Energy Tidbits

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Produced by: Dan Tsubouchi

Macron Hurts IEA Analysis Credibility "*The IEA has become, so to speak, our armed wing of implementing the Paris agreement*"

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. Macron hurts (destroys?) credibility of IEA analysis/forecasts saying "*The IEA has become, so to speak, our armed wing of implementing the Paris agreement".* [click here]

2. Biden is reported ready to slow down the regulatory push to his planned early shift to EVs, which means more ICE and oil /gasoline demand for longer. [click here]

3. Qatar Energy surprised this morning with announcement to add another 2.1 bcf/d of LNG capacity before the end of 2030. [click here]

4. Increased risk that no more US LNG export projects get approved with Qatar's surprise announcement of additional LNG capacity. [click here]

5. Saudi Aramco reminds global oil decline rate is 6%, i.e. 6 mmb/d per year or a Saudi Arabia every 2 years. [click here]

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

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

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Natural Gas: -60 bcf draw from US gas storage; now +265 bcf YoY surplus

-60 draw in US gas storage

There was a small draw from gas storage in the US this week. For the week of February 16, the EIA reported a -60 bcf draw. Total storage is now 2.470 tcf, representing a surplus of +265 bcf YoY compared to a surplus of +250 bcf last week. Note that the EIA revised last week's storage figure down to 2.530 tcf from 2.535 tcf. Last month was the highest storage has been in 5 years, with the previous high being 3,460 bcf from 2020. Total storage is +451 bcf above the 5-year average, up from the +348 bcf surplus last week. Below is the EIA's storage table from its Weekly Natural Gas Storage report [LINK].

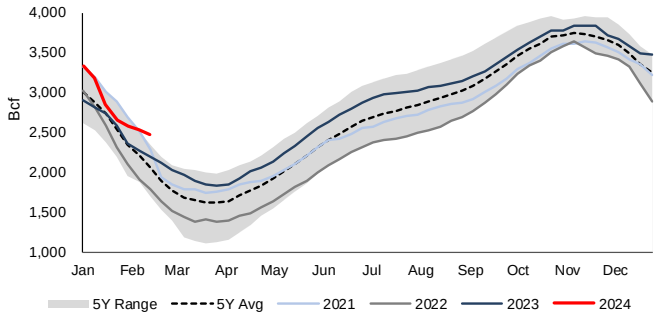
Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (02/16/23)		5-year average (2019-23)	
Region	02/16/24	02/09/24	net change	implied flow	Bcf	% change	Bcf	% change
East	505	532 R	-27	-27	482	4.8	449	12.5
Midwest	631	662	-31	-31	579	9.0	528	19.5
Mountain	173	178	-5	-5	107	61.7	109	58.7
Pacific	217	222	-5	-5	110	97.3	170	27.6
South Central	944	936	8	8	927	1.8	764	23.6
Salt	278	271	7	7	262	6.1	218	27.5
Nonsalt	666	665	1	1	665	0.2	546	22.0
Total	2,470	2,530 R	-60	-60	2,205	12.0	2,019	22.3

R=Revised.
The reported revision caused the stocks for February 09, 2024 to change from 2,535 Bcf to 2,530 Bcf. As a result, the implied net change between the weeks ending February 02 and February 09 changed from -49 Bcf to -54 Bcf.

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



Source: EIA, SAF

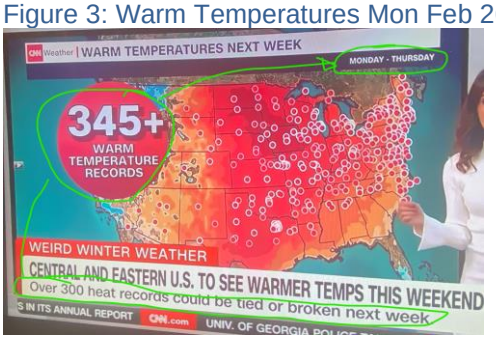
Natural Gas: Record temperatures to end Feb in the US

Record warmth in much of the US

It's been a bad last month for natural gas with the warm weather and the warm winter is continuing to close February. February is ending and so, for the most part, any material winter temperature driven natural gas demand has passed. Accordingly, we don't expect to post weekly updates of NOAA's 6-10 and 8-14 day temperature outlooks unless we see some unexpected temperature driven outlook for natural gas. But, as a rule, shoulder season means no strong temperature driven demand for natural gas. Rater, it's what we call "leave the windows" weather. But winter temperature in the US is expected to be record temps in many parts of the US to end Feb. Yesterday, we tweeted [LINK] "*US record high*

temps expected to continue next week. @CNN just now for Mon-Thurs, forecasts 345+ warm temperature records to be set. Negative for HH #NatGas. #OOTT." Our tweet included the below CNN graphic that was running early Saturday morning. CNN forecast very hot temperatures for Mon-Thurs with "*over 300 heat records cold be tied or broken next week" and "345+ warm temperature records*".

Figure 3: Warm Temperatures Mon Feb 26 – Thurs Feb 29



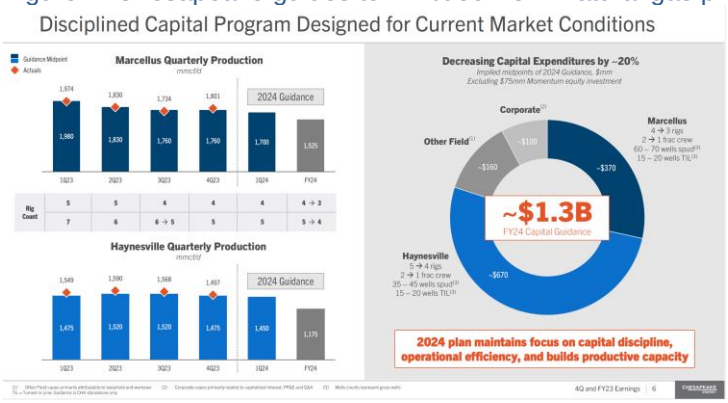
Source: CNN ~5am MT on Feb 24, 2024

High US shale gas decline rate

Natural Gas: Chesapeake reminds US shale gas has high decline rates

There was a great reminder this week of the high decline rates in US shale gas from Chesapeake's q4 results on Wed morning. Early Wednesday morning, we tweeted [LINK] *"US shale #Oil #NatGas has to keep fracing levels up or high shale decline rates hit. $CHK cutting rigs (H 5→4, M 4→3) & frac crews (H 2→1, M 2→1), Activity maintained thru yr-end. 2024 guidance now 2.65-2.75 bcf/d, down ~22% YoY vs 3.47 bcf/d in 2023. #OOTT."* Chesapeake's shale gas is in the Haynesville and Marcellus shales. The big news from the Q4 was their decision to respond to low natural gas prices by cutting capex and pulling back rigs and frack spreads. It reinforces our concern that the impact of the warm winter will carry thru to keep pressure on natural gas prices for months and certainly beyond H1/24. Our tweet was to remind that US shale gas has a high decline rate and gas producers have to keep well completions at high levels or else production will declines. You need drilling rigs to add uncompleted wellsto be fracked/completed to add production. Chesapeake is cutting gits rigs by 1 in the Haynesville and1 in the Marcellus. And are cutting their frac sareds in the Haynesville from 2 to 1, and in the Marcellus from 2 to 1. So lower activity, but Cheseapeake is guiding to a 22% decrease in production from 3.470 bcf/d in 2023 to 2.65-2.75 bcf/d in 2024. That's a decrease of approx. 0.8 bcf/d.

Figure 4: Chesapeake guides to 22%decline in natural gas production



Source: Chesapeake

Diamondback reminds its "base total decline is 31% in its Permian lands"

The Permian oil plays are oil plays that produce a lot of associated natural gas and NGLs so the decline rates on Permian oil plays is relevant to the associated natural gas in the oil wells. Although the associated natural gas will have a lower decline rate the an the oil as, over time, natural gas cuts will increase over time. Here is what we wrote in last week's (Feb 18, 2024) Energy Tidbits memo. "*Long term readers know that we always look for insight into global decline rates of oil and natural gas. All oil and gas properties decline and at various rates. And the amount of decline in any period is the amount of new oil or natural gas that must be added to keep production flat. The big US oil and gas sector news on Monday morning was Diamondback Energy's $26 billion acquisition of privately held Endeavor Energy Partners. Diamondback's slide deck was titled "Creating the Must-Own Permian Pure Play" with proforma Q4/23 production of 468,000 bpd of oil, and total of 816,000 boepd oil equivalent. We had a number of comments on our tweet on the deal but, to be fair, one of the advantages of no longer being a stock analyst is that we can look at transaction from a sector perspective and not get involved in the detail of models and stock valuations. But in going thru the deal slide deck, there was one key reminder of the Permian – it has a high decline rate. Early Monday morning, we tweeted [LINK] "US #Oil supply can grow but the treadmill is not slowing down. $FANG is now 3rd largest Permian player at 816.000 boe/d. Says "Base Total Decline (%) is ~31%" in its Permian lands" ie. need to add ~250,000 b/d to keep Permian flat. #OOTT." Our tweet included the below table that was in the Diamondback slide that noted the "base total decline (%)" was ~31% for the Diamondback Permian lands, ~32% for the Endeavor Permian lands, and ~31% on a proforma basis. It's a reminder that there is a high decline rate in the Permian and that is the challenge for growth. And the other issue is that with the big increase in US oil production in 2024, it means the challenge to replace is greater in 2024."*

Figure 5: "Base total decline (%)" for Diamondback and Endeavor lands

	DIAMONDBACK ENERGY	Endeavor Energy Resources	DIAMONDBACK ENERGY Pro Forma
Enterprise Value	$36.2bn[1]	~$26.0bn	~$62.2bn
Q4 2023E Production (MBO/d / MBOE/d)	273 / 463	195 / 353	468 / 816
Base Total Decline (%)	~31%	~32%	~31%
Net Midland Acreage	350k	344k	694k
Total Permian Acres	494k	344k	838k
Gross Core Locations (Sub $40 B/E)	~3,800	~2,300	~6,100

Source: Diamondback Energy

Natural Gas: Biden's temporary LNG export approval halt could be14 months

Biden's temporary LNG export approval

No one should be surprised to hear that Biden's LGN export approval halt will be a lot longer than they were trying to infer by referring to it as a few months process. Rather, it seems like it is more likely more than a year. On Tuesday, we tweeted [LINK] "*OOPS. A few months can mean 14 months. On Biden LNG review, @amoshochstein "take a pause of a few months". But @_HadleyGamble asks timeline. "The timeline is going to be somewhere in that 10, 12, 14 months. I don't know what it is". @amoshochstein ie. post election! #OOTT."* Biden's US energy envoy Amos Hochstein 's was interviewed by Al Arabiya. Our tweet included the transcript of Hochstein's comments. SAF Group created transcript of comments by Amos Hochstein (US energy envoy) to Al Arabiya English's Hadley Gamble on Feb16, 2024. [LINK] Items in "*italics*" are SAF Group created transcript. At 3:03 min mark, Hochstein "*… I think this step is there to take, is a prudent step in order for us to take a look at what is happening in the market. Take a pause of a few months. Look at the study and see where it takes us. And what we don't' want is a massive overbuilding, an overcapacity when demand is not going to be there*." Gamble "A *few months, six months, timeline*?" Hochstein "*The timeline is going to be somewhere in that 10, 12, 14 months, I don't know what it is*".

Increased risk to new US LNG with Qatar's surprise adding 2.1 bcf/d by 2030

If Biden wanted to use the pause to not approve any more US LNG exports, Qatar Energy just gave him a reason to do so. Later in the memo, we highlight the breaking news that Qatar Energy has surprised with the announcement that it was adding a further 2.1 bcf/d of LNG capacity before the end of 2030 and this added 2.1 bcf/d would not have been in any forecasts or analysis. Earlier this morning, we tweeted [LINK] "*Increased risk to US #LNG projects caught in Biden "pause". 👇02/16 @amoshochstein to @_HadleyGamble, pause study let them avoid threat of overbuilding US capacity. @qatarenergy new +2.1 bcfd by end of 2030 wouldn't have been in US supply forecast before today. #OOTT."* Our tweet included the transcript we made of Hochstein saying one of the reasons is to studying the outlook to avoid any massive overbuilding of LNG capacity in the US. Qatar surprise adding 2.1 bcf/d has to have a big impact on the Biden LNG pause study. Our tweet included the transcript we made of Hochstein's comments on Feb 16 to Al Arabiya's Hadley Gamble. SAF Group created transcript of comments by Amos Hochstein (US energy envoy) to Al Arabiya English's Hadley Gamble on Feb16, 2024. [LINK] Items in "*italics*" are SAF Group created transcript. At 0:25 min mark, Hochstein "*… The only thing we have paused is beyond the doubling of our capacity is to look at a number of factors. Say wait a minute, we have a massive amount of LNG capacity*

coming on, let's look at three things. One is what's the demand looking at the world, do we need to, are we going to be in a threat of overbuilding our capacity in the US and global demand won't be there. So we have to take a pause to think about that." At 3:04 min mark, Hochstein "I *think this step is there to take, is a prudent step in order for us to take a look at what is happening in the market. Take a pause of a few months. Look at the study and see where it takes us. And what we don't want is a massive overbuilding, an overcapacity when demand is not going to be there*."

Will Biden's temporary LNG export approval halt will stop future LNG?

Even before today's surprise Qatar announcement of adding 2.1 bcf/d of new capacity before the end of 2030, we questioned if the Biden LNG pause would half any future US LNG. Here is what we wrote in our Jan 28, 2024 Energy Tidbits memo on the Biden "temporary" LNG export approval halt. "*We note that the analyst and markets don't seem to be as worried as us on Biden's temporary halt to any LNG export project approvals until it can update its review process for these projects. On Friday morning, we tweeted][LINK] "Read it carefully. If "our" refers to US, it's hard, if not impossible, to see any future approvals of #LNG exports absent a crisis. EU better hope #IEA is right & #NatGas consumption peaks this decade. Reminds it's regulatory agencies, not laws, hurt #Oil #NatGas. #OOTT.' We believe this is a game changer from multiple aspects. (i) Hard, if not impossible, to see any future LNG export approvals. It's still early but we haven't seen strong statements like my view but, if you carefully read this rumored announcement for a "temporary" pause on pending approvals of LNG exports, it's virtually impossible to see how this won't stop any future LNG export approvals. (ii) Note there is no indication of how long "temporary" pause. Our concern on these is that it means these LNG projects are, at a minimum, stuck in a multi year limbo. Like Keystone XL was for years. (iii) the purpose of the pause is so the Dept of Energy can update the underlying economic and environmental analysis for "its" LNG export approvals. Note that, at least for now, it's targeting updating the analysis for "its" LNG export approvals. [Note, there is no reason why this thesis won't come up for other analysis for other approvals of oil and natural gas items]. (iv) Biden said "During this period, we will take a hard look at the impacts of LNG exports on energy costs, America's energy security, and our environment. " US is now the world's LNG exporter so surely any analysis will show that not approving any LNG export project won't impact US only energy costs or energy security. And then on the environmental side, how can any new project being built not add to "our" emissions. It doesn't make a difference if it's a LNG export project, a new EV manufacturing facility or any large project, they will add to "US" emissions. Every new project adds emissions of some sort. And this is the movement to cumulative impact of emissions that Canada has been trying to incorporate also. Anything is additive to the existing cumulative emissions. NOTE they did not use the term cumulative emissions in this announcement but we believe this is the unsaid approach. (v) They make it very clear that this analysis is related to the US impact only. It's all linked to "our" impact. (vi) Our concern on impact to costs to the US is that we think it's hard to make a undisputable case that stopping future LNG exports and the related natural gas supply will lead to increased energy costs to US consumers. (vii) And they make it clear that stopping future approvals don't impact their ability to supply LNG to their allies, in particular Europe, in the near term. (viii)*

Implications are not just to US oil and gas sector. (ix) Reminder how it's not new laws. Rather it's regulations that have the biggest impact on the oil and gas sector. (x) Where will this updated analysis approach go next? This is for federal controlled approvals. But we have to worry if there are any pending federal approvals for items oil or petroleum product exports. How can this not also hit any potential for future LNG exports out of the US NE for Marcellus gas? Also why won't this capture if any existing LNG export projects want to expand?? (xi) Canada implications. Note we say we think the unsaid argument will be on cumulative emissions and that any big facility being built adds to cumulative emissions. We think we need to be careful as this is potentially an eyes on the future for this to be the dominant criteria in Canada and how they will be applying this concept. (xii) Europe will be very interesting. IF Europeans buy into their IEA's analysis and believe natural gas consumption is peaking by 2030, this won't make a difference. But if anyone doesn't believe the peak timing, this will add risk to Europe's long term natural gas supply. It will bring Russia back into the long term picture and I have to believe, in a post Putin world, Russia would be poised to regain its dominant role as natural gas supplier to Europe. But I think that happens regardless of this action. (xiii) The other winners in the long term, assuming natural gas consumption doesn't peak, will be Qatar and any other LNG suppliers. Potentially even Iran if they ever get peace with the West. Our Supplemental Documents includes the Biden statement."

Natural Gas: Mexico's natural gas production still below 5 bcf/d, flat MoM, down YoY

Mexico natural gas still below 5 bcf/d

On Friday, Pemex posted its natural gas production data for January. [LINK] Pemex does not provide any commentary on the data but reported January 2024 natural gas production of 4.780 bcf/d, which was -3.5% YoY and basically flat MoM. The big picture story for Mexico natural gas is, at least for now, still unchanged – for the past six years, Mexico natural gas production has been stuck right around 5 bcf/d, and that means any increased domestic natural gas consumption has been met by US natural gas imports. Below is our ongoing table of Pemex reported monthly natural gas production.

Figure 6: Mexico Natural Gas Production

Natural Gas Production bcf/d	2017	2018	2019	2020	2021	2022	22/21	2023	2024	24/23
Jan	5.326	4.910	4.648	5.005	4.848	4.713	-2.8%	4.955	4.780	-3.5%
Feb	5.299	4.853	4.869	4.942	4.854	4.646	-4.3%	4.979		
Mar	5.383	4.646	4.857	4.946	4.839	4.766	-1.5%	5.035		
Apr	5.334	4.869	4.816	4.827	4.671	4.740	1.5%	5.095		
May	5.299	4.827	4.841	4.460	4.730	4.702	-0.6%	5.034		
June	5.253	4.840	4.843	4.754	4.727	4.744	0.4%	5.035		
July	5.216	4.856	4.892	4.902	4.725	4.815	1.9%	4.936		
Aug	5.035	4.898	4.939	4.920	4.656	4.796	3.0%	4.947		
Sept	4.302	4.913	5.017	4.926	4.746	4.798	1.1%	4.969		
Oct	4.759	4.895	4.971	4.928	4.718	4.795	1.6%	4.950		
Nov	4.803	4.776	5.015	4.769	4.751	4.845	2.0%	4.888		
Dec	4.811	4.881	5.024	4.846	4.697	4.845	3.2%	4.786		

Source: Pemex, SAF

Natural Gas: Equinor and Deepak Fertilisers sign 15-year LT LNG Deal

Long-term LNG deal

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 was a major long-term LNG deal. (i) On Monday, Equinor announced they signed a 15-year LNG deal with Deepak Fertilisers (India) [LINK], whereby Deepak will purchase 0.09 bcf/d annually from Equinor beginning in 2026 to use as feedstock for ammonia production. Equinor's Senior VP for Gas & Power, Helge Haugane, said "*Deepak's new ammonia plant has created new gas demand in the growing Indian market. I am very happy that we have landed this agreement with Deepak Fertilisers. The agreement is another proof of how we use our position in the Atlantic basin to strengthen our relationship with key players in the growing Indian market. We look forward to developing our relationship with Deepak and to exploring avenues for further collaboration on petrochemicals feedstocks such as propane and ethane and on low carbon ammonia in the future*". Our supplemental documents package contains the Equinor news release.

There have been 21.31 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
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				**13.58**			

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	Austria/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	**21.31**

*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

Another Qatar LNG expansion

Natural Gas: Qatar to increase LNG capacity 10.1 bcf/d today to 18.7 by end of 2030

There was a big surprise earlier this morning when Qatar Energy announced it would add a further 2.1 bcf/d of LNG capacity before the end of 2030. It is important to remember the advantage of brownfield expansions vs greenfield LNG projects. Qatar Energy is able to bring this new capacity on in six years. Earlier this morning, we tweeted [LINK] "*Brownfield advantage. Drilling confirms more reserves so Qatar to add a further +2.1 bcfd #LNG supply capacity. Current 10.1 bcfd. Going to 16.6 bcfd in 2027 with NFE & NFS projects. Today @qatarenergy now have reserves to grow to 18.7 bcfd by end of 2030. #NatGas #Oil.*" QatarEnergy announced [LINK] "*QatarEnergy has announced that it is proceeding with a new LNG expansion project, the "North Field West" project, to further raise the State of Qatar's LNG production capacity to 142 million tons per annum (MTPA) before the end of this decade, representing an increase of almost 85% from current production levels." "H.E. Minister Al-Kaabi also announced the presence of huge additional gas quantities in the North Field estimated at 240 trillion cubic feet, which raises the State of Qatar's gas reserves from 1,760 to more than 2,000 trillion cubic feet, and the condensates reserves from 70 to more than 80 billion barrels, in addition to large quantities of liquefied petroleum gas, ethane, and*

helium. H.E. the Minister of State for Energy Affairs, the President and CEO of QatarEnergy, said: "These are very important results of great dimensions that will take Qatar's gas industry to new horizons, as they will enable us to begin developing a new LNG project from the North Field's western sector with a production capacity of about 16 MTPA. As such, the State of Qatar's total LNG production will reach about 142 MTPA when this new expansion is completed before the end of this decade. This represents an increase of almost 85% compared to current production levels." Our tweet did the conversion on how Qatar's current capacity is 10.1 bcfd, increasing to 16.6 bcf/d with its in progress NFS and NFE expansions, and now increasing to 18.7 bcf/d before the end of 2030 with today's announcement. Our Supplemental Documents package includes the Qatar Energy announcement.

Figure 8: Qatar Energy LNG capacity from 10.1 bcf/d today to 18.7 bcf/d before end of 2030

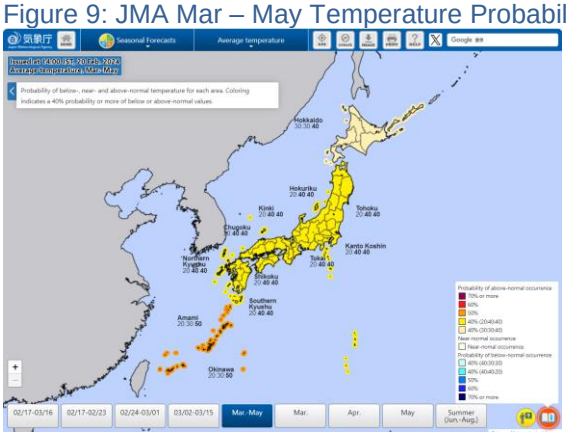
Source: Qatar Energy

Natural Gas: JMA forecasts a warm spring and hot summer in Japan

Japan's spring and summer temperature forecast

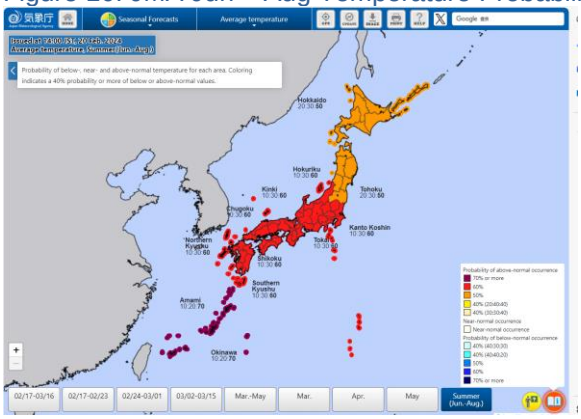
Japan is the #2 LNG importer just behind China. Feb is ending and there have been no worries this winter for any LNG shortage given it's been a warmer than normal winter that has taken Japan thru any major winter weather driven electricity and natural gas demand period. We have been warming for weeks that it is setting up a repeat of winter 2022/23 where the warm winter led to JKM LNG prices being held back for months. It's looking worse in 2024 as JKM prices have been much lower YoY since mid-Jan. Given it's the end of Feb, we have stopped for a month or two reporting on the temperatures over the next 30 days as it moving into shoulder season when there is normally not any major heating or air conditioning temperature driven natural gas demand. We call shoulder season the time of year that is normally leave the windows open as it's not too hot or too cold. However, the Japan Meteorological Agency updated its spring and summer outlooks [LINK]. The February 20 update calls for a warm spring and an even warmer summer. The JMA spring forecast is for March to May, and their summer forecast is June through August. A warm spring is not normally a big temperature driver for big natural gas consumption, but a hot summer can bea boost to natural gas consumption. So far, the summer prediction would indicate increased natural gas demand as it will be hot. Below is the JMA's seasonal temperature probability forecasts for the spring (March-May) and summer (June-August).

Figure 9: JMA Mar – May Temperature Probability Forecast



Source: Japan Meteorological Agency

Figure 10: JMA Jun – Aug Temperature Probability Forecast



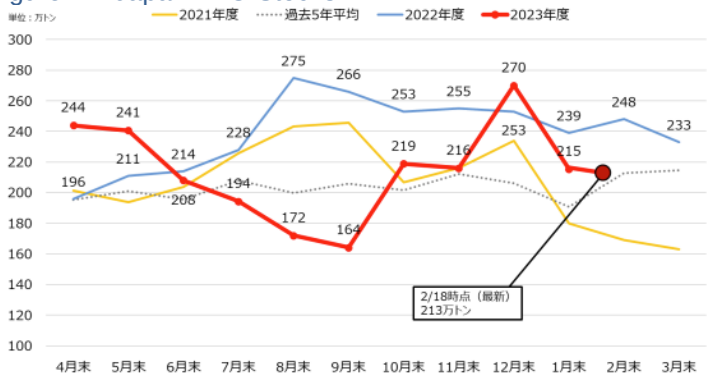
Source: Japan Meteorological Agency

Natural Gas: Japan LNG stocks up WoW, down YoY, now in-line with 5-year average

Japan LNG stocks up +3.9% WoW

Japan LNG stocks are below 2023 levels and the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on Feb 18 were 102.3 bcf, up +3.9% WoW from Feb 11 of 98.9bcf, and are down -14.1% YoY from 119.1 bcf a year earlier, and in-line with 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 11: Japan LNG Stocks



Source: METI

Natural Gas: Japan LNG imports down to post Fukushima Jan low

Japan LNG imports in January

Japan LNG imports were in January are record low January levels since Fukushima and hitting new Jan lows aby a wide margin. It was a combination of warm winter and return of some nuclear. On Wednesday, Japan's Ministry of Finance posted its import data for January [LINK]. The MOF reported Japan's January LNG imports were 9.46 bcfd, which is -6.0% MoM from 10.06 bcf/d in December 2023, and down 10.5% YoY from 10.56 bcf/d in January 2023. This is new record low for January since Fukushima with the previous January low being 10.51 bcf/d ion January 2022, which was just below 10.56 bcf/d in January 2023. Japan's thermal coal imports in January were -6.8% YoY and Petroleum Producdts imports were -9.9% YoY. Below is our table that tracks Japan LNG import data.

Figure 12: Japan Monthly LNG Imports

bcf/d	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	12.66	13.06	11.22	12.85	12.79	11.69	11.63	12.48	10.51	10.56	9.46	-10.5%
Feb	12.88	13.26	12.30	13.36	14.23	12.61	10.99	13.84	12.19	10.98		
Mar	12.46	12.60	12.62	12.61	12.28	11.30	11.16	11.04	10.07	8.86		
Apr	11.54	10.56	10.21	10.52	8.97	9.00	8.31	7.96	8.92	7.25		
May	10.06	8.91	8.55	9.66	9.92	8.62	7.09	7.67	8.92	7.14		
June	10.91	10.61	10.02	9.90	8.88	8.32	8.42	9.13	9.29	7.25		
July	12.14	10.77	10.19	10.19	10.55	10.56	9.35	9.58	9.54	7.88		
Aug	10.92	10.93	11.96	11.24	11.73	9.45	9.04	9.75	9.71	8.78		
Sept	11.64	11.06	10.67	9.31	10.04	10.30	10.41	8.66	8.52	8.84		
Oct	10.75	9.38	9.73	9.50	10.12	9.75	9.20	7.17	7.88	8.38		
Nov	11.00	10.71	12.07	10.26	10.15	10.03	9.63	9.38	8.88	8.53		
Dec	12.79	12.51	11.69	12.31	11.23	10.54	11.96	10.89	9.39	10.06		

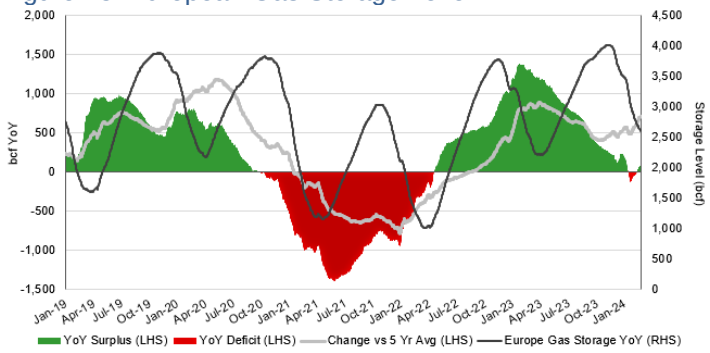
Source: Japan Ministry of Finance, SAF

Natural Gas: Europe storage drops again WoW to 64.49%, YoY surplus remains

Europe gas storage

Europe is seeing some draws on gas storage, but shook off its YoY deficit last week. This week, Europe storage decreased by -1.23% WoW to 64.49% on Feb 22 vs 65.72% on Feb 15. Storage is now +1.28% higher than last year's levels of 63.21% on Feb 22, 2023. Recall the panic of late 2021 on natural gas, it was because Europe gas storage was only 67.21% full on Dec 1, 2021. Below is our graph of Europe Gas Storage Level.

Figure 13: European Gas Storage Level



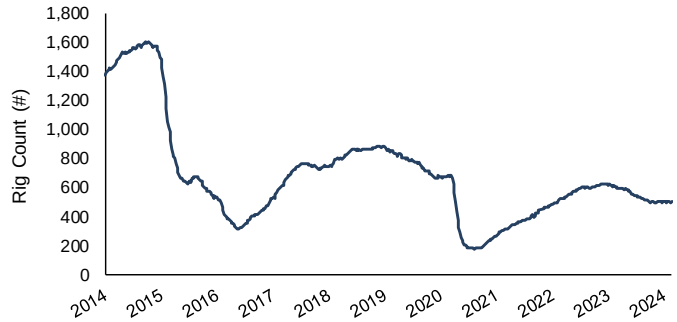
Source: Bloomberg, SAF

Oil: US oil rigs up +6 WoW to 503 rigs, US gas rigs down -1 WoW at 120 rigs

US oil rigs up WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Total US oil rigs were up +6 rigs WoW to 503 oil rigs as of Feb 23. 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. (ii) The major basin changes for oil rigs were Permian +2 rigs WoW to 308 oil rigs, Granite Wash +1 rigs WoW to 5 oil rigs, and Others +3 rigs WoW to 70 rigs. (iii) US gas rigs were down -1 rig WoW at 120 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 14: Baker Hughes Total US Oil Rigs



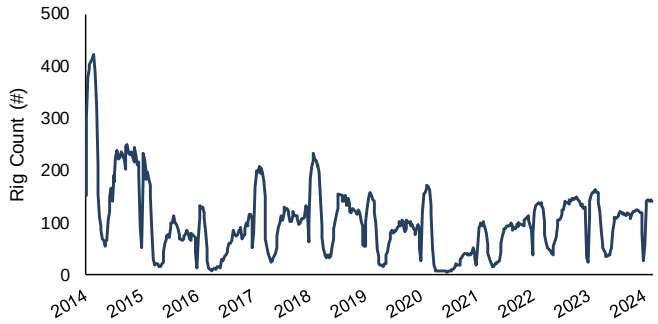
Source: Baker Hughes, SAF

Oil: Total Cdn rigs down -3 rigs WoW, risk road bans to start anytime now

Cdn total rigs down WoW

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 Feb 23, total Cdn rigs were up -3. WoW to 231 rigs. By province, Alberta was up +2 rigs WoW to 165 total rigs, and Saskatchewan dropped 5 rigs WoW to 35 rigs. Cdn oil rigs were down -3 rigs WoW to 141 oil rigs and are down -17 rigs YoY. Cdn gas rigs were down -flat WoW at 90 rigs, which is up +4 rigs YoY.

Figure 15: 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

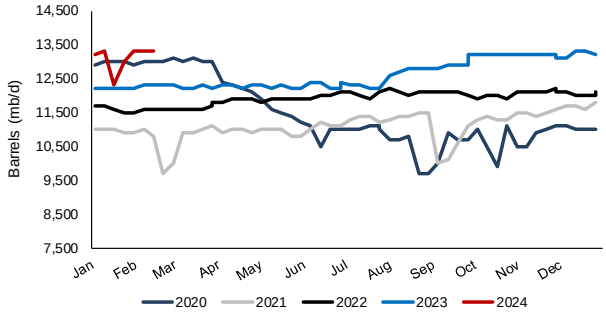
After the EIA slashed production estimates by -1.000 mmb/d last month in response to cold temperatures and production shut-ins, the EIA's estimates are now back up to where they were before January. On Jan 24, the EIA wrote "*This week's domestic crude oil production estimate incorporates a decrease 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 November actuals) was +0.108 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 16. Alaska was down -0.008 mmb/d WoW to 0.431 mmb/d. Below is a table of the EIA's weekly oil production estimates.

Figure 16: 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				

Source: EIA

Figure 17: EIA's Estimated Weekly US Oil Production



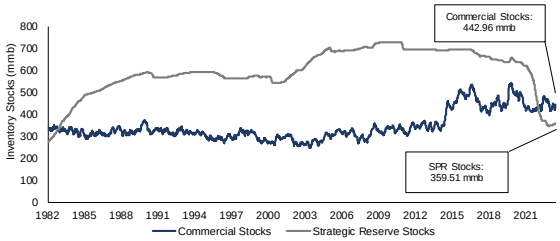
Source: EIA, SAF

Oil: US SPR-commercial reserve deficit now -83.453 mmb

US SPR reserves

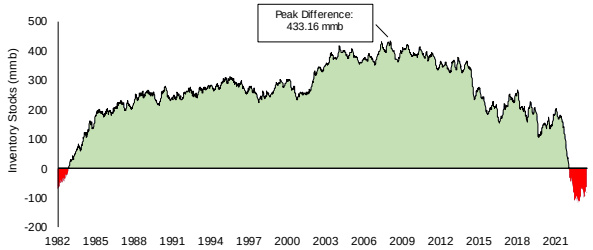
Oil in the US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sept 16, 2022 week. After last week's huge +12.018 mmb build, this week saw a smaller (but still sizeable) +3.514 mmb build. The EIA's weekly oil data for February 16 [LINK] saw the SPR reserves increase +0.748 mmb WoW to 359.511 mmb, while commercial crude oil reserves increased +3.514 mmb to 442.964 mmb. There is now a -83.453 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles.

Figure 18: US Oil Inventories: Commercial & SPR



Source: EIA, SAF

Figure 19: US Oil Inventories: SPR Less Commercial



Source: EIA, SAF

Oil: US gasoline prices -$0.02 this week to $3.26

US gasoline prices

US gasoline prices were up for the past few weeks after being around $3.10 for several weeks driven in part by the shut down of bp's Whiting refinery. Yesterday, AAA reported that US national average prices were $3.26, which is down $0.02 WoW, up $0.16 MoM and down $0.13 YoY. As of yesterday, the California average gasoline prices was $4.64 (-$0.01 WoW) and a $1.38 premium to the national average gasoline price of $3.26. 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 $5.38 WoW to $30.61

Crack spreads closed at $25/23

There was a big widening of crack spreads this week t co close at $30.61 on Feb 23. On Friday, we tweeted [LINK] "*321 crack spreads closed at $30.61 today. Spreads over $30 provides big incentives for refineries to keep up runs and first response is to drag up #Oil prices a bit. Thx @business #OOTT."* This week's $5.38 WoW widening followed a big $4.80 WoW narrowing for the Feb 16 week, which had followed a big $4.98 WoW widening for the Feb 9 week. 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 jump up to $30 is a big incentive to refiners to want more crude and produce more product. This week, crack spreads widened $5.38 WoW to $30.61, which followed a $4.80 WoW narrowing to $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, $24.10 on Jan 12, $21.71 on Jan 5, and $23.57 on Dec 29. Crack spreads at $30.61 are still 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 $30.61 as of the Friday Feb 23, 2024 close.

Figure 20: Cushing Oil 321 Crack Spread & WTI Feb 23, 2014 to Feb 23, 2024

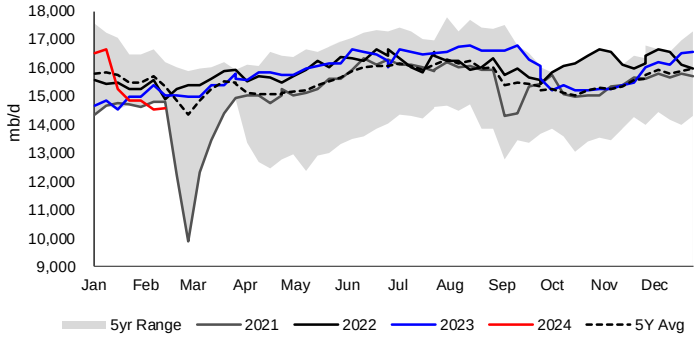
Source: Bloomberg

Oil: Refinery Inputs up +0.032 mmb/d WoW to 14.574 mmb/d

Refinery inputs +0.032 mmb/d WoW

There are other refinery items impacting crude oil inputs into refineries but the big on is the continued unplanned shut down of the 435,000 /d Whiting (Indiana) refinery that is primarily run on Cdn crude. It went down on Feb 1, and we saw the effect in last week's data, which turned out to be a new 5-year low (on a 2019-2023 basis). It reminds that there are always unplanned issues that impact crude oil inputs into refineries, but refineries around the world follow seasonal patterns for their maintenance. US refineries are in their normal winter turnaround period ie. more refineries are down for turnaround. On Thursday, the EIA released its estimated crude oil input to refinery data for the week ended February 16 [LINK]. The EIA reported crude inputs to refineries were up +0.032 mmb/d this week to 14.574 mmb/d and are down -0.436 mmb/d YoY. Refinery utilization was flat WoW at 80.6%, which is -530 bps YoY.

Figure 21: US Refinery Crude Oil Inputs



Source: EIA, SAF

US net oil imports

Oil: US net oil imports -0.434 mmb/d WoW as oil exports up +0.618 mmb/d WoW

The EIA reported US "NET" imports were down -0.434 mmb/d to 1.689 mmb/d for the February 16 week. US imports were up +0.184 mmb/d to 6.654 mmb/d against exports which were +0.618 mmb/d WoW to 4.965 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 up +0.217 mmb/d. Some items to note on the country data: (i) Canada was down -0.330 mmb/d to 3.669 mmb/d. which would be explained by BP Whiting still being down. (ii) Saudi Arabia was down -0.166 mmb/d to 0.224 mmb/d. (iii) Mexico was up +0.490 mmb/d to 0.784 mmb/d. (iv) Colombia was up +0.136 mmb/d to 0.286 mmb/d. (v) Iraq was up +0.183 mmb/d to 0.226 mmb/d. (vi) Ecuador was down -0.043 mmb/d to 0.158 mmb/d. (vii) Nigeria was up +0.022 mmb/d to 0.159 mmb/d.

Figure 22: US Weekly Preliminary Imports by Major Country

(thousand b/d)	Nov 17/23	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	WoW
Canada	3,846	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	-330
Saudi Arabia	224	141	400	316	406	75	139	474	413	81	150	353	390	224	-166
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	971	571	876	633	851	380	952	522	756	356	427	661	294	784	490
Colombia	217	143	289	214	215	157	129	220	212	72	79	415	150	286	136
Iraq	36	178	166	85	22	380	239	192	64	206	205	0	43	226	183
Ecuador	126	112	252	233	49	142	83	30	150	3	103	72	201	158	-43
Nigeria	79	174	226	111	162	80	95	165	147	199	190	81	137	159	22
Brazil	257	148	274	255	197	238	305	249	264	266	213	338	148	44	-104
Libya	86	0	87	87	86	0	171	0	7	37	0	0	63	92	29
Top 10	5,842	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	217
Others	687	1,123	966	1,011	1,076	1,396	986	832	1,219	1,090	665	1,448	1,045	1,012	-33
Total US	**6,529**	**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**	184

Source: EIA, SAF

Pemex January oil production

Oil: Mexico oil production including partner volumes just below 1.6 mmb/d

On Friday, Pemex posted its January 2024 oil production data. [LINK] Pemex does not provide any commentary on the data, but reported January oil production, including partners, was 1.549 mmb/d, which was -2.2% YoY and basically flat MoM from 1.560 mmb/d in December 2023. The big picture story remains the same - Mexico (Pemex) oil production is stuck around 1.6 mmb/d for the last three years. Pemex has been unable to grow Mexico oil production, which means that any increase in Pemex Mexico refineries crude oil input will result in less Mexico oil for export including to the US Gulf Coast. And it also means that if Mexico has refinery issues in a month, there will be more Mexico oil for export in a month. Below is our table tracking Pemex oil production.

Figure 23: Pemex (Incl Partners) Mexico Oil Production

Oil Production (thousand b/d)	2016	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	2,259	2,020	1,909	1,623	1,724	1,651	1,705	1,584	1,549	-2.2%
Feb	2,214	2,016	1,876	1,701	1,729	1,669	1,684	1,582		
Mar	2,217	2,018	1,846	1,691	1,745	1,697	1,696	1,597		
Apr	2,177	2,012	1,868	1,675	1,703	1,693	1,686	1,608		
May	2,174	2,020	1,850	1,663	1,633	1,688	1,690	1,611		
June	2,178	2,008	1,828	1,671	1,605	1,698	1,702	1,609		
July	2,157	1,986	1,823	1,671	1,595	1,701	1,707	1,573		
Aug	2,144	1,930	1,798	1,683	1,632	1,657	1,691	1,602		
Sept	2,113	1,730	1,808	1,705	1,643	1,709	1,685	1,593		
Oct	2,103	1,902	1,747	1,655	1,627	1,692	1,698	1,574		
Nov	2,072	1,867	1,697	1,696	1,633	1,691	1,706	1,567		
Dec	2,035	1,873	1,710	1,706	1,650	1,694	1,576	1,560		

Source: Pemex, SAF

Oil: Mexico exports 0.951 mmb/d of oil in January, -7.4% MoM

Pemex January oil exports

On Friday, Pemex posted its oil exports for January [LINK] Pemex does not provide any commentary on the data but reported January oil exports were 0.951 mmb/d, which is -7.4% MoM and -3.0% YoY vs 0.980 mmb/d in January 2023. Oil exports to the US fell sharply, -0.432 mmb/d MoM to 0.279 mmb/d vs 0.711 mmb/d in December, and -63.0% YoY from 0.754 mmb/d in January 2023. The US tends to be a higher margin market so Pemex typically prioritizes oil exports to the US. A drop in exports was expected as Pemex's 243,000 b/d Olmeca refinery was slated to start up in January. The simple reminder is more oil processed at refineries = less oil available for export. Below is our table of the Pemex oil export data.

Figure 24: Pemex Mexico Oil Exports

Oil Exports (thousand b/d)	2016	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	1,119	1,085	1,107	1,071	1,260	979	832	980	951	-3.0%
Feb	1,241	1,217	1,451	1,475	1,093	1,006	925	949		
Mar	1,062	1,001	1,176	1,150	1,144	925	905	971		
Apr	1,081	1,017	1,266	1,023	1,179	923	1,024	989		
May	1,204	958	1,222	1,205	1,062	1,031	965	1,087		
June	1,098	1,157	1,110	995	1,114	1,106	1,029	1,203		
July	1,146	1,255	1,156	1,079	1,051	1,173	1,062	1,052		
Aug	1,261	1,114	1,181	1,082	1,190	1,099	915	1,076		
Sept	1,425	1,159	1,206	995	1,023	983	1,022	1,119		
Oct	1,312	1,342	1,027	963	908	935	971	1,053		
Nov	1,273	1,388	1,135	1,114	1,171	1,025	893	883		
Dec	1,115	1,401	1,198	1,115	1,243	1,037	900	1,027		

Source: Pemex, SAF

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

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 what we wrote in 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: Norway January oil production of 1.829 mmb/d, up MoM

Norway January oil production

On Tuesday, the Norwegian Offshore Directorate released its January production figures [LINK]. It reported oil production of 1.829 mmb/d, down from 1.870 mmb/d in December and +3.6% YoY from 1.765 mmb/d in January 2023. January's production actuals came in +2.0% (+0.035 mmb/d) over the forecast volumes of 1.794 mmb/d. The NOD does not provide any explanation for any MoM changes. Note that, prior to 2024, the Norwegian Offshore Directorate was called the Norwegian Petroleum Directorate.

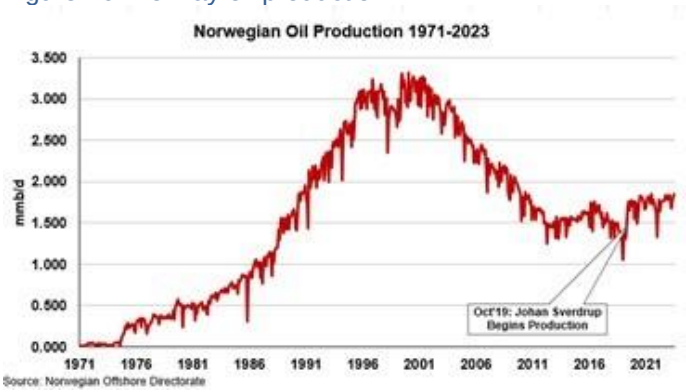
Figure 25: Norway January 2024 Production

		Oil mill bbl/day	Sum liquid mill bbl/day	Gas MSm³/day	Total MSm³ o.e/day
Production	**January 2024**	**1.829**	**2.071**	**377.7**	**0.707**
Forecast for	January 2024	1.794	2.055	378.4	0.705
Deviation from forecast		0.035	0.016	-0.6	0.002
Deviation from forecaset in %		2 %	0.8 %	-0.2 %	0.3 %
Production	December 2023	1.870	2.122	382.8	0.720
Deviation from	December 2023	-0.041	-0.051	-5	-0.013
Deviation in % from	December 2023	-2.2 %	-2.4 %	-1.3 %	-1.8 %
Production	January 2023	1.765	1.995	359	0.676
Deviation from	January 2023	0.064	0.076	18.8	0.031
Deviation in % from	January 2023	3.6 %	3.8 %	5.2 %	4.6 %

Source: Norwegian Offshore Directorate

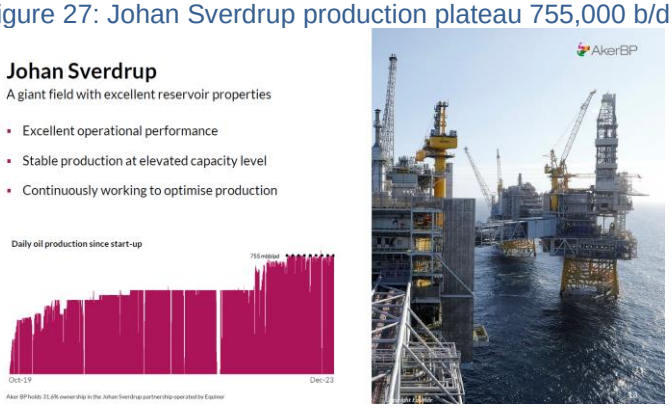
Is Norway oil production peaking w/ Johan Sverdrup field moving to decline?
Here is what we wrote in our Feb 11, 2024 Energy Tidbitgs memo asking if Norway oil production is peaking with Johan Sverdrup oil field moving to decline. "*We have to believe Norway will be in a "show me" phase over the next 12 months. There was big news on Thursday, when Aker BP said Norway's biggest oil field, the 755,000 b/d Johan Sverdrup, is moving from plateau to decline in late 2024 or early 2025. There was no disclosure of how much it will decline in 2025 or if the decline can be offset, but it will raise the question what does it mean to Norway's oil production base. (i) On Thursday, we tweeted [LINK] "#Oil bulls will like this. Johan Sverdrup 0 to 0.75 mmbd led to Norway 1.31 mmbd in 09/19 to 1.85 mmbd today. BUT Aker BP says JS moving from plateau to decline in late 24/early 25. Water now hitting some wells. Can they arrest decline with H2O handling, more wells, etc? Are there other fields to offset? Or is Norway #Oil about to start to decline? #OOTT." (ii) Our tweet included the below graphs that reminded Johan Sverdrup started production in Oct 2019 and is now 755,000 b/d. And Norway oi production was 1.31 mmb/d in Sept 2019 and is now 1.85 mmb/d in Dec 2023. Johan Sverdrup is currently 40% of total Norway oil production. (iii) There was a great Q&A exchange on the Aker BP Q4 call on Thursday that led to the CEO noting a few key points. Aker BP has 31.6% in Johan Sverdrup but is not the operator. Equinor is the operator. CEO noted that water is hitting some undisclosed number of wells. And everyone knows water in conventional oil wells is a negative. And the more water, the more water handling capacity is required. The CEO said there is sufficient water handling capacity, didn't specify how much more longer that would be the case and that water handling capacity will impact some operations. The CEO noted that plateau is ending and declines should start in late 2024 or early 2025. This is earlier than expected. But he would not say what decline rate going forward and if their development options (adding more water handling, drilling more wells, etc) can offset or more than offset the start of declines. There is more in the Q&A and we recommend reading the excerpt. (iv) The key items to come out in 2024 is what will the declines look like at Johan Sverdrup in 2025, can they offset the declines at Johan Sverdrup and for how long, are there other Norway projects that can more than offset any declines at Johan Sverdrup. (v) Until these questions are answered, we have to take the Aker CEO comments at face value and that Johan Sverdrup plateau oil production is ending in late 2024/early 2025 and declines are about to start. Our Supplemental Documents package includes excerpts from Aker BP call transcript."*

Figure 26: Norway oil production



Source: Norwegian Offshore Directorate

Figure 27: Johan Sverdrup production plateau 755,000 b/d



Source: Aker BP Q4 Presentation Feb 8, 2024

Oil: Russia/Ukraine war passed 2-yr mark, no end in sight if West support stays

Russia/Ukraine war hits 2-year mark

Yesterday, Feb 24 marked the 2-yar mark of the Russia/Ukraine war. We heard a politician talk about how tough it has been but did it from a global perspective. Well, that may be true, but that can be nothing like it has been for the people in Ukraine. If you get the chance, we recommend trying to talk to Ukrainians who have made it to Canada about what they experienced and their friends/family who are still in Ukraine are still experiencing. And that the unfortunate part is there is no end in sight. That view was echoed by France Minister of the Armed Forces, Sebastien Lecornu, on Thursday [LINK], who was quoted saying "*This kind of war teaches us again what patience is. You have a situation that is stabilizing, the front line is settling in, there is a form of endurance that will be created"*.

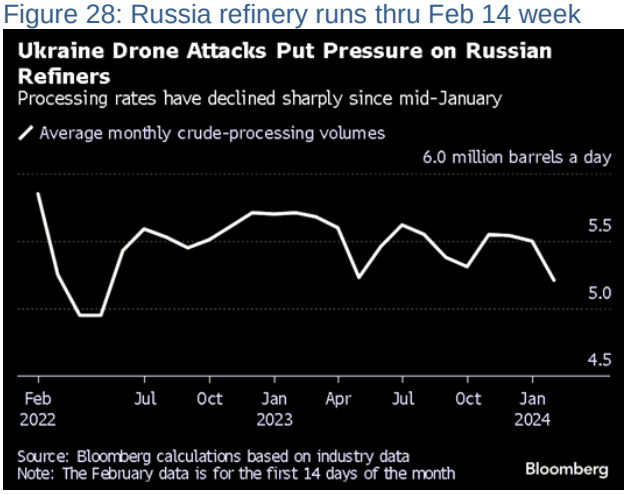
Oil: Russian refineries oil processing down -94,000 b/d WoW after Drone Strikes

Russia oil refinery runs

Ukraine drone attacks are the key reason why Russian refinery runs are down when they would normally be higher even as the normal winter peak refining period winds down. On Monday, Bloomberg reported that Russian refiners processed 5.160 mmb/d between Feb 7 and Feb 14. This is down 94,000 b/d WoW, and also brings the February average down to

5.21 mmb/d, the lowest since October. Normally Russia refineries are starting their seasonal decline but this year hjas been extra impacted by drone attacks. Recent drone strikes on Lukoil Volgograd, Rosneft Ryazan, Ilsky and Afipsky have all had some processing impact over the past few weeks. The Rosneft Tuapse refinery that caught fire on Jan 25th after a drone strike is also still not back 100%, and Lukoil's Perm refinery is seeing lower runs for other unknown reasons. Our Supplemental documents package includes the Bloomberg report.

Figure 28: Russia refinery runs thru Feb 14 week



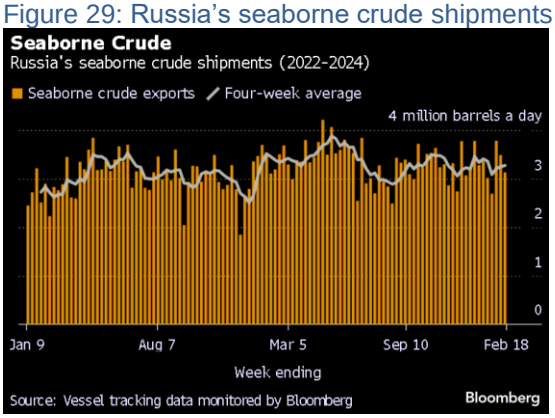
Source: Bloomberg

Oil: Russia's crude oil shipments for Feb 18 down WoW, below committed cuts

Russia oil shipments meet commitment

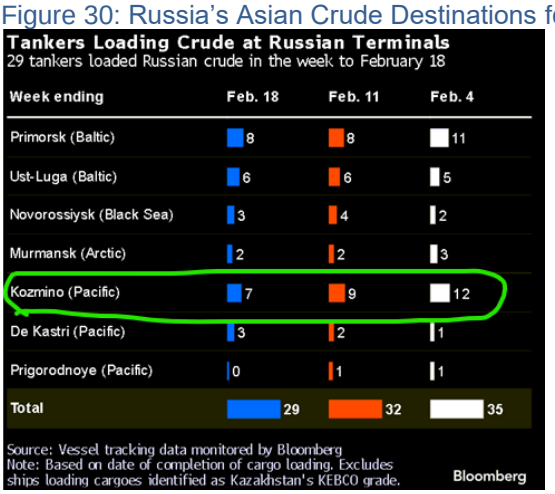
Russian crude exports by ship fell for the second straight week in a row, and are now below their target cap on a weekly basis (directly in-line on a 4-week average). Bloomberg had reported "*Russia's crude shipments fell by about 360,000 barrels a day in the week to Feb. 18 to 3.13 million barrels a day. The decline put exports 150,000 barrels a day below the level Moscow has pledged to its OPEC+ partners for the first quarter, on a weekly basis. Despite that retreat, the less volatile four-week average rose for a third week, up by about 30,000 barrels a day, putting it almost exactly in line with the target".* Russia is still having a hard time selling their Sokol crude, and even after a couple deliveries to India last week, refineries have shown reluctance to take 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 Korea and Japan would be big buyers of this grade since it comes out of Russia's offshore Pacific fields. 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 18 week



Source: Bloomberg

Figure 30: Russia's Asian Crude Destinations for Feb 18 week



Source: Bloomberg

Oil: France says Russia threatened to shoot down France planes in the Black Sea

France Minister of the Armed Forces Lecornu also revealed that Russia recently threatened to shoot down France jets in the Black Sea. RTL reported [LINK] "*Russia is not only waging this war on the military front, the minister recently spoke of threats and attempts to sabotage our own armies. "Russia's behaviour in 2024 is not at all the same as it was in 2022. This is because Russia is struggling on the battlefield in Ukraine. You have attempts to take control of the Russians. A month ago, a Russian air traffic control system threatened to shoot down French planes in the Black Sea. It's as old as the Cold War, we have the return of a particularly aggressive Russian positioning. Russia is playing with the thresholds of aggressiveness," he said*

Russia threatened France jets

Oil: Russia threatened the use of nukes against Kyiv, Berlin, London, Washington

Russia threatened to use nukes

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: Will OPEC+ extend voluntary cuts, will Iraq compensate for over production?

OPEC+ voluntary cuts March 31

On Friday, we tweeted [LINK] "*More expecting #OPEC+ to extend voluntary cuts past March 31. But we could/should see statement on compensation for any members overproduction. ie. as 👇 @S_Elwardany reported for Iraq. #OOTT."* We are starting to see more OPEC watchers look ahead to the March 31 current end of the OPEC+ voluntary cuts and it seems like they are expecting OPEC+ to extend the voluntary cuts past March 31. But, as our tweet noted, we think there will be some sort of statement on members committing to comply and, if they haven't complied, to make up for the overproduction. We haven't seen reports of Saudi Energy Minister working the phones but it makes sense that he is working on something to ensure markets see a committed OPEC+ group. Our tweet included Bloomberg's Monday report from their interview with Iraq oil Minister who said Iraq is not producing more than their quota but if the external estimates say they are overproducing, Bloomberg wrote "* *"There will be a commitment and a tweaking of the amounts after reviewing the secondary sources," the minister said."* Note that Bloomberg also wrote " *The minister doesn't think there's a need for OPEC+ to extend cuts, which are in place until the end of the first quarter, but Iraq will comply with whatever the group decides."* Our Supplemental Documents package includes the Bloomberg report.

Oil: US increases attacks on Houthis

Is US having any impact on Houthis?

Part of the story is the same this week in that the Houthis and the US continue their back and forth attacks on each other. So that is the same, However, what is different is that the US is hitting back even harder this week after any Houthi attack. Two days ago, the Houithis went after cargo ships and a tanker. Yesterday, CENTCOM tweeted [LINK] they "*conducted strikes against 18 Houthi targets in Iranian-backed Houthi terrorist-controlled areas of Yemen. These strikes from this multilateral coalition targeted areas used by the Houthis to attack international merchant vessels and naval ships in the region. Illegal Houthi attacks have disrupted humanitarian aid bound for Yemen, harmed Middle Eastern economies, and caused environmental damage. The targets included Houthi underground weapons storage*

facilities, missile storage facilities, one-way attack unmanned aerial systems, air defense systems, radars, and a helicopter. These strikes are intended to degrade Houthi capability and disrupt their continued reckless and unlawful attacks on international commercial and U.S. and U.K. vessels in the Red Sea, Bab AI-Mandeb Strait, and the Gulf of Aden." So far, the biggest surprise to most is that all the US attacks to date haven't caused the Houthis to stop or damaged their attack capability to the extent they really can't attack. There has been sign yet of any slow down by the Houthis despite the US having hit the Houthis hard. IF the pattern continues, the Houthis should be launching attacks over the next couple days.

Houthis "submarine weapon"

Oil: Houthis leader confirms using a "submarine weapon" in Red Sea

On Thursday, the Houthis leader made another speech to the people. It seems like Thursday is his regular big speech day. The leader confirmed the Houthis now are using a submarine weapon in the Red Sea. Al Masirah wrote [LINK] "*Sayyed Abdulmalik: Yemen Introduced 'Submarine Weapon' in Red Sea Operations." " The leader of the revolution, Sayyed Abdulmalik al-Houthi affirmed that Yemeni operations in support of Gaza in the Red Sea, the Arabian Sea, the Gulf of Aden, and the Bab al-Mandab Strait continue. He stated that Yemen is escalating these operations in response to the enemy's increased aggression in the Gaza Strip. In a speech on Thursday, the leader mentioned that Yemen's operations against Israeli targets in the occupied territories included using 183 missiles and drones. The escalation in naval operations involved activating missiles, drones, and military boats. He disclosed the involvement of submarines in the maritime operations, causing concern for the US. Despite the enemy's efforts to reduce movement, camouflage, and withhold information, 48 ships in the sea were targeted."*

Add tanker days to avoid Red Sea

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

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*."

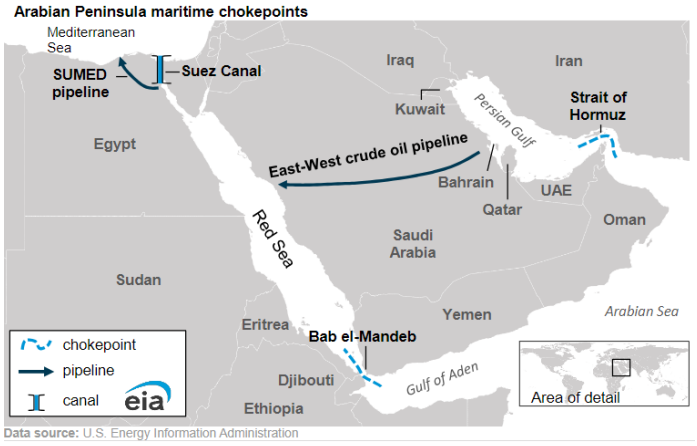
Figure 31: Selected commercial shipping routes, as of January 2024

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 32: Bab el-Mandeb Strait, a world oil chokepoint



Source: EIA

Figure 33: 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)

eia

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 sees oil decline at 6%

Oil: Saudi Aramco reminds global oil decline is 6% per yr, a Saudi Arabia every 2 years

We really believe that, if it hadn't been for Covid, the basic oil fundamental of oil decline would be an issue today and not looking ahead to the balance of the 2020s. On Monday, we tweeted [LINK] "*For #Oil bulls. "What I am saying natural decline is call it 6% on 103 million barrels, that's over 6 million barrels per day of capacity that is lost every year, that has to be replaced. So that is a Saudi Arabia every 2 years" Saudi Aramco CFO Al-Murshed to @VonnieQuinn #OOTT."* Saudi Aramco CFO reminded of the basic of oil and gas – they decline and producers have to replace declines every year just to hold production flat. In this case the CFO said Aramco believes there is a 6% decline so that means annual decline over 6 mmb/d that has to be replaced every year. And his line put that in great perspective saying "*that is a Saudi Arabia every 2 years*". Our tweet included the transcript we made of Saudi Aramco CFO Al-Murshed's comments. SAF Group created transcript from personal mobile recording of comments by Saudi Aramco CFO Ziad Al-Murshed with Bloomberg's Vonnie Quinn at a conference in Riyadh. Items in "*italics*" are SAF Group created transcript. Al-Murshed "*..the world today is still depending on very little capacity. There is about 3, 3 ½ %, actually 3% of the world production that is spare. And that is extremely dangerous to continue this into the mid to long term. If you recall, the problems we were having with gas because gas didn't have any spare capacity. Oil is always a lot more stable from fluctuations because there is spare capacity. The world is now down to 3% spare capacity." Quinn "let me get this right, are we at dangerous levels of spare capacity?" Al-Murshed "what I am saying natural decline is call it 6% on 103 million barrels, that's over 6 million barrels per day of capacity that is lost every year, that has to be replaced. So that is a Saudi Arabia every two years., So a Saudi Arabia every two years, you have to ask where is this coming from? It may not happen, probably not happen this year, next year but if there isn't a significant investment in supply, it will eventually, we will get there*." Note the CFO was criticized for his saying there only 3% spare capacity but we assumed he was speaking of excluding Saudi Arabia.

Aramco CEO global conventional + unconventional oil decline rate is 7%

Here is what we wrote in our Dec 10, 2023 Energy Tidbits memo on the last time Saudi Aramco discussed global decline rates. "*We recognize that no one is really*

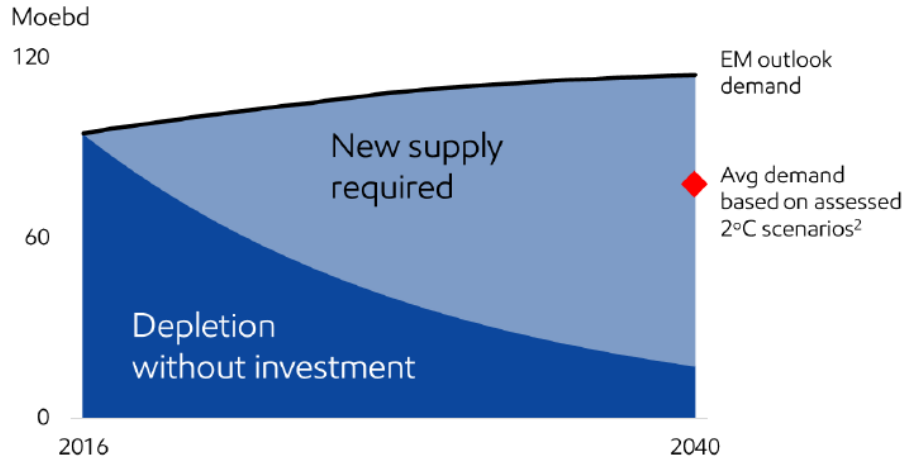
thinking about mid-term oil outlook given the oil price weakness now going into Q1/24. For months, we have been warning that the key factor driving why Saud would continue its voluntary 1 mmb/d cuts thru Q1/24 was that global oil demand is always seasonally down in Q1 every year vs the preceding Q4. That is the big problem, the normal seasonal decrease in oil demand in Q1 vs Q4 that is approx. 1.5 mmb/d. So no one is focused beyond 2024 but, for those that care, on Thursday, we tweeted [LINK] "For anyone looking at #Oil in 2025+. #Aramco CEO "If you look at existing fields today & the level of maturity that we're seeing in conventional and unconventional resources, you're looking at a 7% decline" ie. 7 mmbd has to be replaced each yr to stay flat. Thx @jcgnana #OOTT." The headlines on the Platts story were "COP28: Saudi Aramco CEO says fossil fuel investment more viable than renewables to meet demand. HIGHLIGHTS Fossil fuel investment down 40% from 2014 levels: Nasser. Q4 2023 oil demand set to be higher than Q4 2019. Renewables, hydrogen not viable in the short term, he says." [LINK]. But what caught our eye were Nasser's comments on global oil declines. Platts wrote "Saudi Aramco's chief called for more investment in fossil fuels while dismissing the short-term viability of renewables due to what he suggested were higher costs and low demand for clean energy. "I think we need more investment," Nasser said citing a 40% decline in investment in fossil fuels from 2014 levels. "If you look at existing fields today and the level of maturity that we're seeing in conventional and unconventional resources, you're looking at a 7% decline," he added." Nasser is reminding the combined global conventional + unconventional oil decline rate is 7%, which means that, on a combined global basis, if spending were to stop oil production would be down 7 mmb/d. The reminder is that the first challenge for the global oil industry is to do the work to replace 7 mmb/d just so global oil production can stay flat. That is why there is the first capital every year to basic production maintenance, development drilling, field extensions, etc to replace the 7% decline. The 7% is an average decline rate across the world, which takes into account the way higher decline rates in the 13 mmb/d of US production. Our Supplemental Documents package includes the Platts report."

06/18/19 Exxon bullish argument for post 2020 oil prices, global oil decline 7%

Prior to Covid, we highlighted how global oil decline rates set up a bullish view for oil post 2020. Recall that at the time of the referenced Exxon comments, WTI was $5. Here is what we wrote in our June 23, 2019 Energy Tidbits memo. "*Exxon presented at a sellside conference this week, and we believe Exxon presented a very bullish argument for oil prices beyond 2020 which was overlooked because most readers only flip thru a slide deck and don't listen to or read transcripts of management's spoken words. Exxon's spoken words highlighted one of the forgotten (and perhaps most important) oil supply/demand concerns for post 2020 – the mid term challenge to replace increasing rate of overall global oil declines. And what is eye opening is Exxon's estimated overall global oil decline rate, which is way higher than any we can ever remember seeing. We posted a blog on Thurs evening titled "Exxon's Math Calls For Overall Global Oil Decline Rate Of ~7%, A Very Bullish Argument For Post 2020 Oil Prices" [LINK]. Our blog said "Its impossible to tell from the small oil supply/demand graph in the slide deck, but Exxon's spoken words says long term oil demand is 0.7% per year and then "When you factor in depletion rates, the need for*

new oil grows at close to 8% per year and new gas at close to 6% per year." Exxon may not specifically say what the global decline rate is, but their math is that the world needs new oil supply to grow annually at close to 8% to meet the 0.7% annual increase in oil demand and offset declines ie. an overall global decline rate of approx. 7%. This is an overall global oil decline rate for OPEC and non-OPEC". BP's estimate of overall global oil decline rate is 4.5% and we expect most are probably assuming something around 5%, certainly not above 6%. No one should be surprised by the increased decline rate given that high decline US shale and tight oil have increased by ~2.5 mmb/d in the last ~2 years. But an implied ~7% overall global oil decline rate is way higher than expectations. There is a big difference between needing to offset oil declines of ~7 mmb/d vs declines of ~4.5 mmb/d ie. an additional 2.5 mmb/d of new oil supply every year. Even if the implied difference was to 6%, it would still be an additional 1.5 mmb/d of new oil supply and that would also be very bullish for post 2020 oil. We recognize that the 2019/2020 oil supply demand story is the need for OPEC+ to keep cuts thru 2020, but Exxon's math implying ~7% overall global oil decline rate sets up a very bullish view for oil post 2020. We believe the reality to replace oil declines post 2020 is overlooked. Our Supplemental Documents package includes our blog, excerpts from the Exxon transcript and its slide deck."

Figure 34: Exxon Estimated Oil Supply/Demand



Source: Exxon

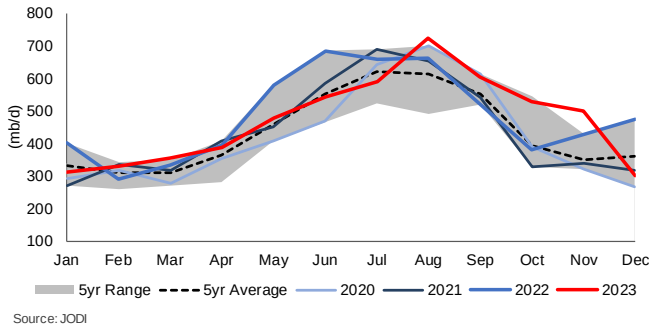
Oil: Saudi use of oil for electricity down big in Dec, ie. more oil available for export

Saudi oil use for electricity down in Dec.

Saudi Arabia had more oil available for export with less oil used for electricity with cooler temperatures in December but, instead, used the extra oil for increased refinery runs. The key seasonal theme for Saudi oil exports is that, all things being equal, Saudi can export more oil in winter months as it uses less oil for electricity and, conversely, it would have less oil for export in summer months as it uses more oil for electricity ie. air conditioning. Note that a normal peak to trough decline is ~400,000 b/d. If there is less oil used for electricity, then there is more oil for export and vice versa. The JODI data for Saudi Arabia oil supply and

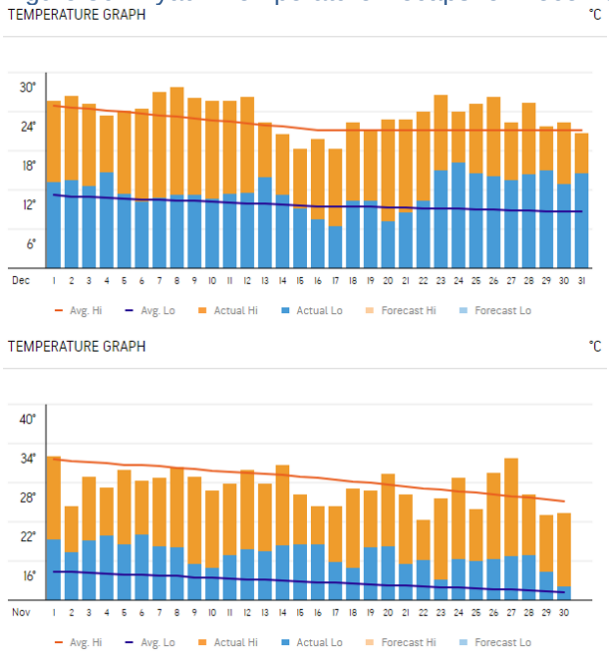
demand for December [LINK] was updated on Monday. Saudi used a lot less oil for electricity in December vs November. December continued to cool against November's averages, especially at night. We checked AccuWeather's monthly data for Riyadh, and we saw daytime highs went from the low 30's in November down to the mid-20's through December, with the nights in the high-teens which we'd consider as "leave your windows open" weather as opposed to needing air conditioning or heating. Oil used for electricity generation (direct use) in December was 303,000 b/d (vs December 2022 of 477,000 b/d) and November was 501,000 b/d (vs November 2022 of 429,000 b/d). Direct use in December 2023 is now below the 5-year average and lower than the January 2023 low of 312,000 b/d. Also note that this year fits the normal trough-to-peak swing of 400,000 b/d. Remember, we saw as much as 726,000 b/d in August. Below are the AccuWeather Temp maps for Riyadh for November and December.

Figure 35: Saudi Arabia Direct Use of Crude Oil for Electricity Generation



Source: JODI, SAF

Figure 36: Riyadh Temperature Recaps for December (top) and November (bottom)



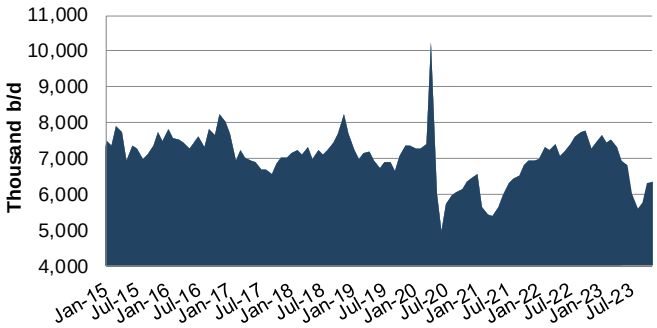
Source: AccuWeather

Oil: Saudi oil exports down -28,000 b/d to 6.308 mmb/d in December

Saudi oil exports down -28,000 b/d MoM

It looks like Saudi Arabia is working to ensure that it doesn't put all the oil out on the market that it could given December is winter and Saudi uses less oil for electricity. In December, the JODI data showed Saudi oil exports were down -28,000 b/d MoM to 6.308 mmb/d. December is winter and, as noted above, it means less oil is used for electricity and this normally frees up more oil for export especially when production was +126m,000 b/d MoM to 8.944 mmb/d in Dec. Below is our graph of Saudi Arabia monthly oil exports.

Figure 37: Saudi Arabia Oil Exports (mb/d)



Source: JODI

Source: JODI, SAF

11/10/23 Saudi reminds oil exports are seasonal, less in summer/more in winter

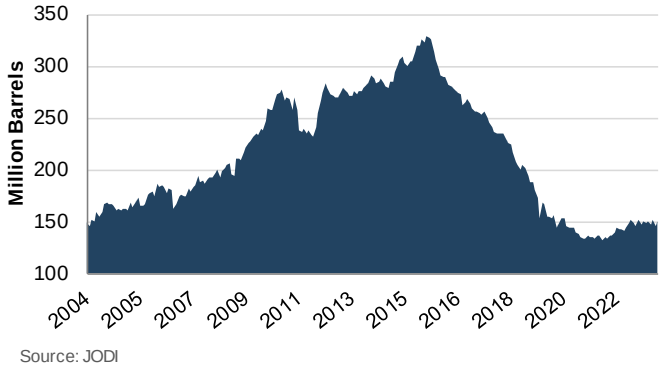
Here is what we wrote in the Nov 12, 2023 Energy Tidbits memo. "*We probably should have called it Saudi Oil 101, but we were a little surprised that Saudi Energy Minister felt the need to explain how there is seasonality to Saudi's oil exports because Saudi domestic consumption of oil has a seasonal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

Saudi oil inventory data

Oil: Saudi oil inventories down -0.580 mmb MoM in December, math suggests build

We have seen this in the past, when there were unexplained builds or draws in inventories than what the basic math from production, refinery intake, and exports would suggest. We guessed the culprit was unreported Russian imports or exports. Remember the October data where there was a huge drop in production, a big hike in exports, minor drops in direct use and refinery intake, but a huge build in inventories. We chalked that up to being potentially unreported Russian imports because the math suggested there should have been a draw on inventory. JODI data shows inventories were down -0.580 mmb MoM, or -19,000 b/d. Looking at the basic components for December, we would have expected a build in inventory closer to +26,000 mmb/d MoM or up +0.806 mmb MoM. There should have been a MoM inventory build impact from exports falling -28,000 b/d: On the build side, production rising +126,000 b/d and 198,000 b/d less oil used for electricity generation. On the draw side, intake of refineries was +326,000 b/d MoM. This would imply a build of +0.026 mmb/d MoM, but inventories were actually down -19,000 b/d (-0.019 mmb/d, -0.580 mmb) MoM leaving ~0.045 mmb/d of unexplained MoM items. There is always some minor unexplained variance, and this was a lot smaller than October's variance. But we do not know what explains the math variance for the surprise draw.

Figure 38: Saudi Arabia Oil Inventories (million barrels)



Source: JODI

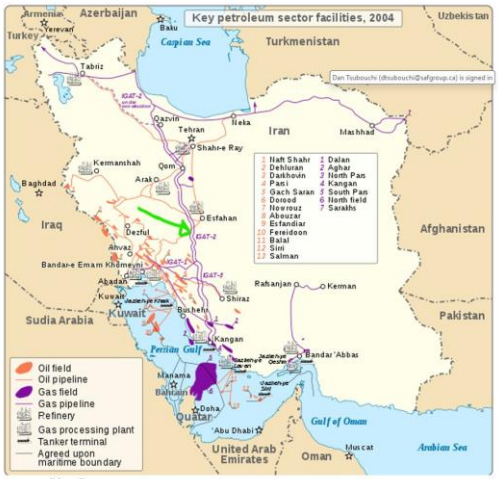
Source: JODI, SAF

Iran natural gas pipeline explosion

Oil: Iran says Israel was behind the nautral gas pipeline sabotage

On Wednesday, we tweeted [LINK] "*How/when will Iran retaliate vs Israel? "Iran's Oil Minister Javad Owji on Wednesday said Israel was behind the sabotage attacks on two gas transmission pipelines last week" reports Shana (News agency for Iran's Oil Ministry) #OOTT."* Shana is the official news agency for Iran's oil ministry and wrote "*Iran's Oil Minister Javad Owji on Wednesday said Israel was behind the sabotage attacks on two gas transmission pipelines last week. Talking to reporters on the sidelines of the weekly cabinet session, the minister added the Israeli conspiracy was thwarted in a unique operation in the mountainous and hard-to-reach areas in the shortest time possible so that there was no gas outage in any part of the country. "The enemy intended to disrupt the household sector's gas supplies in large provinces but failed as the Iranian technicians were fully prepared," said Owji, continuing, "The enemy's wicked act and plot was properly dealt with and the pipelines were repaired within two hours."* Iran says Israel is behind the sabotage. How can Iran not retaliate in some form? If they don't retaliate, how can they project any sense of strength. And this is not the type of retaliation they can subcontract out to a proxy. By saying Israel is behind it, they have boxed themselves into having to do something. And this is why we worry there is a wild card on what does Iran do. And then if Iran retaliates, how can Isreael not go back in with another attack.

Figure 39: Approx location of Iran natural gas pipeline explosion



Source: Wikimedia

Oil: Iraq oil minister expects Kurdistan agreement in next week or two

Iraq expects Kurdistan deal

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.

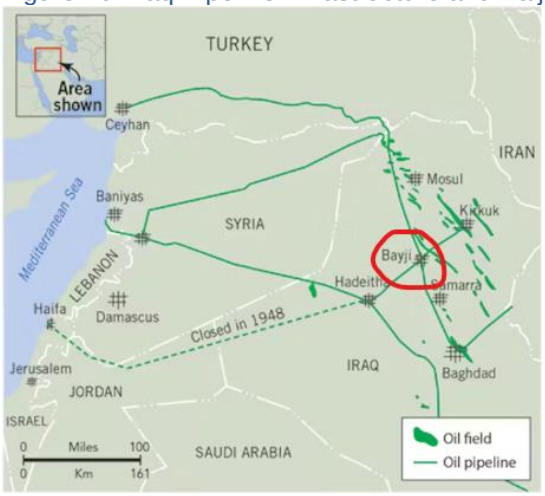
02/16/24: Kurdistan oil producers ask US to help get Iraq to restart exports

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: 150,000 b/d Al-Shamal Refinery in Northern Iraq restarts after 10 years

It looks like there is a break coming for Kurdistan oil with the restart of a long-halted refinery in northern Iraq. On Friday, Bloomberg reported that the Al-Shamal refinery in the Baiji refining compound in Northern Iraq has restarted operations after being shut down for 10 years. The refinery was closed in 2014 when the Islamic State and Iraq were fighting in the region, but after maintenance it is ready to go again. The Al-Shamal refinery is expected to be able to handle up to 150,000 b/d through 2024. This should be significant for Kurdistan because Al-Shamal should be able to take Kurdistan crude oil. The Baiji compound sits on a major pipeline intersection in Iraq and is connected to the Iraq-Turkey line which has access to the Mediterranean port of Ceyhan (shut down though due to Kurdistan shut-in of oil). See our Iraq country brief in this memo for more context.

Figure 40: Iraq Pipeline Infrastructure and Baiji compound location



Source: Oil & Gas Journal

Oil: Looks like protests are shutting down some Libya oil and gas again

Libya oil stable at 1.2 mmb/d

As of our 7am MT news cut off, we have not seen any indication from the Libya National Oil Corporation as to the status of Libya oil and gas production in light of the emerging reports of protests shutting down oil and gas production. Just before our news cut off, at 5:24am MT, the NOC only tweeted "*Brigadier General Abdul Razzaq Al-Khurmani also reviewed the difficulties and problems facing members of the Petroleum Facilities Guard and the reasons for protests by members of the agency*." And "*For his part, Masoud Suleiman stressed the need to keep oil installations away from any tensions, stressing his understanding of the requirements of the agency's employees, urging them to follow official and legal channels to implement their requirements.*" So the NOC is acknowledging problems but not the impact. 5:18am MT, Bloomberg reported "*A subsea natural gas link from Libya to Italy was closed following protests in the North African country, according to a person familiar with the matter. The line carries about 200 million cubic meters of gas per day, or about 20% of the total gas output of the Mellitah Oil & Gas Co., the person said. Oil and gas production at the Wafa and El Feel fields is continuing, they added. Protesters shut the Mellitah complex and several fields in a dispute primarily over wages, according to a spokesman for the demonstrators.*

The group said it closed access to the El Feel and Wafa fields, as well as the Al-Zawiya refinery, where production is still underway. If the protests continue, output at Mellitah and the Zawiya refinery could halt and result in a force majeure, according to a letter to the government signed by a board member of the National Oil Corp., seen by Bloomberg."

02/12/24: Libya oil production stable at ~1.2 mmb/d

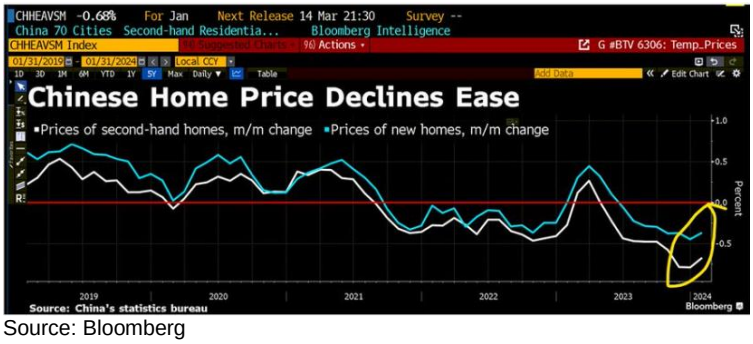
Here is what we wrote in last week's (Feb 18, 2024) Energy Tidbits memo on the NOC's last oil production update. "*Our Jan 21, 2024 Energy Tidbits memo highlighted the news that the protests had ended and oil production was being restored at the Sharara oil field. On Monday, the National Oil Corporation of Libya tweeted [LINK] "Crude oil production reached 1,212,000 barrels per day, and condensate production reached 52,000 barrels per day during the past 24 hours." Other than the protest impact, Libya oil production has been stable at ~1.2 mmb/d for the last several months. And while the NOC confirmed that production has come right back to those levels, the OPEC MOMR Secondary Sources estimated the protests hit Libya oil production by 60,000 b/d."*

Oil: Can China keep it going as China stocks and home prices move off the bottom

China stocks & home prices off the bottom

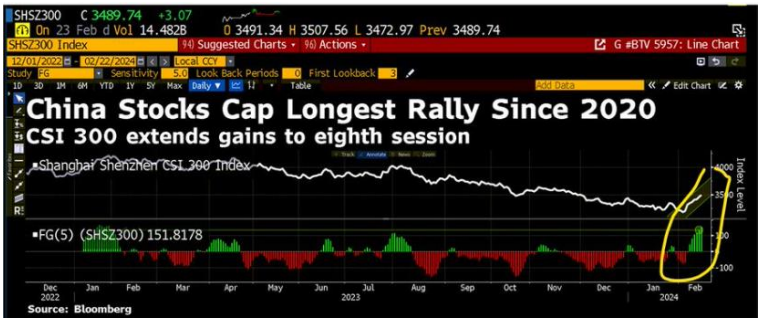
In the following item, we note the trends in new vs used home sales is something that should impact mid to long term China economic levels. For the near term, its more about home and stock prices. If China can keep home and stock prices moving off the bottom, it should be a catalyst for more consumer confidence and the Chinese spending of their big accumulated savings. Yesterday morning, we tweeted [LINK] "*Too early to celebrate but both China stocks and home prices are seeing a move off bottom. Does China need to, or will they, keep adding new measures/policies to try to make these turns lasting? Thx @business #OOTT."* There have been too many false starts to the China recovery story but, at least for now, it looks like the ongoing government measures/policies are having some impact on the two big items for the people – home prices and stock prices. The question that is far from clear is how much more does China have to do to keep this rally going and then will they do so? Below are the two graphs Bloomberg TV graphs attached to our tweet.

Figure 41: Chinese Home Price Declines Ease



Source: Bloomberg

Figure 42: China Stocks Cap Longest Rally Since 2020



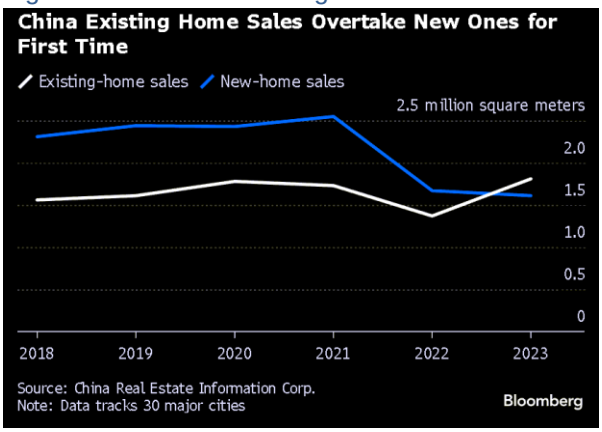
Source: Bloomberg

Oil: China Used Home Sales top New Home Sales for 1st time ever

China's Used Home Sales vs New Home Sales

Note this item is for a mid to long term trend from new vs used home sales. For those like us who expect to see China at lower mid to long term growth rates, there was an indicator to support that this week. Sales of existing homes in China surpassed new home sales for the 1st time ever. At the peak of new-home sales in 2021, there were 2.55 million square meters of new homes sold against 1.73 million square meters of used homes. Now, over 2023, there were only 1.61 million square meters of new homes sold against 1.81 million square meters of used homes. Less new homes sales means less construction, which means less demand for commodities. On Friday, we tweeted [LINK] "*Lower China growth for longer? "China's existing-home sales overtook new homes by area for the 1st time in history last yr, underscoring a fundamental shift in the nation's real-estate sector" ".. will lower demand for many commodities..." Thx @business Charlie Zhu, Emma Dong. #OOTT #Oil."* Our tweet included the below Bloomberg graph. It was significant to note "*China's existing-home sales overtook new homes by area for the first time in history last year, underscoring a fundamental shift in the nation's real-estate sector."* And if there is less demand for new home prices, it also means as Bloomberg wrote "it *will lower demand for many commodities such as iron ore and would also hit wages and demand for things such as household appliances*." Our Supplemental Documents package includes the Bloomberg report.

Figure 43: Chinese Existing Home Sales Overtake New Ones for First Time



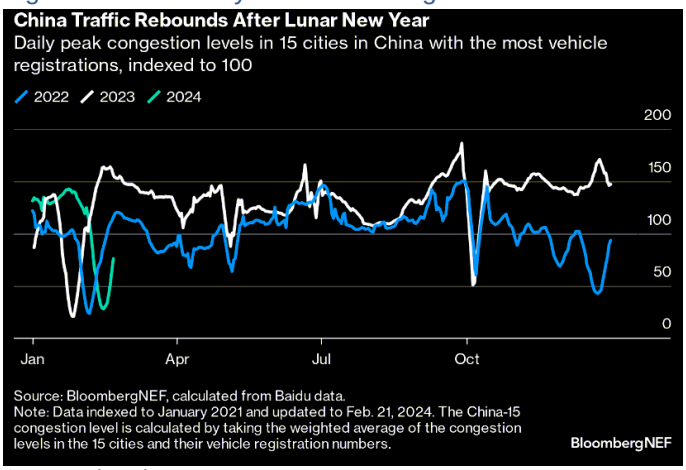
Source: Bloomberg

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

China city-level traffic congestion

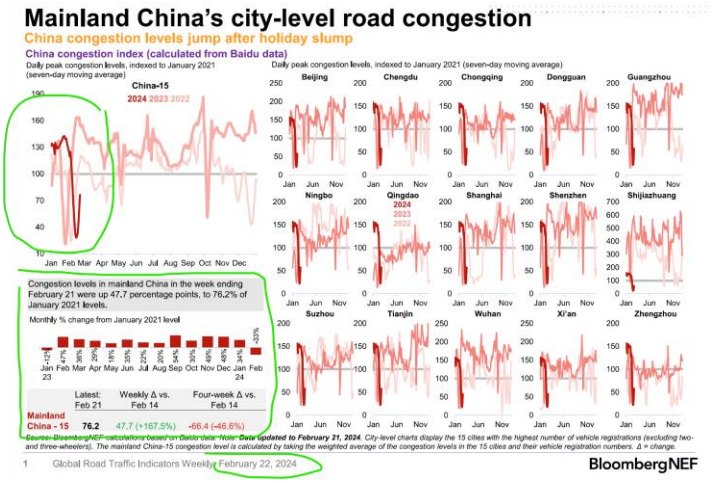
On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly Feb 22 report, which includes the Baidu city-level road congestion for the week ended Feb 21. (i) As expected, China city-level road congestion rebounded after Lunar New Year on Feb 10. Baidu city-level road congestion was +167.5% WoW to 76.2% of Jan 2021 levels. (ii) 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.

Figure 44: China city-level road congestion for the week ended Feb 21



Source: BloombergNEF

Figure 45: China city-level road congestion for the week ended Feb 21



Source: BloombergNEF

Spring Festival is "*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.*

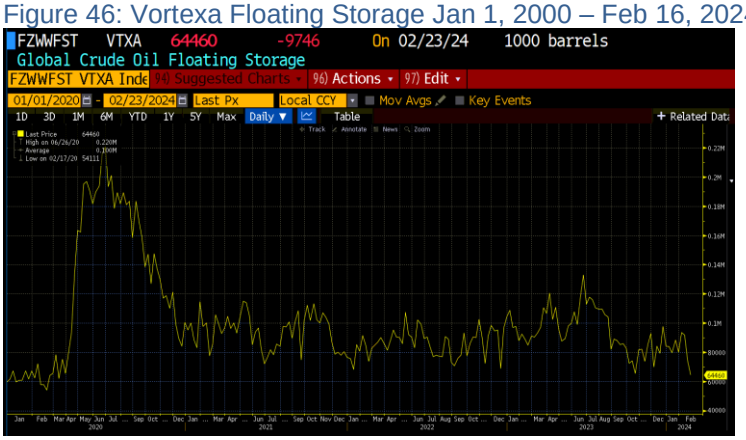
Oil: Vortexa crude oil floating storage est 64.46 at Feb 23, -9.75 mmb WoW

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 17 at 9am MT. (i) Yesterday, we tweeted [LINK] *"#Oil floating storage 64.46 mmb Feb 23 (post Covid low) 74.21 mmb Feb 16 incl upward revision. will floating normalize at lower (<80 mmb) levels now that upward revisions are getting smaller? ie. longer tanker trips = lower floating storage? Thx @vortexa @business #OOTT."* (ii)

As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Feb 23 at 64.46 mmb, which is -9.75 mmb WoW vs revised up Feb 16 of 74.21 mmb. Note Feb 16 was revised +3.36 mmb mmb vs 70.85 mmb originally posted at 9am on Feb 17. (iii) We have to wonder if oil floating storage/longer tanker travel has mostly sorted out to a new normal. This is the 3rd consecutive week of upward revisions, albeit a lot less than the prior two weeks reports. It seems like refineries and shippers have now had a month to work thru the longer tanker trips into deliveries, which should return oil 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. The revisions this week were upward for the past month but smaller than the prior two weeks reports that saw much larger 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, we are seeing a lookback and revisions as the longer tanker travel times have increasingly been worked into refinery deliveries. Here are the revisions compared to the estimates originally posted on Bloomberg at 9am MT on Feb 17. Feb 16 revised +3.36 mmb. Feb 9 revised +1.04 mmb. Feb 2 revised +3,71 mmb. Jan 26 revised +3.99 mmb. Jan 19 revised +0.58 mmb. Jan 12 revised -0.10 mmb. Jan 5 revised -0.11 mmmb. (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 81.71 mmb vs last week's then seven-week average of 82.71 mmb. The increase is due to the large 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) Feb 23 estimate of 64.46 mmb is -26.60 mmb YoY vs Feb 24, 2023 of 91.06 mmb. (ix) Feb 23 estimate of 64.46 mmb is s -155.85 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (x) Feb 16 estimate of 64.46 mmb is -1.154 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 Feb 24, 9am MT Feb 17, and 9am MT Feb 10.

Figure 46: Vortexa Floating Storage Jan 1, 2000 – Feb 16, 2024, posted Feb 24 at 9am MT



Source: Bloomberg, Vortexa

Figure 47: Vortexa Estimates Posted 9am MT on Feb 24, Feb 17, and Feb 10

Posted Feb 24, 9am MT

Date	Last Px
Fr 02/23/2024	64460
Fr 02/16/2024	74206
Fr 02/09/2024	91806
Fr 02/02/2024	93654
Fr 01/26/2024	79907
Fr 01/19/2024	88387
Fr 01/12/2024	79539
Fr 01/05/2024	83963
Fr 12/29/2023	84075
Fr 12/22/2023	97485
Fr 12/15/2023	79495

Feb 17, 9am MT

Date	Last Px
Fr 02/16/2024	70848
Fr 02/09/2024	90765
Fr 02/02/2024	89936
Fr 01/26/2024	75919
Fr 01/19/2024	87812
Fr 01/12/2024	79643
Fr 01/05/2024	84066
Fr 12/29/2023	84046
Fr 12/22/2023	97991
Fr 12/15/2023	77156
Fr 12/08/2023	83942

Feb 10, 9am MT

Date	Last Px
Fr 02/09/2024	74958
Fr 02/02/2024	83592
Fr 01/26/2024	71362
Fr 01/19/2024	83525
Fr 01/12/2024	78727
Fr 01/05/2024	81907
Fr 12/29/2023	81610
Fr 12/22/2023	95584
Fr 12/15/2023	74921
Fr 12/08/2023	81346
Fr 12/01/2023	68265

Source: Bloomberg, Vortexa

Vortexa floating storage by region

Oil: Vortexa crude oil floating storage WoW changes by regions

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 16, in total, was revised +3.36 mmb. There were no major revisions in any region vs the estimates posted as of 9am Feb 17 for Feb 16. (ii) As noted above, Feb 23 of 64.46 mmb was -9.75 mmb WoW vs the revised up Feb 16 of 74.21 mmb. The major WoW changes by region were Other -8.03 mmb WoW and West Africa -2.66 mmb WoW. (iii) Feb 23 at 64.46 mmb is -70.85 mmb vs the summer June 23, 2023 peak of 133.15 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 -33.52 mmb and Other -26.95 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 16 that was posted on Bloomberg at 9am MT on Feb 17.

Figure 48: Vortexa crude oil floating by region

Vortexa Crude Oil Floating Storage by Region (mmb)				Original Posted	Recent Peak	
Region	Feb 23/24	Feb 16/24	WoW	Feb 1624	Jun 23/23	Feb 23 vs Jun 23
Asia	40.21	40.06	0.15	39.78	73.73	-33.52
Europe	3.66	2.40	1.26	2.62	6.21	-2.55
Middle East	5.29	5.08	0.21	3.51	6.76	-1.47
West Africa	4.68	7.34	-2.66	7.37	7.62	-2.94
US Gulf Coast	0.13	0.81	-0.68	0.76	0.97	-0.84
Other	10.49	18.52	-8.03	16.81	37.44	-26.95
Global Total	64.46	74.21	-9.75	70.85	132.73	-68.27
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Feb 24						
Source: Vortexa, Bloomberg						

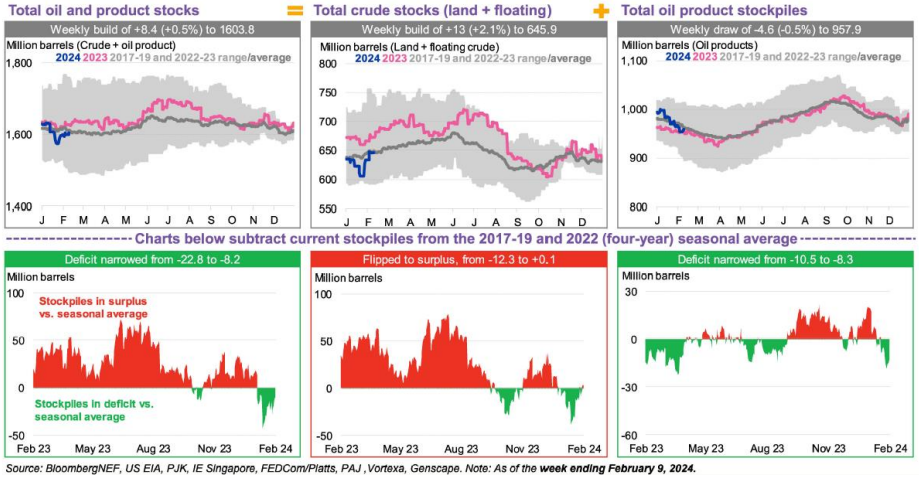
Source: Bloomberg, Vortexa

Oil: BNEF – global oil and product stocks deficit narrows to -8.2 mmb

Global oil and products stocks

Please note that the BloombergNEF global oil and products stocks estimate are for the week ending February 9, which is a week earlier than the normal EIA US oil inventory data that is for the week ending Feb 16 which was a build of +3.51 mmb. On Tuesday, BloombergNEF posted its "Oil Price Indicators" weekly, which provides good charts depicting near-term global oil demand and supply indicators. (i) Note BloombergNEF uses different periods to determine the surplus/deficit, sometimes using a four-year average for 2017-2019 + 2022-2023, and other times using a five-year average 2017-2019 + 2022-2023. In both cases they do not include 2020 and 2021 in the averages. (ii) The global stockpile for crude oil and products deficit narrowed from -22.8 mmb to -8.2 mmb deficit for the week ending Feb 9. (iii) Total crude inventories (incl. floating) increased by +2.1% WoW to 645.9 mmb, while the stockpile deficit of -12.3 mmb flipped to a surplus of +0.1 mmb. (iv) Land crude oil inventories increased +2.2% WoW to 555.1 mmb, narrowing the deficit to -24.5 mmb against the five-year average (2017-2019 + 2022-23). (v) The gas, oil, and middle distillate stocks increased by +0.9% WoW to 162.4 mmb, with the deficit against the four-year average narrowing from -22.9 mmb to -20.2 mmb. Jet fuel consumption by international departures for the week of Feb 19 is set to decrease by -8,400 b/d WoW, while consumption by domestic passenger departures is forecast to decrease by -11,600 b/d WoW. Below is a snapshot of aggregate global stockpiles.

Figure 49: Aggregate Global Oil and Product Stockpiles



Source: BloombergNEF, US EIA, PJK, IE Singapore, FEDCom/Platts, PAJ ,Vortexa, Genscape. Note: As of the ***week ending February 9, 2024.***

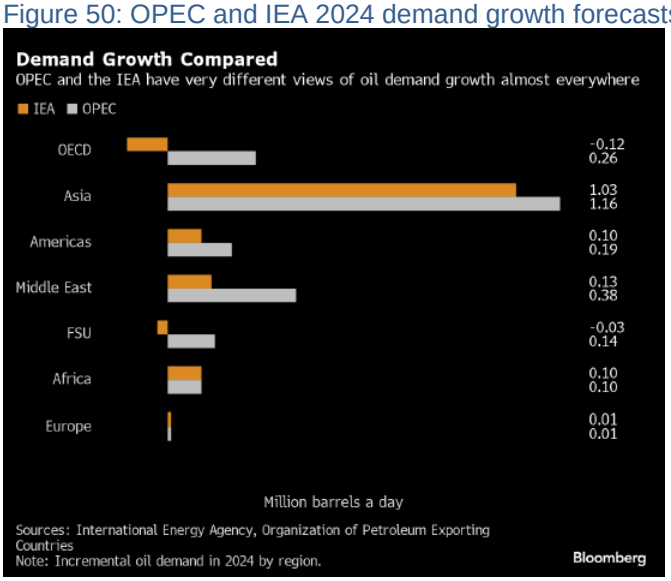
Source: BloombergNEF

Bloomberg oil demand monitor

Oil: Bloomberg Oil Demand Monitor "Strength Signals Offset Macroeconomic Doubts"

The Bloomberg Terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. The major focus in this issue was on bullish indicators emerging in Q1 and the vast differences in outlooks from the IEA and OPEC. The report points to an uptick in commercial flights globally and cite Willie Walsh (IATA president) commenting on the Chinese resurgence in air travel. China's flights are especially important as it is a good economic indicator, and China's rebounding demand for oil is a critical assumption for growth forecasts in both the IEA and OPEC's outlooks. China's passenger numbers in January (even before Lunar new year) hit a 5-month high, and globally air traffic tracks higher than 2019, save for Europe. The February IEA OMR and OPEC MOMR have a big discrepancy in their growth demand forecasts: OPEC reckons there will be an extra 2.25 mmb/d of oil consumed in 2024, while IEA has it at +1.24 mmb/d. Both forecasts assume over 1 mmb/d of this comes from Asia, but OPEC has a standout optimistic call on the Middle East, at +0.380 mmb/d against the IEA's measly +0.130 mmb/d, as well as another +140,000 b/d extra from the former Soviet Union whereas the IEA forecasts a contraction in demand in those countries. Be aware that the IEA has come under criticism for appearing to run an "agenda", that of a forecasted energy transition, and we even saw Macron come out this week and admit the IEA was their "armed wing" to implement the Paris Agreement [LINK]. Obviously, OPEC is openly pro-oil, so we think the real unbiased demand forecast is somewhere in between the two. Looking at consumption indicators, the demand monitor showed that global flights continued to track comfortably above both 2023 and 2022 levels during the week of Feb 19, and were up +20% on a MoM basis (probably due to the Lunar New Year travel in China). For the first two weeks of February, Diesel and Gasoline sales in India were down -3.4% and up +3.4% YoY, respectively, while on a MoM basis Diesel sales were up +4.7% MoM and Gasoline sales were down -2.0% MoM. Refinery utilization in the US as of Feb 16 was down -490 bps MoM and -530 bps YoY at 80.6%. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor. Below are the differences in the OPEC and IEA demand growth forecasts.

Figure 50: OPEC and IEA 2024 demand growth forecasts by region



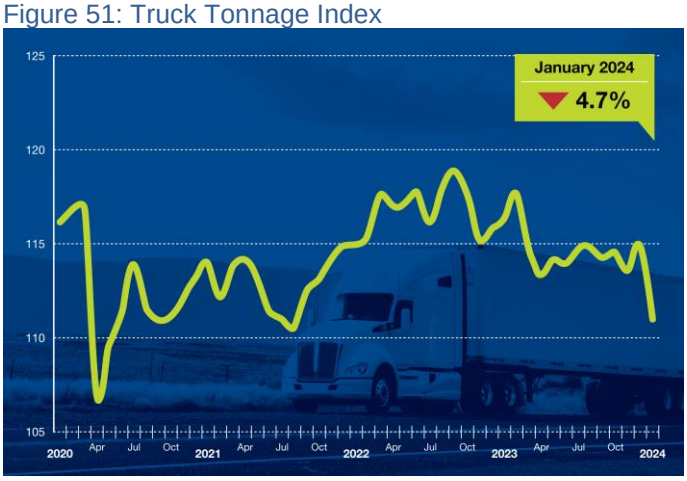
Source: Bloomberg

Oil: ATA Truck tonnage index in Jan down -3.5% MoM, -4.7% YoY

January Truck Tonnage -3.5% MoM

We look to items like truck tonnage for indicators on the US economy, and the January truck tonnage is indicative of a slowing US economy. Truck tonnage fell -3.5% MoM, and -4.7% YoY from January 2023. The American Trucking Association released its seasonally adjusted Truck Tonnage Index for December on Tuesday [LINK]. Chief Economist Bob Costello noted "*January's data was a snap back to reality for anyone thinking the freight market was about to turn the corner…Bad winter weather in January likely hurt volumes, not to mention sharp drops in a number of drivers of tonnage including retail sales, housing starts and manufacturing output*." Trucking serves as a barometer of the U.S. economy, representing 72.6% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 11.46 billion tons of freight in 2022. Motor carriers collected $940.8 billion, or 80.7% of total revenue earned by all transport modes. Our Supplemental Documents package includes the ATA release.

Figure 51: Truck Tonnage Index



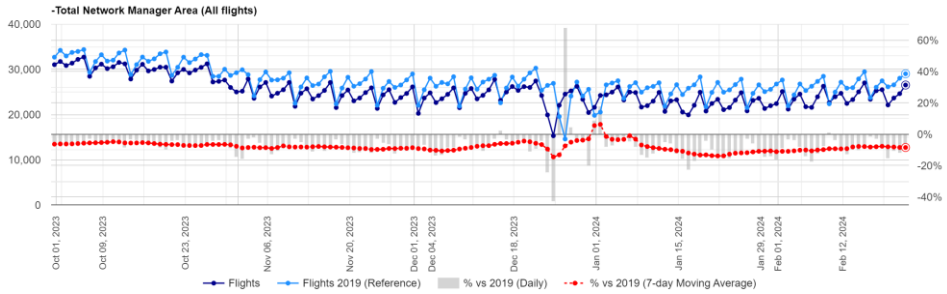
Source: ATA

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 22 is -8.5% below pre-Covid 2019 levels. Eurocontrol updates this data daily and it is found at [LINK]

Figure 52: Europe Air Traffic: Daily Traffic Variation to end of Feb 22



Source: Eurocontrol

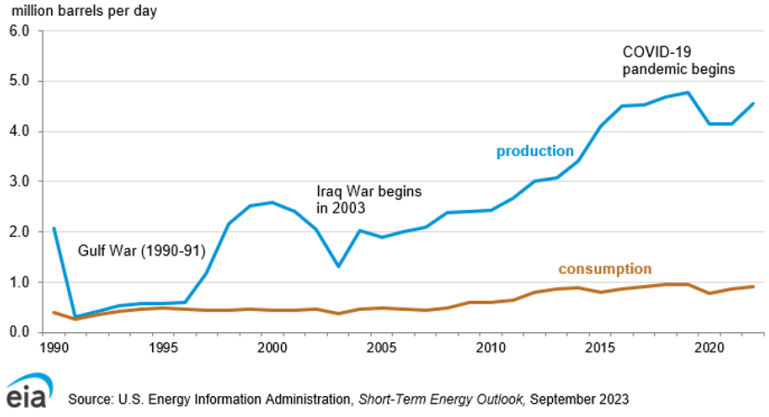
Oil & Natural Gas: Iraq Country Brief

EIA's country brief on Iraq

We continue to recommend adding the EIA's country analysis briefs to reference libraries as good quick references, in this case its new EIA country executive summary [LINK] on Iraq. Iraq is the 2nd largest OPEC producer and is the 6th largest in the world. Just behind Canada, Iraq has the 5th biggest oil reserves in the world with an estimated 145 billion barrels (2022). Crude production in 2022 averaged 4.6 mmb/d in Iraq, although voluntary cuts in accordance with OPEC through 2024 would bring this down to 4.2 mmb/d. While Iraq has the 12th-largest natural gas reserves on the planet, they are also the 2nd-biggest gas flarer in the world, having flared over 630 bcf (~1.7 bcf/d) over 2022. Unlike many Gulf neighbours, Iraq's reserves are mostly onshore, with the largest fields being the Basra region in the south, the

Diyala in the east, and the Kirkuk deposit. Iraq shares its reserves with the Kurdistan Regional Government (KRG), which historically has been at odds with Baghdad over regions within the Kirkuk field as well as autonomy overall. The KRG reached almost 0.470 mmb/d of oil production in 2019, but has declined as a result of a lack of export options following the closure of the Iraq-Turkey pipeline in March 2023. Since Kurdistan is landlocked, the only place they can now send their oil are domestic refineries, which are already running at full capacity. Despite this abundance of supply, Iraq as a whole has an underdeveloped downstream sector and actually imports refined products due to an inability of refinery throughput to meet domestic demand. While Iraq's refiners have a combined 1.200 mmb/d throughput capacity, it does not meet their 0.900 mmb/d domestic demand for petroleum products since they mostly produce heavy fuel oils. Almost all of Iraq's domestic electricity is generated using natural gas and oil, and while Iraq has an abundance of associate gas production, challenges in capture led to imports from Iran supplementing the growth in natural gas for power usage since 2016: up to 900,000 bcf/y during the summer season. Iraq is looking for other sources of natural gas as Iran is having their own generation problems at home due to droughts causing reductions in deliveries, creating a need to diversify sources. Iraq's main markets for export lie in Asia, with India and China making up 27% each (54% combined) of all crude exports in 2022, with the rest going to Europe (26%) and the US (7%). Overall, the big story with Iraq is that it has a lot of production and refining potential, but regional instability, territorial disputes and a dearth of foreign investment has caused challenges for the country. Keep in mind over the past 30 years, Iraq has seen the Gulf War where they tried to invade Kuwait, the Iraq War after 9/11, as well as the Arab Spring which brought about ISIS until recently. Our Supplemental Documents package includes the EIA brief.

Figure 53: Iraq's oil production and consumption, Gulf War - Present



Source: EIA

Energy Transition: NY Times: Biden to slow early stage of shift to EVs

Biden to slow shift to EVs?

There was big news for peak oil demand forecasts last Saturday night when the Last Saturday, the New York Times posted its report "*Biden Administration Is Said to Slow Early Stage of Shift to Electric Cars"* [LINK] on how "*Biden administration intends to relax elements of one of its most ambitious strategies to combat climate change, limits on tailpipe emissions that are designed to get Americans to switch from gas-powered cars to electric vehicles,*

according to three people familiar with the plan. Instead of essentially requiring automakers to rapidly ramp up sales of electric vehicles over the next few years, the administration would give car manufacturers more time, with a sharp increase in sales not required until after 2030, these people said." Other news agencies subsequently ran their own, but similar stories. On Thursday, Politico's story "*Biden's big bet on EVs is poised to take a detour*" [LINK] wrote "*President Joe Biden's hopes for an electric-car takeover of America's highways are running into speed bumps — amid weaker-than-expected sales and uncertainty over how the green agenda is playing in the crucial swing state of Michigan. And now his regulators are poised to ease back the throttle, three people familiar with the administration's internal deliberations told POLITICO. The Environmental Protection Agency is leaning toward approving a compromise regulation on car and truck pollution that could slow the initial pace of the required cuts compared with a draft proposal the administration released last year, the three people said. The change could mean that for the rest of this decade, electric vehicle sales would climb more incrementally than EPA had originally projected."* It sounds like Biden is about to push back timing targets for EVs adoption. And EVs replacing the miles driven by ICE vehicles is the most important factor for reducing emissions aspirations to 2030. So any delay such as being reported has to impact forecasts for ICE vehicles displacement and emissions. This is big news as forcing Americans to shift to EVs is the critical factor in the peak oil demand call and reducing emissions. And any big delay in the US will impact that those calls. It's why last Sunday night, we tweeted [LINK] "*Will IEA change its math for EVs to displace ~5.5 mmbd of oil by 2030 if Biden slows down how fast automakers must sell EVs. Thx @CoralMDavenport. US is ~25% of IEA's ~5.5 mmbd! If so, doesn't this force IEA to push back its peak oil demand by 2030? #OOTT [LINK].*" Our Supplemental Documents package includes the New York Times and Politco reports.

Critical success factors for Net Zero aren't working as hoped/planned

The reports of Biden pushing back the speed of EV adoption in the US is another reminder that one of the critical success factor for the energy transition is not working anywhere near as fast as hoped/planned. And EVs are probably the most significant factor given EVs are hoped to tackle transport emissions. Biden may be delaying the EVs ramp up to give more time to the manufacturers, but the reality is that the buyers aren't there to support any EV ramp ie. the targets would be impossible to be met. Regardless why Biden backs off, the backing off of EV targets fits our theme that the critical success factors for Net Zero aren't working as hoped/planned. Here is what we wrote in our Oct 29, 2023 Energy Tidbits prior to COP28. Note that we never wrote the blog. "*We expect to post a long overdue blog ahead of COP28, which runs from Nov 30 to Dec 1 in the UAE. Our view on the Energy Transition is unchanged for the past several years – it's happening but it will take way longer, cost way more and be a bumpy/rocky road. It is very hard to predict what will happen at COP28 but we would hope that everyone doesn't fool themselves with their starting point – all of the major items for the energy transition aren't working as planned. For the past few years, we have placed a priority for tracking the major items of the energy transition because their progress, or lack thereof, relative to their plans/aspirations is the most important factor for oil and natural gas for the next decade. It's why we have said for years that oil and natural gas will be needed for longer and therefore there will be cash flow value for the next decade. Our memos have highlighted the major energy transition items being well behind plans and aspirations. (i) EVs. The major oil*

consumption impact is forecast to come from EVs replacing ICE. So far, our focus has been on how EVs aren't displacing ICE mileage as much as assumed as forecasts like the IEA assume that every new EV replaces the miles driven by an ICE. It's like they assume that every EV sold means an ICE gets junked or stopped driving. So the IEA demand forecasts assume way too much demand destruction from new EV sales. But, as noted later in the memo, we expect to see forecasters reduce their assumption for EV adoption as they move to not assume the rate of growth in EVs isn't as fast asEVs move to lower and middle income. (ii) Sustainable aviation fuel. Sustainable aviation fuel is the key item for the airline industry to reach its Net Zero targets. The problem with SAF is that it is very expensive relative to jet fuel and there won't be enough supply. Climate change side has been trumpeting that there is a huge growth in SAF. That is correct, it is a huge growth, the amount of SAF tripled in 2022 but the IATA highlighted SAF supplied only 0.1% of total 2022 jet fuel consumption. We expect to see the reality of SAF potential to be reflected in new forecasts. (iii) Offshore wind is having a huge pause. This has been the big news item over the past six months – offshore wind projects in the US and Europe are being paused or trying to be renegotiated due to insufficient returns to developers. This is pause has been now going on for six months or so, and will need to be addressed as they are projects that were approved by governments so assumed to be happening. Best case scenario is a pause of a year. So it pushes back assumed startup of wind. (iv) Hydrogen costs too much so no buyers will step up. Hydrogen is expected to be a key fuel for energy intensive uses. The problem is that it is too expensive and there haven't been any large buyers step up to commit to long term hydrogen such that hydrogen suppliers can commit the billions for large commercial supply. We expect to see more reflect a significant reduction n their hydrogen penetration forecasts."

02/14/24: Are Liberals about to back off mandatory EV sales targets?

We haven't seen any similar Cdn reports that Canada is planning to do the same. However, we thought Environment Minister Guilbeault seemed to point to Canada doing the same. Here is what we wrote in last week's (Feb 18, 2024) Energy Tidbits memo. "*Earlier this morning, we tweeted [LINK] "Is phasing out of ICE vehicles in CA about to be delayed? Did Min Guilbeault highlight EVs not a panacea to set stage to relax his 👇 #EVs sales targets >20% by 2030 & >60% by 2030? #Oil #Gasoline will be needed for longer #OOTT." (i) Liberals Environment Minister Guilbeault got the ire of provincial leaders, when the Montreal Gazette reported "Besides funding these types of projects, all levels of government must make the hard decision to stop expanding the road network, he said. Adding more roads and new lanes on existing roads has proven to encourage more car use, which means more congestion, and more calls for road expansion, he said. "Our government has made the decision to stop investing in new road infrastructure. Of course we will continue to be there for cities, provinces and territories to maintain the existing network, but there will be no more envelopes from the federal government to enlarge the road network. The analysis we have done is that the network is perfectly adequate to respond to the needs we have. And thanks to a mix of investment in active and public transit, and in territorial planning and densification, we can very well achieve our goals of economic, social and human development without more enlargement of the road network."*

Guilbeault backtracked a bit by saying he meant major road infrastructure projects. (ii) We thought there was more to think about Guilbeault's dinner speech than the headline that The Liberals "has made the decision to stop investing in new road infrastructure." Although that is a quite headline. (iii) We also don't think enough people give Guilbeault credit for intelligence, but also that he is a crafty politician with what and how he says things so when we read the Montreal Gazette reporting. He surely knew Premier Smith and others would jump all over the not investing in new road infrastructure. (iv) That was the magician's distraction. And we think what Guilbeault wanted to do was set the stage to start backtracking in some way on EVs. On Wednesday night, we tweeted [LINK] "Hmmm! ᴄᴀ Guilbeault 👇is warning that Cdns (including himself??) have been overestimating the impact of EVs on climate fight despite being considered 1 of the critical success factors to do so. Where do they go to make up for EVs overestimating? Thx @mtlgazette Michelle Lalonde #OOTT." (v) And we think what he wanted to do was start the process of backtracking on what EVs can do for their climate plan. To us, this is a major start of new messaging on EVs. And as we keep saying, the critical success factors for the energy transition are not working anywhere near as assumed in the Liberals net zero plans or any western Govt net zero plans. The Montreal Gazette wrote "Electric cars are among the many necessary solutions to Canada's environment problems, but they are far from a panacea, Environment and Climate Change Minister Steven Guilbeault told a conference on public transit in Montreal on Monday. "We must stop thinking that electric cars will solve all our problems," said Guilbeault, who was the keynote speaker at a fundraising luncheon at the Westin Montreal." Guilbeault is basically saying that and EVs are the key success factor for reducing emissions in transportation. We believe this is significant – it's a way of admitting that the energy transition isn't working without saying so. (vi) Also, we have to wonder if Guilbeault is kid of admitting he overestimated the potential of EVs ie. did he include himself in the "we must stop thinking…". . The Montreal Gazette wrote "Guilbeault said over-estimating the ability of electricity-powered transportation to solve climate change and other environmental crises would be "an error, a false utopia that will let us down over the long term." (vii) So Guilbeault is saying EVs' won't sale all the problems in emissions despite being viewed as one of the critical success factors to do so, which led to our tweet this morning that he must be setting the stage to back off the Liberals 2030 Emissions Reduction Plan that has EVs as a key to the plan. It seems the Liberals have to back off their 2026 and 2030 mandatory targets for EVs sales. Our tweet included the ERP that says "Develop a light duty vehicle (LDV) ZEV sales mandate, which will set annually increasing requirements towards achieving 100% LDV ZEV sales by 2035, including mandatory interim targets of at least 20% of all new LDVs offered for sale by 2026 and at least 60% by 2030." (viii) Then the next question moves where do they go to cut emissions and to ensure they don't lose any more emissions setbacks in other areas. We will have to more say on this in future Energy Tidbits memos. Our Supplemental Documents package includes the Montreal Gazette report and the Liberals 2030 Emissions Reduction Plan on Transportation.

Fits our 2022 Prediction leaders to admit energy transition isn't working

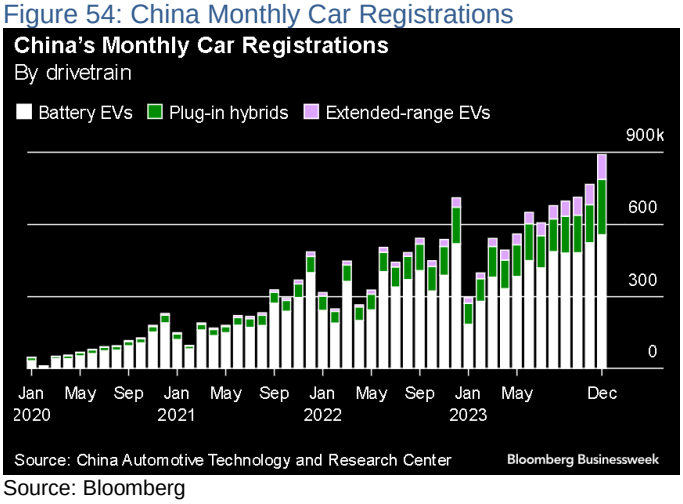
We haven't seen any Biden comments on this reported EVs push back so we haven't seen how he will frame any such delay. However, we still don't expect Biden to admit the energy transition plan isn't working. Here is what we wrote in our Oct 29, 2023 Energy Tidbits memo. "*We don't expect to see many western leaders come out and directly say the energy transition isn't working but we do expect to see their actions reflect that conclusion. Our #1 prediction for 2022 was on this concept. We were probably 6 to 12 months early but it is unfolding. Here is what we wrote in our Dec 12, 2021 Energy Tidbits memo. "Its December and so analysts will soon be coming out with 2022 predictions, so we thought we would beat them with one of our main 2022 predictions. On Thursday, we tweeted [LINK] "Time for #2022Predictions. My #1 is more #EnergyTransition #NetZero leaders come out of closet, have a #MacronMoment ie. have "transition" not self inflicted shortage so 2021 energy crisis isn't every year. A return to #EnergySecurity = #Oil #NatGas #LNG strong thru 2030. #OOTT." This should not surprise readers as we have been noting the start of energy transition leaders starting to admit, in a politician's manner, that the energy transition isn't working as per aspirations and energy costs will be a lot higher than aspired. We have said for years that the energy transition will happen, but it will take longer, be bumpy road and cost more than the aspirations. Last week's (Dec 5, 2021) Energy Tidbits wrote on the ADNOC CEO speech There was much more in the speech, which is why we tweeted [LINK] "If more leaders have a "Macron Moment" in 2022, maybe COP28 UAE in 2023 can be catalyst for getting down to work on practical, commercial, sustainable energy solutions: pro climate/pro growth? See SAF Group transcript of @SultanAhmedalj8 #ADIPEC keynote. #EnergyTransition #OOTT." We do wonder if we will see more world leaders accept that the energy transition isn't working according to their aspirations and that there is an increasing risk of a decade of energy crisis like seen in Europe in H2/21 unless the world puts in an achievable energy transition plan." We think COP26 will turn out to be turning point, but a turning point to force energy transition leaders into changing their plan. It why we think we will more of the energy transition leaders come out of the closet and admit this in 2022. But what got us to tweet this week was after seeing Saudi Aramco CEO Nasser speech at the WPC in Houston. Nasser said "There is one more thing that can no longer remain unsaid. A majority of key stakeholders agree with these realities as much as they believe in addressing climate change. We know this, because they say so in private. They should say it publicly too. I understand their dilemma. Publicly admitting that oil and gas will play an essential and significant role, during the transition and beyond, will be hard for some." So our #1 2022 Prediction is that we will see leaders come out of the close and admit, in a politician's way, that the energy transition plan needs to be changed. The key result will be that fossil fuels are needed for way longer and the outlook for oil, natural gas and LNG will be stronger thru 2030 and beyond."*

Energy Transition: China EV sales being hurt by relative cost and range anxiety

China EV vs hybrid sales

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 54: China Monthly Car Registrations



Source: Bloomberg

Energy Transition Mercedes reducing EV sales expectations and investment

Mercedes pulls back on EVs

Mercedes held its Q4 call on Thursday and there was a clear pull back in Mercedes EVs sales expectations and its future investment in EVs. (i) Merecedes says eheir customers don't want to only see EVs and they don't forecast any increasing share of EVs vs ICE. On Thursday, we tweeted [LINK] ""*we have not made any plans for any artificial market shares lower or higher on ICE or BEV" Mercedes Q4. "i don't think our ICE customers long term would accept if that if that is like, then when the next gen comes, a BEV story only" Not all higher income want to buy BEV #OOTT."* (ii) Mercedes EV slowdown will be longer term as they will reducing EVs investments in the 2nd half of the 2020s. It seemed overlooked that Mercedes is going to cut future EVs capex. No one should be surprised Mercedes doesn't expect to reduce EV investments in 2025 as most of these investments are likely already underway. So the first real time to make any significant cuts in investment is in 2026 and Merecedes says they are doing exactly that. We tweeted [LINK] "*Money talks! EVs slowdown is longer term, not a pause? "But the BEV investment profile for us is pretty clear, and we see definitely the potential for the investments to come down over time. So, confirmed, not for 2025, but for the 2nd half of the decade" Mercedes Q4. #OOTT."* (iii) Mercedes also warns that big picture, EVs can't be at the expected speed because it is a "*Herculean task*" to switch energy source. This was the good big picture reminder that you can't easily change a big system like transport and mobility. We tweeted [LINK] ""*for a big system like transport and mobility to turn and literally switch energy source, that is a Herculean task, that is a systemic, an industrial task". Mercedes Q4 call. EVs are growing , but now seeing it will be nowhere near speed of aspirations. #OOTT."* Our Supplemental Documents package includes excerpts from the Mercedes Q4 call transcript.

Energy Transition: Ford says halted shipments of F150 Lightning 2 wks after doing so

Ford halts F150 Lightning shipments

As we always say, political or business news a couple hours or later after the market closed for the week is never good news. In Ford's case, it's more negative news on the F150 Lightning in that Ford halted Lightning shipments to dealers on Feb 9 for an "*undisclosed quality issue*". On Friday night, we tweeted [LINK] "*Friday night news is never good. @KeithNaughton : Ford "has halted shipments of its F-150 Lightning plug-in pickup for an undisclosed quality issue .....statement late Friday it stopped shipping the Lightning on Feb. 9 "to ensure quality." It did not say when it expects to resume delivering the Lightning to dealers" #OOTT #EVs."* And then Saturday morning, we tweeted [LINK] "*Be interesting to see what the market thinks on Monday? Feb 9: Ford reported halted shipments of F-150 Lightning . Feb 23, 2 weeks later. Reports that Ford issued statement advising of the Feb 9 halt. per 👇@KeithNaughton report last night. #OOTT #EVs."* As of our 7am MT news cut off, we have not seen any disclosure of the nature of the undisclosed quality issue. We were surprised that it reportedly took two weeks for the statement advising of the halt in shipments. Given the recent negative news on cutting back on Lightning production, we would have assumed there would have been a statement back on Feb 9 and not on Feb 23 Our second tweet included the 1-month stock chart that noted Ford shares hit $12.81 on the Feb 9 close and have been in steady down since then to close at $12.14 on Feb 23. Our Supplemental Documents package includes the Bloomberg report.

01/19/24: Ford cuts F-150 Lighting production due to less demand

Here is what we wrote in our Jan 21, 2024 Energy Tidbits memo. "*Ford is the latest to come out with changes to reflect significantly less customer EV buying. Early Friday morning, we tweeted [LINK] "Breaking. Ford cuts F-150 Lightning production to "achieve optimal balance of production, sales growth & profitability" Did customers speak or will Kerry 👇blame this on EV misinformation? #EnergyTransition will take longer and #Oil #Gasoline needed for much longer. OOTT." Ford didn't say how much lower Ford F-150 Lightning sales were projected. Rather they said on their overall EVs that they "expect continued growth in global EV sales in 2024, though less than anticipated". But it looks like they cut their Ford F-150 Lightning production capacity by ½ at their big Rouge Electric Vehicle Center that "transitions to one shift effective April 1". That sounds like a cut in half to Lightning production. Ford wrote that the reduction in production was to "achieve the optimal balance of production, sales growth and profitability." Our Supplemental Documents package includes the Ford release.* "

Sounds like customers want more gas powered and hybrid Ford F-150s

We also wrote in our Jan 21, 2024 Energy Tidbits memo. "*On Friday, Ford didn't say it specifically but seemed to infer that the other customer feedback is that the customers want more gas powered and hybrid F-150s. It was interesting to see in the release on cutting Ford F-150 Lightning production, Ford also said "The company also has capacity available to scale production of gas-powered and hybrid F-150 trucks based on customer demand."*

Ford F-150 Lightning isn't a pickup for working pickup drivers

We have to believe that one of the big factors for the less than expected Ford F-150 Lightning sales is that the Lightning isn't going to work for working pickup drivers ie. contractors, drivers, ranchers, who tow, etc. Here is one reason from our Oct 8, 2023 Energy Tidbits memo. "*Recirculated Ford F-150 Lightning failed Motor Trend's towing test. We wouldn't have included this item on a recirculated Motor Trend report if the report wasn't getting renewed interest this week and if Ford CEO Jim Farley hadn't warned people on the shortfalls of the F-150 Lightning. The Ford F-150 Lightning had a lot of headlines in the last week with the reports from dealers in Canada and US on how they weren't getting planned deliveries of the Lightning. So, inevitably, a range of stories come out on the Lightning from both car and EV news sites. And in many cases, these are not new news such as one that got circulated this week – the Motor Trend July 31, 2022 report [LINK] "Tow No! The Ford F-150 Lightning Struggled in Our Towing Test". Motor Trend reported "We towed 3100-, 5300-, and 7200-pound travel trailers with Ford's electric truck and didn't get very far from home. Before you hitch an Airstream to your electric truck and set out to circumnavigate the country, you need to understand this: With the largest available battery pack, a fully charged 2022 Ford F-150 Lightning electric truck has less energy onboard than a regular F-150 with four gallons of gas in its tank. Consider how far a combustion-powered F-150 would tow at max capacity on four gallons of regular unleaded. Thirty five miles? Maybe 40 if you drive slowly? Now that you understand where we're starting from, you won't be as surprised to learn that the towing range of the electric F-150 is dismal. In Motor Trend testing, an F-150 Lightning Platinum saddled with a camper*

that nearly maxed out its 8,500-pound towing capacity couldn't even cover 100 miles. Range improved when we hooked up a significantly lighter trailer, but not by as much as you might expect."

04/26/22: Ford CEO warned EV trucks aren't for working pickup truck drivers

Here is what we wrote in our May 1, 2022 Energy Tidbits memo on Ford CEO Jim Farley warning that the F-150 Lightning is really for normal pickup truck uses. "*We thought there was a throwing water on the fire reality check on EV trucks from Ford CEO Jim Farley on Tuesday. We had missed his comments but one of our Twitter followers flagged it for us after seeing our Wednesday morning tweet [LINK] "GM #SilveradoEV truck will have 400 miles of range & that is only a year away, @mtbarra just said to @tomkeene on @bsurveillance. #EV range is no longer a reason not to buy. Can they get the prices down?? #OOTT." We thought 400 miles of range was a pretty good number, even if it gets hammered down in cold Cdn winters. But then we went to search out the Ford CEO interview on the Ford F150 Lightning EV. As everyone knows, Ford dominates the pickup truck market with the F150. But clearly Farley threw some cold water on the fire. We were surprised at the bluntness of his warning on EV pickup truck uses. We tweeted [LINK] "#EV trucks #F150Lightning are not good for heavy users ie. ranchers, contactors. But perfect for urban cowboy & commuting to work, so will need mix of #ICE & #BEV says #Ford CEO to @sonalibasak..So why feature towing so prominently in commercials? Thx @kropija for flagging. #OOTT. Farley is basically saying the F150 Lightning is best suited for commuters and what Texans call "all hat, no cattle" pickup truck drivers. We created a transcript of Farley's comments [LINK]. Bloomberg's Sonali Basak. "Jim, look out into the future for a second here, can you see all the F150's going electric? And what would it take for that to happen?" Farley "No way. I don't see that happening. If you're towing a fifth wheel in Wyoming, or you know with a horse trailer, there is no way. An electric vehicle is not a good solution for super duty customers. We're 50% of all commercial light duty vehicles in the US so we know. And the technology is not right for that. For retail customer who is doing some light towing or commuting to work, it's perfect. But for heavy duty usage, it's not the right solution. So you're going to see a mix of ICE and BEV." After listening to Farley, we looked at the Ford F150 Lightning promotion video [LINK] and couldn't help notice how prominently Ford featured towing in its commercials."* [Note, we checked the link to the promotion video from 2022 and it is no longer available].

Energy Transition: Stellantis CEO will take longer for EVs to displace ICE

Stellantis CEO on EVs

On Tuesday, Stellantis CEO Carlos Tavares was on CNBC Squawk Box and had some good common sense reminders of the challenges facing EVs. (i) It will take longer to make EVs affordable so they can replace ICE. EVs are too expensive and have to reduce costs/price. On Tuesday, we tweeted [LINK] "*Will take longer for EVs to displace ICE. Stellantis CEO says have a lot a work to do to make EVs affordable. ie. "we have to double the power density of the batter cells so that you can have a smaller battery with less weight and therefore less cost" #OOTT."* (ii) Have to find a way to sell EVs at the price of ICE and reminds that US tariffs on EVs will only add to inflation. We tweeted [LINK] "*More EV reality challenges from Stellantis CEO Tavares. "We have to find a way to sell BEVs at the price of ICEs. That's quite simple." Reminds US/EU tariffs on Chinese EVs add to inflation. Thx for*

posting interview @andrewrsorkin @JoeSquawk @Lebeaucarnews @SquawkCNBC #OOTT." (iii) Tavares reminds that people need to know there are chargers and they don't have to hunt for them. Think about gas stations, no one worries there are multiple stations on any time you go out to work, to shop; to whatever. People don't want to feel they have to map out in advance where they might be able to charge their EV. We tweeted [LINK] "*EV buyers want to know they can charge their EV if out & about says Stellantis CEO Tavares. "You need with your eyes to see where the charging units are. The charging units need to come to your customer journey, to your day journey without you having to look for them" #OOTT."* Our Supplemental Documents package includes the transcripts we made of Tavares comments.

Energy Transition: Rivian *"incurred cancellations due to macro & customer factors"*

Rivian shares down 35%

Rivian shares were down 35% after their Q4 release after markets on Wednesday. The message was clear – orders are being cancelled. On Wednesday after markets ,we tweeted after seeing the Rivian Q4 release [LINK] "*Rivian -16% after mkt. "Economic and geopolitical uncertainties and pressures, most notably the impact of historically high interest rates, have informed our expectations for 2024. "we have incurred cancellations due to macro and customer factors" is it price or what? #OOTT."* The -16% move was the early after markets reaction to the shares, which were down 25% on Thursday and a further 10% on Friday. ON the Q4 call, mgmt. said "*Our business is not immune to existing economic and geopolitical uncertainties. Most notably, the impact of historically high-interest rates, which has negatively impact demand. In this fluid environment, we appreciate the expressed interest in-demand visibility from the investment community. The conversion of orders to sales can be impacted by several factors including delivery timing location of order monthly payments and customer readiness. Our order bank has notably reduced overtime as delivers more than doubled in 2023 versus 2022 along with the impact of cancellations due to both the macro-environment and the customer factors, I just referenced"*

Energy Transition: Macron, IEA is "*our armed wing of implementing*" Paris agreement

IEA scenarios

We were shocked by France President Macron's comment on the IEA. On Monday, we tweeted [LINK] "*The IEA has become, so to speak, our armed wing of implementing the Paris agreement" Macron. The IEA has no guns, is Macron saying analysis/fcasts are their weapons to implement Paris as opposed to analyzing energy! Saudi Energy Minister Abdulaziz will say I told you so! #OOTT."* Macron made the keynote speech at the IEA Ministerial Meeting in Paris that also celebrated the IEA's 50th anniversary. We were surprised that Macron made such a direct comment that made it clear the IEA's focus is on implementing the Paris Agreement on behalf of the western governments that fund the IEA. This was not an accident, rather it looked like a prepared speech Macron read from a teleprompter. So, for some reason, Macron wanted the world to know the IEA is there to the "*armed wing*" for their western country funders to implement the Paris agreement. And not an agency that provides analysis for their western governments to make the right policy decisions. But, if we take Macron at his words, the IEA's analysis is there to support policy or provide the impetus for their western government funders to make policy to support the conclusions of the analysis. And to provide the western governments with the rationale for why they make policies for Paris Agreement. It was a major ht to the IEA credibility and we just don't understand why Macron did it unless he wanted to hurt the IEA's credibility. Here is the transcript we made of Macron's comments that was attached to our tweet. Note that we

made the transcript from the IEA's posting of Macron's speech. The IEA just didn't includes the full Macron quote. At 0;52 min mark, Macron "*We are also very proud that since its creation, the Agency has been able to profoundly shift its mandate. From an agency dedicated to managing strategic oil reserves, it has now become a global hub for debate, collective action to meet the challenge of the energy transition. The IEA has become, so to speak, our armed wing of implementing the Paris agreement, given that energy accounts for more than 75% of global greenhouse gas emissions."*

IEA's prior view on their "analysis"

Every fall, the IEA postes their major report Oil and the year ie. Oil 2023, which is their analysis and forecast for the next five years. The last time they included a foreward by Executive Director Birol was in their Oil 2019 report. Hereis the last paragraph of his foreward "*The IEA's core mandate has always been energy security. Our mission has expanded over the years and the definition of energy security has also evolved beyond oil to include natural gas and electricity. But oil market analysis remains a central focus of the IEA, which we demonstrate through our vigilent analysis of market developments and their consequences. We hope this report contributes to a better understanding of the sector and helps develop policies supporting the longer term transition to a more secure but also a more sustainable energy future."*

Canada uses IEA scenarios as if they are data- based

Here is what we wrote in last week's (Feb 18, 2024) Energy Tidbits memo on how countries like Canada use the IEA works as if it an unbiased analysis and forecast. Last week, we wrote "*We continue to see one of our concerns play out – western leaders use the IEA scenarios as if they are forecasts. And despite these being scenarios of what if's, the western leaders want use these scenarios to support their policies, in this case the push to net zero. And that is why we have warned for several years that the Energy Transition will take way longer, cost way more and be a bumpy/rocky road. The question is do they not read the IEA work or just choose to use it as something it isn't. Either way, the Energy Transition plans aren't based on data but based on what if's. Canada's Energy & Natural Resources Minister, Jonathan Wilkinson, gave a good reminder of this in his interview with Bloomberg on Wednesday morning. Its like the western leaders are using scenarios based on what they are saying is policy to set policy. We tweeted [LINK] "Unfortunately, a big difference between data driven forecast vs a scenario based on stated policies! CA Energy Minister, "when the IEA SAYS that #Oil #NatGas #Coal utiliization is gong to peak this decade, that is based on the data that show actually much of this is becoming uneconomic" IEA WEO 2023 peak demand was based on a "Stated Energy Policies Scenario" #OOTT @ManusCranny @daniburgz." Wilkinson gave the perfect example and it seems like his staff never read the assumptions when IEA Fatih Birol came out in Sept in his call for peak oil, natural gas and coal demand by 2030 that he said would be detailed in IEA big World Energy Outlook 2023 in Oct. Wilkinson said that the IEA call for peak oil, natural gas and coal demand is NOT based on policy. We made a transcript of his comments. At 3:23 am MT, Wilkinson "But I would say that a lot of this is just being driven by straight economics and by the financial markets. Like when the IEA says that oil, gas and coal utilization is going to*

peak this decade, that is based on the data that shows that actually much of this is becoming uneconomic for a whole range of different reasons". His staff didn't read the IEA executive director Birol FT op-ed or IEA world energy outlook key findings. Our tweet included the FT Fatih Birol op-ed and the excerpt from IEA World Energy Outlook Oct 2023 that both indicate the call for peak oil, natural gas and coal this decade is based on policy statements coming true. The IEA WEO wrote "The analysis does not present a single view of the future but instead explores different scenarios that reflect current real-world conditions and starting points. The Stated Policies Scenario (STEPS) provides an outlook based on the latest policy settings, including energy, climate and related industrial policies." And "We are on track to see all fossil fuels peak before 2030. A legacy of the global energy crisis may be to usher in the beginning of the end of the fossil fuel era: the momentum behind clean energy transitions is now sufficient for global demand for coal, oil and natural gas to all reach a high point before 2030 in the STEPS. The share of coal, oil and natural gas in global energy supply – stuck for decades around 80% – starts to edge downwards and reaches 73% in the STEPS by 2030. This is an important shift. However, if demand for these fossil fuels remains at a high level, as has been the case for coal in recent years, and as is the case in the STEPS projections for oil and gas, it is far from enough to reach global climate goals." Our Supplemental Documents package includes the IEA Executive Director Birol FT OP-ED in Sept and the excerpts from the IEA WEO 2023."

Energy Transition: IEA is due to update its EVs to displace ~5.5 mmb/d of oil by 2030

IEA"s global EVs outlook is in April

Macron's timing couldn't be worse for the IEA considering they are to update their amajor assumption for their peak oil demand by 2030 – their call for EVs to displace ~5.5 mmb/d of oil by 2030. On Tuesday, we tweeted [LINK] "*Bad timing for Macro to say out loud IEA is "our armed wing of implementing the Paris Agreement". IEA's peak #Oil demand by 2030 depends on its annual Global EVs outlook 👇says EVs will displace ~5.5 mmb/d of oil by 2030. Will IEA double down or push peak demand back? IEA's global EVs outlook is in April #OOTT."* The IEA normally updates its annual Global EVs outlook in April. Last year's outlook included the key conclusion that EVs are to displace approx. 5.5 mmb/d by 2030. We believe the IEA will have to make some bold new assumptions to not reduce the amount oif oil EVs are to displace by 2030. There is nowhere of significance that isn't pointing to a lesser EVs penetration than assumed a year ago. Plus we have highlighted several times our view of the unrealistic key assumption that every EV sold effectively displaces the miles driven by an ICE ie. it's like every time an EV is bought, it means an ICE doesn't get driven ever again. Absent some bold new assumptions, the IEA has to reduce its forecast for oil displaced by EVs and, if so, it should also push back when the IEA calls peak oil demand. When we say its bad timing for the IEA, it's because of the logical cut to its oil displacement call and Macron's call should see more scrutiny on the IEA's assumptions.

Energy Transition: Glencore warns on persistent supply challenges for copper

Glencore warns on copper

For years, we have highlighted our concern that critical metals and minerals supply isn't going to be ready to meet the Net Zero aspirations in the 2020s. On Wednesday, we tweeted [LINK] "*Doctor Copper. "particularly the case for copper, where the closure of a major mine & various cuts to production guidance through the 2H23 have highlighted the persistent supply challenges facing the industry. These are likely to keep the market tight*

throughout 2024 against previous expectations of oversupply" Glencore CEO. #OOTT." The Glencore CEO message in the Q4 this week wasn't specifically linked to Net Zero needs, but it is impossible to ignore that there is a linkage for critical metals and minerals. Glencore CEO said "*Supply constraints and energy transition demand prevented large inventory increases in most commodities during this cyclical trough, leaving markets well-positioned for a strong recovery as demand conditions improve. This is particularly the case for copper, where the closure of a major mine and various cuts to production guidance through the second half of 2023 have highlighted the persistent supply challenges facing the industry. These are likely to keep the market tight throughout 2024 against previous expectations of oversupply."*

02/12/24: Saudi future energy security risk is renewables, materials, mines

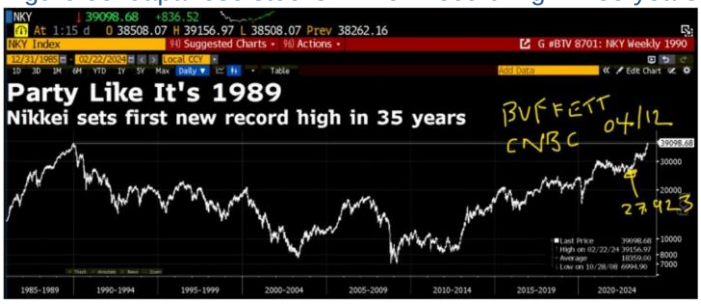
Last week's (Feb 18, 2024) Energy Tidbits memo highlighted Saud Energy Minister Abdulaziz warning about future energy security risk. Here is what we wrote "*We have been, and are still, in the camp that worries the world's leaders haven't' addressed the energy security risks under the Energy Transition. It's not just the risk of providing 24/7 reliable, affordable, available electricity, it's the availability and security of supply of critical metals, and more. Saudi Energy Minister Abdulaziz highlighted this future energy risk in his Monday interview. On Monday, we tweeted [LINK] ""future problem on energy security, it will not be oil, it will be renewables, and the materials, and the mines..." Saudi Energy Minister Abdulaziz. Need dispatchable #NatGas #Coal #Nuclear for renewable down time. Who ensures stable metals supply? See 👇SAF transcript #OOTT." Our tweet included the transcript we made of Abdulaziz's comments. "what we want to do also is make sure that people understand that we also used to maintain what you have rightly said the 1.5 to 2 million because energy security in the 70s, and 80s and 90s was more dependent on oil. Now, look at what happened last year, 22 I mean. It was gas. The future problem on energy security, it will not be oil, it will be renewables, and the materials, and the mines, and the mining industry. And who is going to be the source of these materials that will constitute the very essence of the new energy of the world. Therefore, and we have also, and it should be said that if emergency stocks were utilized for commercial purposes in 22 because they were not used for attending to shortages of supply. Why should we be he last country to hold energy capacity, capacity, emergency capacity when it is not appreciated and when it is not recognized. I think we owe it to the oil market, to the stability of the market that we have to manage our capacity in a way that enables us to continue to again, our first and foremost endeavour, of sustainable stability of the market. That's what we owe actually to ourselves to start with, and to the rest of our colleagues in OPEC and OPEC+. And we really believe that we are doing a remarkable job attending to this task because, not only we're helping ourselves, but we are helping the industry, be it in the US, Patrick is here, he's enjoying what we're doing. I hope so. But also we believe that we're helping the world economy because there is nothing, as we have seen happening in 22, there is nothing that can be ruinous to the world economy more than not stable energy markets."*

Capital Markets – Warren Buffett led Japanese stocks to new 35 year highs

It was a big week for Japanese stocks finally getting back to 1989 highs after 35 years. And we continue to highlight that the charts and math shows it was Warren Buffett that got it going. Warren Buffett had a big CNBC interview on Apr 12, 2023 where he was positive on the Japanese trading houses and Japan and then all the charts tuend up especially the flow of foreign funds into Japanese stocks. Stock markets are simple – mor ebuyers than sellers leads to high stock prices. Below are the three Bloomberg charts attached to our tweet.

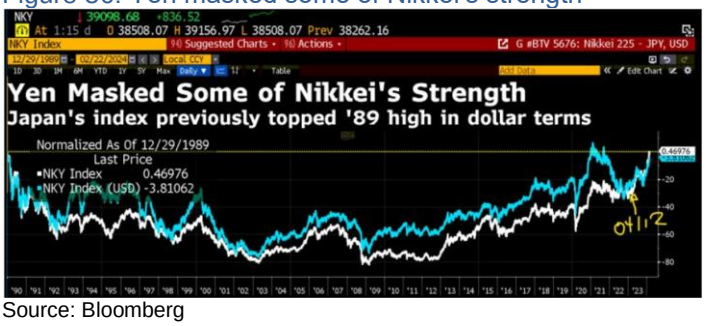
Japan stocks set 35 yr high

Figure 55: Japanese stocks 1st new record high in 35 years



Source: Bloomberg

Figure 56: Yen masked some of Nikkei's strength



Source: Bloomberg

Figure 57: Foreign funds boost Japanes stocks

Source: Bloomberg

The Warren Buffett effect on Japanese stocks became evident in May

The Warren Buffett impact on Japanese stocks didn't come to our attention until we were watching Bloomberg TV Asia shows on May 18. Here is what we wrote in our May 21, 2023 Energy Tidbits memo. "*We aren't in the category of the Warren Buffett fanatics who think everything he says is gospel and he touches turns to gold. But we really respect what he has accomplished and continues to accomplish over the decades. It's amazing when someone can be considered to be on the top of his game over many decades. So we couldn't help tweet a Warren Buffett shout-out on Thursday, when we saw the below Bloomberg TV chart on how foreigners are loving Japanese stocks. We tweeted [LINK] "The #WarrenBuffett effect is still working. @business "foreigners loving Japanese stocks. positive flows into equities for 7th straight week". Last 5 weeks were since #WarrenBuffett made his positive comments on Japanese trading houses in his @BeckyQuick Apr 12 interview in Japan. #OOTT." Buffett was in Japan in early April and there was big investor attention to the CNBC Becky Quick interview with Buffett and Greg Abel on April 12, where he made positive comments about the Japanese trading houses. We have to believe this got a lot of attention from investors around the world. Was it coincidental or did people follow? Given his following, we suspect a good portion of this was people following Warren Buffett into Japanese stocks.*"

Figure 58: Positive flows into Japanese equities for 7th straight week

Source: Bloomberg

Capital Markets: Loblaw says don't blame grocers for escalating grocery prices

Loblaw on high grocery prices

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."

Q3/23 call, Loblaw blames suppliers for higher inflation on grocery prices

Loblaw's Q3 call was more direct in calling out suppliers. Here is what we wrote in our Dec 3, 2023 Energy Tidbits memo. "*On Nov 15, Loblaw held its Q3 call and made sure they reminded investors that grocers aren't the reason for high food prices, it's the suppliers and other aspects of the supply chain. Loblaw's Galen Weston said "Overall affordability remains a pressing issue on Canadians' minds, and lower food prices remain a top priority for us throughout the business, from our stores to our supply chain, to our suppliers. And it's important to reiterate that grocers are not the reason for high food prices, and so we are unable to resolve inflationary pressures on our own. Over the last two months, we have participated actively in discussions with government, shared ideas and have provided them with the details of the specific actions we have taken." Loblaw CFO Dufresne emphasized they were reducing margins to help keep pricing down and that it was the suppliers who were still increasing price. Dufrene said "Our internal food inflation number was lower than food CPI. In fact, our actual inflation on food items as measured at our checkouts was significantly lower than food CPI, clearly demonstrating the role we are playing to help stabilize food prices for our customers. Since January, food inflation in Canada has been falling rapidly and consistently. While Canada continues to see lower food inflation than most of the world, we know that rising food prices have a real impact on Canadians and their families. Loblaw continues to invest to keep prices lower in our stores. The decrease in our food margin is evidence that our costs continue to grow faster than our prices. As we continue to do our part to fight inflation, we remain concerned about the level of commitment to this cause from some of our suppliers. Without the support of suppliers, it will be difficult for the industry to sustain the current momentum of falling food inflation With lower supplier costs, we can lower prices on the shelf for customers. Unfortunately, several large global suppliers are still coming with higher-than-expected cost increases for next year."*

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

@Energy_Tidbits on Twitter

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.

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.

Cdn Ben Silverman is T-3 into the final round of PGA's Mexico Open

We caught a little bit o the PGA golf yesterday and it was great to see Canada's Ben Silverman sitting in T-3 at -12 with two others going into the final round of the PGA's Mexico Open. He is far back with the leader Jake Knapp at -19 and Sami Valimaki who is 2nd at -15. But there are only two ahead and that gives a better chance to close a big shot gap. Silverman was born and raised justg north of Toronto before going to the US for college golf and then ultimately to the pros. We are planning to watch as much as we can and be cheering for himn as this should be his biggestg check by far in any any golf tournament.

Thursday Feb 22 was National Margarita Day

We have the good fortune to be in San Jose del Cabo this week. National Margarita Day was on Thurs Feb 22 but most will celebrate with a margarita on most if not every day. We didn't get a chance to be at our favorite place for tacos and margaritas is La Lupita Taco & Mezcal on Feb 22, but did get a chance to have some margaritas there on Feb 24.

Figure 59: Margaritas at La Lupita Taco & Mezcal on Feb 24, 2024

Source: SAF Group

The Maytag Man

The first thought that came to mind after seeing the WSJ Tues report "*The Lifespan of Large Appliances Is Shrinking. Appliance technicians blame a push toward computerization and an increase in the quantity of components inside a machine"*

[LINK] was where is the Maytag Man when you need him? The WSJ wrote "*Our refrigerators, washing machines and ovens can do more than ever, from producing symmetrical ice cubes to remotely preheating on your commute home. The downside to all these snazzy features is that the appliances are more prone to breaking. Appliance technicians and others in the industry say there has been an increase in items in need of repair. Yelp users, for example, requested 58% more quotes from thousands of appliance repair businesses last month than they did in January 2022."* The Maytag Man was introduced in 1988 as part of Maytag's branding as dependable durable appliances. The Maytag Man was the loneliest man in the town because he had nothing to do and that was the commercials. Some of the tag lines from the Maytag commercials were *""Not all Maytag repairmen are this lonely, but we're trying."* Below are the first two Maytag Man actors – Jesse White from 1967-1988, and then Gordon Jump from 1989-2003. Jump was also known for his role as station manager Arthur Carlson in the TV comedy WKRP in Cincinnati that ran from 1978 to 1982.

Figure 60: Maytag Man: Jesse White 1967-88, Gordon Jump (1989-2003)

Source: Globe and Mail