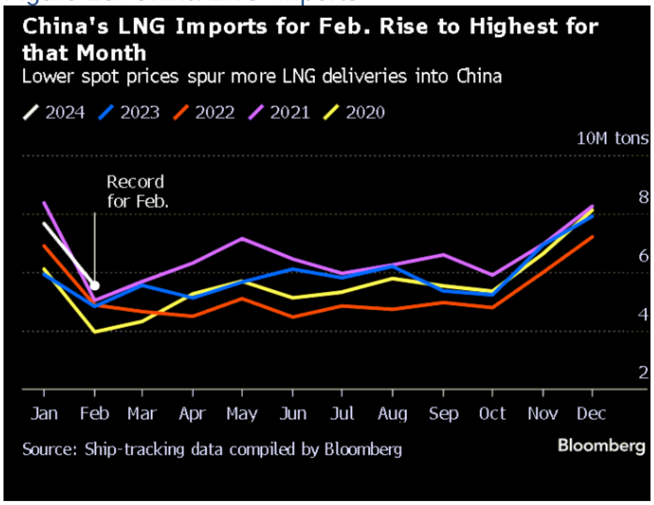


Source: METI

Natural Gas: China's LNG imports reach record high in February, 9.1 bcf/d

The very weak LNG spot prices in late Jan and in Feb led to buyers stepping up to take advantage of the very low prices and that includes China. We look at China's record, for a Feb, LNG imports being driven primarily by price and less by any shift in energy mix to reduce emissions. On Friday, Bloomberg reported that China's LNG imports reach a record high, taking in 9.1 bcf/d over February. Bloomberg wrote "*China's liquefied natural gas imports for February jumped to the highest ever level for that month, as a drop in spot prices spurred additional purchases of the fuel. Deliveries rose to more than 5.5 million tons, a 15% increase from a year earlier, according to ship-tracking data compiled by Bloomberg. That's the first time China's monthly imports have broken a record since 2021, before the global energy crisis sent prices surging and as virus lockdowns dashed demand*". We This is an encouraging sign for the Chinese appetite for energy, but also indicative of the shift in the energy mix they are relying on. Less on coal, more on LNG. Below is a chart of China's LNG imports. Our Supplemental Documents package includes the Bloomberg report.

Figure 13: China LNG Imports



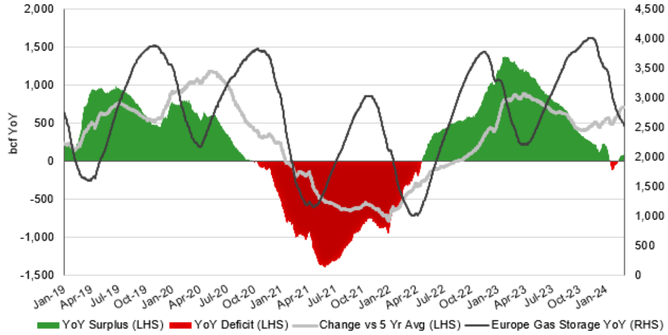
Source: Bloomberg

Natural Gas: Europe storage drops again WoW to 62.51%, YoY surplus widens

Europe gas storage

Europe is seeing some draws on gas storage but shook off its YoY deficit two weeks ago. This week, Europe storage decreased by -1.92% WoW to 62.51% on Feb 29 vs 64.43% on Feb 22. Storage is now +1.47% higher than last year's levels of 61.04% on Feb 29, 2023. Even though the YoY surplus is modest, there are no fears for natural gas and LNG suppy and the expectations seem mostly for storage to be full once again going into the winter. Below is our graph of Europe Gas Storage Level.

Figure 14: European Gas Storage Level



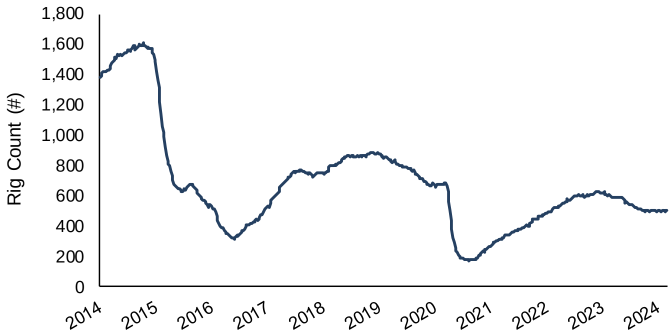
Source: Bloomberg, SAF

Oil: US oil rigs up +3 WoW to 506 rigs, US gas rigs down -1 WoW at 119 rigs

US oil rigs up WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Note, Baker Hughes has changed their data output format, so we are in the process of finding a way to get basin splits between gas/oil more easily. (ii) Total US oil rigs were up +3 rigs WoW to 506 oil rigs as of March 1. US oil rigs went below 520 rigs on Aug 25 and stayed there for 4 weeks and for the last 15 weeks have been between 494 and 507 oil rigs. (iii) The major basin changes for rigs were Permian +1 rig WoW to 315 rigs, Cana Woodford +1 rig WoW to 22 rigs, Marcellus +1 rig to 32 rigs, and Haynesville -2 rigs WoW to 41 rigs. (iiv) US gas rigs were down -1 rig WoW at 119 gas rigs. We are surprised gas rig counts have held up so well recently given poor gas prices, and now with HH under $2 we expect rigs to drop off.

Figure 15: Baker Hughes Total US Oil Rigs



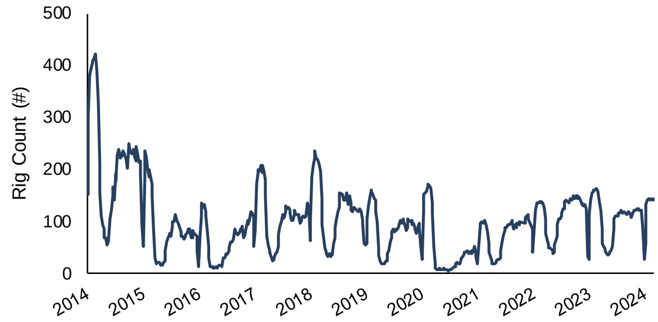
Source: Baker Hughes, SAF

Oil: Total Cdn rigs flat WoW, very cold weather extends winter drilling

Cdn total rigs flat WoW

Note, Baker Hughes has changed their data output format, so we are in the process of finding a way to get historical provincial splits more easily. Cold weather allowed for more late winter drilling, especially for drillers in the Montney in NE BC (natural gas) ahead of LNG Canada Phase 1. We still expect a turndown in rigs over the next week as we are getting some very warm weather in NW AB / NE BC. For the week of March 1, total Cdn rigs were up flat WoW at 231 rigs. Cdn oil rigs were up +3 rigs WoW to 144 oil rigs and are down -14 rigs YoY. Cdn gas rigs were down -3 rigs WoW at 87 rigs, which is down -1 rig YoY.

Figure 16: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes, SAF

US oil production flat WoW

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

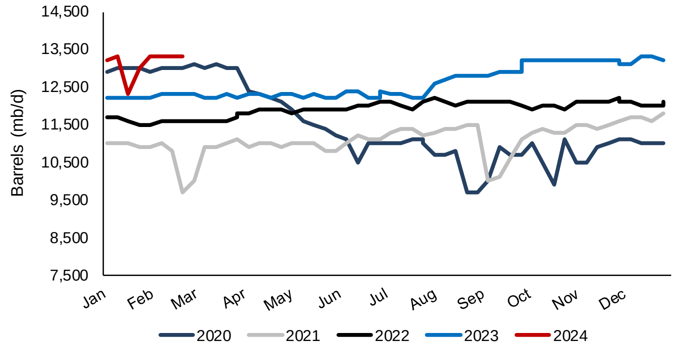
After the EIA slashed production estimates by -1.000 mmb/d last month in response to cold temperatures and production shut-ins, the EIA's estimates showed production quickly returned to where they were before January. On Jan 24, the EIA wrote "*This week's domestic crude oil production estimate incorporates a decrease of 1 million barrels per day, representing an estimate of the impact of winter storms and extreme cold temperatures. We will report survey-based domestic production for January in the Petroleum Supply Monthly (PSM) at the end of March*". We will see how accurate they were when we see the actuals. The latest Form 914 (with December actuals) was +0.115 mmb/d higher than the weekly estimates of 13.200 mmb/d. This week, the EIA's production estimates were flat WoW at 13.300 mmb/d for the week ended February 23. Alaska was up +0.001 mmb/d WoW to 0.432 mmb/d. Below is a table of the EIA's weekly oil production estimates.

Figure 17: EIA's Estimated Weekly US Field Oil Production

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

Source: EIA

Figure 18: EIA's Estimated Weekly US Oil Production



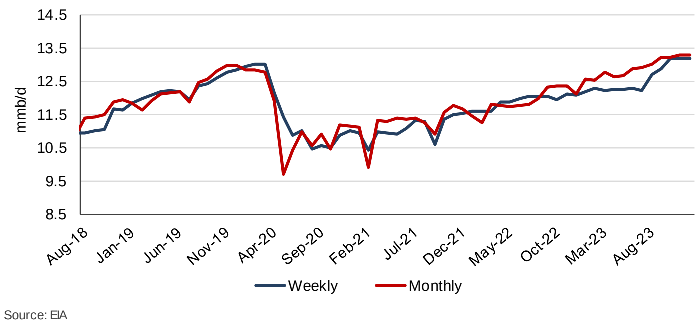
Source: EIA, SAF

Oil: EIA Form 914 – US December oil production actuals +1.117 mmb/d YoY

EIA Form 914 December

On Thursday, the EIA released its Form 914 data [LINK], which is the EIA's "actuals" for December US oil and natural gas production. As noted above and previously, over the past four months the EIA has had to make big upward adjustments to their weekly oil supply estimates to bring them more in line with the Form 914 actuals. The upward adjustments to the EIA weekly oil estimates were +0.400 mmb/d in Aug, then another +0.400 mmb/d in Oct and then November's +0.200 mmb/d. December actuals came in at 13,315 mmb/d. (i) Revisions. There were no material revisions to the monthly data for the past few months. November was bumped up immaterially by 11,000 b/d. (iii) Weekly EIA estimates for December were at 13.200 mmb/d, so the Form 914 actuals are +0.115 mmb/d over the weekly estimates.

Figure 19: EIA Form 914 US Oil Production vs Weekly Estimates



Source: EIA, SAF

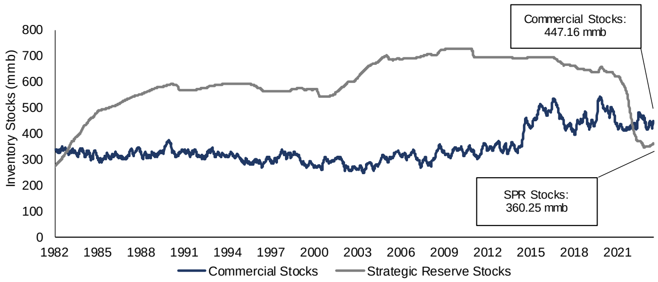
Oil: US SPR-commercial reserve deficit now -86.909 mmb

US SPR reserves

Oil in the US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sep 16, 2022 week. This week, there was a bigger build on the commercial side. The EIA's weekly oil data for February 23 [LINK] saw the SPR reserves increase +0.743

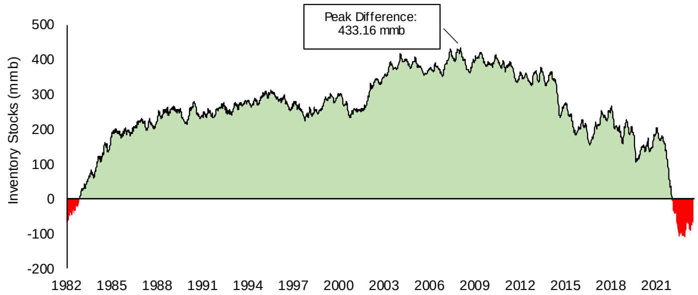
mmb WoW to 360.254 mmb, while commercial crude oil reserves increased +4.199 mmb to 447.163 mmb. There is now a -86.909 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles.

Figure 20: US Oil Inventories: Commercial & SPR



Source: EIA, SAF

Figure 21: US Oil Inventories: SPR Less Commercial



Source: EIA, SAF

Oil: US gasoline prices +$0.08 this week to $3.34

US gasoline prices

US gasoline prices were up this week driven in by the continued shut down of the BP Whiting (Indiana) 430,000 b/d refinery. Yesterday, AAA reported that US national average prices were $3.34, which was +$0.08 WoW, up $0.19 MoM and -$0.03 YoY. There were big WoW increases in local gasoline prices most impacted by BP Whiting. Indiana gas prices were +$0.24 WoW to $3.44. Illinois gas prices were +$0.22 WoW to $3.72 . Wisconsin gas prices were +$0.24 WoW to $3.26. As of yesterday, the California average gasoline prices were +$0.16 WoW to $4.80, which is a $1.44 premium to the national average gasoline price of $3.34. Remember the big gasoline crisis in summer 2022 started to see US gasoline prices ease below $4 in August 2022 and were helped in Q4/22 by the SPR releases.

Oil: Crack spreads widened $0.50 WoW to $31.11

Crack spreads closed at $31.11

On Friday, we tweeted [LINK] "*Positive for Oil next week. 321 crack spreads +$0.50 WoW to close at $31.11. Spreads >$30 provide big incentive for refineries to keep up runs and, if possible, defer maintenance. Refineries taking as much #Oil as possible tends to drag up Oil prices a bit. #OOTT Thx @business."* Crack spreads continue to e at high levels and certainly high enough to incentivize refineries to run as much crude as possible and, if possible, defer maintenance. Crack spreads closed at $31.11 on Mar 1, which followed $30.61 on Feb 23, . We remind that oil demand is driven by refiners and their ability to make money by processing oil and selling petroleum products. So crack spreads are a good indicator if refiners will be looking to buy more or less oil. And when crack spreads are over $30, its' a very big incentive to refiners to want more crude and produce more product. This week, crack spreads widened $0.50 WoW to $31.11, which followed $30.61 on Feb 23, $25.23 on Feb 16, $30.03 on Feb 9, $25.07 on Feb 2, $26.65 on Jan 26, $24.47 on Jan 19, and $24.10 on Jan 12. Crack spreads at $1.11 are well above the high end of the more normal pre-Covid that was more like $15-$20, which is why we believe refineries continue to be incentivized to take more oil.

Explaining 321 crack spread

People often just say "cracks", which refers to the 321 crack spread. This is the spread or margin that refiners make from buying crude at a certain price and then selling the finished petroleum products at their respective prices. The 321 crack spread is meant to represent what a typical US refinery produces. It assumes that for every three barrels of crude oil, the refinery will produce two barrels of gasoline and one barrel of distillates. So the crack spread is based on that formula and worked back to a crack spread per barrel. Below is the current 321 crack spread vs WTI that we put in our tweet where we marked the gaps where the crack spread normally drags up oil prices. The crack spread was $31.11 as of the Friday March 1, 2024 close.

Figure 22: Cushing Oil 321 Crack Spread & WTI Mar 1, 2014 to Mar 1, 2024

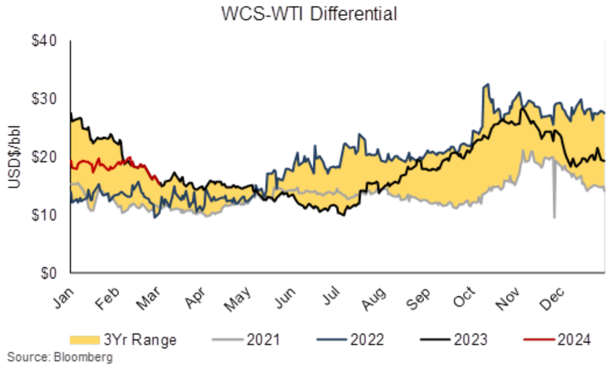
Source: Bloomberg

Oil – Cdn heavy oil differentials continue to seasonally narrow ahead of TMX start

WCS differentials normally narrow in spring

Early in the year, every year, we start to remind that that Cdn WCS less WTI differentials normally narrow in late Feb thru May as US refiners maximize production of asphalt for annual paving season. The narrowing happens every year. So this is the time of the year, for the next few months, that normally sees Cdn heavy oil differentials narrow. This is the time of year, when refineries move to turnarounds so they can start to maximize production of asphalt ahead of the annual summer paving season. As is said in Canada, there are two seasons in Canada – winter and paving season. Below is graph showing WCS-WTI differentials that shows this normal seasonal trend of narrowing WCS-WTI differentials from Feb thru May. We have seen Cdn heavy oil differentials narrowing already and a key factor for that is the OPEC+ cuts, which tend to first be on heavy/medium sour barrels that would tend to compete with Cdn heavy/medium barrels. WCS less WTI differential closed on March 1 at $16.40, which was -$0.95 WoW vs $17.35 on Feb 23, and down $3.35 from the Feb peak of $19.75. We note that this is before the start up of Trans Mountain 590,000 b/d TMX expansion, which is expected to have a major reduction of WCS less WTI differenitals.

Figure 23: WCS less WTI oil differentials to March 1 close



Source: Bloomberg

Oil: Trans Mountain 590,000 b/d TMX expansion looks to start up in June

TMX 590,000 b/d expansion

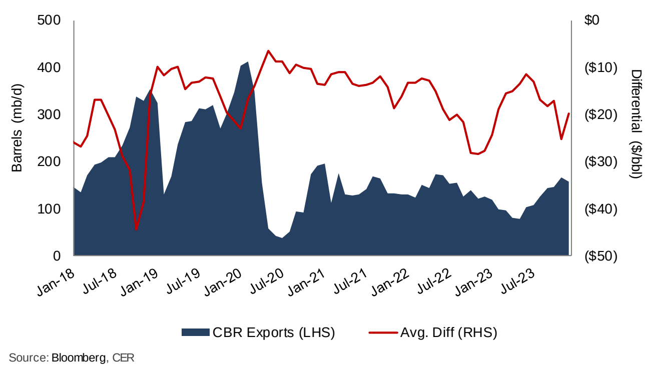
There was good news, albeit expected, from the MEG Energy Q4 call on Friday morning on the start up of Trans Mountain's 590,000 b/d TMX expansion. We tweeted [LINK] "*Looks like Trans Mountain 590,000 b/d TMX expansion is on track to start in June. @business headlines out of MEG Q4 call right now. "Trans Mountain seeks 2.1M bbl in April, 2.1M bbl in May: MEG". So calling for line-fill of 70,000 b/d in Apr & May. #OOTT.*" We weren't on the call but was seeing headlines rolling across Bloomberg reporting on the call. The key headline was "*Trans Mountain seeks 2.1M bbl in April, 2.1M bbl in May: MEG*." As soon as we saw it, we thought it pointed to TMX starting up in June. There would be no reason for why Trans Mountain would call for line-fil if they weren't planning to start up full operations right away. It points to a June start up.

Oil: Cdn crude by rail exports at 157,142 b/d in December, up +24.5% YoY

Cdn crude by rail up YoY in Dec

We have reached out a couple times to the EIA (but never get a response) as to why their crude by rail imports from Canada data are so much lower than the CER data for Cdn crude by rail exports to the US. Our assumption is that the major reason for the difference is likely Cdn crude by rail that goes directly to the Gulf Coast and then onto tankers for export, i.e. the oil never stay in the US. On February 23, the CER released their Canadian crude exports by rail figures for December. December crude exports by rail were 157,142 b/d, down -5.9% MoM from 167,006 b/d in November but up +24.5% YoY from 126,198 b/d in December 2022. Here is what we wrote in our Dec 31 tidbits memo: "*Below we note the EIA crude by rail imports from Canada that were only 85,000 b/d for Oct. This is 61,000 b/d less than the CER's estimate of crude by rail exports for Oct, which fits our thesis that the large variance* *likely represents Cdn crude by rail that is shipped directly to the Gulf Coast for loading on tankers for exports ie. the US never receives and keeps the barrels in the US*". The EIA released their crude by rail numbers for December and , once again, the EIA estimates of 100, 290 b/d was significantly below the CER export estimates. The WCS–WTI differential tightening is improving the price incentive for crude by rail to the Gulf coast. The CER doesn't provide any explanation for the MoM changes. Below is our graph of Cdn crude by rail exports compared to the WCS–WTI differential.

Figure 24: Cdn Crude By Rail Exports vs WCS Differential



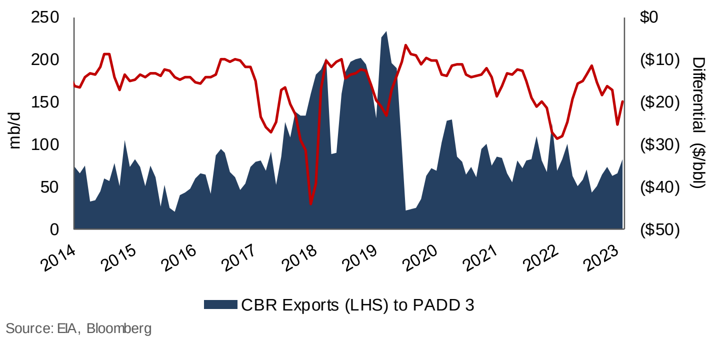
Source: Canadian Energy Regulator, Bloomberg

EIA Cdn crude by rail imports

Oil: EIA estimates total Cdn crude by rail imports +100,290 b/d MoM in Dec

On Wednesday, the EIA posted its "*U.S. Movements of Crude Oil by Rail*" [LINK], which includes the EIA data on US imports of Cdn crude by rail. EIA estimates total US imports of Cdn crude by rail were 100,290 b/d in December, which was +15,124 b/d MoM from 85,167 b/d (revised) in November. The EIA estimates Cdn crude by rail into PADD 3 (Gulf Coast) were 83,194 b/d in December, which was +17,594 b/d MoM from 65,600 b/d in November (revised). Note there were some big revisions on the November data. Initially, in last month's release, the EIA reported total imports from Canada were 61,267 b/d, with the PADD 3 numbers at 53,100 b/d. This week's November revision is up over 20,000 b/d to 85,167 b/d (Total imports) and over 10,000 b/d at 65,600 (PADD 3). The EIA did not comment on the MoM changes or revisions. We have been highlighting some very large discrepancies in what the EIA reports as crude-by-rail imports from Canada versus what the Canadian Energy Regulator (CER) reports as crude-by-rail exports from Canada. This month, as noted above in the Cdn crude by rail item, the CER reported that 157,142 b/d of crude were exported by rail out of Canada during December. This is way off the total Canadian imports by rail of 100,290 b/d the EIA says they got – there are over 50,000 b/d of unexplained items. The only explanation is that the difference is Cdn crude-by-rail that goes directly to Gulf Coast for exports to international markets. Here is what we wrote in our Nov 5 memo: "*Last month, we reached out to the EIA to ask if they could shed some light on why there might be such a large difference to the CER numbers but they did not respond to our question. Last month, there was a 75,000 b/d difference in what the CER estimated as Cdn crude by rail exports to US in July vs what the EIA estimates as Cdn crude by rail imports from Canada. This month,* *there is 92,000 b/d difference in what the CER estimates as Cdn crude by rail exports to US in Aug vs what the EIA estimate for crude by rail imports from Canada. We have checked to see if somehow the crude by rail went into the US and was turned around and sent back to Canada via truck, rail or pipeline. But the EIA shows zero crude by rail exports Plus we checked the North Dakota Pipeline Authority monthly report as North Dakota will truck oil into Canada and the NDPA showed zero such volumes in July and small amounts in Aug. Our only explanation was that the higher amount of Cdn crude by rail exports to the US is railed to the GoM and directly put on tankers for export from the GoM. That way they wouldn't be included in the EIA's ~30,000 b/d of crude oil by rail imports into PADD 3 in July or the ~47,000 b/d into PADD 3 in Aug*". Below is our graph of Cdn CBR exports to the Gulf Coast and WCS differential over time.

Figure 25: US Imports of Canada CBR to US Gulf Coast vs WCS Differential



Source: EIA, Bloomberg

Oil: US net oil imports -0.032 mmb/d WoW as oil imports down -0.269 mmb/d WoW

US net oil imports

The EIA reported US "NET" imports were down -0.032 mmb/d to 1.657 mmb/d for the February 23 week. US imports were down -0.269 mmb/d to 6.385 mmb/d against exports which were -0.237 mmb/d WoW to 4.728 mmb/d. (i) Venezuela weekly imports. We know why the EIA doesn't have any data in the row for Venezuela weekly oil imports but we still don't know if the weekly oil imports are off or if Venezuela is included in the weekly oil imports in the Others number. But we do know that Chevron continues to import >100,000 b/d from Venezuela into the Gulf Coast. Give the EIA credit for putting out weekly oil import estimates, but it's a reminder that we have to be careful about using the weekly oil import estimates. Rather we need to make sure we go to the monthly data for oil imports. ii) Top 10 was down -0.393 mmb/d. Some items to note on the country data: (i) Canada was up +0.097 mmb/d to 3.766 mmb/d. But is still off the recent 4.188 mmb/d for the Jan 12 week as BP Whiting (Indiana) 435,000 b/d refinery is still down. And BP Whiting runs primarily on Cdn crude. (ii) Saudi Arabia was down -0.085 mmb/d to 0.139 mmb/d. (iii) Mexico was down -0.215 mmb/d to 0.569 mmb/d. (iv) Colombia was down -0.215 mmb/d to 0.071 mmb/d. (v) Iraq was up +0.014 mmb/d to 0.240 mmb/d. (vi) Ecuador was down -0.158 mmb/d to 0.000 mmb/d. (vii) Nigeria was up +0.006 mmb/d to 0.165 mmb/d.

Figure 26: US Weekly Preliminary Imports by Major Country

	Nov 24/23	Dec 1/23	Dec 8/23	Dec 15/23	Dec 22/23	Dec 29/23	Jan 5/24	Jan 12/24	Jan 19/24	Jan 26/24	Feb 2/24	Feb 9/24	Feb 16/24	Feb 23/24	WoW
Canada	3,243	3,972	3,572	3,686	3,428	3,796	3,557	4,188	3,270	3,573	3,539	3,999	3,669	3,766	97
Saudi Arabia	141	400	316	406	75	139	474	413	81	150	353	390	224	139	-85
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	571	876	633	851	380	952	522	756	356	427	661	294	784	569	-215
Colombia	143	289	214	215	157	129	220	212	72	79	415	150	286	71	-215
Iraq	178	166	85	22	380	239	192	64	206	205	0	43	226	240	14
Ecuador	112	252	233	49	142	83	30	150	3	103	72	201	158	0	-158
Nigeria	174	226	111	162	80	95	165	147	199	190	81	137	159	165	6
Brazil	148	274	255	197	238	305	249	264	266	213	338	148	44	234	190
Libya	0	87	87	86	0	171	0	7	37	0	0	63	92	65	-27
Top 10	4,710	6,542	5,506	5,674	4,880	5,909	5,409	6,201	4,490	4,940	5,459	5,425	5,642	5,249	-393
Others	1,123	966	1,011	1,076	1,396	986	832	1,219	1,090	665	1,448	1,045	1,012	1,136	124
Total US	**5,833**	**7,508**	**6,517**	**6,750**	**6,276**	**6,895**	**6,241**	**7,420**	**5,580**	**5,605**	**6,907**	**6,470**	**6,654**	**6,385**	-269

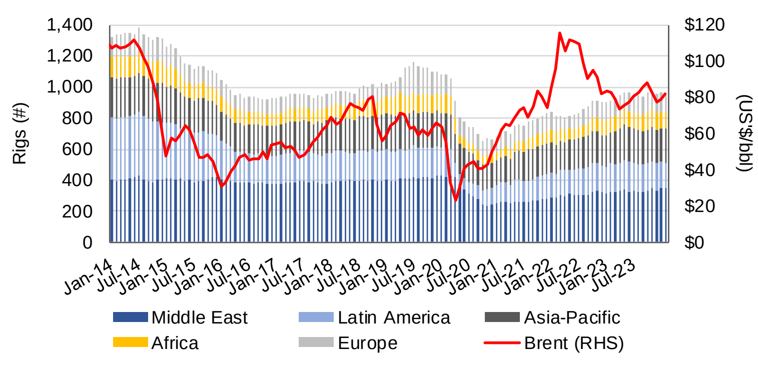
Source: EIA, SAF

Oil: Baker Hughes International rigs -7 MoM to 958 rigs in February

International rigs -7 MoM in February

On Friday, Baker Hughes posted its monthly update to international rigs, in total, that show rigs in February decreased MoM. (i) Note that Baker Hughes changed its format for data output, which unfortunately does not let us easily break out historic rig totals by month, but allows us to see a good summary of the regions. Going forward, we will focus on the regional data. (ii) Total international rigs decreased by -7 rigs MoM to 958 rigs in February, and total rigs are now up +152 rigs from the recent low of 806 in April 2022. The MoM rig count is as follows: Africa +0 rigs, Asia-Pacific +5 rigs, Europe -8 rigs, Latin America -5 rigs YoY, and the Middle East +1 rig (iii) The Asia-Pacific region saw the largest MoM increase of +5 rigs to 219 total rigs, while in contrast the biggest drop in rigs came from Europe which was down -8 rigs MoM to 114 rigs. (iv) The largest YoY increases came from the Middle East, which is up +17 rigs YoY to 349 rigs, while the biggest decline comes from Latin America, which lost 17 rigs YoY down to 168 rigs. The YoY rig count is as follows: Africa +9 rigs, Asia-Pacific +0 rigs, Europe +0 rigs, Latin America -11 rigs YoY, and the Middle East +17 rigs. (v) February's count of 958 rigs was +5% YoY from 915 in February 2023, and down -12% vs pre-Covid February 2020 of 1,085 rigs. Below is our graph of international rigs by region and avg monthly Brent price.

Figure 27: Baker Hughes International Rig Count and Brent Price



Source: Baker Hughes, Bloomberg, SAF

Pemex refines +130,000 b/d MoM in Jan

Oil: Pemex refines +130,000 b/d MoM in Jan ie. less Mexico oil for export

On Thursday, we tweeted [LINK] "*Another positive for Cdn WCS oil in 2024 is ramping up. increased #Oil refined in MEX Pemex refineries = less heavy/medium oil for export. Existing refineries processed +130,000 b/d MoM in Jan. This excludes the ramping up of new Olmeca 340,000 b/d refinery. Thx @lkassai #OOTT.'* Bloomberg had reported on Pemex January oil processing volumes at its refineries excluding the new recently starting up 340,000 b/d Olmeca refinery. Our tweet included the reminder that the more oil processed at Pemex refineries means there is less Mexico oil for exports. And the less heavy/medium crude oil exported by Mexico, it is a positive for Cdn heavy/medium oil. Bloomberg wrote "*Pemex cranked up rates at its domestic refineries to the highest utilization rates since May 2017, according to company data compiled by Bloomberg. * Utilization rate rose to 58.6% in January vs 50.6% in December ** Mexico's six refineries have capacity to process 1.627m b/d of crude, according to Pemex * Pemex didn't disclose data for its new Olmeca refinery, also known as Dos Bocas, which started operations in September."* Our Supplemental Documents package includes the Bloomberg report.

Figure 28: Pemex Mexico Oil Exports

Refinery	January (b/d)	m/m	y/y	Capacity use	NOTE
Cadereyta	169,413	8.7%	68%	61.6%	highest since April 2017
Madero	117,531	36%	27%	61.9%	highest since March 2016
Tula	179,604	4.6%	-21%	57.0%%	
Salamanca	135,967	16%	-1.0%	61.8%%	highest in 12 months
Minatitlan	141,665	-8.6%	19%	49.7%%	
Salina Cruz	209,905	54%	33%	63.6%	4-month high
Dos Bocas	not available				
Total	954,085	16%	14%	58.6%	highest since May 2017

Source: Pemex, SAF

01/20/24: Pemex Olmeca refinery to be at max production capacity by Mar 31

The Bloomberg report this week noted that the oil did not include the new Olmeca oil refinery. Here is what we wrote in our Jan 21, 2024 Energy Tidbits memo. "*Yesterday, Pemex CEO Oropeza said its new 340,000 b/d Olmeca refinery will be running at full capacity by the end of March. Pemex posted a video on Twitter/X in Oropeza in Spanish but it had English translation running on the bottom. [LINK]. Oropeza said "we are very excited because in a matter of weeks, this refinery, this great project, is going to enter commercial production. First we will start producing diesel, then regular gasoline and, by the end of March, all three will be at their maximum production capacity."*

01/04/24: Pemex Olmeca refinery to process 243,000 b/d in 24, 320,000 b/d in 25
Here is an itemOlmeca from our Jan 7, 2024 Energy Tidbits memo. "*Going into 2023, Mexico's (Pemex) ramp up in its existing refineries capacity utilization and the start up of the new 340,000 b/d Olmeca (formerly known as Dos Bocas) was expected to have a big reduction to Mexico oil exports including to the US Gulf Coast. But that didn't happen as Olmeca start was delayed and Pemex had a series of problems at its refineries in the first 4-months of 2023. But Olmeca is ramping up and that means Pemex should be increasing the amount of its domestic oil production that it refines in Mexico and therefore there should be less Mexico oil for export. On Thursday, the WSJ reported "Speaking at President Andrés Manuel López Obrador's morning press conference, Romero Oropeza said Pemex's six refineries in Mexico processed 794,000 barrels a day of crude oil last year, while its Deer Park refinery in Texas processed 270,000 barrels a day. With the new refinery in operation, Pemex expects to raise its total crude processing to 1.5 million barrels a day this year, and to increase that to nearly 1.8 million barrels a day by 2026, he added. The new refinery is located in Dos Bocas, in southern Tabasco state. The Olmeca refinery, one of López Obrador's flagship infrastructure projects, is expected to process 243,000 barrels a day this year and raise that to 320,000 barrels a day in 2025, Romero Oropeza said."*

Oil: Nuevo Leon closed Pemex Cadereyta refinery that processed 169,413 b/d in Jan

Nuevo Leon closes Cadereyta refinery

The positive for Pemex on increasing refinery oil processing in Jan was hit on Friday, one day after the Bloomberg report, when El Financiero reported the state govt, Nuevo Leon, closed the Cadereyta refinery that processed 169,413 b/d in Jan. There is no indication as to how long the refinery will be closed. On Friday, we tweeted [LINK] "*Breaking! State of Nuevo Leon authorities closed Pemex Cadereyta refinery Following Pemex "refusal to collaborate with the state Ministry of the Environment" reports @ElFinanciero_Mx. Cadereyta processed 169,413 b/d in Jan so, until reopened, frees up more MEX oil for export. #OOTT [LINK].*" Our tweet linked the El Financiero (Mexico) report *"The government of Samuel Garcia has on several occasions blamed the Pemex refinery for being to blame for poor air quality in Monterrey. The 'battle' between the government of Nuevo Leon and Petróleos Mexicanos (Pemex) escalated this Friday, after authorities closed the refinery in Cadereyta following the company's refusal to collaborate with the state Ministry of the Environment. Personnel from the agency went to the refinery on March 1 to carry out an inspection. However, the parastatal denied them access, which according to the government of Nuevo León led to the closure. State authorities have repeatedly pointed out that Pemex is responsible for generating the largest amount of polluting particles that end up suspended in the sky of the Monterrey Metropolitan Area. On February 27, the Ministry of the Environment activated the third environmental alert due to high concentrations of PM10 particles, and although these conditions were widespread, in the metropolis it was the municipality of San Pedro that reported the worst conditions. Since then, environmental monitoring stations have not reported an improvement, including on Wednesday, February 28, four stations reported extremely poor air quality."*

Oil: Putin reinforces nukes option in response to Macron's NATO troops into Ukraine

Putin reminds on Russia nukes

The big news on Monday was Macron opening the possibility to send NATO troops into Ukraine. Reuters reported [LINK] " *Some 20 European leaders gathered in Paris on Monday to send Russian President Vladimir Putin a message of European resolve on Ukraine and counter the Kremlin's narrative that Russia is bound to win a war now in its third year. "There is no consensus at this stage ... to send troops on the ground," Macron told reporters. "Nothing should be excluded. We will do everything that we must so that Russia does not win."* No one should be surprised Putin responded with his reminder of Russian nukes. On Thursday, we tweeted [LINK] "*Headline from Putin address to Federal Assembly. "The strategic nuclear forces are on full combat alert and the ability to use them is assured" Putin. Not as specific as Medvedev 👇02/18 tweet, BUT another reminder RUS is prepared to use nukes. #OOTT."* In his address, Putin said "*We were not the ones who started the war in Donbass, but, as I have already said many times, we will do everything to put an end to it, eradicate Nazism and fulfil all the objectives of the special military operation, as well as defend sovereignty and ensure that our people are safe. The strategic nuclear forces are on full combat alert and the ability to use them is assured. We have either already accomplished or are about to accomplish all our plans in terms of weapons in keeping with what I said in my 2018 Address."*

02/18/24: Russia threatened use of nukes on Kyiv, Berlin, London, Washington

Our tweet this week referenced the Medvedev nukes threat on Feb 18. Here is what we wrote in last week's (Feb 25, 2024) Energy Tidbits memo. "*We were surprised that Russia's threat to use nukes against the west if the west tries to stop Russia from their rightful, in their minds, lands. Last Sunday afternoon, we tweeted [LINK] "Scary stuff! RUS says if try to force them back to old borders, "can only lead to one thing. To a global war with Western countries with the use of the entire strategic arsenal of our state. In Kyiv, Berlin, London, Washington...,." #OOTT." TASS reported [LINK] on comments by Dimitry Medvedev, the Deputy Chairman of the Security Council of Russia on how nuclear powers have never lost wars and Russia will use nukes against western capitals if the west tries to stop Russia in taking control of its rightful lands. TASS wrote "He noted that "nuclear powers have never lost to anyone" wars "in which the defense of their Fatherland, their land, people and values takes place. "Attempts to bring Russia back to the 1991 borders will only lead to one thing. To a global war with Western countries with the use of the entire strategic arsenal of our state. In Kyiv, Berlin, London, Washington. For all other beautiful historical places that have long been included in the flight goals of our nuclear triad," Medvedev stressed. "So it's better to let them return everything before it's too late. Or we will return it ourselves with maximum losses for the enemy. Like Avdiivka. Our soldiers are heroes!" wrote the deputy chairman of the Security Council of the Russian Federation." Our Supplemental Documents package includes the TASS report.*"

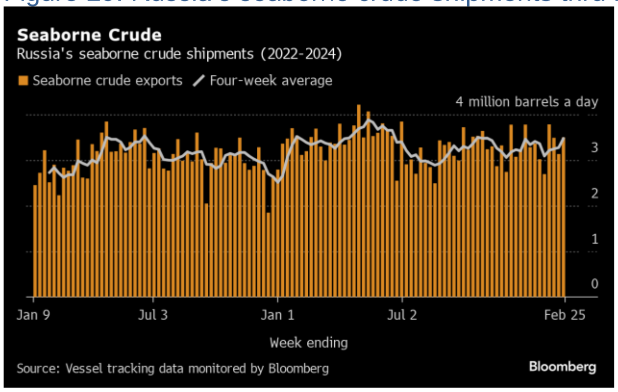
Oil: Russia's crude oil shipments for Feb 25 up WoW, above Q1/24 target

Russia oil shipments breaches commitment

Following the two-week decline we saw earlier this month, Russian crude shipments have picked up again. Bloomberg had reported "*Russia's seaborne crude flows in the four weeks to Feb. 25 jumped by about 200,000 barrels a day to 3.48 million barrels a day. Shipments were about 110,000 barrels a day below the average seen in May and June, or about*

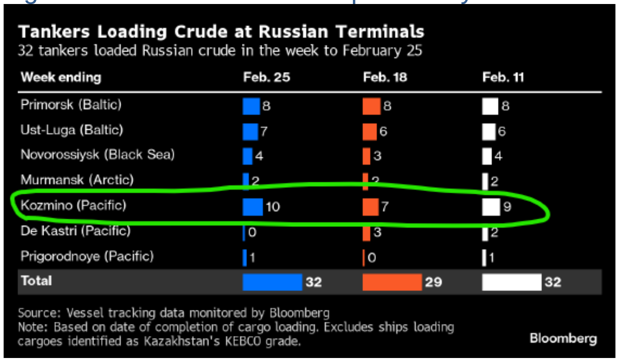
190,000 barrels a day above Russia's first quarter target". Russia's woes on moving Sokol crude continued this week, with straight-up export halts this week as there aren't any empty specialized tankers left that can shuttle more oil. Indian refiners are shunning the Pacific grade over pricing issues and worries about violating US Sanctions. Even if Russia was finding buyers, as of this week the 7 specialized tankers that shuttle Sokol are already full and waiting to make deliveries, so there's no more floating storage. Normally India, Korea and Japan would be big buyers of this grade since it comes out of Russia's offshore Pacific fields. Bloomberg reported there was a shipment last week to China, and two more are expected later this week, so this halt should be temporary. See the De Kastri terminal outflows in the figure below to see how few shipments are leaving Sakhalin island with Sokol. Despite the troubles with this grade, there was a big outflow of crude from the nearby Kozmino terminal in the pacific, which more than offset the stunted Sokol export levels. Below are Russia's seaborne crude shipments since 2022 and tanker loading data (note the reduction in the Pacific Kozmino terminal). Our Supplemental Documents package includes the Bloomberg report.

Figure 29: Russia's seaborne crude shipments thru Feb 25 week



Source: Bloomberg

Figure 30: Russian Crude Shipments by Terminal



Tankers Loading Crude at Russian Terminals
32 tankers loaded Russian crude in the week to February 25

Week ending	Feb. 25	Feb. 18	Feb. 11
Primorsk (Baltic)	8	8	8
Ust-Luga (Baltic)	7	6	6
Novorossiysk (Black Sea)	4	3	4
Murmansk (Arctic)	2	2	2
Kozmino (Pacific)	10	7	9
De Kastri (Pacific)	0	3	2
Prigorodnoye (Pacific)	1	0	1
Total	32	29	32

Source: Vessel tracking data monitored by Bloomberg
Note: Based on date of completion of cargo loading. Excludes ships loading cargoes identified as Kazakhstan's KEBCO grade.
Bloomberg

Source: Bloomberg

Oil: Bloomberg OPEC production +110,000 b/d MoM to 26.689 mmb/d in Feb

On Friday, Bloomberg posted its monthly survey of OPEC production. The Bloomberg survey estimates OPEC production was +110,000 b/d MoM to 26.680 mmb/d in Feb. A higher MoM was expected as Libya was recovering from when protests shut-in oil production at the Sharara oil field in part of Jan. Libya was +120,000 b/d MoM to 1.140 mmb/d in Feb. Iran was -50,000 b/d MoM to 3.070 mmb/d. Nigeria continues its recovery and was +30,000 b/d MoM to 1.520 mmb/d. Venezuela was +30,000 b/d MoM to 0.850 mmb/d. Below is the Bloomberg survey table.

OPEC Feb production +110,000 b/d MoM

Figure 31: Bloomberg Survey OPEC production in Feb

Production ('000 b/d)		Feb	Jan	Chg	Capacity
Total OPEC		26,680	26,570	+110	32,990
Algeria		910	900	+10	1,060
Angola		0	0	0	0
Congo, Republic		250	240	+10	300
Equatorial Guinea		60	70	-10	120
Gabon		200	200	0	220
Iran		3,070	3,120	-50	3,830
Iraq		4,160	4,200	-40	4,800
Kuwait	i	2,430	2,440	-10	2,820
Libya		1,140	1,020	+120	1,200
Nigeria		1,520	1,490	+30	1,600
Saudi Arabia	i	8,950	8,940	+10	12,000
U.A.E.		3,140	3,130	+10	4,200
Venezuela		850	820	+30	840

Source: Bloomberg

Oil: No security warnings yet on Ramadan

As of our 5am MT news cut off, we are surprised that we haven't seen any warning from the US on Ramadan. Ramadan is expected to begin on March 11, and the Eid al Fitr celebrated on Apr 10. With one week to go until Ramadan, we are surprised that there has been now security warning from the US Overseas Security Advisory Council [LINK] for Security Alerts that typically refer to Ramadan. In prior years, their warnings have noted that "*martyrdom during the month may hold a special allure to some*". It's normally a reminder they make just like we see reminders of terrorist risk on certain anniversaries. We are surprised given the increased fighting in Gaza, Yemen, Iraq and Lebanon. Ramadan is described by the LiveScience [LINK] "*Ramadan is the most sacred month of the year in Islamic culture. Muslims observe the month of Ramadan, to mark that Allah, or God, gave the first chapters of the Quran to the Prophet Muhammad in 610, according to the Times of India. During Ramadan, Muslims fast, abstain from pleasures and pray to become closer to God. It is also a time for families to gather and celebrate".*

Ramadan starts March 11

Can there be a Hamas temporary ceasefire before Ramadan?

We have to believe there is hope for a temporary ceasefire during Ramadan and maybe that is what Biden had in mind when he said this week that a ceasefire could be in the next week. Who knows? But there hasn't seemed to be any such concern on attacking during Ramada from Netanyahu so it's hard to see a temporary deal. But you never know.

Oil: WSJ: 3 internet cables thru Red Sea dropped service for some markets on Feb 24

3 internet cables dropped service

We have been following some of the tweets on Red Sea internet cables may have been cut but didn't see any confirmation from known sources until we saw the WSJ report yesterday. The WSJ confirmed that three internet cables thru the Red Sea were cut and service *"suddenly dropped*" in some of the markets but not enough to disconnect any country. The Houthis reportedly denied it was them. Regardless, it reminds of the vulnerability for major economic interruption with all the major communication cables from Europe to Asia running thru the Red Sea. Yesterday, we tweeted [LINK] "*Who did it? Feb 24: "3 submarine internet cables running through the region [Red Sea] suddenly dropped service in some of their markets. The cuts weren't enough to disconnect any country ..." Houthis said not them. Reports @DrewFitzGerald #OOTT [LINK]."* The WSJ wrote "*The latest warning sign came Feb. 24, when three submarine internet cables running through the region suddenly dropped service in some of their markets. The cuts weren't enough to disconnect any country but instantly worsened web service in India, Pakistan and parts of East Africa, said Doug Madory, director of internet analysis at network research firm Kentik. It wasn't immediately clear what caused the cutoffs. Some telecom experts pointed to the cargo ship Rubymar, which was abandoned by its crew after it came under Houthi attack on Feb. 18. The disabled ship has been drifting in the area for more than a week even after it dropped its anchor. Yemen's Houthi-backed telecom ministry in San'a issued a statement denying responsibility for the submarine cable failures and repeating the government is "keen to keep all submarine telecom cables…away from any possible risks." The ministry didn't comment on the Rubymar attack."* The WSJ also reminded that the conflict complicates the process of repairing underwater cables. Our Supplemental Documents package includes the WSJ report.

02/13/24: Houthis Leader says have no intention of targeting submarine cables

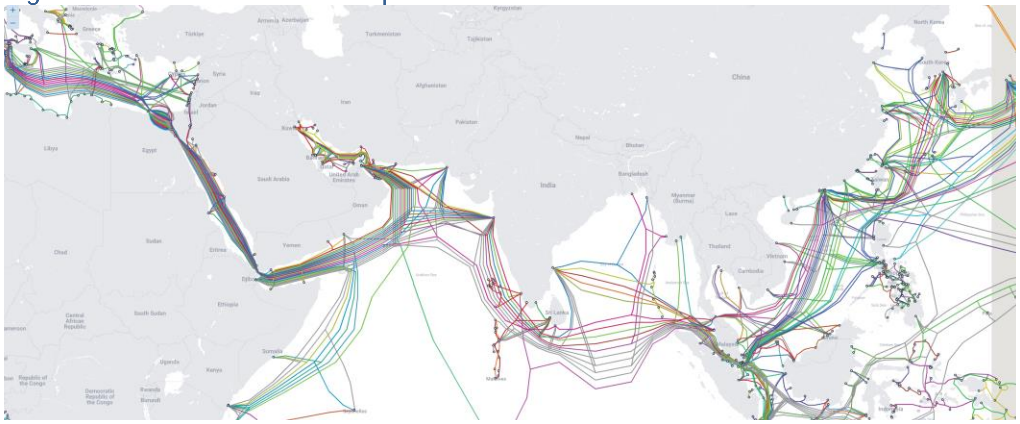
Here is what we wrote in our Feb 18, 2024 Energy Tidbits memo. "*On Tuesday, we tweeted [LINK] "Houthis leader "we have no intention of targeting submarine cables connecting to countries in region". Lets hope his intention is more indicative than when politicians say no intention. #OOTT." The Houthis leader was responding to the media reports last week about the risk to underwater communications cables from Europe to Asia that all run thru the Red Sea and Bab el Mandeb. Our tweet included the Al Masirah (Yemen news) web page that showed the headlines of the Houthis leader comments "Sayyed Abdulmalik. We have no intention of targeting submarine cables connecting to countries in region" "Sayyed Abdulmalik. Rumors circulating in some media about our intention to target submarine cables, internet cables are aimed at distorting, mispresenting Yemen's position."*

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

Here is what we wrote in our Feb 11, 2024 Energy Tidbits memo. "*There was a good reminder that the Bab el Mandeb is more than a critical shipping chokepoint, it is also a critical choke point for global communications. On Monday, we tweeted [LINK] "Overlooked Houthis global risk. "we also have to make sure they never build the capacity to touch the underground sea cables that handle most of the internet traffic between EU and Asia that go thru the Bab el Mandeb" warns @Norman_Roule to @FerroTV @lisaabramowicz1 @annmarie See 👇@TeleGeography map. #OOTT." This was a reminder from Norman Roule(Senior Advisor, Transnational Threats Project for CSIS Center for Strategic & International Studies on Blooomberg*

Surveillance. HE remidned that all of the major underwater cables for communications from Europe to Asia went thru thej Bab el Mandeb. And that the Houthis could cause major global economic hit if they damaged this underwater cables. Our prior writings on these underwater cables was on the risk in the South China Sea and not the Bab el Mandeb but the concept is the same. These underwater communications cables are at risk. Our tweet included the Submarine Cable Maps from TeleGeography that shows the major global underwater communications cables. Our Supplemental Documents package includes the Submarine Cable Maps.

Figure 32: Submarine Cable Map



Source: GeoTrelegraphy

Oil: Houthis leader "*we have surprises that the enemies never expect*"

Houthis leader keeps warning

Our view is unchanged on the Houthis – don't expect them to easily go away and we believe many under-estimated their resilience. On Thursday, we tweeted [LINK] ""*We have surprises that the enemies never expect" "US-UK airstrikes and bombings have no impact on our capabilities or morale, not even among children" says Houthis leader. Reminds no sign the Houthis are going to give up anytime soon. No full transcript yet. #OOTT."* We have no idea of what "surprises" he has in mind. But we looked at his comments as much the same as his prior comments – he is reminding they are fighters and aren't going away. Our Supplemental Documents package includes the Al Masirah reporting of quotes from his speech.

Oil: Added oil tanker days from avoiding Suez Canal and Panama Canal

Add tanker days to avoid Red Sea

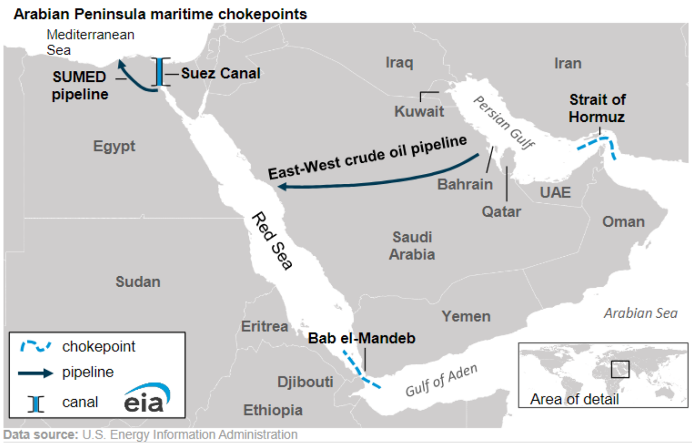
Here is what we wrote in our Feb 4, 2024 Energy Tidbits memo. "*We always love a good map. On Friday, we tweeted [LINK] "Great map courtesy of @EIAgov Josh Eiermann. Shows relative tanker travel times from US Gulf Coast to China. Via Panama Canal (27 days) Suez Canal (44 days) Cape of Good Hope (48 days)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

Figure 33: Selected commercial shipping routes, as of January 2024

Source: EIA

EIA estimates 8.8 mmb/d & 4.1 bcf/d thru Bab el Mandeb/Red Sea chokepoint
Here is what we wrote in our Dec 10, 2023 Energy Tidbits memo. "*For the past few years and over the past couple months in particular, we have referenced the EIA's Aug 27, 2019 brief "The Bab el-Mandeb Strait is a strategic route for oil and natural gas shipments", which highlighted the volume of oil, petroleum products and LNG that goes thru the Red Sea and Bab el Mandeb every day. The EIA then wrote "In 2018, an estimated 6.2 million barrels per day (b/d) of crude oil, condensate, and refined petroleum products flowed through the Bab el-Mandeb Strait toward Europe, the United States, and Asia, an increase from 5.1 million b/d in 2014." On Monday, the EIA updated the same data in a blog titled "Red Sea chokepoints are critical for international oil and natural gas flows" [LINK]. The volumes thru the Bab el Mandeb and Red Sea are a lot higher. The EIA's updated data for H1/23 estimates the volume was now up to 8.8 mmb/d and 4.1 bcf/d of LNG. Our Supplemental Documents package includes the EIA blog*."

Figure 34: Bab el-Mandeb Strait, a world oil chokepoint



Source: EIA

Figure 35: Bab el-Mandeb Strait, a world oil chokepoint

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

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

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

Source: EIA

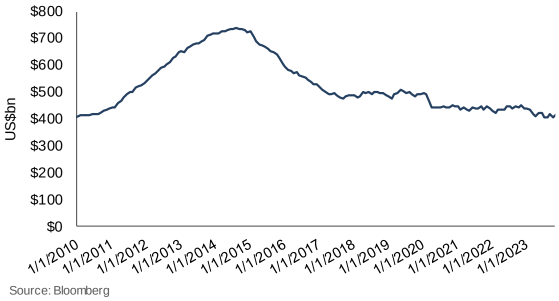
Saudi net foreign assets

Oil: Saudi nest egg, its net foreign assets were up +$2.2b MoM in January

On Wednesday, the Saudi Central Bank (SAMA) released its Monthly Statistical Bulletin for the month of January [LINK]. We continue to believe the #1 financial theme for Saudi Arabia in the 2020s will be their continued, and increasing, use of Other People's Money as they try to transition their country to MBS's Vision 2030. We believe this has been obvious with how Saudi Arabia's net foreign assets dropped by ~42% or $305.33b over the last nine years (since January 2015). We are surprised that markets and oil watchers didn't seem to pay attention to the Saudi net foreign assets data i.e., what we call their nest egg to help them their push to MBS's Vision 2030. There was a +$2.2b MoM increase to Saudi Arabia's net foreign assets which are now $419.3b in January vs $417.1b in December. Recall that in November, there was a +$11.7b increase after a -$13.9b MoM decrease to $406.3b in October vs $420.2b in September. We have to believe this was due to some timing issues or other external fund injections. But the thesis and big picture remains, Saudi net foreign assets as of January 31 of $419.3b is a decline of ~43% or $319.9b over the last 9 years from its peak of $737.0b on Aug 31, 2014. That is an average of $2.9b per month for the last

112 months since the peak. One factor over the last several years is that Saudi Arabia has been moving more capital to its PIF (Public Investment Fund) but those would generally be into less liquid assets. Saudi Arabia is far from going broke but there has been a huge decline in the last 9 years, but it is still a big nest egg. This net foreign asset depletion is why we have been highlighting that the primary financial theme for Saudi Arabia in the 2020s is getting Other People's Money (OPM) to fund as much of their Vision 2030 as possible. And no question, accessing OPM has helped to slow down and temporarily pause the decline in net foreign assets. Our supplemental documents package includes an excerpt from the SAMA monthly bulletin. Below is our graph of Saudi Arabia net foreign assets updated for the January data.

Figure 36: Saudi Arabia Net Foreign Assets



Source: Bloomberg

Oil: Seems Kurdistan oil companies don't expect oil export restart for >2 months

Kurdistan oil co's look to US for help

Earlier this morning, we tweeted [LINK] "*Kurdistan #OIl exports shut at least 2 more months? AKIPUR hopes US can pressure Iraq PM Sudani to resume exports at his late Apr White House visit. AKIPUR reminds Iraq budget depends on US funding! Great interview @diyarkurda! [LINK].*" Our tweet included Rudaw's (Kurdistan news) Saturday interview with a representative of AKIPUR (industry association for Kurdistan oil companies). In reading the interview, it's hard to see how AKIPUR expects any restart of Kurdistan oil exports until at least late Apr, when they hope the US can pressure Iraq Prime Minister Sudani when he meets Biden at the White House in late Apr. AKIPUR also reminds of an overlooked fundamental for why the US can pressure Sudani – Iraq gets US funding for its budget! Rudaw writes "*The White House has issued an invitation to Iraqi Prime Minister Mohammed Shia' al-Sudani, and an association of oil producers working in the Kurdistan Region is hoping Americans can use that visit to pressure Baghdad into resuming oil exports.*

"We know that Prime Minister Mohammed Shia' al-Sudani has been invited to visit the White House and we think that visit will happen after Ramadan, sometime in late April." There is more in the interview. Our Supplemental Documents package includes the Rudaw interview.

No specific US commitment from Sullivan/Kurdistan PM Barzani meeting
There was no specific US commitment to help in resolving the Kurdistan oil export issue from US National Security Advisor Jake Sullivan in his meeting with Kurdistan Prime Minister Barzani on Thursday in the White House. The White House readout [LINK] was "*National Security Advisor Jake Sullivan met with Prime Minister Masrour Barzani of Iraq's Kurdistan Regional Government (KRG) today at the White House. Sullivan expressed appreciation for the longstanding partnership between Kurdistan and the United States and confirmed U.S. support for a strong and economically viable Kurdistan region as outlined in Iraq's constitution. He made special reference to the role played by the Kurdish Peshmerga in the fight against ISIS and the historic partnership between the Peshmerga and the United States. He expressed condolences to Peshmerga fighters and Kurdish civilians lost over the last decade during the campaign to defeat ISIS. He affirmed support for the security of the Kurdistan region and condemned attacks by Iran and Iranian-backed proxy groups against locations there. Sullivan also reaffirmed U.S. support for the KRG and Iraqi government as they work towards a durable revenue- and budget-sharing arrangement that strengthens stability, good governance, and economic progress throughout Iraq and its Kurdistan region*."

Oil: Kurdistan oil companies haven't seen any proposal to restart oil exports

Kurdistan oil co's dispute Iraq view

It's now been 13 days since the Iraq Oil Minister surprised and Bloomberg wrote "*Separately, he said he expects an agreement with Kurdistan on resuming oil production from the semi-autonomous region in one or two weeks, and eventually the restart of exports through a pipeline to Turkey."* The Kurdistan oil exports via Turkey have been stopped since March 23. Yesterday, we tweeted [LINK] "*Breaking! AKIPUR (Kurdistan oil industry association) says no deal has been made to restart Kurdistan #Oil exports. Rather, AKIPUR hasn't even seen any proposal to restart* and *see "no concrete progress towards that end" since Jan 7-9 Baghdad meetings. #OOTT."* AKIPUR is the industry association for the oil companies. Our tweet included AKIPUR's Saturday release that was clear that AKIPUR disputes any report of a deal to restart Kurdistan oil exports. Rather AKIPUR said they haven't even seen any proposal to restart and that they have seen "*no concrete progress towards that end"* since the Jan 7-9 meetings in Baghdad. Our Supplemental Documents package includes the AKIPUR release.

02/19/24: Iraq oil minister expects Kurdistan agreement in next week or two
Here is what we wrote in last week's (Feb 25, 2024) Energy Tidbits memo. *"The Bloomberg Feb 19 report on Iraq Oil Minister also included a surprise statement that he expects a deal in the next one or two weeks with Kurdistan to resume oil exports via Turkey. Bloomberg also wrote "Separately, he said he expects an agreement with Kurdistan on resuming oil production from the semi-autonomous region in one or two weeks, and eventually the restart of exports through a pipeline to Turkey." The Kurdistan oil exports via Turkey have been stopped since March 23. This is a surprise given that we have only seen negatives coming from Kurdistan on no progress on a deal with Iraq to resume oil exports via Turkey. However, Kurdistan looks to be getting a break with the restart of the Al-Shamal Refinery."*

02/16/24: Kurdistan oil producers ask US to help get Iraq to restart exports
Here is another ritem from last week's (Feb 25, 2024) Energy Tidbits memo. "*The reason for the surprise on the Iraq Oil Minister is that, only three days earlier, Kurdistan oil producers asked the US to help get Iraq to agree to resume Kurdistan oil exports. On Feb 16, Rudaw (Kurdistan news) reported [LINK] "Oil producers in the Kurdistan Region on Friday called on US officials at the Munich Security Conference to encourage the Iraqi prime minister to reopen the pipeline with Turkey and allow for oil exports from the Kurdistan Region. In a statement, the Association of the Petroleum Industry of Kurdistan (APIKUR) called for "urgent" action by the US Congress and the White House to facilitate the reopening of the Ceyhan pipeline between Turkey and Iraq. APIKUR called on US officials present at the Munich Security Conference to use the "prime opportunity" presented by the event to discuss the issue directly with Iraqi Prime Minister Mohammed Shia' al-Sudani, who is also present. "Congressional action is imperative to influence Iraqi leaders to immediately resolve oil and budget issues that are harming Iraq's economy and regional security interests," APIKUR spokesperson Myles Caggins said." Our Supplemental Documents Package includes the Rudaw report."*

Oil: Libya NOC "*operations are proceeding as usual across all onshore & offshore*"
On Monday, the Libya National Oil Corporation tweeted [LINK] "*The NOC confirms that its operations are proceeding as usual across all offshore and inshore locations*." This follows last weekend's protests that, for one day, shut down the ~40,000 b/d Wafa oilfield and a 0.2 bcf/d natural gas pipeline to Italy only lasted a day. The NOC says operations are cedinging as usual but did not provide any estimate of oil production levels. Recall that produciotn has been consistent for sevral months at just over 1.2 mmb/d.

Libya operations proceeding as usual

Oil: Visitors to Macau picking up but still 17% below pre-Covid
Last Sunday night, we tweeted [LINK] "*Visitors to Macau still 17% below pre-Covid. Up big YoY as China only relaxed Covid restrictions at the end of 2022. Total Jan 2024 at 2.862 mm is 83% of pre-Covid Jan 2019 of 3.425 mm. Mainland China Jan 2024 at 2.056 mm is 82% of Pre-Covid Jan 2019. #OOTT.*" Our tweet included the Arrivals for January 2024 fromMacau Statistics and Census Service [LINK]. It was a big increase YoY but that was expected given that China had only relaxed Covid restrictions at the end of 2022. But visitors are still down 17% overall vs pre-Covid and down 18% from Mainland China. Macau wrote "*Information from the Statistics and Census Service (DSEC) indicated that visitor arrivals soared by 104.7% year-on-year to 2,861,609 in January 2024, recovering to 83.5% of the level in the same month of 2019; however, the figure represented a drop of 2.8% month-on-month. Same-day visitors (1,480,098) and overnight visitors (1,381,511) leapt by 154.5% and 69.3% year-on-year respectively. Meanwhile, the average length of stay of visitors shortened by 0.4 day year-on-year to 1.2 days, with that of overnight visitors (2.2 days) and same-day visitors (0.2 day) decreasing by 0.4 day and 0.1 day respectively*." Our Supplemental Documents package includes the Macau data.

Visitors to Macau down 17% vs pre-Covid

Figure 37: Visitors to Macau – total

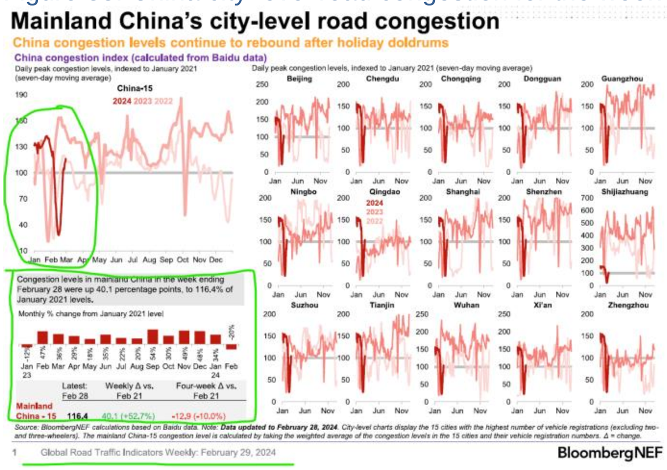
Source: Macau Statistics and Census Service

Oil: Baidu China city-level road congestion still recovering after Lunar New Year

China city-level traffic congestion

On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly Feb 29 report, which includes the Baidu city-level road congestion for the week ended Feb 28. (i) As expected, China city-level road congestion is well on its way to recovery after Lunar New Year on Feb 10. Baidu city-level road congestion was +52.7% WoW to 116.4% of Jan 2021 levels. (ii) Here's what we wrote in our Feb 25 tidbits memo: "*It may not jump out but one thing struck us when looking at the different data lines. The reports last week were on record travel within China on items like train trips. It doesn't jump out but if you look at the 2024 lines vs 2023. Recall that China removed Covid restrictions at the end of 2022 so 2023 was first open New year so it would have seen the biggest swings of people escaping the cities to go to visit relatives and friends. But when we compare 2024 vs 2023, it looks like 2024 is a little higher road congestion YoY, which makes sense given there should be more happening /working cities. But the plunge down in 2024 looks a little less suggesting less people left cities, which we would have rationalized that people haven't fully jumped back into it's time to increase consumption. So we wouldn't have been surprised by this lesser gap down. But that would seem to be inconsistent with all the reports of record rail and travel within China. The only explanation is that rail and air can be record but it's still only a small percentage of the population. And that car travel is the marginal/more mass traveler (seems logical but may not be true) so that what ultimately determines if there is more travel and therefore consumption up as people spend on holiday. So maybe road congestion is the best indicator if consumption is increasing? Something that we can't necessarily prove but worth thinking about*". Even if you look at this week against what would be the same week last year, the recovery in 2023 happened a lot faster. Some cities, especially Shijiazhuang, are lagging hard against their normal levels, and haven't seen the rebound yet. We will keep a close eye on the recovery to see where things even out to begin 2024, because as we've mentioned in our previous memos, the big question to these oil consumption forecasts is if China is going to drive demand growth. If things don't pick up on the roads, it's hard to believe that China is indeed making the big comeback every expects.

Figure 38: China city-level road congestion for the week ended Feb 28



Source: BloombergNEF

Spring Festival is "*world's largest annual human migration*"

The move back up in traffic makes sense as it is the return of people from what China calls the "*world's largest annual human migration*". Here is what we wrote in our Jan 28, 2024 Energy Tidbits memo. "*On Thursday, we tweeted [LINK] "Will we see more signs Chinese consumer is back to spending? "Spring Festival travel rush for 2024 - the world's largest annual human migration - officially starts on Friday, and is expected to set a new record of 9 billion passenger trips during the 40-day travel peak" #OOTT." Our tweet included the Global Times (state media) report "China braces for Spring Festival travel rush with record 9 billion passenger trips expected." "The chunyun or Spring Festival travel rush for 2024 - the world's largest annual human migration - officially starts on Friday, and is expected to set a new record of 9 billion passenger trips during the 40-day travel peak. From jam-packed transportation hubs to the hustle and bustle seen in markets nationwide, the anticipated booming Chinese New Year holidays are poised to continue the country's steady recovery while ushering in a lively 2024. The airport will see 7.2 million passenger trips during chunyun, a growth of more than 60 percent from the same period of 2023, the airport said on Thursday, adding that overseas passenger flow will reach 1.41 million passenger trips following the implementation of visa reciprocity policies between China and many countries." Our Supplemental Documents package includes the Global Times report.*

Oil: Caixin Manufacturing PMI at 50.9 in February, slightly up MoM

Caixin Manufacturing Feb PMI 50.9

As a reminder, there are two China manufacturing PMI data from S&P Global that come out each month. The Official Manufacturing PMI that normally comes out earlier the same day or the day before the Caixin Manufacturing PMI data that we track. We have focused on the Caixin Manufacturing PMI as it is viewed as more of a leading indicator for how the China recovery is doing as it is a more of a smaller Chinese company who are export-oriented PMI and exports have been the big driver of China for the past 20 years. The Caixin Manufacturing PMI for February was released at 6:45pm MT Thursday night [LINK] and we tweeted [LINK] "*Continued positive view from China smaller & export oriented firms. China Caixin Manufacturing PMI Feb 50.9 (est 50.7) vs Jan 50.8, Dec 50.8, Nov 50.7, Oct 49.5. 4th straight month of growth.*" Our Supplemental Documents package includes Caixin Manufacturing PMI report.

Figure 39: China Caixin General Manufacturing PMI

Source: Caixin, S&P Global

Oil: Trafigura 2024 oil demand growth stronger than most are expecting

Trafigura sees stronger 2024 oil demand

Trafigura Chief Economist Saad Rahim was on Bloomberg and made a number of positive comments on oil demand for 2024. On Wednesday morning, we tweeted [LINK] "*One for #Oil bulls. "now you're starting to see [Oil] demand revisions upwards". financial markets "still looking at this saying do we really buy into this demand story that at least the physical market is telling us". "if you're saying demand growth is now, instead of the 1.1 that people were expecting, maybe it is 1.7, 1.8." Trafigura @saadrahim 👇SAF transcript. #OOTT* Thx @GuyJohnsonTV @annaedwardsnews @KritiGuptaNews." A few of his Rahim's key comments were "*But now you're starting to see [Oil] demand revisions upwards, and people saying, you're hearing the phrase upside risk a lot more than you have in the past couple years".* "*a lot of that is financial markets, financial players, macro players still looking at this saying do we really buy into this demand story, that at least the physical market is telling us."* And on the potential for Saudi and OPEC to bring more barrels back *"But you know if you're saying demand growth is now, instead of the 1.1 that people were expecting, maybe it is 1.7, 1.8. If it's something like that, if it's like that and that's why prices have moved higher. Rather than just a supply side response, which may be temporary, you don't want to bring barrels back in too early if it's just a supply side issue. Right. But if it's a demand and it looks like it's actually holding up and its structural, then you can start to think about adding some of those barrels back."* Our Supplemental Documents package includes the longer transcript we made of Rahim's key comments.

Oil: Wood Mackenzie forecasts oil demand +1.9 mmb/d in 2024, +1.4 mmb/d in 2025

Wood Mackenzie sees oil demand +1.9 mmbd in 2024

Wood Mackenzie presented its oil demand outlook and it is right in line with comments by Trafigura's Rahim in that they expect oil demand +1.9 mmb/d YoY in 2024 and that is much higher than what most analysts expect. Wood Mackenzie spoke on Wednesday at the Energy Institute conference on London. Wood Mackenzie posted "*APAC Markets driving global oil*" on their forecast that "*global oil demand will rise by 1.9 million barrels a day (B/d) in 2024 with key markets in the Asia Pacific (APAC) region being the main driver*".

Unfortunately, we checked all day yesterday and again up until our early 4am MT news cut off this morning, the link to the Wood Mackenzie posting [LINK] was still saying "*We are performing routine maintenance. The site is temporarily unavailable*. But Reuters reported on the comments [LINK] "*Global oil demand will grow by 1.9 million barrels per day (bpd) this year, according to a prediction by energy research company Wood Mackenzie, a forecast close to the Organisation of the Petroleum Exporting Countries' (OPEC) estimate for 2024. In remarks shared with delegates at a Wood Mac briefing on Wednesday during the Energy Institute conference in London, the firm's vice president of oils research Alan Gelder predicted, like most other forecasters, that the bulk of that rise would come from China and India. Forecasts for oil demand growth in 2024 differ dramatically, reflecting contrasting views on how quickly the world will shift from fossil fuels. OPEC believes oil use will keep rising over the next two decades, while the IEA, which represents industrialised countries, predicts it will peak by 2030. OPEC expects another year of relatively strong demand growth of 2.25 million bpd, while the International Energy Agency expects much slower growth of 1.22 million bpd. Meanwhile, a wide-ranging Reuters survey showed most analysts expect global oil demand to grow by somewhere between 1 million and 1.5 million bpd in 2024. Wood Mac's prediction for demand growth in 2025 is lower at 1.4 million bpd. OPEC expects growth of 1.85 million bpd in 2025, while the IEA is expected to reveal its 2025 prediction in April."*

Oil: Brent prompt less fourth contract spread in backwardation

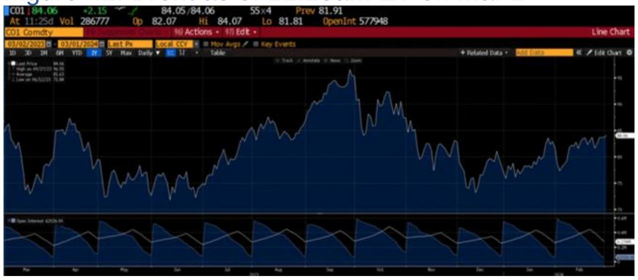
Brent backwardation

We always like to see what the forwards prices point to for trader sentiments. On Wednesday night, we were watching Bloomberg China Open and they flashed up a chage of Brnt prompt less fourth contract and how the increasing backwardation was pointing to higher prices. So we tweeted [LINK] *"Brent backwardation. Chart on a few minutes ago on @business China Open. @YvonneManTV #OOTT."* Then on Friday, we tweeted an update [LINK] *"Brent +$0.62 since Wed close but still Brent backwardation. updated brent spread and price graph as of 9:24am MT vs Wed night. #OOTT."* Below are the charts to our Friday tweet.

Figure 40: Brent prompt – fourth contract spread as of 11:24am ET Mar 1

Source: Bloomberg

Figure 41: Brent as of 11:25am ET on Mar 1



Source: Bloomberg

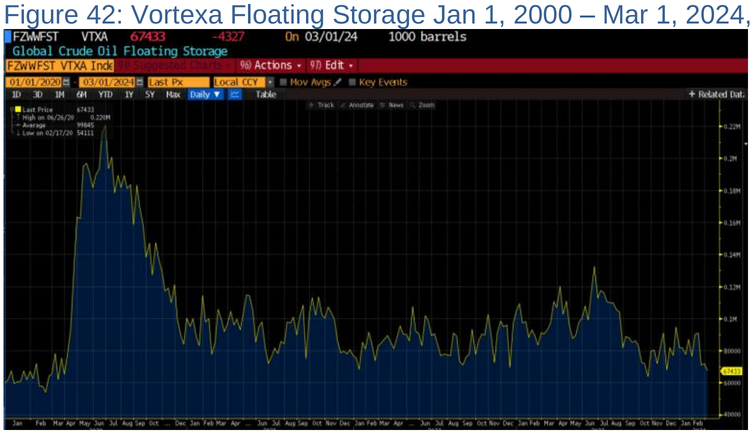
Oil: Vortexa crude oil floating storage est 67.43 at Mar 1, -4.33 mmb WoW

Vortexa floating storage

We are referencing the Vortexa crude oil floating storage data posted on the Bloomberg terminal as of 9am MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments on the new estimates are compared to the prior week's Vortexa estimates posted on Bloomberg on Feb 26 at 9am MT. (i) Yesterday, we tweeted [LINK] "*#Oil floating storage 67.43 mmb Mar 1, Seems floating is normalizing at lower (<80 mmb) levels as refiners/tankers have had 4-5 wks to work in longer tanker trips. ie. longer tanker trips = lower floating storage especially if OPEC+ keeps cuts? Thx @vortexa @business #OOTT.*" (ii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Mar 1 at 67.43 mmb, which is -4.33 mmb WoW vs revised up Feb 23 of 71.76 mmb. Note Feb 23 was revised +7.30 mmb vs 64.46 mmb originally posted at 9am on Feb 26. (iii) It seems like oil floating storage/longer tanker travel has mostly sorted out to a new normal. This week was mostly downward revisions after three weeks of upward revisions. It feels like refineries and shippers have have now had well over a month to work thru the longer tanker trips into deliveries/schedules, which seemed to return oil to storage that was used to fill in as deliveries took longer. If the oil delivery system has now adapted to the longer tanker travel, it makes sense that a world of longer tanker travel is likely to have floating storage at lower (ie. <80 mmb) levels. (iv) Revisions. Other than the +7.30 mmb revision to Feb 23, all other revisions for the past several weeks were downward revisions. This follows the prior few weeks of upward revisions. We have to believe this is likely due to likely due to the normalization of the forced longer than originally expected tanker travel voyages. Prior to the normalization, floating storage was needed to fill the gap for the longer tanker voyages. Now, it looks like we are seeing the longer longer tanker travel times increasingly worked into refinery delivery planning and schedules. Here are the revisions compared to the estimates originally posted on Bloomberg at 9am MT on Feb 26. Feb 23 revised +7.30 mmb. Feb 16 revised -3.14 mmb. Feb 9 revised -0.89 mmb. Feb 2 revised -3.70 mmb. Jan 26 revised -3.46 mmb. Jan 19 revised -1.538 mmb. Jan 12 revised -1.99 mmb. (v) There is a wide range of floating storage estimates for the past seven weeks, but a simple average for the past seven weeks is 79.21 mmb vs last week's then seven-week average of 81.71 mmb. The decrease is due to the downward revisions. (vi) Also remember Vortexa revises these weekly storage estimates on a regular basis. For example, when most report on the Vortexa data on Monday morning, they will be reporting on different estimates. We do not track the revisions through the week. Rather we try to compare the first posted storage estimates on a consistent week over week timing comparison. Normally we download the Vortexa data as of

Saturday mornings around 9am MT. (vii) Note the below graph goes back to Jan 1, 2020 to show the run up to Covid and then how Covid started to impact Covid in March/April 2020. (viii) Mar 1 estimate of 67.43 mmb is -22.83 mmb YoY vs Mar 3, 2023 of 90.26 mmb. (ix) Mar 1 estimate of 67.43 mmb is s -152.88 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (x) Mar 1 estimate of 67.43 mmb is +1.82 mmb vs pre-Covid Feb 28, 2020 of 65.61 mmb. (xi) Below are the last several weeks of estimates posted on Bloomberg as of 9am MT Mar 2, 9am MT Feb 24, and 9am MT Feb 17.

Figure 42: Vortexa Floating Storage Jan 1, 2000 – Mar 1, 2024, posted Mar 2 at 9am MT



Source: Bloomberg, Vortexa

Figure 43: Vortexa Estimates Posted 9am MT on Mar 2, Feb 24, and Feb 17

Posted Mar 2, 9am MT		Feb 24, 9am MT		Feb 17, 9am MT	
FZWWFST VTXA Inde 01/01/2020 - 03/01/2024		FZWWFST VTXA Inde 01/01/2020 - 02/23/2024		FZWWFST VTXA Inde 01/01/2020 - 02/16/2024	
Date	Last Px	Date	Last Px	Date	Last Px
Fr 03/01/2024	67433	Fr 02/23/2024	64460	Fr 02/16/2024	70848
Fr 02/23/2024	71760	Fr 02/16/2024	74206	Fr 02/09/2024	90765
Fr 02/16/2024	71072	Fr 02/09/2024	91806	Fr 02/02/2024	89936
Fr 02/09/2024	90919	Fr 02/02/2024	93654	Fr 01/26/2024	75919
Fr 02/02/2024	89953	Fr 01/26/2024	79907	Fr 01/19/2024	87812
Fr 01/26/2024	76451	Fr 01/19/2024	88387	Fr 01/12/2024	79643
Fr 01/19/2024	86864	Fr 01/12/2024	79539	Fr 01/05/2024	84066
Fr 01/12/2024	77553	Fr 01/05/2024	83963	Fr 12/29/2023	84046
Fr 01/05/2024	81870	Fr 12/29/2023	84075	Fr 12/22/2023	97991
Fr 12/29/2023	82007	Fr 12/22/2023	97485	Fr 12/15/2023	77156
Fr 12/22/2023	94772	Fr 12/15/2023	79495	Fr 12/08/2023	83942

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

Vortexa floating storage by region

Bloomberg also posts the Vortexa crude oil floating storage in key regions, but not all regions of the world. The regions covered are Asia, Europe, Middle East, West Africa and US Gulf Coast. We then back into the "Other" or rest of world. (i) As noted above, Feb 23, in total, was revised +7.30 mmb. Other was revised +3.06 mmb and Europe was revised +1.79 mmb vs the estimates posted as of 9am Feb 24 for Feb 16. (ii) As noted above, Mar 1 of 67.43 mmb was -4.33 mmb WoW vs revised up Feb 23 of 71.76 mmb. The major WoW changes by region were Asia -7.98 mmb WoW and Europe +2.26 mmb WoW. (iii) Mar 1 at 67.43 mmb is -65.11 mmb vs the summer June 23, 2023 peak of 132.54 mmb. Recall Saudi Arabia started its voluntary 1 mmb/d production cuts on July 1, 2023. The major changes by region vs the summer June 23 peak are Asia -40.92 mmb and Other -22.30 mmb. (iv) Below is the table we created of the WoW changes by region posted on Bloomberg at of 9am MT yesterday. Our table also includes the "Original Posted" regional data for Feb 23 that was posted on Bloomberg at 9am MT on Feb 24.

Figure 44: Vortexa crude oil floating by region

Vortexa Crude Oil Floating Storage by Region (mmb)				Original Posted	Recent Peak	
Region	Mar 1/24	Feb 23/24	WoW	Feb 23/24	Jun 23/23	Mar 1 vs Jun 23
Asia	32.53	40.51	-7.98	40.21	73.45	-40.92
Europe	6.83	4.57	2.26	3.66	6.21	0.62
Middle East	7.69	7.08	0.61	5.29	6.76	0.93
West Africa	5.10	5.92	-0.82	4.68	7.62	-2.52
US Gulf Coast	0.13	0.13	0.00	0.13	1.05	-0.92
Other	15.15	13.55	1.60	10.49	37.45	-22.30
Global Total	67.43	71.76	-4.33	64.46	132.54	-65.11
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Mar 2						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

Oil: Asia/Pacific international air travel MoM growth but still below pre-Covid

Asian Pacific air traffic in Jan

On Thursday, the Association of Asia Pacific Airlines released its January traffic results [LINK] which is comprised of aggregate data across a total of 40 Asia Pacific airline carriers. (i) Air travel. International passenger air travel on the 40 airlines is up big YoY, but still well below 2019 levels. The AAPA reports preliminary 2023 travel figures "*January saw a continuation of growth in air cargo markets, propelled by demand related to the festive Lunar New Year season. International air cargo demand, as measured in freight tonne kilometres (FTK), recorded a strong 22.5% year-on-year increase for the month, extending the rebound seen in the last quarter of 2023. Nevertheless, growth in offered freight capacity continued to outpace demand, driven by the ongoing recovery in belly-hold capacities of international passenger operations. For the month, offered freight capacity rose by 25.8% year-on-year, leading to a 1.6 percentage point decline in the average international freight load factor to 57.5%."* (ii) Air cargo was up big at +22.5% YoY, measured in Freight Tonne Kilometres (FTK). "*Meanwhile, January saw a continuation of growth in air cargo markets, propelled by demand related to the festive Lunar New Year season. International air cargo demand, as measured in freight tonne kilometres (FTK), recorded a strong 22.5% year-on-year increase for the month, extending the rebound seen in the last quarter of 2023. Nevertheless, growth in offered freight capacity continued to outpace demand, driven by the ongoing recovery in belly-hold capacities of international passenger operations. For the month, offered freight capacity rose by 25.8% year-on-year, leading to a 1.6 percentage point decline in the average international freight load factor to 57.5%*". Below is a snapshot of the APAA's traffic update.

Figure 45: APAA Preliminary International Air Traffic Data

International Scheduled Services of Asia Pacific Airlines

International	Jan-24	Jan-23	% Change
Passengers (Thousand)	27,040	18,099	+ 49.4%
RPK (Million)	99,672	67,201	+ 48.3%
ASK (Million)	124,775	82,460	+ 51.3%
Passenger Load Factor	79.9%	81.5%	- 1.6 pp
FTK (Million)	5,589	4,564	+ 22.5%
FATK (Million)	9,713	7,723	+ 25.8%
Freight Load Factor	57.5%	59.1%	- 1.6 pp

Effective January 2020, the dataset comprises aggregated traffic data from the following 40 Asia Pacific based carriers: 3K, 5J, 6E, 7C, 9C, 9W, AI, AK, BI, BR, CA, CI, CK, CX, CZ, D7, GA, HO, HU, IX, JL, JQ, KA, KC, KE, KZ, MH, MU, NH, NZ,

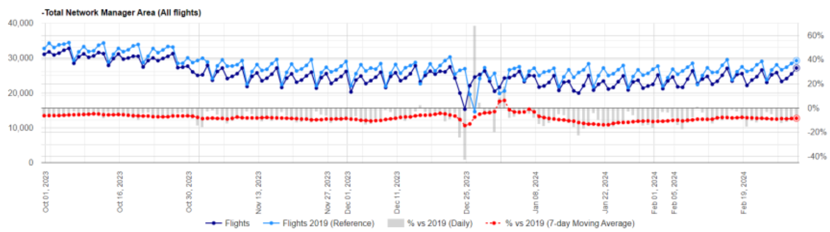
Source: AAPA

Oil: Europe airports daily traffic 7-day average is -8.5% below pre-Covid levels

Europe airports daily traffic

Other than over Christmas, European daily traffic at airports continues to be stuck below pre-Covid levels. As of our 7am MT news cut off, the latest Eurocontrol daily traffic at Europe airports shows the 7-day rolling average to then end of Feb 29 is unchanged WoW at -8.5% below pre-Covid 2019 levels. Eurocontrol updates this data daily and it is found at [LINK]

Figure 46: Europe Air Traffic: Daily Traffic Variation to end of Feb 29



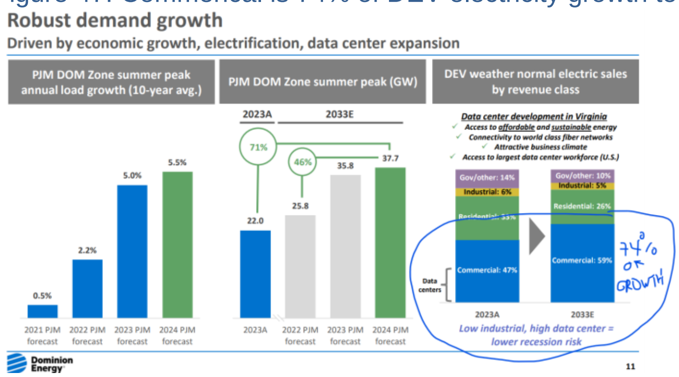
Source: Eurocontrol

Energy Transition: Data centers/AI drive big electricyt demand for Dominion Energy

Data centers drive electricity growth

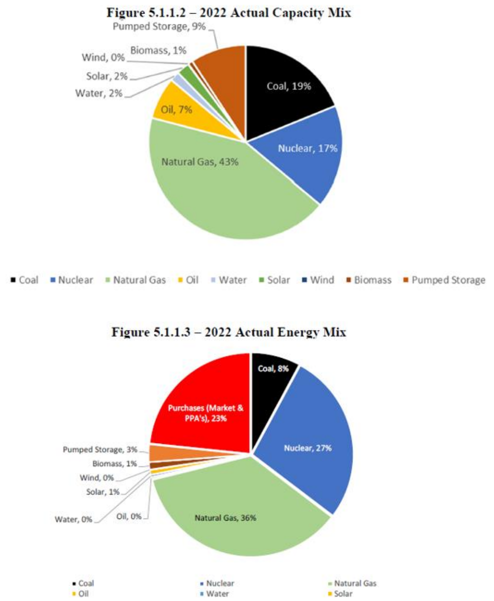
We have been highlighting the stronger and earlier than expected electricity demand from data centers/AI and how they need 24/7 power ie. natural gas, nuclear and coal. Dominion Energy held its investor day on Friday, When we saw the released and slide deck on Friday morning, we tweeted [LINK] "*Data centers/AI growth = massive need for 24/7, not ntermittent, power. $D highlights 74% of electricity growth is commercial driven by data centers/AI. Can do so only because of its #Nuclear #NatGas #Coal. Green energy was 14% of 2022 capacity but only 5% of actual. #OOTT.*" Dominion highlighted data center/AI power growth and how Virginia was the dominant place for data center/AI in the world. And how DEV (Dominion Energy Virginia) was the dominant player. Dominion forecasts big growth in electricity consumption in Virginia and "commercial" is 74% of the growth in demand in next 10 years. And commercial is driven by data centers/AI. Our tweet highlighted how Dominion is able to be the dominant player because it's electricity supply is 95% driven by 24/7 fuel from nuclear, natural gas and coal. In their 80 slides for the investor day, we didn't see anywhere their electricity capacity mix or their actual energy supply mix. However, our tweet included their filed data with the state of Virginia for their Virginal 2022 actuals for energy capacity mix and energy supply mix. In 2022, they had 14% of the energy capacity was clean energy. However in 2022, clean energy only supplied 5% of the actual energy supplied. Ie. data centers/AI need 24/7 power and Dominion is fortunate that 95% of its power was from nuclear, natural gas and coal. It reminds that natural gas will be needed for the stronger and earlier than expected growth in power demand from data centers/AI. For example, there is a good slide that shows how a data center supporting AI can required 2-3x the electricity that a typical data center with AI. We recommend reviewing the Dominion slides as they provide good overall sector background on data centers/AI. Our Supplemental Documents package includes some of the slides.

Figure 47: Commerical is 74% of DEV electricity growth to 2033



Source: Dominion Energy

Figure 48: Dominion's Virginia 2022 actual energy capacity mix and actual energy mix



Source: Dominion Energy

Energy Transition: Cdn largest pensions, like CPPIB, moving too slowly on climate

CPPIB called out for its climate score

On Tuesday, we tweeted [LINK] *"#CPPIB called out for lower climate scores. Why? See 👇12/15/21 tweet, @cppib was early to recognize there was a rapidly emerging energy security issue (they were right) so a "new investment approach" was needed including #Oil #NatGas as a strategic sector". #OOTT."* To be fair, the SHIFT annual Canadian Pension Climate Report Card was on more than CPPIB. It is what they describe as "*an independent benchmark for evaluating the quality, depth and credibility of climate policies for 11 of Canada's largest pension managers."* And Shift found the group of 11 was on an overall basis not doing great. SHIFT wrote "*This second edition finds that despite incremental progress, Canadian pension funds remain off track, especially compared to international peers. Far more work is needed to ensure Canadian pension managers fulfill their fiduciary duty to invest in plan members' long-term interests and protect Canadians' retirement security in a pathway aligned with the Paris Agreement goal of limiting global heating to 1.5°C.*" But SHIFT also called out CPPIB for its lower scores in 2023 vs 2022. One other key reminder from the SHIFT release and the attached Canadian Press report on the report. They remind how the IEA analysis and forecasts, even if only scenarios, are taken and messaged as being expert. This Shift report writes "*Rather than heeding expert advice from the International Energy Agency and acknowledging the scientific consensus on the need for the phase-out of fossil fuels*." And as we have noted in recent memos, the western governments like Canada use the IEA scenarios as data and not what if scenarios. The Canadian Press report how a former CPPIB executive, now head of CAPP noted how CPPIB realized the need to invest in energy security ie. oil and gas. This was the major shift that CPPIB made on Dec 15, 2021 when they backed off their climate push and called oil and gas a strategic sector. Our Supplemental Documents package includes the SHIFT release and Canadian Press report.

12/15/21: oil & gas are strategic sectors in CPPIB's "new" investment approach

No one should be surprised that CPPIB was called out by SHIFT as CPPIB was the first major pension fund to look at the energy picture and realize that energy security would emerge as a significant concern and they came to this view before Russia invaded Ukraine. As a result, CPPIB announced a new investment approach that put oil and gas in their list of strategic sectors. Here is what we wrote in our Dec 19, 2021 Energy Tidbits memo. "*Energy Transition – CPPIB's #MacronMoment, a "new" oil & gas investment approach. There was a significant positive to oil and gas investing this week and one that we expect others to follow, and this will lead to more long term investor capital allocation to oil and gas. On Wednesday, CPPIB announced its "new" investment approach in its release "CPP Investments highlights importance of decarbonizing hard-to-abate sectors in addressing climate change". [LINK] This is a significant change for a couple of reasons and one that we have been expecting based on the feedback we hear from long term investors. CPPIB calls it a "new investment approach" including on oil and gas. (i) CPPIB is a leader and is providing the messaging framework that we expect others to follow. Big long term investors like CPPIB have mostly all come out plans on how they taking their investment strategy to Net Zero. But, in discussions, more are realizing the Energy Transition isn't happening as fast as expected so their challenge is how to slow play* *their capital allocation to Net Zero. CPPIB provide the messaging on how they will do so. (ii) CPPIB now calls oil and gas a "strategic sector" and one for capital allocation. CPPIB said "helping businesses decarbonize is critical to addressing climate change, according to a recent perspective published by Canada Pension Plan Investment Board (CPP Investments). The perspective, "Investing to enable an economy-wide evolution to a low-carbon future," highlights the opportunity decarbonization presents for long-term investors, noting the need to address a particularly serious obstacle to decarbonization: strategic sectors that are essential, high-emitting and hard-to-abate.The perspective also outlines CPP Investments' new investment approach which aims to identify, fund and support companies that are committed to creating value by lowering their emissions over time, consistent with CPP Investments' time horizon advantage. "High-emitting companies that successfully navigate the economy-wide evolution to a low-carbon future will preserve and deliver embedded value for patient long-term investors like CPP Investments," said Deb Orida, Global Head of Real Assets & Chief Sustainability Officer. "This new investment approach complements the Fund's ongoing commitment to investing in companies that have the potential to develop innovative climate technologies around the world and furthers our existing capabilities in technologies that enable the energy evolution." Strategic sectors that are essential, high emitting and hard-to-abate within this investment approach include agriculture, chemicals, cement, conventional power, oil and gas, steel and heavy transportation. The successful decarbonization of these sectors is not only essential to meet wider net-zero ambitions, but also to sustain economic growth, stability and a responsible transition." Our Supplemental Documents package includes the CPPIB announcement."*

Energy Transition: Alberta taxing EVs to contribute to road maintenance

Alberta to tax EVs

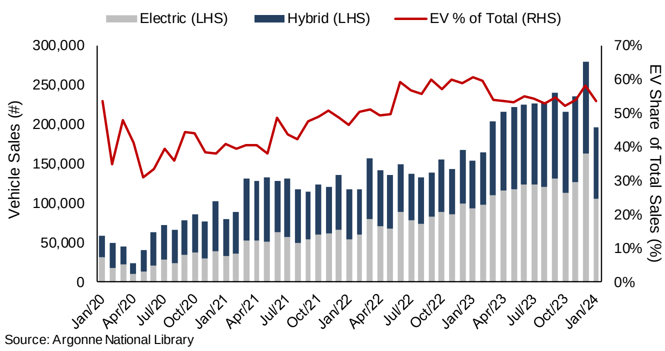
Alberta decided to deal with an issue that will be impacting all provinces and states – how/when to tax EVs so that they pay a share of sort to road maintenance. And this wil be an increasing issue every yar as the aging roads requires more maintenance capital and increasing EVs means less cars are paying fuel taxes to fund road maintenance. Alberta introduced its 2024 budget on Thursday. We were in transit on Thursday afternoon so we didn't tweet until Thursday night [LINK] "*Alberta introduces #EV tax so EVs pay their fair share towards roads maintenance. This will be an issue that all provinces/states will have to deal with sooner or later - how do they roll in EVs to pay a fair share to fund maintenance of an aging road system. #OOTT"* Our tweet included the excerpt from the Alberta budget that said "*Electric Vehicle Tax. While the number of electric vehicles (EVs) in Alberta is currently low, EVs are being purchased in ever-increasing numbers. EVs tend to be heavier than similar internal combustion vehicles and cause more wear and tear on provincial roadways while their owners pay no fuel tax. While fuel tax revenue is not dedicated to funding construction and maintenance of provincial roads, there are nevertheless fairness concerns with drivers of other vehicles and longer-term challenges associated with declining fuel tax revenue. Budget 2024 introduces a new $200 annual tax on EVs, with a targeted effective date of January 1, 2025. The tax will be paid when owners register their vehicles and will be in addition to the existing registration fee. This tax rate is in line with the estimated annual fuel tax paid by the driver of a typical internal combustion vehicle in Alberta. The tax will not apply to hybrid vehicles. More details regarding the tax will be made available when* *legislation is introduced in fall 2024. Revenue from the tax is estimated at $1 million in 2024-25 and is expected to grow as EV adoption accelerates, reaching $5 million in 2025-26 and $8 million in 2026-27."*

Energy Transition: Hybrids take market share from EVs, EV down big MoM in US

Hybrids gaining share from EVs

To be fair, Jan is normally a down month for vehicle sales But the trend from H2/23 is continuing – EVs are not being adopted anywhere near as fast as assumed in the Energy Transition plans and aspirations. And now most are aware that Hybrids also started taking share from EVs in key markets like the US. We look at the Argonne National Laboratory monthly light duty electric drive vehicles monthly data [LINK]. The headlines on the monthly data have been on how EV sales have leveled off over the past few months. We agree, but we thought the more interesting trend is how hybrids looks to be taking market share from EVs. Below is a graph we made of the ANL data. EVs as a % of EVs + Hybrids sales reached its peak of 60.8% in Jan 2023, and since we first created the graph in October, we saw this month's data bring the EV share of total down -230bps from 52.0% in October to 53.6% in January. We expected the big spike in December 2023, as the list of EVs eligible for the US cash credit was about to get way shorter and people who were already thinking of buying rushed to get them before they became ineligible in January. December tends to be a good month for car sale in general as well. Below is our graph tracking EV and Hybrid sales.

Figure 49: US EV and Hybrid monthly sales

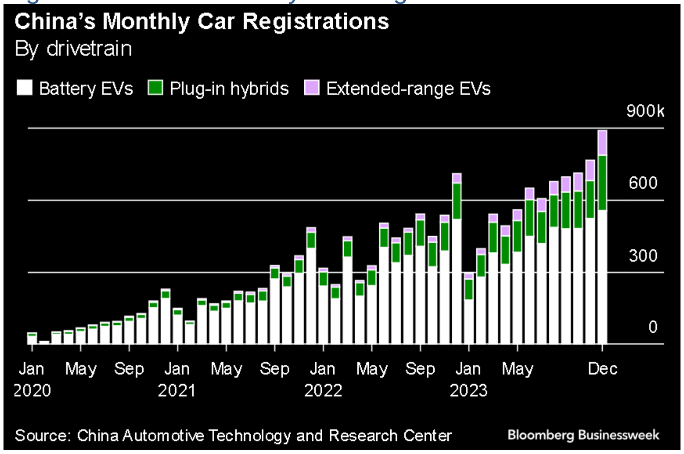


Source: Argonne National Library

Similar EV/Hybrid sales trends have also emerged in China

Last week's (Feb 25, 2024) Energy Tidbits memo highlighted how the same EV and Hybrid trends being seen in the US have also emerged in China. Here is what we wrote last week. "*It's not just in the US that higher relative cost of EVs (especially as incentives wind down) and range anxiety is slowing down growth rates in EV sales including a shift to more hybrids. It is also happening in China. China is the recognized big EV growth country in the past few years on how quickly EVs have grown driven by what the world has now recognized – the ability for China to produce very low cost EVs. The world holds up China as the example to what the world can do with EVs growth aspirations. (i) But, it was interesting to see China's NEV (New Energy Vehicles) sales show similar trends as in the US. On Thursday, we tweeted [LINK] "China phased out EV incentives = Accelerated growth in Hybrids over EVs. "growing preference for plug-in hybrids, which solve range anxiety and are more* *affordable than battery-only cars" EV buyers "mainly concentrated in large, wealthy metropolises ....residents of smaller cities & rural areas .. seem to prefer more affordable options & a longer driving range" Thx @business @Lindadalew @hongjinshan Chunying Zhang #OOTT." Bloomberg's Wed report "Chinese Buyers Embracing Plug-In Hybrids Stalls Gains for EVs" highlighted a number of key EV trends being seen in the US. (ii) Similar to the US, EV cost and fears of range anxiety led to an increase in hybrids vs EVs. Bloomberg wrote "A growing preference for plug-in hybrids—which solve range anxiety and are more affordable than battery-only cars—has seen the segment become the growth engine for China's market for electrified vehicles, especially after national EV subsidies were phased out at the end of 2022. Last year sales of plug-in hybrids increased 83%, compared with 21% growth for battery-only EVs. The trend has continued this year:" (iii) Reduced EVs incentives hits sales EVs sales and a move to cheaper hybrids. Bloomberg wrote "A growing preference for plug-in hybrids—which solve range anxiety and are more affordable than battery-only cars—has seen the segment become the growth engine for China's market for electrified vehicles, especially after national EV subsidies were phased out at the end of 2022." (iv) Wealthier city dwellers will buy EVs but less so for rural areas. Bloomberg wrote "Their customers are mainly concentrated in large, wealthy metropolises such as Beijing, Shanghai and Shenzhen, where drivers have embraced EVs. Residents of smaller cities and rural areas, where EV makers would like to make inroads, seem to prefer more affordable options and a longer driving range." Our Supplemental Documents package includes the Bloomberg report."*

Figure 50: China Monthly Car Registrations



Source: Bloomberg

Energy Transition: Toyota hybrid Prius #1 in ACEEE 2024 GreenerCar Rankings

Hybrid Prius gets #1 green ranking

On Wednesday, we tweeted [LINK] "*Toyota will love it - Prius is #1 in @ACEEEdc 2024 GreenerCar Rankings Full cycle score "cost to human health from air pollution associated with vehicle manufacturing & disposal, the production & distribution of fuel or electricity, & vehicle tailpipe emissions*". ACEEE does something that is overlooked in EVs – the full cycle climate impact of producing EVs. The American Council for an Energy-Efficient Economy (ACEEE) GreenerCars ratings ranks cars by how environmentally friendly they are.

On the 2024 rankings list, the top 3 were: #3 Mini Cooper SE (EV), #2 Lexus RZ 300e (EV), and #1 the Toyota Prius (PHEV). At the bottom of the list (top of the Meanest list), were: #3 Ford F150 Raptor, #2 Ram 1500, and #1 Mercedes AMG G63 (all gas cars/trucks). Note that the winner of the list, the Prius, is a plug-in electric hybrid, not a pure EV. Interestingly, the Tesla Model 3 Long Range placed #116 with a score of 55, and the Model 3 RWD placed #117 from the top with a score of 55. Keep in mind that to make these rankings, they take into account the production impact – not just how little gas gets burnt. Note that lithium batteries are almost impossible to recycle and have a very bad impact on the environment during production and disposal, which must have gotten factored in when making this list. Below is a list of the top 12 cars on the Greenest list. Our Supplemental Documents Package includes the ACEEE report.

Figure 51: ACEEE Greenest Car Rankings

Rank	Make & Model	Powertrain	Green Score	MSRP	Estimated Annual Fuel Cost*
1	Toyota Prius Prime SE	PHEV	71	$32,975	$529
2	Lexus RZ 300e	EV	67	$55,150	$651
3	Mini Cooper SE	EV	67	$30,900	$747
4	Nissan Leaf	EV	66	$28,140	$741
5	Toyota bZ4X	EV	66	$43,070	$689
6	Toyota RAV4 Prime	PHEV	64	$43,690	$741
7	Hyundai Elantra Blue	Gas Hybrid	64	$26,250	$864
8	Hyundai Kona Electric	EV	63	$34,050	$695
9	Toyota Camry LE	Gas Hybrid	63	$28,855	$907
10	Kia EV6	EV	63	$43,975	$689
11	Toyota Corolla	Gas Hybrid	62	$23,500	$944
12	Hyundai Ioniq 5	EV	62	$41,650	$737

*ACEEE analysis using EIA data of annual cost—from gasoline, electricity, or a combination—of driving 15,000 miles

Source: American Council for an Energy-Efficient Economy

Energy Transition: Even Democrats oppose ban on ICE car sales

Americans oppose ban on ICE sales

On Tuesday, we tweeted [LINK] "*More to support why Biden will back off EV targets as reported 02/17 by 👇 @CoralMDavenport @APIenergy @Ipsos poll: not a banning new ICE vehicles is not a winning issue. A toss up among Dems, more opposed by Independents. ICE vehicles will be needed for longer! #OOTT][LINK].*" We expect Biden to back off some of his EV aspirations with the reality check that Americans just aren't buying EVs at the big growth rate assumed in his energy transition aspirations. The API posted the "API American Energy Policy Perception Survey" conducted by Ipsos. [LINK]. Our tweet included the response to a question "*Government regulations that would ban new gasoline, dieserl and hybrid vehicles – Do you support or oppose the following*". All groups were opposed to the ban: Republicans 92% opposed, Independents 80% opposed and even Democrats 56% opposed. Trump is anti-EV and we have to believe Biden backs off or goes slow on pro EV moves to avoid giving any additional edge to Trump.

Figure 52: API American Energy Policy Perception Survey

Q2_3. Government regulations that would ban new gasoline, diesel and hybrid vehicles - Do you support or oppose the following:

	Total (N=1,132)	Republican (N=358)	Democrat (N=364)	Independent (N=359)
Support (net)	**23%**	**8%**	**43%**	**19%**
Strongly support	5%	3%	9%	2%
Somewhat support	18%	5%	34%	17%
Skipped	1%	0%	1%	1%
Somewhat oppose	32%	20%	40%	37%
Strongly oppose	43%	72%	16%	42%
Oppose (net)	**75%**	**92%**	**56%**	**80%**

Source: API, Ipsos

Energy Transition: Apple reportedly cancels its EV AppleCar project

Apple cancelling AppleCar project

On Tuesday after markets, we tweeted [LINK] "*Another reason why EVs ambitions will take longer. @markgurman reports Apple cancels the AppleCar project. Forget the sunk $billions spent to date, it means a technology leader won't be investing $ billions to lead/drive EVs advancements. #Oil will be needed for longer. #OOTT.*" Bloomberg had just broken the news that "*Apple Inc. is canceling a decadelong effort to build an electric car, according to people with knowledge of the matter, abandoning one of the most ambitious projects in the history of the company. Apple made the disclosure internally Tuesday, surprising the nearly 2,000 employees working on the project, said the people, who asked not to be identified because the announcement wasn't public. The decision was shared by Chief Operating Officer Jeff Williams and Kevin Lynch, a vice president in charge of the effort, according to the people.*" And "*The decision to ultimately wind down the project is a bombshell for the company, ending a multibillion-dollar effort called Project Titan that would have vaulted Apple into a whole new industry. The tech giant started working on a car around 2014, setting its sights on a fully autonomous electric vehicle with a limousine-like interior and voice-guided navigation.*" Our tweet noted that it wasn't so much the sunk costs to date but rather that the EV sector wouldn't have the benefit of the future billions to be spent by a technology leader to help advance EVs. That was the negative we see with Apple cancelling its AppleCar project. Our Supplemental Documents package includes the Bloomberg report.

Energy Transition: No surprise, Edmonton e-bus project turned out close to useless

Edmonton E-bus

We put this item in from a few weeks ago not to pick on Edmonton but there were some good rules of thumb for Alberta/Sask electric vehicle range based on Edmonton's failed e-bus project. What is useful here is that the negatives on the e-bus are based on the disclosure from Edmonton's lawsuit on their e-bus purchase so it will be as fact-based as possible. The Edmonton Journal report [LINK] "*Keith Gerein: Edmonton faces questions of calculated risk following $82-million electric bus failure*" was focused on the decision making process. It sounds like the e-bus project was a big failure because the e-bus did not deliver the range in the winter and in warmer weather. The criticism is who in a Cdn weather would expect the e-bus to deliver range capacity and not expect to see underperformance on range. Unfortunately for Edmonton, it means the buses are close to useless and that they have to return to diesel buses. They noted that the buses had about half the headline range projected for Edmonton's climate and then 2/3 or that Edmonton projected range for Exteme cold range. *"Specifically, the city claims the buses have fallen well short of Proterra's performance guarantees for Edmonton's climate that specified an operating range of 328 km at the beginning of battery life and 268 km in extreme cold. "None of the buses have ever* *achieved 328 km on a single charge," the proof of claim says. "On average, the bus range has been approximately 165 km in the winter and, at best, 250 km in warmer weather*". So the e-bus only delivered half in the winter and ~75% in warmer weather. What isn't disclosed is what is the operating range capacity for the buses in the normal range temperatures of 70F ie. the ranges that are disclosed in all EVs. Rather, they only disclose the lesser range to operate in Edmonton climate. So the 328 km starting point would be some higher number for the normal disclosed range under 70F. We don't know how much higher. But then the rule of thumb was relative to the range under normal Edmonton climate, to use 80% of that for extreme cold. We just don't know how much lower the 80% would be of the normal range under 70F. The other reminder here is that these are when the battery is new and battery life degrades. So there is a rule of thumb here, at least for e-bus, that, relative to the promised range for normal Edmonton climate, the Edmonton e-bus only achieved ~half of promised range in winter and ~75% of promised range in warmer temperatures. Our Supplemental Documents package includes the Edmonton Journal report.

Energy Transition Exxon CEO direct air capture/sustainable aviation fuel reality check

Exxon CEO reality checks

We shouldn't have been surprised to see there wasn't much coverage of Fortune's report on its interview as the last thing the pro climate change media side give credit to Exxon for its reality check on the energy transition. (i) Surely no one disagrees with the concept that we all want a planet that has cleaner air and is more sustainable. Our concern for several years has been the western governments put out an aspiration as an achievable plan despite it being dependent some unknown technological advancements and key elements like sustainable aviation fuel that everyone knew would be hugely expensive. It's why we have said for several years the Energy Transition will take way longer, cost way more and be a bumpy/rocky road. So Exxon CEO Darren Woods comments weren't going to get big attention. (ii) Woods had a simple message that people aren't prepared to pay the price for the energy transition. Fortune wrote "*To have any chance of achieving carbon neutrality within the next 25 years, civilians must "be willing to pay for carbon reduction, because today we have opportunities to make fuels with lower carbon, but people aren't willing to spend the money to do that," he said. Businesses aren't keen on shelling out, either. "We could, today, make sustainable aviation fuel for the airline business, but the airline companies can't afford to pay."* (ii) Direct air capture of CO2 will be hugely expensive. On Friday, we tweeted [LINK] "*Reality check on Direct Air Capture! Exxon CEO Woods "We just built a pilot plant prototype that we're working on to try and cut the cost in half—which by the way, will still be too expensive," reports @thier_jane #OOTT [LINK] ."* So even if Exxon can reduce the Direct Air Capture pilot in half, it will still be to expensive." (iii) Sustainable Aviation Fuel is too expensive for airline companies. This should not surprise anyone. And it is something we have highlighted for years that the cost of SAF is way too expensive. On Friday, we tweeted [LINK] "*Sustainable Aviation Fuel is very, very expensive!.Similar to @qatarairways CEO 06/19/23, Exxon CEO Woods "We could, today, make sustainable aviation fuel for the airline business, but the airline companies can't afford to pay." #OOTT Thx @thier_jane [LINK].* Our Supplemental Documents package includes the Fortune report.

Biggest direct air capture of carbon plant offsets <900 cars

There is a huge way to go for anyone to a direct air capture CO2 project to scale. Right now the world's largest direct air capture of CO2 is the Orca Iceland project that offsets the impact of ~900 cars. Here is what we wrote in our Sept 26, 2021

Energy Tidbits, when we first reported on Orca. "*We are well aware that governments and capital providers are going to make sure the world is put on a push to get to Net Zero, we just don't want to see that ambition result in an massive energy crisis for multiple years in the 2020s. But it gets increasingly harder to not believe a massive energy crisis is coming because we continue to see capital allocation go to energy transition technologies that are Not Ready for Prime Time. Yet, capital continues to pour into them. A good example is the push into direct capture of carbon from the air. On Tuesday, NowThis news tweeted a video [LINK] from Climeworks CEO (Jan Wurzbacher) on how they just turned into operation their Orca plant in Iceland, "which is the largest direct air capture plant currently operational in the world with a capacity of 4,000 tonnes of CO2 that are captured from the air every year. So that's phenomenal capacity." We hadn't realized that the capacity of the direct air capture plants was that low, which is why we tweeted [LINK] "World needs massive cuts to #CO2 emissions & need demonstration projects like this to show it can be done. But world's biggest project can remove 4,000 tonnes CO2/yr only offsets <900 cars, EPA est typcial car emits ~4.6 tonnes CO2/yr. #EnergyTransition will be hugely expensive." Our tweet included the main page from the EPA's Greenhouse Gas Emissions from a Typical Passenger Vehicle [LINK] "a typical passenger vehicle emits about 4.6 metric tons of carbon dioxide per year" . The math perspective is that the world's largest operating direct air capture of carbon plant will only offset the CO2 emissions of <900 cars. Climeworks did not disclose the capital or operating costs of the Orca plant. But this must be hugely expensive to take the equivalent of <900 cars off the road. Yet direct air capture of carbon is still able to attract massive capital. To illustrate the challenge, the number of cars in the US is approx. 290 million, or the equivalent of ~325,000 Orca direct air capture of carbon plants.*

Figure 53: Climeworks Direct Air Capture Plant

Source: Climeworks, NowThis

Qatar Airways CEO "let us not fool ourself" on sustainable aviation fuel

Our Exxon CEO tweet could have included several different airlines or oil refiners warning that SAF is very, very expensive. But we didn include the Qatar Airways

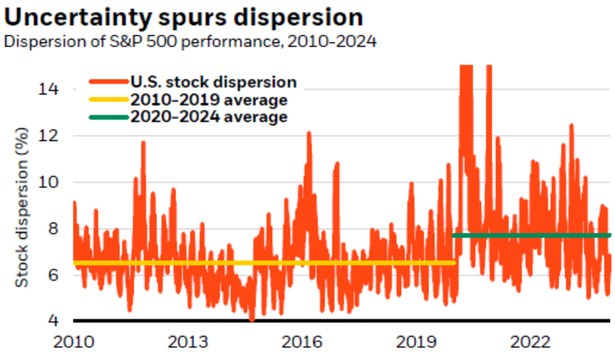
CEO June 19, 2023 commen. Here I swhat we wrote in our June 25, 2023 Energy Tidbits memo. *"On Monday, we tweeted [LINK] "Blunt reality check comments on Sustainable Aviation Fuel from @qatarairways CEO. Being pushed to get SAF into airplanes, SAF is "exorbitantly expensive & unavailable". Paying 4x the cost to have SAF "what do you expect". Are 2050 targets achievable? "No ..... I don't think so, Let us not fool ourself". See 👇06/06/23 tweet, SAF is 0.1% of jet fuel use now. Great interview @GuyJohnsonTV. #OOTT #EnergyTransition." Bloomberg interviewed CEOs at the Paris Air Show including Qatar Airways CEO Akbar Al Baker on June 19. Al Baker's comments were clear – the ramp up in sustainable aviation fuel targets for the aviation industry are not achievable, SAF is exorbitantly expensive and unavailable. Our tweet included a transcript of Al Baker's comments with Bloomberg's We created a transcript of his comments with Bloomberg's Guy Johnson from the Bloomberg clip. [LINK]. Items in "Italics" are SAF Group created transcript At 3:15 min mark, after talking about supply chain issues impacting aircraft and engine supply at a time where business is back to 2019 levels and high fares being a supply and demand basic, Al Baker "I think fares are going to stay high. Also keep in mind that the oil prices are high. We are now being pushed to get SAF [Sustainable Aviation Fuel] into our airplanes. Again, which is exorbitantly expensive and unavailable So all this is a factor that is increasing the cost of the value that you have to pay to travel." Johnson "So the move to SAF is going to be inflationary so you think?" Al Baker "Absolutely. If you are paying four times the price of Avgas to have SAF, what do you expect?" Johnson "And do you think the 2050 targets are looking achievable at this point?" Al Baker "No. I don't think so. Please explain to me one SAF manufacturer undertaking that they will be able to fill in the demand of 2050. I don't think so. Let us not fool ourself. First let us see from them, from Shell, ExxonMobil, TotalEnergies, all these people, ask them what is the volume they will [xxx?} produce? And they will never give you an answer."*

BlackRock says move to active management

Capital Markets – BlackRock's "*strategic reasons to get active*"

It as interesting to see BlackRock, the leader in ETFs, outline their reasons for invesotrs to get active and move more to active management ie. away from passive ETFs. On Tuesday, we tweeted [LINK] "*ICYMI #BlackRock "portfolio approach of static asset allocations won't work as well as in recent decades" "active strategies will play a greater role " BUT need top managers as "active returns between the top and bottom 25% of managers is near its widest since 2011" #OOTT."* Our tweet included BlackRock's Weekly Commentary from last week, Feb 20, that was titled *"Strategic reasons to get active*". It was a clear shift recommending investors get more active ie. away from passive ETFs. Some of the key quotes were "*That return outlook means that the traditional portfolio approach of static asset allocations won't work as well as in recent decades, in our view." "In addition to being more dynamic, we think active strategies will play a greater role in strategic portfolios." "Our work finds that the difference in our estimate of active returns between the top and bottom 25% of managers is near its widest since 2011." "We believe there is less consensus and more uncertainty about key macro variables, like inflation, than in the past. Elevated uncertainty is reflected in the heightened Elevated uncertainty is reflected in the heightened dispersion of returns in the new regime, we find." "Skill and acting more frequently on good insights can be better rewarded now, in our view" "Top managers may have more potential for active returns in private markets. Dispersion across them has risen in the new regime and tops public* *markets, based on the limited data available from NCREIF."* Our Supplemental Documents package includes the BlackRock Feb 20 Weekly Commentary.

Figure 54: Uncertainty spurs dispersion



Source: BlackRock

IFIC Cdn mutual fund data

Capital Markets: IFIC Equity and balanced funds net redemptions -$82.5b in 2023
We have been highlighting the big change to Cdn mutual funds that started in Q2/22 – there has been a shift from net sales to massive net redemptions in balanced and equity funds. What started in H2/22 played out even bigger in 2023 and is continuing to start 2024. On Thursday, we tweeted [LINK] "*Still no stopping continued monthly net redemptions from balanced & equity mutual funds in Canada. Flipped from net sales to net redemptions in Q2/22 & hasn't stopped. @ific net redemptions balanced/equity funds $5.7b in Jan 2024, which followed $82.5b in 2023 & $38.4b in 2022 #OOTT."* On Wednesday, IFIC (Investment Funds Institute of Canada) reported [LINK] mutual funds and ETF sales for January. IFIC reported net redemptions for balanced mutual funds were $4.544b in January vs $4.584b in December and $6.510b in November. This is also a bigger redemption that January 2023, which only had $4.400b net redemptions in balanced funds. IFIC also reported net redemptions for equity mutual funds were $1.119b vs net redemptions of $2.283b in December and $3.178b in November. Recall last month we learned that in 2023 there were $82.5b of net redemptions in balanced and equity mutual funds! This is more than double the net redemptions of 2022. Last year net redemptions in balanced and equity funds totalled $38.47b, which was a massive YoY crashing of $138.92b vs 2021 that saw net sales in balanced funds and equity funds of $100.45b. Note that Q2/22 was when it flipped from net sales into the massive net redemptions to end 2022. Our Supplemental Documents package includes the IFIC release.

Figure 55: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

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

Asset Class	Jan 2024	Dec 2023	Jan 2023
Long-term funds			
Balanced	(4,544)	(4,584)	(4,400)
Equity	(1,119)	(2,283)	(668)
Bond	3,730	817	3,462
Specialty	747	175	626
Total long-term funds	(1,186)	(5,875)	(981)
Total money market funds	487	790	1,057
Total	(699)	(5,086)	76

Source: IFIC

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

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

Figure 56: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

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

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

Source: IFIC

Capital Markets: Some foreign buying returning in Korean stocks

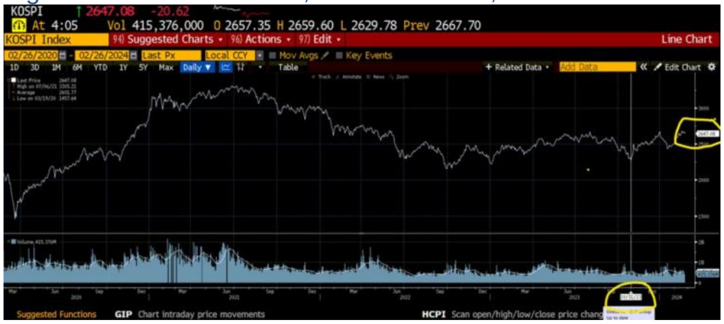
Foreign buyers in Korean stocks

It hasn't been a straight line up for Korean stocks, but there has been some strength siunce Oct 31 and that is likely due to the return of foreign buyers of Korean stocks. On Monday morning, we tweeted [LINK] "*Stocks 101. Increasing foreign buying of Korea stocks = KOSPI share prices up. US$b net flows by foreigners: MTD Feb $5.4, Jan $2.3, Dec $3.6, Nov $3.3. #KOSPI +16.2% since Oct 31/23.*" Below are the two charts attached to our tweet.

Figure 57: South Korea's Stock Market Flows Feb 28, 2020 – Feb 23, 2024

Source: Bloomberg

Figure 58: KOSPI Feb 26, 2020 – Feb 26, 2024



Source: Bloomberg

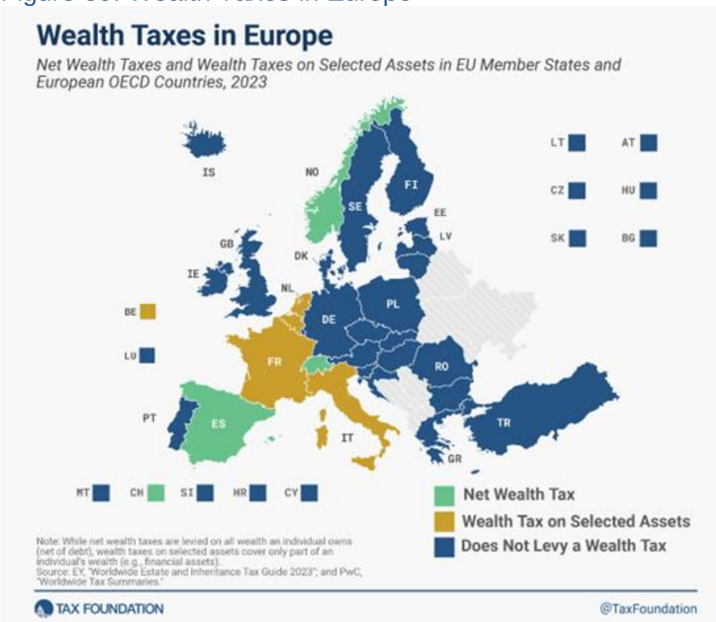
Capital Markets: "Net Wealth Taxes" on three countries in Europe

Europe "net wealth taxes"

There are eight months to the US elections and that means we should start to see the return of a call from the Democrats on higher taxes to the wealthy and higher income Americans. And one item that people should expect is Senator Warren highlighting her wealth tax idea. Wealth taxes, certainly in Warren's concept, don't happen in western countries. However, there are a few European countries that have "Net Wealth Taxes", taxes on net assets in addition to income tax and capital gains tax. Essentially, you would still be dinged on the cash you had sitting in your bank account, doing nothing. The idea is similar to property taxes, except applied to individuals regardless of whether they own real estate or not. On February 27, the Tax Foundation released a report on wealth taxes in Europe [LINK], and noted that there are three countries in Europe with net wealth taxes: Norway, Spain, and Switzerland. There are a few like France, Italy, the Netherlands and Belgium which only taxes select assets. Norway slaps a 1% ax on wealth stocks that are higher than US$160,000, and that goes up to 1.1% when you have over $1.94mm. Spain has a progressive system that goes from 0.16%, depending on where you live, up to 3.5% on wealth stocks exceeding

US$757,850. A solidarity wealth tax is going to be collected in 2023/2024 that adds an extra 1.7-3.5% on net assets over US$3.25mm which is collected on a federal basis. Switzerland's regime has been around since 1840, is applied to all worldwide assets (excluding real estate abroad), and has varying tax rates depending on region. Below is a map summarizing tax regimes in Europe. Our Supplemental Documents package includes excerpts from the Tax Foundation blog.

Figure 59: Wealth Taxes in Europe



Source: Tax Foundation

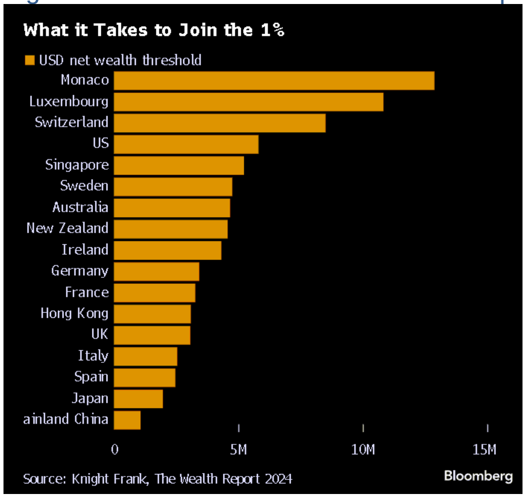
Sen. Warren frames her wealth tax as a two cent wealth tax

Here is what we wrote in our Dec 10, 2023 Energy Tidbits memo about Sen Warren's wealth tax idea. "*We shouldn't be surprised that, with the US elections 11 months away, politicians are trying to get their preferred policy positions as par to the platform. In this case, it's Elizabeth Warren, known as a progressive, setting the stage for one of her favorite items to enact – a wealth tax. On Thursday, we tweeted [LINK] "Fan or not, got to appreciate how @ewarren messages. a 2 cent wealth tax, doesn't sound like big deal, but 2% on assets >$50mm is a huge pot of $$, listen 👇 to all the items it can fund. is wealth tax likely in Biden 2024 election? Trudeau 2025 election? @andrewrsorkin #OOTT." Elizabeth Warren was on CNBC Squawk Box on Thursday and mentioned her wealth tax idea from a few years ago. Our comment is much like we wrote on this in our Jan 31, 2021 wealth tax comments. Whether you are an Elizabeth Warren fan or not, you have to at least admire how she can frame her position to make the other side look unreasonable. Framing her wealth tax as a 2 cent tax makes it sound like a nothing. However, she is talking about a 2% tax per year on assets/wealth over $50 million. So it the wealth is $50mm, it's a tax of $1mm for that year, or $2mm for assets at $100mm and so forth. So it sounds like no big* *deal, but then when you listen to what she says it could fund, you realize it's a huge pot of money per year. Our tweet include the video clip of her comments ""If we just said if you've got more than $50 million in assets and we put in place a two cent tax on wealth. And by the way, people pay taxes, pay property taxes all the time on unrealized gains. You pay your property taxes on your home. But a two cent wealth tax, think what that would mean in this country right now. it would mean that we could provide universal child care for every one of our babies, we could put much more money into our public school system, we could provide free post high school technical school, 2-year college, 4-year college, we could cancel all student loan debt and we could still have a lot of money left over."*

Capital Markets: $5 Million is not enough anymore to make the top 1% in the US

A sign of the wealth gap widening was highlighted by a Bloomberg report we read that was released on Wednesday, titled "*Having $5 Million Is No Longer Enough to Crack the Top 1% in US".* Bloomberg used numbers from Knight Frank, which shows that it now takes $5.8mm to crack the top 1% in the US, which is 15% higher than the threshold only one year ago. The report also points out thresholds for the 1% in other countries, with the highest being Monaco at $12.8mm. Bloomberg wrote "Russia's 2022 invasion of Ukraine damaged a global economy just recovering from the pandemic, sending prices for energy and food surging. While that caused problems worldwide, poorer nations that have to import those goods were especially hard hit as borrowing costs increased. Still, not everyone felt the squeeze. The world's 500 richest people added $1.5 trillion to their combined fortunes last year, with Tesla Inc. Chief Executive Officer Elon Musk adding the most, according to the Bloomberg Billionaires Index". The actual Knight Frank report is expected to be released next week. Our Supplemental Documents package includes the Bloomberg report.

Figure 60: Net wealth thresholds for the top 1% by country



Source: Bloomberg, Knight Frank

Capital Markets: USDA Consumer Price Index Jan for food +0.6% MoM, +2.6% YoY

USDA CPI for food +2.6% YoY

We recognize that the USDA consumer food price index is a much better indicator for grocery store prices than the UN's food commodity price index. But we still continue to believe the actual prices at the grocery stores are still higher than indicated by the USDA. Last Friday, the USDA posted its January Consumer Price Index for food [LINK], which reported the all-items Consumer Price Index (CPI) was +0.6% MoM and +2.6% YoY. The +2.6% YoY increase in the Consumer Price Index has a relative weighting for the various food categories. Beef and veal were down -0.3% MoM, +7.7% YoY, and are expected to increase +2.2% over 2024, fresh vegetables are +2.9% MoM, -0.9% Yoy, and expected to increase +1.9% over 2024, retail eggs are +1.8% MoM and -28.6% YoY after a flu outbreak affected 4.5mm chickens in December, and pork prices are -0.3% MoM, -0.4% YoY and expected to fall 0.5% over 2024. It is important to note the USDA said that the "*Food prices are expected to continue to decelerate in 2024. In 2024, all food prices are predicted to increase 2.9 percent, with a prediction interval of 0.5 to 5.3 percent. Food-at-home prices are predicted to increase 1.6 percent, with a prediction interval of -1.8 to 5.3 percent, and food-away-from-home prices are predicted to increase 5.0 percent, with a prediction interval of 3.7 to 6.3 percent".*

Loblaw says don't blame grocers for escalating grocery prices

Loblaw has been vocal on its earnings call saying the grocer, at least Loblaw, is not responsible for the inflation of grocery prices over and above inflation. It's others in the supply chain. Here is what we wrote in last week's (Feb 25, 2024) Energy Tidbits memo on the Loblaw Q4 call. "*On Thursday, Loblaw held its Q4 call, which was the first earnings call led by recently new CEO Per Bank. Bank may have been less direct than prior CEO messaging but the point was the same – don't blame the grocers if grocery price escalation is much higher than inflation. Bank didn't specifically say who but he has to be referring to the food and product suppliers who are to blame. On Thursday, we tweeted [LINK] "Who's responsible for >inflation grocery store prices? Loblaw says not the grocer, rather look at others in grocery supply chain. "once again, our internal inflation was lower than grocery CPI, while our food gross margin is still below pre-Covid levels" Loblaw Q4 call." Bank reminded that their internal inflation was lower than grocery CPI ie. blame others in the supply chain to get groceries to consumers. Our tweet included the excerpt from the transcript where Bank said "Canadians continue to seek greater value as they face challenging and persistent inflationary pressures and we are committed to delivering that. Once again, our internal inflation was lower than grocery CPI, while our food gross margin is still below pre-COVID levels. Food price increases in our stores are as low as they have been over the past two years. We are pushing back whenever we can on suppliers cost increases, and we are finding more ways to be efficient to keep prices low for our customers. Our colleagues are doing a great job to reduce costs and be more efficient, allowing us to reinvest back into the business and help offset inflation."*

Capital Markets: Wendy's says new signs could be to offer discounts not surge prices

We have to wonder who is going to get fired or demoted at Wendy's for writing the script for the Q4 call on Feb 15 with respect to the new Digital Menuboards. In his prepared remarks

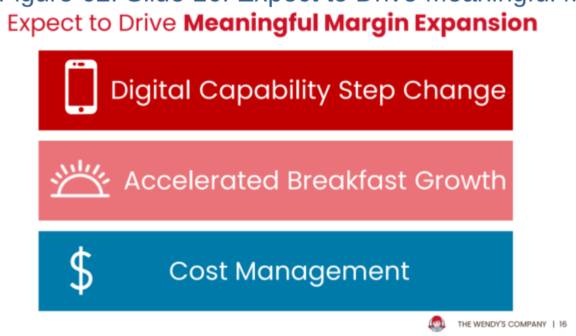
Wendy's digital menuboards

on the Q4 call, CEO Tanner said "*We are planning to invest approximately $20 million to roll out digital menu boards to all us company operated restaurants by the end of 2025, and approximately $10 million over the next two years to support digital menu board enhancements for the global system. We expect our digital menu boards will drive immediate benefits to order accuracy, improve crew experience and sales growth from upselling and consistent merchandising execution. Beginning as early as 2025, we will begin testing more enhanced features like dynamic pricing and day part offerings along with AI enabled menu changes and suggestive selling. As we continue to show the benefit of this technology in our company operated restaurants, franchisee interest in digital menu boards should increase further supporting sales and profit growth across the system."* We highly doubt CEO Tanner wrote out his prepared remarks although surely he would have reviewed them. No one should be surprised that the outside interpretation of "*dynamic pricing*" was for the potential of surge pricing. On Tues Feb 27 (12 days after the Q4 call), Wendy's posted its "*Wendy's Digital News Update*" [LINK]. Wendy's wrote "*Earlier this month we issued our fourth quarter and full year 2023 earnings results and included an update on investments we are making in our digital business. One initiative is digital menuboards, which are being added to U.S. Company-operated restaurants. We said these menuboards would give us more flexibility to change the display of featured items. This was misconstrued in some media reports as an intent to raise prices when demand is highest at our restaurants. We have no plans to do that and would not raise prices when our customers are visiting us most. Any features we may test in the future would be designed to benefit our customers and restaurant crew members. Digital menuboards could allow us to change the menu offerings at different times of day and offer discounts and value offers to our customers more easily, particularly in the slower times of day. Wendy's has always been about providing high-quality food at a great value, and customers can continue to expect that from our brand.* Maybe it was that people at Wendy's never thought anyone would misinterpret their use of dynamic pricing as setting the stage for surge pricing. However, if you look at their comments and how they are presented in their slide deck, it really is hard to see how they didn't, in fact, mean dynamic pricing was for surge pricing. On Thursday, we tweeted [LINK] "*Hmmm! Wendy's says digital menuboards are NOT to surge price. Rather "could allow us to change the menu offerings at different times of day and offer discounts and value offers". But 👇digital menuboards to support margin expansion! discounting burgers = higher margins??"* Our tweet included the two slides from the Q4 call and how the new digital menuboards are there to improve margins. We are sure everyone has friends who own restaurants and we have never heard that offering discounted pricing on food improvise the margin on those foods. Rather restaurants will use discounted food items to get you in the door to sell the highest margin, by far, more booze.

Figure 61: Slide 15: ~$30mm investment in digital menu board

Source: Wendy's Q4 call on Feb 15, 2024

Figure 62: Slide 16: Expect to Drive Meaningful Margin Expansion



Source: Wendy's Q4 call on Feb 15, 2024

Demographics: Putin wants bigger Russian families in "The Year of the Family"

Putin wants bigger families

We read the transcript for Putin's Thursday's address to the Federal Assembly [LINK] and we thought one of his big themes was the need to have bigger Russian families. On Thursday, we tweeted [LINK] "*Pre-Ukraine, Putin's greatest concern was Russia's shrinking population. See 12/28/21 tweet. That hasn't changed. Increasing birth rates & family sizes had a huge emphasis in Putin's speech today to Federal Assembly. #OOTT.*" Putin's key comments were "*Incidentally, friends and colleagues, I am sure that many of you have been to the Russia exhibition. People go there to see how rich and vast our homeland is and to show this to their children. The Year of the Family has been launched there. The values of love, mutual support and trust are handed down from generation to generation, just like our culture, traditions, history, and moral principles. But the main purpose of the family is to have children, to procreate, to bring up children and hence to ensure the survival of our multi-ethnic nation. We can see what is taking place in some countries where moral standards and the family are being deliberately destroyed and entire nations are pushed to extinction and decadence. We have chosen life. Russia has been and remains a stronghold of the traditional values on which human civilisation stands. Our choice is supported by the majority of people in the world, including millions in Western countries. True, today birth rates are declining in Russia and many other countries. Demographers say that this challenge is related to changes in social, economic, technological, cultural and value perceptions throughout the world. Young people get an education, try to make a career, and improve their living conditions, leaving children for later. It is obvious that the economy and the quality of* *the social sector are not the only factors affecting demography and the birth rate. The life choices encouraged in the family and by our culture and education also have a tremendous impact. All levels of government, civil society, and the clergy of all our traditional religions must contribute to this. Support for families with children is our fundamental moral choice. A multi-child family must become a norm, the underlying social philosophy, and the focus of state strategy."*

11/28/23: Putin wants Russian women revive having 7, 8 or even more children
We have been highlighting Putin's push for bigger families for the past few years. Here is what we wrote in our Dec 3, 2023 Energy Tidbits memo on his desire for Rusisan women to have 7 or 8 or even more children. "*It didn't get a lot of attention but, on Tuesday, Putin stressed that Russia had to overcome "the daunting demographic challenges". Even before the casualties from the Russia/Ukraine war, Russia had a shrinking population. Putin said "preserving and increasing the population of Russia is our goal for the coming decades and even generations ahead". On Tuesday, Putin said the key was to preserve and revive the excellent tradition of Russian families when grandmothers and great-grandmothers has seven, eight or even more children. On Tuesday, Putin, via videoconference, "addressed the plenary session of the World Russian People's Council. The key topic of the forum, dedicated to the 30th anniversary of the organisation's establishment, is the Present and Future of the Russian World." [LINK] A couple of his key sentences were "Thankfully, many of our ethnic groups have preserved the tradition of having strong multigenerational families with four, five, or even more children. Let us remember that Russian families, many of our grandmothers and great-grandmothers had seven, eight, or even more children. Let us preserve and revive these excellent traditions. Large families must become the norm, a way of life for all Russia's peoples. The family is not just the foundation of the state and society, it is a spiritual phenomenon, a source of morality." There were more comments on this goal. Our Supplemental Documents package includes the transcript of Putin's address*."

11/30/21: Putin's greatest concern is Russia's shrinking population
Putin's focus on Russians having bigger families is not a new focus and not a new focus post Ukraine. Rather Russian's shrinking population, pre-Ukraine, was his greatest concern. Here is what we wrote in our Dec 26, 2021 Energy Tidbits memo. "*Putin's big press conference comments on Russia's population reminded us of an item we forgot to include in our Dec 5, 2021 Energy Tidbits – Putin's greatest concern is the shrinking Russia population. This week, Putin noted "There are issues that cannot but cause concern, including life expectancy, which has slightly decreased from 71.5 to 70.1 years." The item we forgot to include was Putin's comments at the "Russia Calling! Investment Forum" on Nov 30. [LINK]. Putin was asked "What keeps you awake at night?" In the sense, "What is your greatest concern?". Putin responds "We have domestic issues typical of Russia, primarily demographic problems. We had two natural declines in our demographic development: during World War II or the Great Patriotic War, as we call it, in 1943–1944, and in the early and middle 1990s after the collapse of the Soviet Union. There was an equal drop in the birth rate. It was the lowest in 1999 – I believe a little over 1,200,000. In 2006, we already had almost two million births – more than 1,900,000.*

This problem has acquired a systemic and economic character due to the shortage of workforce in the labour market. We have a little over 80 million there and our losses amount to 1.1–1.2 percent a year. In this context, demographics is one of our main problems both for humanitarian and economic considerations, and because we need to strengthen our statehood as well. I will not enumerate all the measures and instruments we are using and intend to continue using in the future in order to tackle this problem. In general, we managed to get things moving in the recent past. Overall, we understand what we can do and know how to do it."

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

It may not last as followers can drop off but, In January, I went over 10,000 followers on Twitter/X. I really appreciate the support and, more importantly, some excellent insights and items to look at from Twitter followers. It helps me do a better job. For new followers to our Twitter, we are trying to tweet on breaking news or early views on energy items, most of which are followed up in detail in the Energy Tidbits memo or in separate blogs. Our Twitter handle is @Energy_Tidbits and can be followed at [LINK]. We wanted to use Energy Tidbits in our name since I have been writing Energy Tidbits memos for over 20 consecutive years. Please take a look thru our tweets and you can see we aren't just retweeting other tweets. Rather we are trying to use Twitter for early views on energy items. Our Supplemental Documents package includes our tweets this week.

@Energy_Tidbits on Twitter

LinkedIn: Look for quick energy items from me on LinkedIn

I can also be reached on Linkedin and plan to use it as another forum to pass on energy items in addition to our weekly Energy Tidbits memo and our blogs that are posted on the SAF Energy website [LINK].

Look for energy items on LinkedIn

Misc Facts and Figures.

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

Former Cdn PM Brian Mulroney passed away this week

Former Canadian Prime Minister Brian Mulroney passed away this week. I never had the chance to meet him but know people who were friends with him so have heard the stories/compliments about his strengths and weaknesses. In watching the CTV coverage of his passing, two comments were items that I had heard about him that made him a successful leader and ones that would be nice to see in today's leaders. First, he took the flak as opposed to looking to lay off the negatives on others in government. There was a clip of Mulroney saying "*The Prime Minister better take on the big and the tough issues himself. I was responsible for those. I took the hit and I took the flak. And that's the way it has to be".* Second was the comment on how Mulroney's in-person connections and how former Liberal Prime Minister Paul Martin's former Director of Communications Scott Reid wrote "*Watching Mulroney charm a room was like watching Guy Lafleur take to the ice".*

Canada's Sara Mitton wings gold in shotput at World indoor championships
Unfortunately, there was no TV coverage of the World Athletics Indoor Championships in Glasgow so we had to read about the results. Early yesterday morning, we tweeted [LINK] "*Congratulations World Champion Sarah Mitton! CA @MittonSarah won gold in shotput yesterday at World Athletics Indoor Championships in Glasgow. What a great confidence boost/motivator going into the @OlympicsParis in 4.5 months."* Our Supplemental Documents package includes a great interview with Mitton before the world championshi8ps. [LINK]

Figure 63: Canada's Sarah Mitton wins shotput gold


Source: AP

Jim Valvano ESPYs speech was March 4, 1993
One of the most memorable and inspirational speeches of all times was given by Jim Valvano at the ESPYs on March 4, 1993. Valvano was a famous college basketball coach, best known for his time at NC State, who was fighting what was known as a losing battle with cancer. Valvano passed away on April 28, 1993. Valvano wanted to remind people what is important about life and also to make sure he could do all he could to help the fight against cancer. A couple of his quotes were "I *just got one last thing. I urge all of you, all of you, to enjoy your life, the precious moments you have to spend each day with some laughter and some thought, to get your emotions going, to be enthusiastic every day. Ralph Waldo Emerson said, "Nothing great can be accomplished without enthusiasm to keep your dreams alive in spite of problems." Whatever you have, the ability to be able to work hard for your dreams to come true, to become a reality."* And he closed saying "*I know I've got to go. I've got to go, and I got one last thing. I've said it before and I'm gonna say it again. Cancer can take away all my physical abilities. It cannot touch my mind. It cannot touch my heart. And it cannot touch my soul. And those three things are going to carry on forever. I thank you and God bless y'all."* A video of his speech is at [LINK]. Our Supplemental Documents package includes the Valvano speech.