Energy Tidbits

January 28, 2024

Produced by: Dan Tsubouchi

Houthis "*still keen on peace with the least amount of escalation possible*" but warn can hit Red, Arabian & Mediterranean Sea

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. Earlier today, the Houthis warned they can hit the Red, Arabian and Mediterranean Seas BUT then said they are "*still keen on peace with the least amount of escalation*". [click here]

2. Vortexa crude oil floating storage estimated at 61.06 mmb is the lowest since Covid. [click here]

3. Election 2024: Biden puts a temporary halt on approvals for new LNG export projects until after election. [click here]

4. Baker Hughes, Haliburton and Liberty Energy CEOs all seemed to point to lower, if any, US oil production growth in 2024. [click here]

5. Canadian mutual funds continue to get hit by big net redemptions in balanced and equity funds. [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: -326 bcf draw from US gas storage; now +110 bcf YoY surplus

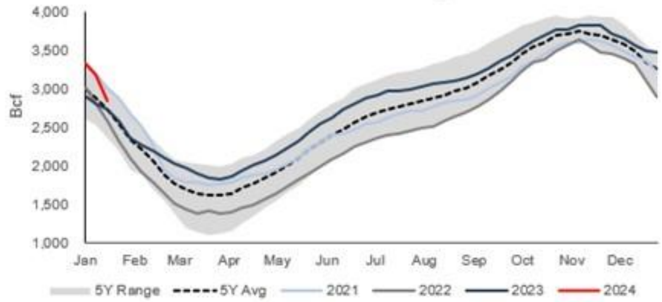
It was a big -326 bcf draw from storage but that was in big part due to the cold weather that shut-in a material amount of US natural gas production. There are no official estimates but we saw well regarded sources estimate 10 to 15 bcf/d. So we would assume an impact of probably at least 70 bcf for the weekly gas storage data. But the cold also cranked up weather driven consumption. Even with the big draw, HH prices are still down $0.60 in the last two weeks, closing Friday at $2.71. For the week of Jan 19, the EIA reported a -326 bcf draw, much bigger than the -86 bcf/d draw reported for the week of Jan 20, 2023. Total storage is now 2.856 tcf, representing a surplus of +110 bcf YoY compared to a surplus of +350 bcf last week. Three weeks ago was the highest storage has been in 5 years, with the previous high being 3,460 bcf from 2020. Total storage is +142 bcf above the 5-year average, down from the +320 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 (01/19/23)		5-year average (2019-23)	
Region	01/19/24	01/12/24	net change	implied flow	Bcf	% change	Bcf	% change
East	657	715	-58	-58	628	4.6	630	4.3
Midwest	788	873	-85	-85	758	4.0	749	5.2
Mountain	194	208	-14	-14	141	37.6	146	32.9
Pacific	228	257	-29	-29	151	51.0	206	10.7
South Central	990	1,128	-138	-138	1,067	-7.2	984	0.6
Salt	269	332	-63	-63	310	-13.2	300	-10.3
Nonsalt	721	796	-75	-75	758	-4.9	684	5.4
Total	**2,856**	**3,182**	**-326**	**-326**	**2,746**	**4.0**	**2,714**	**5.2**

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



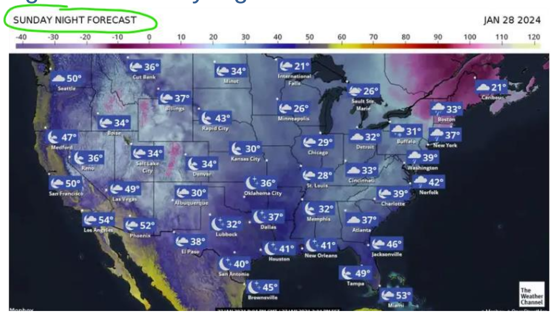
Source: EIA, SAF

Natural Gas: Cold US temperatures turning to above normal Great Lakes/NE US

NOAA 6-10 & 8-14 day temp outlook

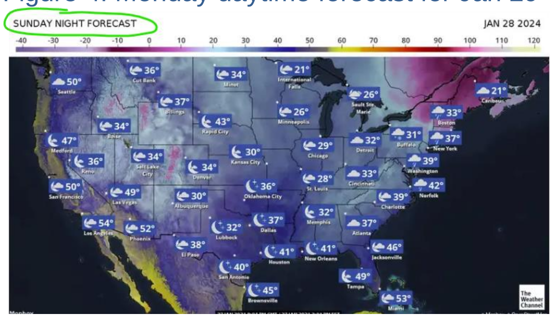
Yesterday, we tweeted [LINK] "*Cold temperatures to continue for next few days across US but then turn to above normal temperatures for Great Lakes/NE US in Feb 2-10. Hopefully support next few days for HH #NatGas price, but then could be a little softer. Thx @weatherchannel @NOAA #OOTT."* Our tweet included the next couple days of The Weathjer Channel daytime an dnight temps, and NOAA's updated 6-10 an d8-14 day temperaturel ouitlooks that cover Feb 2-10. The Weather Channel forecasts call for cold temperaturs for the next few days that should suport Friday’s HH $2.71 but then turning to warmer than normal arouind the Great Lakes/NE US is likely to leead to softer prices. Below we only included a couple of The Weather Channel maps that were with our tweet.

Figure 3: Sunday night forecast for Jan 28



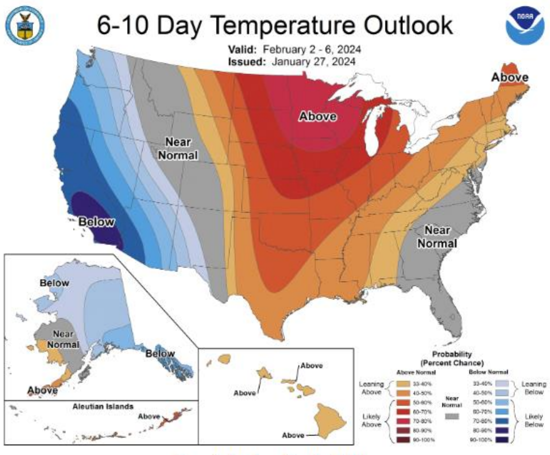
Source: The Weather Channel

Figure 4: Monday daytime forecast for Jan 29



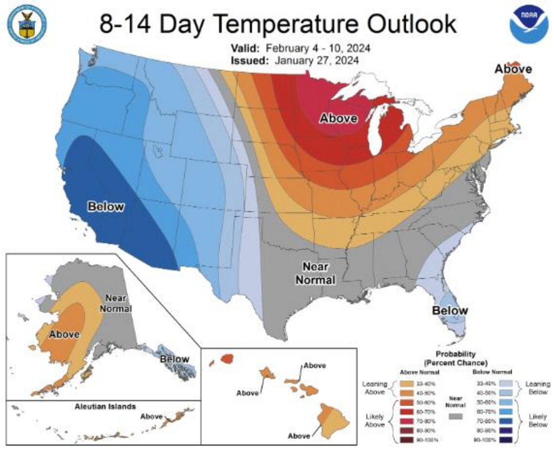
Source: The Weather Channel

Figure 5: NOAA 6-10 day temperature outlook as of Jan 27



Source: NOAA

Figure 6: NOAA 8-14 day temperature outlook as of Jan 27



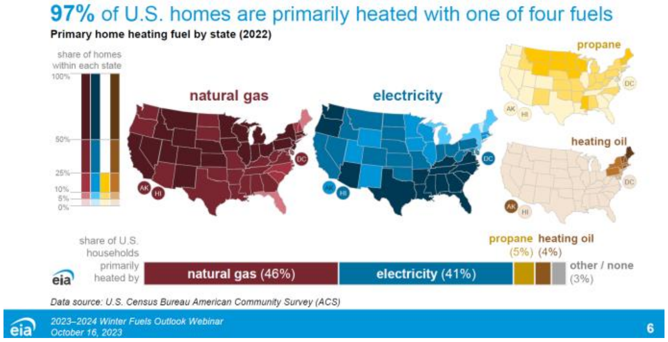
Source: NOAA

Natural Gas: 62% of US homes have winter home heating fueled by natural gas

Natural gas home heating

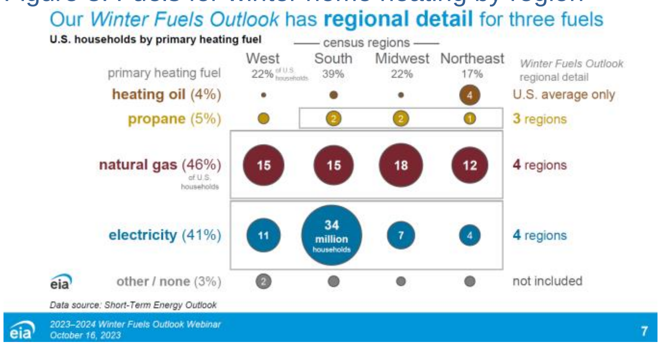
We are keeping this item in our memos for Jan and Feb as one of the common questions we get is on where is it important to be cold in the US for natural gas. Here is what we wrote in our Nov 19, 2023 Energy Tidbits memo on overview of US home heating by fuel. "*Our primary focus for winter weather tends to be in the US NE and around the Great Lakes for the combination of population density, areas that have colder winters, and a higher percentage of the US homes in these regions that primarily use natural gas for heating. Below is the EIA's map from Oct showing the primary fuel source for heating homes. (i) On Thursday, we tweeted [LINK] "62% of US homes winter heated directly (46%) and indirectly (16%) by #natgas. All direct fuel % splits unchanged YoY ie. #natgas 46%, electricity 41%, etc. @EIAgov #natgas fuels 40% of electricity for home heating ie. indirect 16% #OOTT." (ii) Natural gas continues to be the major fuel for "direct" fuel for home heating with 46% of US homes followed by electricity 41%, propane 5%, heating oil 4% and other/none at 3%. Note these % shares are unchanged vs last year. (ii) much of the electricity is provided by natural gas. (iii) Natural also is the major fuel to generate electricity. On a direct basis, electricity is the primary source for heating 41% of US homes. The EIA notes that natural gas provides the fuel for 40% of electricity. The EIA wrote "Last winter, electricity generation fueled by natural gas reached a new record of 619 billion kilowatthours (kWh), accounting for nearly 40% of all generation in the U.S. electric power sector. We forecast a similar level and share of natural gas generation for winter 2023–24. The addition of new natural gas-fired generating capacity has been one factor keeping natural gas the largest source of power generation. By October 31, we expect U.S. natural gas generating capacity to have grown by 4.7 gigawatts (GW) from the previous October." ivi) Adding the indirect and direct, natural gas provides the fuel for 62% of US homes*."

Figure 7: Fuels for winter home heating of US homes



Source: EIA

Figure 8: Fuels for winter home heating by region



Source: EIA

Natural Gas: US LNG exports up +3.8% MoM to 12.9 bcf/d in Nov; up +27.5% YoY

US November LNG exports

Last Friday, the Department of Energy (DOE) posted its US LNG exports estimates for November 2023 [LINK]. Note, the DOE has changed the name from the LNG Monthly to the U.S. Natural Gas Imports and Exports Monthly. This is a reminder that the US LNG export data is available about a week prior to the more commonly referenced US LNG exports from the EIA's Natural Gas Monthly. The EIA is a group under the Department of Energy. The data for LNG exports is either identical or just a rounding issue. US LNG exports were up MoM to 12.9 bcf/d in November from 12.4 bcf/d in October. US LNG exports are now averaging 11.7 bcf/d per month YTD for 2023, which is +1.1 bcf/d compared to the same period in 2022. The DOE did not comment on the MoM or YoY increases. Our Supplemental Documents package includes excerpts from the U.S. Natural Gas Imports and Exports Monthly.

Figure 9: US Monthly LNG Exports

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

Source: EIA, DOE

Figure 10: US LNG and Natural Gas Exports Nov 2023 vs Nov 2022 and Oct 2023

Volume (Bcf)	Monthly			Percentage Change	
Mode of Transport	Nov 2023	Oct 2023	Nov 2022	Nov 2023 vs. Oct 2023	Nov 2023 vs. Nov 2022
Exports					
LNG by Vessel	386.2	384.3	302.3	<1%	28%
Pipeline	268.4	267.4	252.4	<1%	6%
Truck	<0.1	<0.1	0.2	-2%	-83%
LNG by ISO Container	<0.1	<0.1	0.2	-4%	-72%
Total	**654.7**	**651.8**	**555.0**	**<1%**	**18%**

Source: DOE

Natural Gas: US natural gas + LNG exports to Mexico down -8.3% MoM, +11.1% YoY

US to Mexico Nov natural gas exports

Also included in the DOE's U.S. Natural Gas Imports and Exports Monthly was a breakout of exports by destination. Natural gas and LNG exports to Mexico were down -8.3% MoM to 6.0 bcf/d in November from 6.5 bcf/d in October, but is up +11.1% YoY from 5.4 bcf/d in November 2022. The DOE doesn't provide a split but based on its prior disclosures, it looks like essentially 100% of the exports are via pipeline, with hardly any LNG in the mix, although once in a while there will be a material LNG figure. Below is a summary of natural gas and LNG exports to Mexico from the US.

Figure 11: US Natural Gas Pipeline + LNG Exports to Mexico

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

Source: DOE, SAF

Biden's temporary pause on LGN export approvals

Natural Gas: Wil Biden's temporary LNG export approval halt will stop future LNG?

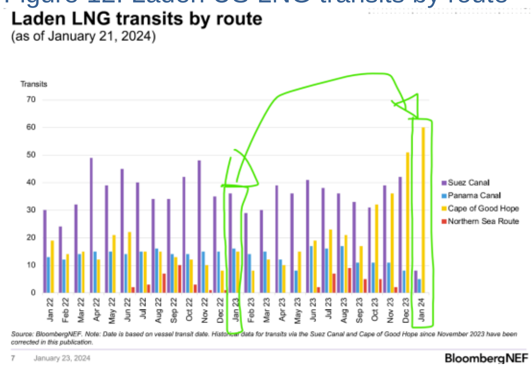
We note that the analyst and markets don't seem to be as worried as us on Biden's temporary halt to any LNG export project approvals until it can update its review process for these projects. On Friday morning, we tweeted]LINK] "*Read it carefully. If "our" refers to US, it's hard, if not impossible, 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 "t*emporar*y" 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 and White House fact sheet.

US LNG to Asia taking longer

Natural Gas: US LNG keeps avoiding Red Sea to take long way via Cape of Good Hope

It looks like US LNG is now fully avoiding the Red Sea. On Tuesday, we tweeted [LINK] "*#LNG floating volumes up 60% YoY. First it was #PanamaCanal lower transits because of drought. Then #Houthis missile/drone attacks on ships in Red Sea/Bab el Mandeb. Thx @BloombergNEF Han Wei, Komelija Dauksaite.*" And [LINK] "*Should have also included this other chart from @BloombergNEF LNG Trade Weekly. Shows how Laden LNG transits by route for Cape of Good Hope are 4 times higher in Jan 24 vs Jan 23. #NatGas #OOTT.*" The below graph is one of the graphs attached to our tweets and it is a good illustraton of how in one year almost eery LNG cargo now gos around the cape of Good Hope.

Figure 12: Laden US LNG transits by route



Source: BloombergNEF

Mexico natural gas still below 5 bcf/d

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

On Friday, Pemex posted its natural gas production data for December. [LINK] Pemex does not provide any commentary on the data but reported December 2023 natural gas production of 4.786 bcf/d, which was -1.2% YoY and -2.1% 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 13: Mexico Natural Gas Production

Natural Gas Production bcf/d	2017	2018	2019	2020	2021	2022	22/21	2023	23/22
Jan	5.326	4.910	4.648	5.005	4.848	4.713	-2.8%	4.955	5.1%
Feb	5.299	4.853	4.869	4.942	4.854	4.646	-4.3%	4.979	7.2%
Mar	5.383	4.646	4.857	4.946	4.839	4.766	-1.5%	5.035	5.6%
Apr	5.334	4.869	4.816	4.827	4.671	4.740	1.5%	5.095	7.5%
May	5.299	4.827	4.841	4.460	4.730	4.702	-0.6%	5.034	7.1%
June	5.253	4.840	4.843	4.754	4.727	4.744	0.4%	5.035	6.1%
July	5.216	4.856	4.892	4.902	4.725	4.815	1.9%	4.936	2.5%
Aug	5.035	4.898	4.939	4.920	4.656	4.796	3.0%	4.947	3.1%
Sept	4.302	4.913	5.017	4.926	4.746	4.798	1.1%	4.969	3.6%
Oct	4.759	4.895	4.971	4.928	4.718	4.795	1.6%	4.950	3.2%
Nov	4.803	4.776	5.015	4.769	4.751	4.845	2.0%	4.888	0.9%
Dec	4.811	4.881	5.024	4.846	4.697	4.845	3.2%	4.786	-1.2%

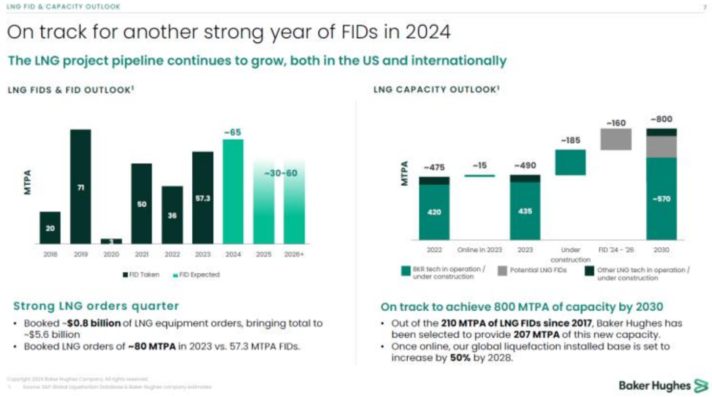
Source: Pemex, SAF

Natural Gas: Baker Hughes keeps bullish LNG supply FID outlook to 2030

Baker Hughes LNG FID outlook

Baker Hughes is the dominant services company for LNG supply projects and we expect is either involved with or aware of every LNG export project. We checked their Q4 call comments on their LNG outlook to their comments on the Q3 call and it looks unchanged. On Wednesday, we tweeted [LINK] "*Looks like no change in today's Q4 call Baker Hughes #LNG FID outlook in near term and to 2030 vs its Q3 call on Oct 29/23. - 65 MTPA for 2024 - 30-60 MTPA for 2025 and 2026 - 800 MTPA installed capacity by 2030. #NatGas #OOTT>*" In bcf/d, this would be 8.6 bcf/d for 2024, 3.9 to 7.9 bcf/d for 2025 and 2026, and 105.3 bcf/d by 2030. Here is what CEO Simonelli said in his prepared remarks "*The outlook for FIDs over the next few years remains strong, and we see projects progressing across all markets. For 2024 specifically, we expect LNG FIDs of around 65 MTPA. However, it is important to note this includes a couple of major LNG orders that were booked during 2023. As we look out to 2025 and 2026, we could see between 30 to 60 MTPA of FIDs annually, bringing total potential LNG FIDs to 125 MTPA and 185 MTPA through 2026. Based on existing capacity, projects under construction, and future FIDs in the pipeline, we have line of sight for global LNG installed capacity to reach 800 MTPA by the end of 2030, representing an almost 75% increase in nameplate capacity from 2022 levels.*"

Figure 14: LNG FIDs & FID Outlook, LNG Capacity Forecast



Source: Baker Hughes.

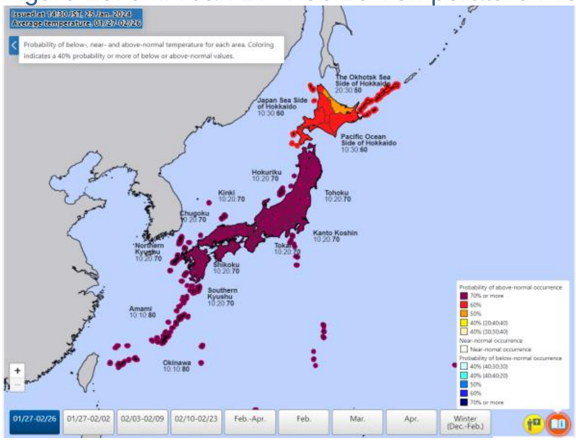
10/25/23: Baker Hughes maintained bullish outlook for LNG FIDs to 2030
Our tweet this week included the following writeup from our Oct 29, 2023 Energy Tidbits memo on comments from the Baker Hughes Q3 call. "*We don't understand why but for some reason Baker Hughes CEO Simonelli decided to drop some of his bullish LNG FID outlook out of his normal quotes in the Q3 release and save it for the earnings call. On Wed morning, Baker Hughes reported Q3 and once we saw the release, we tweeted [LINK] "See 👇 as always wonder why items dropped vs Q2 message, $BKR Q3 drops specifics on #LNG FIDs in 23/24 & mention of LNG cycle extending for several yrs. Hope analysts drill down on his LNG outlook past 23 in Q3 call as will give insight to overall LNG market. #NatGas #OOTT." Our tweet included Simonelli's message in Q3 vs Q2 vs Q1 release and we noted the lack of LNG outlook to 2030, which has been a key and very bullish part of his normal message. In his prepared remarks and in the Q&A, Simonelli continued with the same bullish outlook for expected FIDs for LNG supply to 2030. As a reminder, Baker Hughes is the most involved services company in global LNG projects so knows basically every LNG project and what is being discussed. His prior forecast was for 65 MTPA of new FIDs in 2023 and in 2024. In the Q3 call, he said there was 53 MTPA FID so far in 2023 and he still sees 65 MTPA for 2024. In the Q2 call, he expected 65 MTPA in both 2023 and 2024. And he had not change as he looked out to 2025 and 2026 and confirmed that he stills sees FIDs as stated previously at the rate of 30 to 60 MTP, and that the outlook continues to point to the 800 MTPA of LNG supply that is needed by 2030."*

Natural Gas: Japan weather much warmer than normal next 30 days, ie February

Japan's 30-day temperature forecast

Japan is the #2 LNG importer just behind China. It's now the end of Jan and JKM LNG markets are no longer really worried about a risk to winter LNG prices especially with the current forecasts for a much warmer Feb in Japan. And, in Japan, that really takes it thru any winter weather driven 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. This is when JKM LNG prices should be high and not showing JKM LNG futures around $9.25 for March. Every Thursday, the Japan Meteorological Agency updates its 30-day outlook [LINK]. The January 25 update calls for much warmer than normal temperatures for the rest of January and through most of February. The JMA forecast is for Jan 27 – Feb 26, with almost all regions experiencing hot temperatures. Below is the JMA's 30-day temperature probability forecast for Jan 27 – Feb 26.

Figure 15: JMA Jan 27 -Feb 26 Temperature Probability Forecast



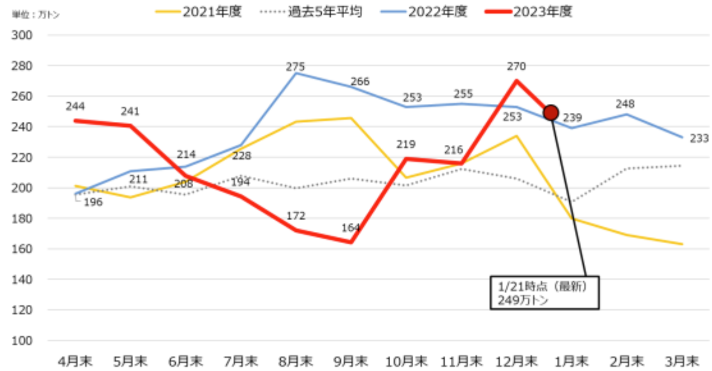
Source: Japan Meteorological Agency

Japan LNG stocks down -3.5% WoW

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

After last week's big draw in LNG storage for Japan, this week had a modest build. Stocks are back above 2022 levels and above the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on Jan 21 were 119.6 bcf, down –3.5% WoW from Jan 7 of 123.9 bcf, up +4.2% YoY from 114.8 bcf a year earlier, and well above the 5-year average for the end of January of 91.7 bcf. METI did not comment on the WoW increase. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 16: Japan LNG Stocks



Source: METI

Japan LNG imports up MoM

Natural Gas: Japan LNG imports up MoM, YoY to 10.06 bcf/d in December

Japan LNG imports were up MoM in December and YoY but continue to be well below historical levels or at least levels to 2020 when there were more normal temperatures On Wednesday, Japan's Ministry of Finance posted its import data for December [LINK] and pointed to a YoY increase in LNG imports. The MOF reported Japan's December LNG imports were 10.06 bcf/d, which is up +17.9% MoM from 8.53 bcf/d in November, and up

+7.2% YoY from 9.39 bcf/d in December 2022. December's imports of 10.06 bcf/d shows strong recovery from the recent low in May of 7.14 bcf/d. Japan's thermal coal imports in November were down -12.0% YoY, compared to -7.6% YoY in November. Petroleum products imports were down +12.4% YoY. Below is our table that tracks Japan LNG import data.

Figure 17: Japan Monthly LNG Imports

bcf/d	2014	2015	2016	2017	2018	2019	2020	2021	2022	22/21	2023	23/22
Jan	12.66	13.06	11.22	12.85	12.79	11.69	11.63	12.48	10.51	-15.8%	10.56	0.5%
Feb	12.88	13.26	12.30	13.36	14.23	12.61	10.99	13.84	12.19	-11.9%	10.98	-9.9%
Mar	12.46	12.60	12.62	12.61	12.28	11.30	11.16	11.04	10.07	-8.7%	8.86	-12.0%
Apr	11.54	10.56	10.21	10.52	8.97	9.00	8.31	7.96	8.92	12.0%	7.25	-18.7%
May	10.06	8.91	8.55	9.66	9.92	8.62	7.09	7.67	8.92	16.3%	7.14	-19.9%
June	10.91	10.61	10.02	9.90	8.88	8.32	8.42	9.13	9.29	1.7%	7.25	-22.0%
July	12.14	10.77	10.19	10.19	10.55	10.56	9.35	9.58	9.54	-0.4%	7.88	-17.4%
Aug	10.92	10.93	11.96	11.24	11.73	9.45	9.04	9.75	9.71	-0.4%	8.78	-9.6%
Sept	11.64	11.06	10.67	9.31	10.04	10.30	10.41	8.66	8.52	-1.6%	8.84	3.8%
Oct	10.75	9.38	9.73	9.50	10.12	9.75	9.20	7.17	7.88	9.9%	8.38	6.4%
Nov	11.00	10.71	12.07	10.26	10.15	10.03	9.63	9.38	8.88	-5.4%	8.53	-3.9%
Dec	12.79	12.51	11.69	12.31	11.23	10.54	11.96	10.89	9.39	-13.8%	10.06	7.2%

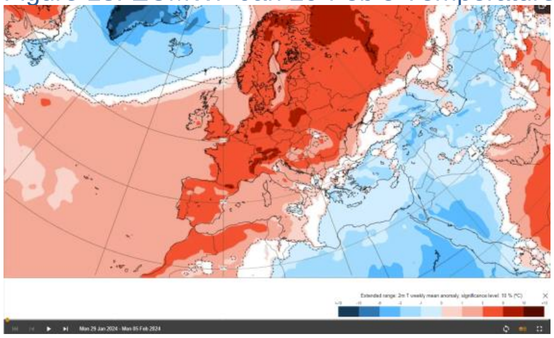
Source: Japan Ministry of Finance, SAF

Europe temperature forecast

Natural Gas: Western Europe forecast for warmer than normal temp for 1st half of Feb

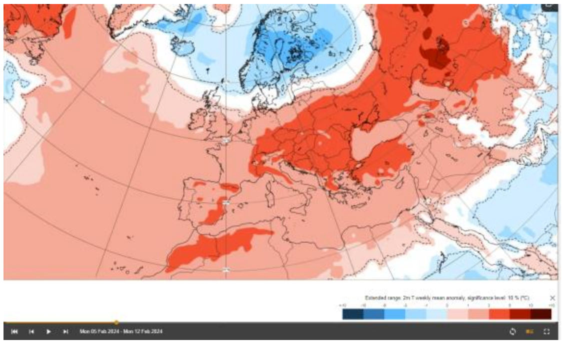
We have been warming that, as far as Europe natural as markets are concerned, any risk to winter natural gas is effectively over if storage is a little lower YoY. The short-term weather forecasts for Europe have been pretty accurate so far this winter. The ECMWF (European Centre for Medium-Range Weather Forecasts) temperature probability forecasts from yesterday forecasts warmer than normal temperatures over the next two weeks for western Europe. Yesterday's ECMWF forecasts for Jan 2-Feb 5 and Feb 5-12 both call for warmer than normal temperatures across Europe. We have been warning that the warm start to winter (Nov/Dec) Our view has been consistent for Europe gas prices is that it's been too warm this winter which meant markets haven't been worried about a natural gas/LNG issues this winter. Now Jan is effectively over, it's clear that Europe natural gas markets aren't worried about natural gas or LNG supply risks this winter. And our concern has been that a weak Europe natural gas market to end winter will lead to months of soft Europe natural gas prices thru shoulder season and into summer or like 2023. Last winter 2022/23 was a hot winter in Europe, Asia and the US, and it held back prices for most of 2023.

Figure 18: ECMWF Jan 29-Feb 5 Temperature Probability Forecast



Source: ECMWF

Figure 19: ECMWF Feb 5-12 Temperature Probability Forecast



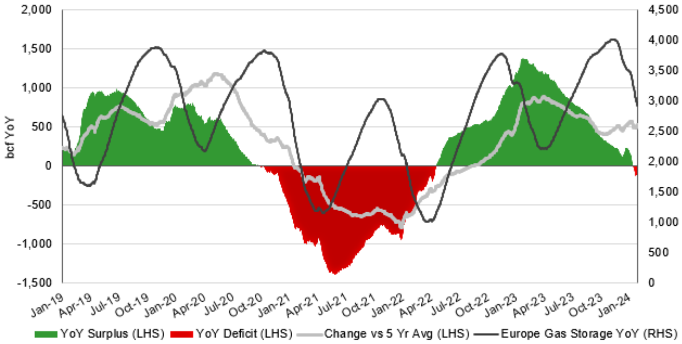
Source: ECMWF

Natural Gas: Europe storage drops big again WoW to 72.64%, YoY deficit continues

Europe gas storage

The cold temperatures more typical of winter in Europe over the past couple weeks has finally led to draws in EU gas storage. We think the impact of delayed LNG shipments noted in the last few memos is continuing this week, as more and more tankers avoid the Red Sea and instead take the long way around Africa. Bloomberg reported last week there were delays in shipments for the upcoming week due to a storm in the Atlantic. Please note that Europe generally refers to the start of winter natural gas withdraw season as starting Oct 1, whereas North America refers to the start of winter natural gas season as starting Nov 1. After entering winter essentially full at over 99%, Europe is now drawing on its gas storage. This week, Europe storage decreased by -3.54% WoW to 72.64% on Jan 25 vs 76.18% on Jan 18. Storage is now -3.54% lower than last year's levels of 75.63% on Jan 25, 2022. But remember 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 20: European Gas Storage Level



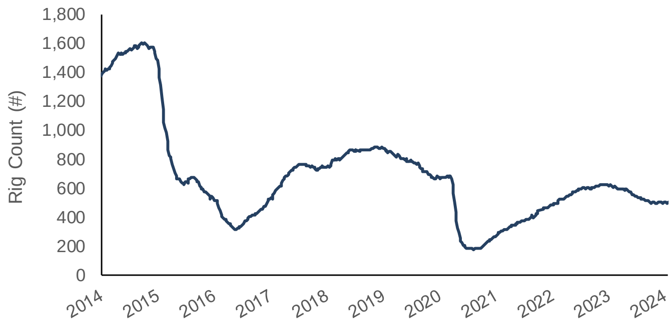
Source: Bloomberg, SAF

Oil: US oil rigs +2 WoW to 499 rigs, US gas rigs -1 WoW to 119 rigs

US oil rigs +2 WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Total US oil rigs were -2 rigs WoW to 499 oil rigs as of Jan 26. US oil rigs went below 520 rigs on Aug 25 and stayed there for 4 weeks and for the last 14 weeks have been between 494 and 507 oil rigs. (ii) The major basin changes for oil rigs were Permian +3 rigs WoW to 306 oil rigs, DJ Niobara +1 rig WoW to 13 oil rigs, Cana Woodford +1 rig WoW to 23 oil rigs, Eagle Ford -1 rig WoW to 50 rigs, and Others -2 rigs WoW to 67 rigs. (iii) US gas rigs were down -1 rig WoW to 119 gas rigs.

Figure 21: Baker Hughes Total US Oil Rigs



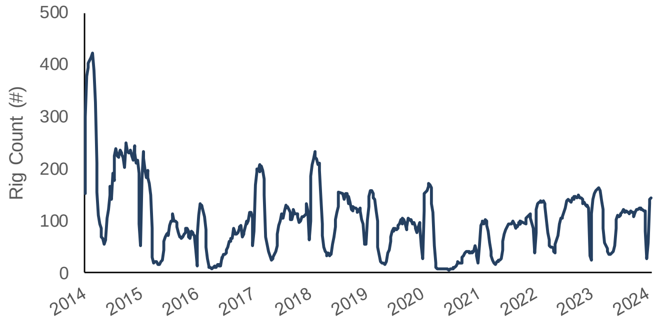
Source: Baker Hughes, SAF

Oil: Total Cdn rigs up +7 rigs to 230 total rigs

Cdn total rigs up WoW

Rig counts in Canada increased as we approach typical peak winter numbers, especially with the cold weather we had over the past few weeks. For the week of Jan 26, total Cdn rigs were up +7 WoW to 230 total rigs. On a per province basis, Alberta was up +6 rigs WoW to 165 rigs, BC was flat WoW at 21 rigs, and Saskatchewan was up +1 rig WoW to 39 rigs. Cdn oil rigs were up +4 rigs WoW to 144 oil rigs and are down -13 oil rigs YoY. Cdn gas rigs were up +3 rigs WoW to 86 gas rigs, which is down -4 rigs YoY.

Figure 22: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes, SAF

US oil production down WoW

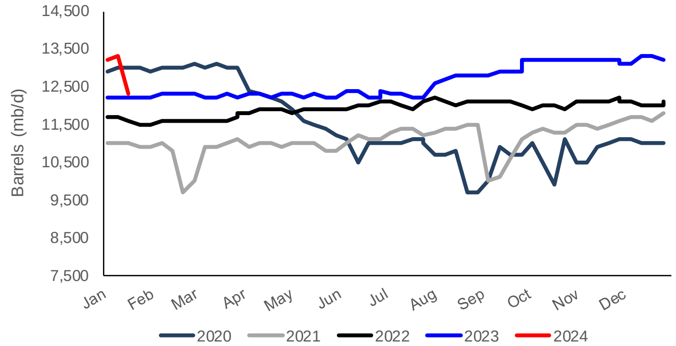
Oil: Cold temps lead to US weekly oil production estimates down -1.000 mmb/d WoW
This week there was a big decrease to US oil production estimates, as the EIA has pre-emptively slashed figures after a week of extreme cold temperatures that should negatively impact production, as we saw with the shut-in in North Dakota (~0.400-0.700 mmb/d). On Wednesday, 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*". So we will see how accurate they were when we see the actuals. The latest Form 914 (with October actuals) was +0.048 mmb/d higher than the weekly estimates of 13.200 mmb/d. This week, the EIA's production estimates were down -1.000 mmb/d WoW to 12.300 mmb/d for the week ended January 19. Alaska was down -0.008 mmb/d WoW to 0.426 mmb/d. Below is a table of the EIA's weekly oil production estimates.

Figure 23: 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						

Source: EIA

Figure 24: EIA's Estimated Weekly US Oil Production



Source: EIA, SAF

North Dakota oil production

Oil: North Dakota Nov oil production up +0.024 mmb/d MoM to 1.278 mmb/d
Our Nov 19, 2023 Energy Tidbits memo highlighted North Dakota's comments that snow storms hit October production and still had a lingering but lesser, impact on production during the first 10 days of November. So November oil production was up MoM but still impacted. Last Friday, the North Dakota Industrial Commission posted its Directors Cut, which includes November's oil and natural gas production data [LINK]. North Dakota oil production in November was up +0.024 mmb/d MoM to 1.278 mmb/d, which is up +16.4% YoY from 1.098 mmb/d in November 2022. Our Supplemental Documents package includes the NDIC Director' Cut.

Figure 25: North Dakota Oil Production by Month

(b/d)	2017	2018	2019	2020	2021	2022	2022/21	2023	2023/22
Jan	981,380	1,179,564	1,403,808	1,430,511	1,147,377	1,088,613	-5.1%	1,060,708	-2.6%
Feb	1,034,248	1,175,316	1,335,591	1,451,681	1,083,554	1,089,091	0.5%	1,158,837	6.4%
Mar	1,025,690	1,162,134	1,391,760	1,430,107	1,108,906	1,122,640	1.2%	1,122,693	0.0%
Apr	1,050,476	1,225,391	1,392,485	1,221,019	1,123,166	900,597	-19.8%	1,133,435	25.9%
May	1,040,995	1,246,355	1,394,648	859,362	1,128,042	1,059,060	-6.1%	1,135,009	7.2%
June	1,032,873	1,227,320	1,425,230	893,591	1,133,498	1,096,783	-3.2%	1,166,604	6.4%
July	1,048,099	1,269,290	1,445,934	1,042,081	1,076,594	1,072,632	-0.4%	1,180,611	10.1%
Aug	1,089,318	1,292,505	1,480,475	1,165,371	1,107,359	1,075,307	-2.9%	1,223,617	13.8%
Sept	1,107,345	1,359,282	1,443,980	1,223,107	1,114,020	1,121,063	0.6%	1,280,052	14.2%
Oct	1,183,810	1,392,369	1,517,936	1,231,048	1,111,910	1,121,754	0.9%	1,254,475	11.8%
Nov	1,194,920	1,375,803	1,519,037	1,227,138	1,158,622	1,098,389	-5.2%	1,278,475	16.4%
Dec	1,182,836	1,402,741	1,476,777	1,191,429	1,144,999	957,864	-16.3%		

Source: NDIC, NDPA

11/14/23: North Dakota cautioned snow storms to hit Oct and Nov production
Here is what we wrote in our November 19, 2023 Energy Tidbits memo. "*It is important to remember that North Dakota holds a monthly press conference on the monthly oil and gas data. It seems like analysts and investors don't listen to the press conference, but we always get additional insights. That was the case with Tuesday's press conference [LINK]. North Dakota director Lynn Helms cautioned that snow storms in Oct will impact production. We made a transcript of Helms comments. At 1:50 min mark. On the impact of Oct snow storms, Helms "Little bit of a cautionary statement about October. You know what happened. We had a major*

storm and we saw what we think looked like a 50 to 90,000 b/d hit on production that lasted for 3 or 4 days and still maybe 20-25% of that is lingering as we work through the first week or 10 days of November. Those things hit hard. Usually what happens is oil tanks on the wellsite fill up and trucks aren't able to get there or pumpers or people that sell the oil aren't able to get there. So as oil backs up, the wells get shut in and you can see that reflected in water transfer and natural gas transfers. October, we're hoping it will be flat, could be down just slightly from September but should still be above that 1.2 mmb/d mark, that's our year end target and we should be really solid on that. We got to almost 1.3 before the October weather."

Oil: North Dakota crude by rail up MoM to 124,228 b/d in November

North Dakota CBR up MoM in November

Last Friday, the North Dakota Pipeline Authority posted its monthly update "*January 2024 Production & Transportation"* [LINK]. Please note that we always go to the backup excel sheets from the North Dakota Pipeline Authority that provide low and high estimates for Williston crude by rail exports. The NDPA Monthly Update (graph below) report has a thick line that represents the low and high range. In the backup excel, the NDPA estimates crude by rail in November from a low of 109,228 b/d and a high of 139,228 b/d for an average of 124,228 b/d. There was a slight downward revision to October's numbers which used to have an average of 104,962 b/d, but is now 101,093 b/d. Because of this, the MoM increase is a bit bigger. The NDPA did not comment on the MoM changes. Below is a chart from the NDPA monthly update showing the crude by rail volumes since 2013. Our Supplemental Documents package includes excerpts from the NDPA monthly update.

Figure 26: Estimated North Dakota Rail Export Volumes

Source: NDPA

Oil: North Dakota est 700,000 b/d of Bakken shut in on Jan 17, long slow recovery

Bakken shut in oil from the cold

Here is what we wrote in last week's (Jan 21, 2024) Energy Tidbits memo. "*On Friday, we tweeted [LINK] "Today, North Dakota estimates still 400,000 b/d of #Oil is still offline and warns "A lot of times, these things take a month from the time that it hits until we see back to normal production". Didn't specify #NatGas offline. See 👇SAF transcript. #OOTT." On Friday, North Dakota held its monthly Directors Cut webcast to review November oil and gas production data. One of the first comments by North Dakota's Lynn Helms was the status of shut-in North Dakota oil production from the deep freeze. Helms did not comment on shut-in associated natural gas, only oil. But since the natural gas in North Dakota is almost all from associated natural gas from oil wells, there would still be a big shut-in impact of natural gas. Helms said that the peak oil shut-in was 700,000 b/d on Jan 17, but was down to 400,000 b/d on Friday. Helms also warned that recovery of all the oil doesn't happen overnight and warned some can take some time to recovery. We made the below transcript of his comments.*" Note the last update we saw attributed to North Dakota was that shut-in was down to approx. 100,000 b/d on Friday.

> **SAF transcript of North Dakota's comments on shut in oil from the cold**
> Last week's (Jan 21, 2024) Energy Tidbits memo also wrote "*Here is the transcript we made of North Dakota's Lynn Helms on the shut-in oil production from the cold. SAF Group created transcript of comments by North Dakota Director of Mineral Resources, Lynn Helms and Justin J. Kringstad, Director North Dakota Pipeline Authority on the monthly Directors Cut webcast on Jan 19, 2024. [LINK] Items in "italics" are SAF Group created transcript. At 6:15 min mark, Helms "I do want to talk about what January is going to look like. It started in. Justin kind of tracks this for us. He has access to some numbers that let us look at production, not quite in real time, but pretty much as the days develop. The cold weather hit a week ago, January 11 was the first indication that this Arctic blast was going to have an effect on the oilpatch. By January 12, it looked like we were down almost 300,000 b/d. The worst of it was the 17th, two days go, when it looked like we were down about 700,000 b/d. So if you think 1.3 minus 700, that's way below a million barrels a day. It looks like as of yesterday, we were still down 500,000. And as of today, about 400,000. So we are coming back out of that. But we are probably still well below a million barrels a day of production in North Dakota.*" At 7:52 min mark, Helms "*Once the wells get shut in or curtailed, then it becomes really, really difficult to bring them back on production, especially at minus 30 or minus 70 wind chills. People can't go out and work on the wells, so it's very hard to put them back on. It will be a long slow recovery. A lot of times, these things take a month from the time that it hits until we see back to normal production. So like I said December should be good but January is going to be a very very bad month in terms of production numbers. We still think it will be good in terms of gas capture. But all of the overall numbers are going to be down*."

Oil: Are big US service companies pointing to lower/flat US oil production growth?

Baker Hughes and Haliburton

It was a big week for the major oil and gas services companies to report Q4 results. The big service companies to the US shale sector didn't come out with a specific forecast for US oil growth in and to exit 2024 but the comments from the CEOs of Baker Hughes, Haliburton and Liberty pointed to lower, if any, growth in 2024 for US oil production.

Baker Hughes CEO sees E&P spend down mid single digits in US land
On Wednesday, we tweeted [LINK] "*Is $BKR CEO pointing to down YoY, or flat at best YoY, US #Oil production over 2024? CEO "In NA, activity continues to lag, and we are now anticipating no meaningful recovery in activity during the first half of the year. On our last quarterly call, we expected 2024 North American DNC spend to be flattish, but now expect spending down in low to mid single-digits, driven by mid single-digit declines in U.S. land. #OOTT."* Baker Hughes CEO Simonelli didn't give an estimate for US oil production growth in 2024 but surprised most by forecasting US E&P spend on land would be down mid single digits in 2024. So Baker Hughes sees lower E&P spend onshore US in 2024. When we see, we have to assume Baker Hughes isn't calling for US oil growth in 2024. They see lower E&P spend. Plus they should know that the strong YoY growth to the 2023 exit would also increase the oil decline in 2024. So increased number of barrels lost thru decline in the face of lower E&P spend would seem to be the formula for much lower oil growth, if any, in 2024.

Haliburton CEO will take the under when looking at US oil growth to exit 2024
On Tuesday, we tweeted [LINK] "*Will US #Oil production growth move from negative to oil price to at least neutral in 2024? $HAL CEO didn't give a number for YoY US production growth in 2024, but seems to imply not much YoY growth & also reminds more growth adds more decline to offset. Worth a read. #OOTT."* Haliburton is the top US fracking company. In the Q&A, CEO Jeff Miller was asked on how US oil production surprised to the upside for 2023 exit and "*as we think about 2024, how do you think about exit rate of US growth?"* Miller didn't give a number but said he would take the under with respect to production growth to exit in 2024. One of the reasons is that they don't see a lot of smaller companies coming into the market. Miller replied "*Yes. Look, if I'm thinking about production growth in '24 production is a function of service intensity, so simply put, more sand, more barrels, and we saw peak levels of service intensity throughout, really in the first half of last year, and a lot of that comes on in the latter half. And I think, some of this is efficiency in the sense that we are delivering more sand to the reservoir, and that comes in a lot of forms. The e-fleet are part of that, and some of the technology that we've brought to market.*

But I also think that the market that we see for next year, it's hard for me to forecast at this point exactly what operators will do, because every operator plays their own game. But at the same time, I would probably take the over on rigs because I think that, we'll run out of ducks at some point. I think I would take the under on production only because whatever you think it is, I'll take the under only because what we see are stable customers delivering to their plans, but what we don't see is a lot of the smaller companies coming into the market in an effort to really ramp up production."

Liberty CEO "*probably at best flat in the sum or oil and gas production*"
On Friday, we tweeted [LINK] "*my bet is where we are today in total activity, you won't see this till summer production data. We're probably at best flat in the sum of oil and gas production" $LBRT CEO when asked if frack activity was enough to offset production decline. #OOTT."* Liberty is a big US fracking company and held its Q4 call on Thursday. In the Q&A, CEO Chris Wright was asked "*do you think that we're*

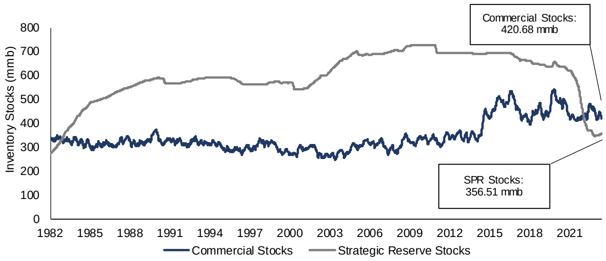
kind of below where we need to be for both oil and gas activity to offset production decline?" Wright replied "*My guess is current, certainly on a granular level, we're working for players that are at activity levels now that are definitely declining production, others that are modest growth and others that are flat. But my bet is where we are today in total activity, you won't see this till summer production data. We're probably at best flat in the sum of oil and gas production. So yeah, I don't think activity drops much from where it is here."*

Oil: US SPR reserves now -64.168 mmb lower than commercial crude oil reserves

US SPR reserves

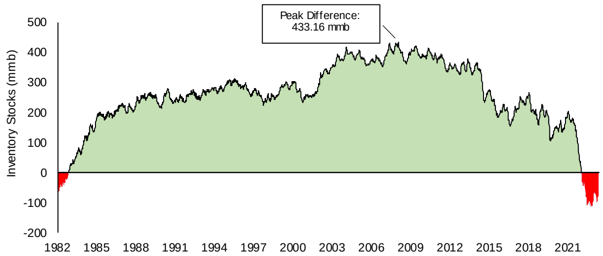
Oil in the US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sept 16, 2022 week. The deficit narrowed this week after a draw in commercial oil stocks of -9.233 mmb. The EIA's weekly oil data for January 19 [LINK] saw the SPR reserves increase +0.920 mmb WoW to 356.510 mmb, while commercial crude oil reserves decreased -9.233 mmb to 420.678 mmb. There is now a -64.168 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles.

Figure 27: US Oil Inventories: Commercial & SPR



Source: EIA, SAF

Figure 28: US Oil Inventories: SPR Less Commercial



b

Source: EIA, SAF

Oil: US gasoline prices +0.02 this week to $3.10

US gasoline prices

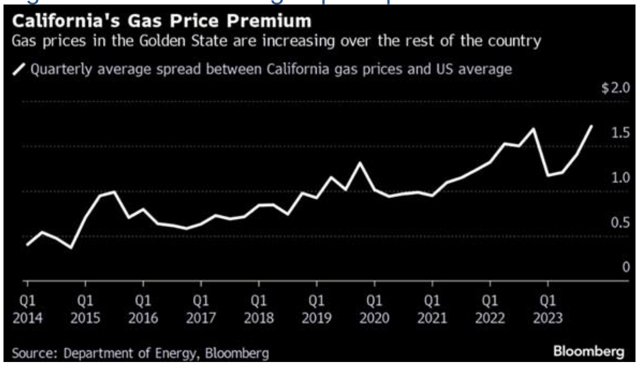
It seems like US gasoline prices, at least for now, seem to be holding around $3.10 for the past several weeks on a national average. Yesterday, AAA reported that US national average prices were $3.10, which is up $0.02 WoW, down $0.02 MoM and $0.41 YoY. As of yesterday, the California average gasoline prices was $4.49, which was a $1.39 premium to the national average gasoline price of $3.10. 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.

Chevron warns California on gas prices

Oil: Chevron warns California on potential for gas prices spikes/shortages

Chevron should be getting some California negative feedback based on yesterday's comments from mgmt in Bloomberg's report "*Chevron Says California Plays a Risky Game With Climate and Gas*." It was a pretty clear warning from Chevron on what is ahead – the continued and likely increasing premium of California gasoline prices to the rest of the US and the risk of shortages. Bloomberg also reported on Gov Newsom's office response. Bloomberg wrote "*Chevron Corp. warns its home state of California's climate policies are a "dangerous game" that risk causing gasoline price spikes and shortages. The premium California drivers pay for gasoline over the national average is likely to rise significantly if state legislators continue enacting policies to discourage petroleum production, Andy Walz, who leads the oil giant's US refining division, said in an interview. While the state has the highest penetration of electric vehicles, it's still the country's second-largest consumer of gasoline. California drivers paid an average of $4.94 per gallon of gasoline in the final three months of 2023, about $1.72 above the national average and the highest quarterly premium on record, according to data compiled by Bloomberg. The state has the country's toughest low-carbon fuel standards that are encouraging refineries to convert from petroleum to renewable diesel. Such conversions reduce gasoline supply, pushing up prices, Walz said. "They knew it was going to happen when they wrote the legislation, he said. "The problem is the consumer is starting to realize it. It's becoming painful. The way politicians dealt with it was 'let's blame the oil companies.' California Governor Gavin Newsom's office said in a statement that the gasoline price spikes the state has experienced have stemmed from oil companies' own lack of planning. "Big Oil has been ripping off consumers for decades and lying to protect their profits," Newsom's office said."* Bloomberg also reported "*It's already difficult for Chevron to justify growth projects at its two California refineries — which account for about 30% of the state's capacity — due to a plan to end sales of internal combustion engines by 2035, which would eviscerate the market for gasoline. But a law that effectively caps refinery profit makes them all-but impossible, Walz said. "If they cap the upside when conditions are good it's going to make it really challenging to want to put our money there," Walz said, adding that Chevron is committed to keeping its refineries safe and reliable. "I cannot compete internally for big capital investments. It doesn't stack up. I'd rather spend money at our refinery in Mississippi."* We recognize that Newsom's office only gave a soundbite in their reply but, one of our big concerns on politicians is that they assume companies can make changes to long term capital spending plans on a stop and start basis if the politicians change policy. Our Supplemental Documents package includes the Bloomberg report.

Figure 29: California's gas price premium



Source: Bloomberg

Oil: Crack spreads widened $2.18 WoW to $26.65

Crack spreads basically flat this 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. Crack spreads bounced around +/- $2 for the Nov and Dec and started to widen in Jan. This week, crack spreads were +$2.18 WoW to $26.65, which followed $24.47 on Jan 19, $24.10 on Jan 12, $21.71 on Jan 5, $23.57 on Dec 29, $22.87 as of Dec 22, $24.79 on Dec 15, $22.56 on Dec 8, $22.50 on Dec 1, $23.36 on Nov 24, $23.95 on Nov 17, and $22.39 on Nov 10. Crack spreads at $26.64 are a little above the high end of the more normal pre-Covid that was more like $15-$20, which should support the continued normal seasonal ram up in refinery runs.

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, which was $26.65 as of the Friday Jan 26, 2024 close.

Figure 30: Cushing Crude Oil 321 Crack Spread Jan 26, 2014 to Jan 26, 2024

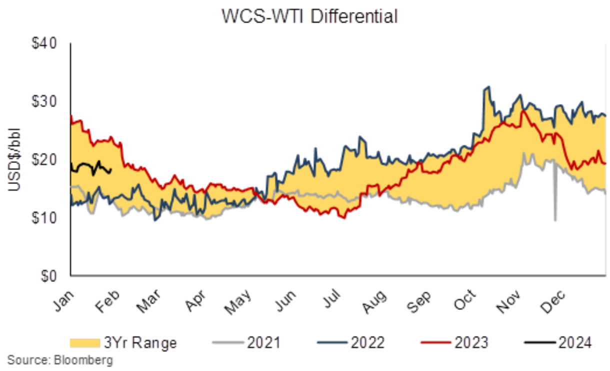
Source: Bloomberg

Oil – Moving into period when Cdn heavy oil differentials normally seasonally narrow

We have been reminding for the last couple weeks that we are moving into the period of normal seasonal narrowing of Cdn heavy oil differentials. There is no hard and fast rule because there are always unplanned events. But there are also global items that impact Cdn heavy oil differentials. Another example is Enbridge differentials. However, this is the time f the year, for the next few months, that normally sees Cdn heavy oil differentials narrow. This is the time of year, when refineries move to turnarounds so they can start to maximize production of asphalt ahead of the annual summer paving season. As is said in Canada, there are two seasons in Canada – winter and paving season. Below is graph showing WCS-WTI differentials that shows this normal seasonal trend of narrowing WCS-WTI differentials from Feb thru May. We have seen Cdn heavy oil differentials narrowing already and a key factor for that is the OPEC+ cuts, which tend to first be on heavy/medium sour barrels that would tend to compete with Cdn heavy/medium barrels. WCS less WTI differential closed on Jan 26 at $16.10, which was down $2.10 WoW from $18.20 on Jan 19, which followed $18.80 on Jan 12. Jan 26, 2024 at $16.10 compares to $23.65 on Jan 26, 2023, $12.80 on Jan 26, 2022 and $13.10 on Jan 26, 2021.

WCS differentials normally narrow in spring

Figure 31: WCS less WTI oil differentials



Source: Bloomberg

Oil – Trans Mountain's TMX line fill starts in Feb, 1st tanker loading in April

1st TMX loading in April

On Friday, the National Poste reported Trans Mountain would begin line fill for its 590,000 b/d TMX expansion so it could have first tanker loadings in April. This is a month or two ahead of the latest expectations. National Post wrote [LINK] "*The much-anticipated Trans Mountain pipeline will begin filling with crude in February, marking a key step toward start-up. Canadian heavy crude prices jumped on the news. Trans Mountain pipeline to start filling with oil in February. While the process to fill a part of the legacy line will begin in February, the bulk of the 890,000 barrel-a-day line will be filled in March and last about two to three weeks, Jason Balasch, senior director of business development at the Canadian government-owned company, said in Houston. Linefill is typically the first stage of startup and includes moving the first batches of oil from shippers. Heavy Western Canadian Select's discount to West Texas Intermediate narrowed to the smallest since August after Balasch's remarks. The start-up of the expansion, which is 98 per cent complete and will triple the pipeline's capacity, is expected to reshape oil flows across the Americas, spur exports to Asia and likely ramp up production of Canadian oil. Traders are closely watching progress on the pipeline, which is running years behind schedule. The first tanker to carry Trans Mountain oil is set to load in Vancouver in April, Balasch said. Shippers are expected to provide the preliminary loading dates for the new line by Friday. The final nomination process should be completed by March 15.*".

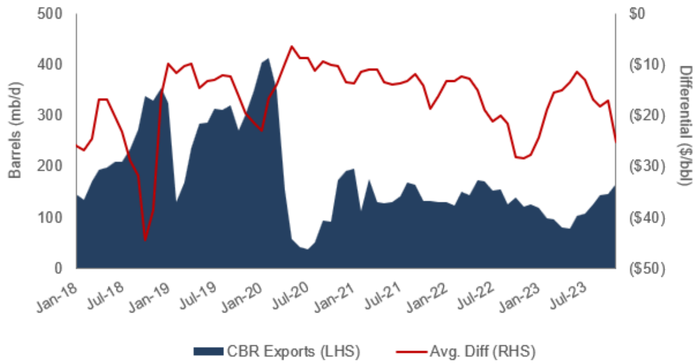
> **01/03/24: Trans Mountain plans line fill for March with CER approval**
>
> Here is what we wrote in our Jan 7, 2024 Energy Tidbits memo on the then expected timing for line fill depending on the CER's decision. *"It looks like good news for the Cdn oil patch assuming Trans Moujntain doesn't face any drilling challenges for their pipeline. We have been waiting to see what Trans Mountain would be saying about the startup for their TMX expansion. And Trans Mountain looks to be planning for line fill for the pipeline in either March or May. That's near term. And it seems to take the risk/threat of a 2-yr delay off the table. On Wednesday, we tweeted [LINK] "Whether March or May, it means line fill is about to happen & not the risk of a 2-yr delay (see 👇12/14). Trans Mountain latest TMX filing plans line fill for Mar or May pending regulatory decision on pipe diameter size assuming it faces no delays on drilling challenges. Thx @RodNickel_Rtrs! #OOTT." On Wednesday, Reuters reported [LINK] "Trans Mountain Corp TMC.UL plans to begin line fill in March or May, depending on the diameter of pipe the Canadian oil pipeline uses, it said in a filing on Wednesday, as it awaits a regulatory decision on its request for a construction change. Line fill is a final step before the expanded Alberta to British Columbia pipeline begins service, providing crucial additional access for Canadian oil to the U.S. West Coast and Asia. Trans Mountain, a Canadian-government corporation, said the schedules assume that it faces no delays caused by challenges drilling into hard rock, such as tool damage." We did not review the CER filing.*"

Oil: Cdn crude by rail exports at 167,006 b/d in November, up +37.0% YoY

Cdn crude by rail up YoY in Nov

We have reached out a couple times to the EIA (but never get a response) as to why their crude by rail imports from Canada data are so much lower than the CER data for Cdn crude by rail exports to the US. Our assumption is that the major reason for the difference is likely Cdn crude by rail that goes directly to the Gulf Coast and then onto tankers for export ie. never stay in the US. On Jan 24, the CER released their Canadian crude exports by rail figures for November. November crude exports by rail were 167,006 b/d, up +14.5% MoM from 145,881 b/d in October and up +37.0% YoY from 121,907 b/d in November 2022. Here is what we wrote in our Dec 31 tidbits memo: "*Below we note the EIA crude by rail imports from Canada that were only 85,000 b/d for Oct. This is 61,000 b/d less than the CER's estimate of crude by rail exports for Oct, which fits our thesis that the large variance likely represents Cdn crude by rail that is shipped directly to the Gulf Coast for loading on tankers for exports ie. the US never receives and keeps the barrels in the US*". The EIA hasn't released their crude by rail numbers for November yet, but when they come out we'll see if there's a huge difference in theirs versus the CER's. The WCS–WTI differential still provide the price incentive for crude by rail to the Gulf coast. The CER doesn't provide any explanation for the MoM changes. Below is our graph of Cdn crude by rail exports compared to the WCS–WTI differential.

Figure 32: Cdn Crude By Rail Exports vs WCS Differential



Source: Canadian Energy Regulator, Bloomberg

Oil: TMX should lead to a big drop in Cdn crude by rail to the US?

Will TMX cut Cdn crude by rail

Valero held its Q4 call on Thursday and it's reply to a question about TMX reminds that Cdn crude by rail exports should be going down significantly as TMX starts up. Every month, we highlght the difference in the CER crude by rail exports that are always more than the IEA estimates of Cdn crude by rail imports. We have reached out to try to get comments from EIA and CER but never get a response asking if the difference is that there is Cdn crude by rail that goes directly to the Gulf Coast for loading onto tankers for export. And because these barrels don't stay in the US, the EIA doesn't count them as imports. We would expect these extra barrels (61,000 b/d in Oct) should be hit by TMX startup, as well as other Cdn crude by rail that stays in the US. Valero said they see the big mpact being less Cdn crude being shipped down to the Gulf Coast forexport to international markets. In the Q&A, mgmt was asked about TMX impacting the Cdn oil received in the Gulf Coast and replied "y*eah, so, our Canadian volumes vary It depends on total heavies were probably 600,000 barrels a day 500,000 to 600,000 barrels a day and we have you know, the ability to optimize between Mexican supplies for in Venezuela and Canada. Our view of TMX is that you'll still have the*

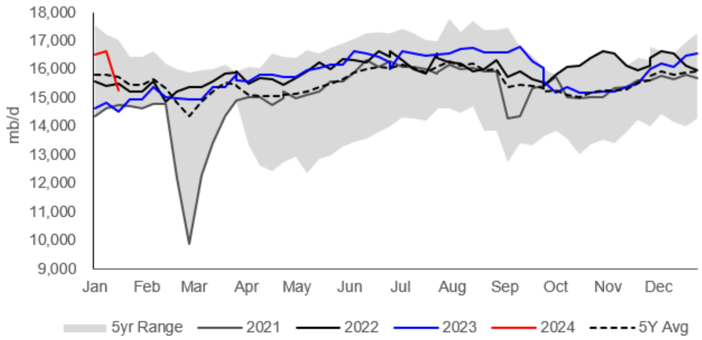
Gulf Coast barrels coming from Western Canada and that what it will really do is decrease exports from the US Gulf Coast and we don't really think that our Gulf Coast system will be materially impacted by TMX."

Oil: Refinery Inputs down -1.377 mmb/d WoW to 15.276 mmb/d

Refinery inputs -1.377 mmb/d WoW

The EIA reports on crude oil inputs into refineries for the week ended January 19 so it now reflects the refineries that went off line last week due the cold weather and power supply outages. And as noted last week, on Sept 19, Wood Mackenzie estimated there was ~1.8 mmb/d of refinery capacity offline due to storms and maintenance. There are always unplanned issues that impact crude oil inputs into refineries, but refineries around the world follow seasonal patterns for their maintenance. There was the normal summer ramp up that lasted a little longer than normal given the big crack spreads. We saw the decline in crude oil inputs for the fall turnarounds and US refineries have been in their normal seasonal winter ramp up so we have been seeing a steady increase in crude inputs. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended January 19 [LINK]. The EIA reported crude inputs to refineries were down -1.377 mmb/d this week to 15.276 mmb/d and are down -0.717 mmb/d YoY. Refinery utilization was down -710 bps WoW to 85.5%, which is -60 bps YoY.

Figure 33: US Refinery Crude Oil Inputs



Source: EIA, SAF

01/19/24; Wood Mackenzie est 1.8 mmb/d of US refinery capacity is offline

Here is what we wrote in last week's (Jan 21, 2024) Energy Tidbits memo. '*On Friday, Bloomberg reported on Wood Mackenze data, writing "The effects of Winter Storm Gerri persist, with 1.5m b/d of crude capacity remaining offline this week on the US Gulf Coast and 1.8m b/d of refining capacity idled across the US, according to data from Wood Mackenzie. * While some crude capacity has been restored, other locations have shut units, keeping size of capacity loss stable." Bloomberg also noted that some of the offline capacity is due to maintenance. Ie. "Largest crude unit at Motiva Enterprises 626k b/d Port Arthur refinery, the 345k b/d VPS-5 CDU, has been shut since Jan. 8 for turnaround." One of the high profile refineries offslilne due to weather is the TotalEnergies 238,000 b/d Port Arthur Texas refinery that was shut in early Tuesday due to a loss of power."*

Oil: US net oil imports -0.528 mmb/d WoW as oil exports up +1.707 mmb/d WoW

US net oil imports

The EIA reported US "NET" imports were down -0.528 mmb/d to 2.391 mmb/d for the January 12 week. US imports were up +1.179 mmb/d to 7.420 mmb/d against exports which were +1.707 mmb/d WoW to 5.029 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) The WoW increase in US imports was driven mostly by "Top 10". Top 10 was up +0.792 mmb/d. Some items to note on the country data: (i) Canada was up +0.631 mmb/d to 4.188 mmb/d. (ii) Saudi Arabia was down -0.061 mmb/d to 0.413 mmb/d. (iii) Mexico was up +0.234 mmb/d to 0.756 mmb/d. (iv) Colombia was down -0.008 mmb/d to 0.212 mmb/d. (v) Iraq was down -0.128 mmb/d to 0.064 mmb/d. (vi) Ecuador was up +0.120 mmb/d to 0.150 mmb/d. (vii) Nigeria was down -0.018 mmb/d to 0.147 mmb/d.

Figure 34: US Weekly Preliminary Imports by Major Country

(thousand b/d)	Oct 13/23	Oct 20/23	Oct 27/23	Nov 3/23	Nov 10/23	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	WoW
Canada	3,723	3,387	3,485	3,873	3,835	3,846	3,243	3,972	3,572	3,686	3,428	3,796	3,557	4,188	631
Saudi Arabia	208	436	294	192	242	224	141	400	316	406	75	139	474	413	-61
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	609	614	1,004	465	366	971	571	876	633	851	380	952	522	756	234
Colombia	150	146	74	364	316	217	143	289	214	215	157	129	220	212	-8
Iraq	127	182	351	187	283	36	178	166	85	22	380	239	192	64	-128
Ecuador	0	92	133	61	36	126	112	252	233	49	142	83	30	150	120
Nigeria	48	89	30	39	70	79	174	226	111	162	80	95	165	147	-18
Brazil	63	221	168	234	135	257	148	274	255	197	238	305	249	264	15
Libya	47	86	106	0	86	86	0	87	87	86	0	171	0	7	7
Top 10	4,975	5,253	5,645	5,415	5,369	5,842	4,710	6,542	5,506	5,674	4,880	5,909	5,409	6,201	792
Others	967	760	780	979	1,004	687	1,123	966	1,011	1,076	1,396	986	832	1,219	387
Total US	5,942	6,013	6,425	6,394	6,373	6,529	5,833	7,508	6,517	6,750	6,276	6,895	6,241	7,420	1,179

Source: EIA, SAF

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

Pemex December oil production

On Friday, Pemex posted its December 2023 oil production data. [LINK] Pemex does not provide any commentary on the data, but reported December oil production, including partners, was 1.560 mmb/d, which was -1.0% YoY and basically flat MoM from 1.567 mmb/d in November 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. Our Supplemental Documents Package includes an excerpt of the Pemex crude oil production information.

Figure 35: Pemex (Incl Partners) Mexico Oil Production

Oil Production (thousand b/d	2016	2017	2018	2019	2020	2021	2022	2023	23/22
Jan	2,259	2,020	1,909	1,623	1,724	1,651	1,705	1,584	-7.1%
Feb	2,214	2,016	1,876	1,701	1,729	1,669	1,684	1,582	-6.1%
Mar	2,217	2,018	1,846	1,691	1,745	1,697	1,696	1,597	-5.8%
Apr	2,177	2,012	1,868	1,675	1,703	1,693	1,686	1,608	-4.6%
May	2,174	2,020	1,850	1,663	1,633	1,688	1,690	1,611	-4.7%
June	2,178	2,008	1,828	1,671	1,605	1,698	1,702	1,609	-5.5%
July	2,157	1,986	1,823	1,671	1,595	1,701	1,707	1,573	-7.9%
Aug	2,144	1,930	1,798	1,683	1,632	1,657	1,691	1,602	-5.3%
Sept	2,113	1,730	1,808	1,705	1,643	1,709	1,685	1,593	-5.5%
Oct	2,103	1,902	1,747	1,655	1,627	1,692	1,698	1,574	-7.3%
Nov	2,072	1,867	1,697	1,696	1,633	1,691	1,706	1,567	-8.1%
Dec	2,035	1,873	1,710	1,706	1,650	1,694	1,576	1,560	-1.0%

Source: Pemex, SAF

Oil: Mexico exports 1.027 mmb/d of oil in December, +16.3% MoM

Pemex December oil exports

On Friday, Pemex posted its oil exports for December [LINK] Pemex does not provide any commentary on the data but reported December oil exports were 1.027 mmb/d, which was +16.3% MoM and -14.1% YoY vs 0.883 mmb/d in December. Pemex oil exports were up 0.144 mmb/d MoM and its exports to the US were up +0.080 mmb/d MoM to 0.711 mmb/d vs 0.631 mmb/d in November 2023. The US tends to be a higher margin market so Pemex typically prioritizes oil exports to the US. Please note that Mexico oil exports were originally expected to decline in Q4/23 with the start up of their new 340,000 b/d Olmeca (formerly known as Dos Bocas) refinery but that startup didn't start to really ramp up throughput in 2023. 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 36: Pemex Mexico Oil Exports

(Thousand b/d)	2016	2017	2018	2019	2020	2021	2022	2023	23/22
Jan	552	698	603	530	754	567	611	754	23.4%
Feb	720	656	757	769	587	583	683	650	-4.8%
Mar	627	549	646	690	762	479	650	638	-1.8%
Apr	667	677	543	594	589	561	594	574	-3.4%
May	593	646	656	643	871	585	740	752	1.6%
June	620	755	796	552	716	695	664	805	21.2%
July	578	667	792	580	614	710	684	809	18.3%
Aug	631	546	798	625	731	552	671	772	15.1%
Sept	556	493	748	539	540	651	580	771	32.9%
Oct	524	599	637	570	477	491	651	757	16.3%
Nov	667	658	545	653	623	568	499	631	26.5%
Dec	522	712	569	579	644	512	627	711	13.4%

Source: Pemex, SAF

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

Here is what we wrote in last week's (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 December oil production of 1.847 mmb/d, up MoM

Norway December oil production

On Tuesday, the Norwegian Offshore Directorate released its December production figures [LINK]. It reported oil production of 1.847 mmb/d, up from 1.805 mmb/d in November and +4.2% YoY from 1.772 mmb/d in December 2022. December's production actuals came in +1.9% (+0.034 mmb/d) over the forecast volumes of 1.813 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 37: Norway December 2023 Production

		Oil mill bbl/day	Sum liquid mill bbl/day	Gas MSm³/day	Total MSm³ o.e/day
Production	**December 2023**	**1.847**	**2.096**	**379**	**0.712**
Forecast for	December 2023	1.813	2.039	352.1	0.676
Deviation from forecast		0.034	0.057	27	0.036
Deviation from forecaset in %		1.9 %	2.8 %	7.7 %	5.3 %
Production	November 2023	1.805	2.045	365	0.690
Deviation from	November 2023	0.042	0.051	14.1	0.022
Deviation in % from	November 2023	2.3 %	2.5 %	3.9 %	3.2 %
Production	December 2022	1.772	2.001	360.3	0.678
Deviation from	December 2022	0.075	0.095	18.8	0.034
Deviation in % from	December 2022	4.2 %	4.7 %	5.2 %	5 %

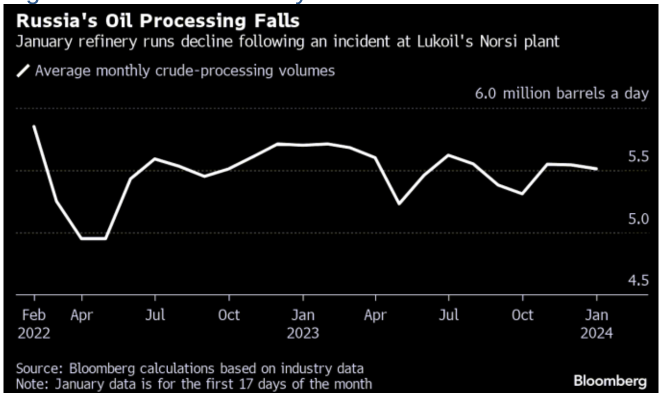
Source: Norwegian Offshore Directorate

Oil: Russian refineries processing oil down -38,000 b/d against Dec average

Russia oil refinery runs

Recall last week Bloomberg reported that a Lukoil gasoline refinery had to undergo unscheduled maintenance. The impact of this shut down was reflected in this week's numbers. On Monday, Bloomberg reported that Russian refiners processed 5.500 mmb/d between Jan 11 and Jan 17. This is ~38,000 b/d lower than the December average. This is uncharacteristic of Russian refinery seasonal fluctuations which typically see strong throughput in the winter as a lot of people use fuel oil and diesel for energy and heat, however with the Lukoil plant being down this isn't unexpected. Our Supplemental documents package includes the Bloomberg report.

Figure 38: Russia refinery runs thru Jan 17 week



Source: Bloomberg

Russian refineries oil input to be down from Jan 25 due to missile strike

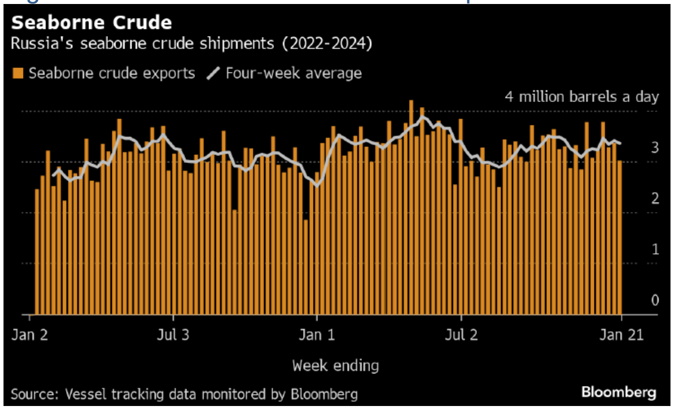
This will likely only have a small impact in next week's Bloomberg reporting on Russian refinery runs as they will be for the Jan 18-25 week. On Thursday (Jan 25), Bloomberg reported "*A fire damaged Rosneft PJSC's major Tuapse refinery on Russia's Black Sea coast early on Thursday, the latest in a string of incidents at the nation's downstream and energy-export facilities blamed on drone attacks by Ukraine."* Bloomberg reported the refinery was processing ~180,000 b/d. We would not that Tuapse is one of Russia's major refineries and has a capacity of 240,000 b/d. As of our 7am MT news

Oil: Russia crude oil shipments for Jan 21 week are above its commitment for Q1/24

Russia oil shipments exceeds commitment

After breaching their OPEC+ commitment last week, Russian crude exports look to be back closer to their pledged cuts, but more as a result of a Baltic drone strike and storms rather than Russia intentionally restriction shipments. Bloomberg had reported "*Russia's seaborne crude shipments fell to the lowest in almost two months, undermined by adverse weather and a Ukrainian drone strike that briefly halted flows from a key Baltic export terminal. About 3.36 million barrels a day of crude were shipped from Russian ports in the four weeks to Jan. 21, tanker tracking data monitored by Bloomberg show. That was down by 50,000 barrels a day from the revised figure for the period to Jan. 14."* The export cuts promised by Moscow should be 500,000 b/d lower than the May-June 2023 average, split between crude oil and refined petroleum products (300,000 b/d of crude). The 4-week average as of Jan 21 shows they are only roughly 220,000 b/d of crude exports below that May-June baseline, Bloomberg reports. So closer than last week but ~80,000 b/d short. Bloomberg also noted that the Houthi attacks in the Red Sea aren't deterring Russian ships from using the Suez Canal, as the Houthis have told the Russians and Chinese that their ships are safe (despite a Russian oil tanker being struck by the Houthis, probably accidentally). Our Supplemental Documents package includes the Bloomberg report.

Figure 39: Russia's seaborne crude shipments thru Jan 21 week



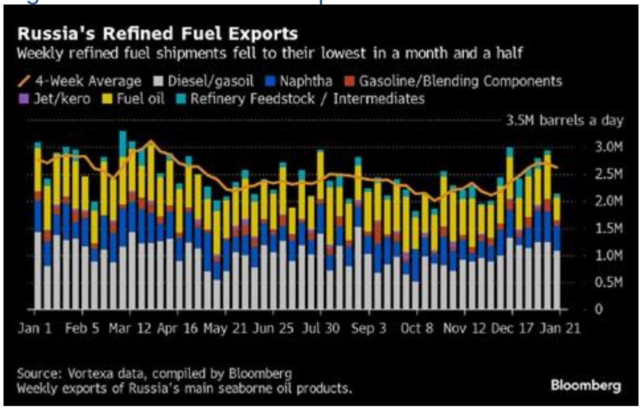
Source: Bloomberg

Oil: Russia fuel exports for Jan 21 week are above its commitment for Q1/24

Russia fuel exports exceeds commitment

The other part (aside from crude) of the 500,000 b/d cut to the May-June average Russia has committed to cutting is 200,000 b/d of refined fuel. This week, despite falling to a several week low, Russia was also above its fuel export commitment by about 58,000 b/d this week, at ~2.136 mmb/d. Bloomberg had reported "*Russia's refined fuel exports fell to the lowest in a month-and-a-half as flows of most finished products declined. Despite the drop, shipments remain markedly above the first quarter target. Exports averaged 2.62 million barrels a day in the four weeks to Jan. 21, according to data compiled by Bloomberg from analytics firm Vortexa Ltd. That's about 70,000 barrels, or 3%, lower than the revised figure for the previous week… the latest four-week average shipments [are] 536,000 barrels a day above the first quarter target. The weekly figure exceeded the target by more than 58,000 barrels a day.*" Remember last week's memo where we pointed out the unscheduled maintenance at the Lukoil refinery, and the corresponding Russian government's response by prioritizing domestic supply; this probably negatively impacted this week's exports. Bloomberg pointed this out too in their report, saying that although gasoline is a small portion of fuel exports, they were down 56% WoW to 101,000 b/d in the Jan 21 week, which may be related to the Lukoil Norsi refinery interruption. Our Supplemental Documents package includes the Bloomberg report.

Figure 40: Russia's fuel exports thru Jan 21 week



Source: Bloomberg

Oil: OPEC+ JMMC meets on Wed Feb 1

OPEC+ JMMC on Feb 1

The next OPEC and non-OPEC Joint Ministerial Monitoring Committee (JMMC) will be held virtually on Wednesday Feb . As of our 7am MT news cut off, the only commentary we have seen from OPEC watchers is for no JMMC recommendations for any change.

Oil: Houthis hit UK tanker, Maersk stops again, Houthis "*still keen on peace*"

Escalation in Red Sea

As of our 7am MT news cut off, we look back at the week in the ongoing Red Sea crisis and highlight three of the weekly events in the back and forth US/UK missile attacks and Houthis drone/missile attacks. (i) Houthis hit a UK products tanker. On Friday, the Houthis hit a UK registered products tanker, Marlin Luanda, with a missile offshore southern Yemen. The tanker was reportedly carrying products for Trafigura. The tanker caught fire and it took about a day to get the fire out. This was the first successful missile attack and fire on an oil or petroleum products tanker. (ii) Maersk tried again but this time specifically in a fleet of 20 US-flagged ships accompanied by USS Gravely. But the Houthis launched >3 missiles at two of the Maersk container ships around the Bab el Mandeb. And it forced the Houthis to stop the transit. (iii) Houthis say they "*are still keen on peace*". No one knows exactly why now but one of the big unknowns has been how much the Houthis attack and defense capability has been hit by the US/UK missile attacks. But it jumped out at us that this was what we have seen is the first mention of the Houthis saying they are keen for peace. Rather, the Houthis have been saying that the Israel has to stop the attacks on Gaza for them to consider stopping their attacks on Israel linked ships. It just seemed like a different offer from the Houthis. And any time we see something different, it catches our eye. We don't' know if anyone knows the Houthi mindset but we highlight this because a patch to peace would reverse avoiding Red Sea and risk to another oil tanker being hit. Earlier this morning, we tweeted [LINK] ""*We are still keen on peace with the least amount of escalation possible" Houthis FM after reminding "we can sink ships & battleships [from any point on the Yemeni mainland to any point in the Red, Arabian, & Mediterranean Seas]," Houthis haven't gone away but being hurt by US. #OOTT."* Yemen media reported [LINK] "*Yemen: Deputy Foreign Minister, Hussein Al-Ezzi, affirmed that Sana'a is capable of sinking enemy ships at any point across the Red, Arabian, and Mediterranean Seas. "By the power of God, we can sink ships and battleships [from any point on the Yemeni mainland to any point in the Red, Arabian, and*

Mediterranean Seas]," Al-Ezzi wrote in a post on X on Saturday. "But we leave that for another time," he, however, added, noting, "We are still keen on peace with the least amount of escalation possible." Our Supplemental Documents package includes the Yemen report.

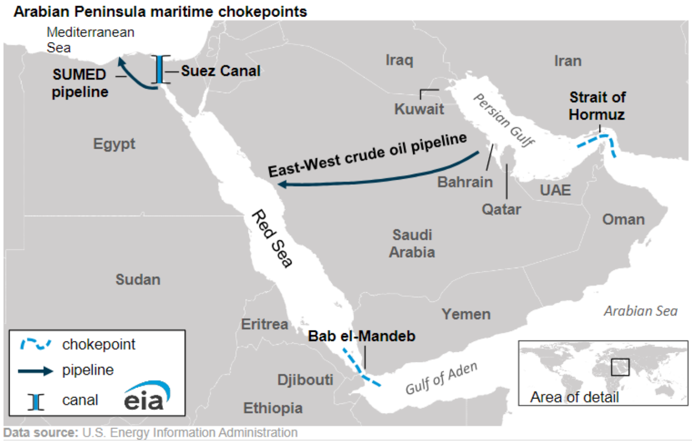
Avoiding the Red Sea adds 3,280 miles and 10-15 days via Cape of Good Hope
Here is an item from our Dec 24, 2023 Energy Tidbits memo. "*The Suez Canal couldn't happen at a worse time given the Panama Canal is still running at far less capacity than normal due to the droughts. So it really only leaves the shippers/tankers with the option of going around the Cape of Good Hope. On Monday, we tweeted [LINK] "Avoiding Red Sea and going the long way around Cape of Good Hope for typical Singapore to Rotterdam for shipping adds ~3,280 miles and 10-15 days. Thx @jcgnana @SPGCI #OOTT." Our tweet included the below map from Jennifer Gnana of Platts."*

Figure 41: Suez Canal vs Cape of Good Hope shipping routes

Source: Platts

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



Source: EIA

Figure 43: Bab el-Mandeb Strait, a world oil chokepoint

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

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

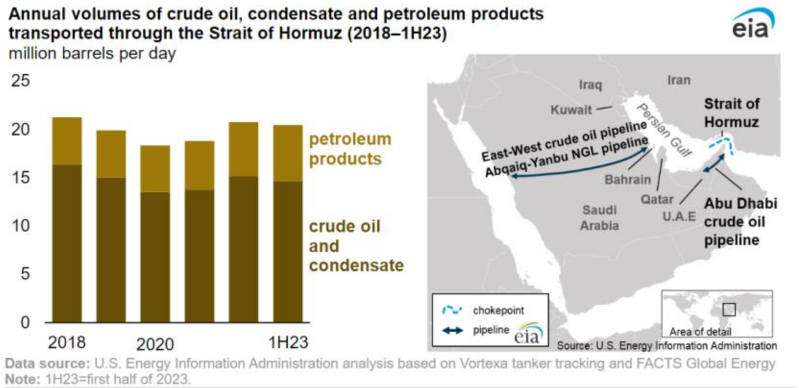
Data source: U.S. Energy Information Administration analysis based on Vortexa tanker tracking
Note: LNG=liquefied natural gas, 1H23=first half of 2023

Source: EIA

The Red Sea can be worked around, not so for the Strait of Hormuz

The reason why the Strait of Hormuz is considered the most important chokepoint for oil and LNG is that there isn't a workaround, to the most part, if the Strait of Hormuz becomes closed. The Red Sea/Bab el Mandeb can be worked around, it just means a much longer voyage. Here is what we wrote in our Nov 26, 2023 Energy Tidbits memo. *"To dated, the market has been focused on the Strati of Hormuz risk as it is the most important world oil chokepoint. We have been more worried to date on interruptions via the Red Sea and Bab el Mandeb but have also been noting how the Strait of Hormuz is more significant to supply if any interruption. And we have been included the EIA's latest Strait of Hormuz blog, which is four years old. But on Tuesday, the EIA updated its Strait of Hormuz blog "The Strait of Hormuz is the world's most important oil transit chokepoint" [LINK]. "The Strait of Hormuz, located between Oman and Iran, connects the Persian Gulf with the Gulf of Oman and the Arabian Sea. The Strait of Hormuz is the world's most important oil chokepoint because large volumes of oil flow through the strait. In 2022, its oil flow averaged 21* *million barrels per day (b/d), or the equivalent of about 21% of global petroleum liquids consumption. In the first half of 2023, total oil flows through the Strait of Hormuz remained relatively flat compared with 2022 because increased flows of oil products partially offset declines in crude oil and condensate." "Between 2020 and 2022, volumes of crude oil, condensate, and petroleum products transiting the Strait of Hormuz rose by 2.4 million b/d as oil demand recovered after the economic downturn from the COVID-19 pandemic. In the first half of 2023, shipments of crude oil and condensates dropped because OPEC+ members implemented crude oil production cuts starting in November 2022. Flows through the Strait of Hormuz in 2022 and the first half of 2023 made up more than one-quarter of total global seaborne traded oil. In addition, around one-fifth of global liquefied natural gas trade also transited the Strait of Hormuz in 2022." Our Supplemental Documents package includes the EIA blog. "*

Figure 44: Crude oil, Condensate & Petroleum Products Flows Thru Strait of Hormuz



Source: EIA

Figure 45: Volumes thru the Strait of Hormuz 2018-1H23

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

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

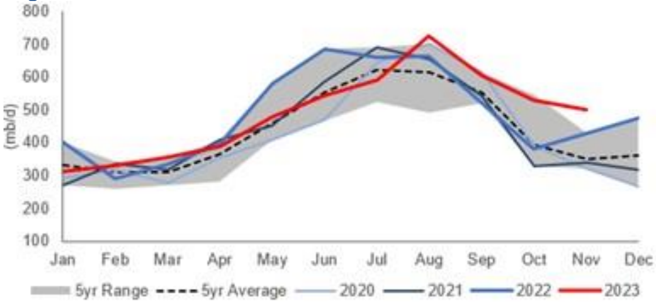
Source: EIA

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

Saudi oil use for electricity down in Nov.

The key seasonal theme for Saudi oil exports is that, all things being equal, Saudi can export more oil in winter months as it uses less oil for electricity and, conversely, it would have less oil for export in summer months as it uses more oil for electricity 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 November [LINK] was updated on Monday. Saudi used less oil for electricity in November vs October. November was considerably cooler than October, especially at night. We checked AccuWeather's monthly data for Riyadh, and we saw daytime highs went from the 30's in October down to the mid-20's in November, 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 November was 501,000 b/d (vs November 2022 of 429,000 b/d) and October was 531,000 b/d (vs September 2022 of 380,000 b/d). While direct use in November is down MoM, it is above the previous 5-yr historical range. Also note that this year fits the normal trough-to-peak swing of 400,000 b/d. The low was 312,000 b/d in Jan and we just saw 726,000 b/d in Aug. Below are the AccuWeather Temp maps for Riyadh for October and November.

Figure 46: Saudi Arabia Direct Use of Crude Oil for Electricity Generation



Source: JODI, SAF

Figure 47: Riyadh Temperature Recaps for November (top) and October (bottom)

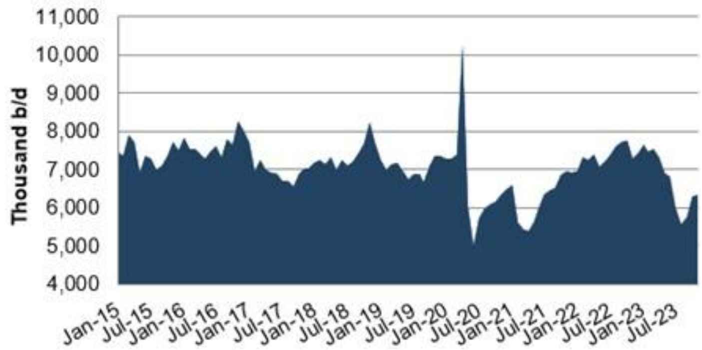
Source: AccuWeather

Oil: Saudi oil exports up +39,000 b/d to 6.336 mmb/d in November, highest since June

The JODI data was that production was down -122,000 b/d MoM to 8.818 mmb/d. Saudi oil exports were up +39,000 b/d MoM to 6.336 mmb/d. The components, before inventory changes, uggest that oil exports should have been down 65,000 b/d MoM and not + 39,000 b/d given the production was down 122,000 b/d MoM vs 30,000 b/d less oil used for electricity and ~27,000 b/d less oil input in to refineries. We have noted in the past how Saudi's imports of Russia fuel oil has been a factor in the monthly reconciliation. Below is our graph of Saudi Arabia monthly oil exports.

Saudi oil exports up +36,000 b/d MoM

Figure 48: Saudi Arabia Oil Exports (mb/d)



Source: JODI, SAF

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

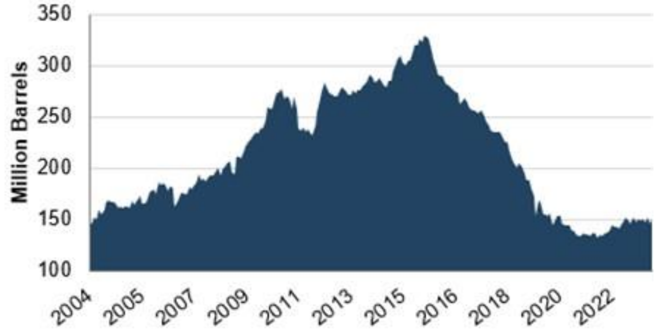
Here is what we wrote in the Nov 12, 2023 Energy Tidbits memo. "*We probably should have called it Saudi Oil 101, but we were a little surprised that Saudi Energy Minister felt the need to explain how there is seasonality to Saudi's oil exports because Saudi domestic consumption of oil has a seasonal 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.*"

Oil: Saudi oil inventories up +0.144 mmb MoM in November

Saudi oil inventory data

We have seen this in the past, when there were unexplained builds in inventories than what the basic math from production, refinery intake, and exports would suggest, and 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 +0.144 mmb MoM, or 4,800 b/d. Looking at the basic components for November, we would have expected a draw on inventory closer to –0.104 mmb/d MoM or down -3.264 mmb MoM. There should have been a MoM inventory draw impact from exports rising +39,000 b/d and production falling -122,000 b/d, against the demand side which was intake of refineries being only down -27,000 b/d MoM and crude oil used for electricity down only -30,000 b/d MoM. This would imply a draw of -0.104 mmb/d MoM, but inventories were actually up +4,800 b/d (+0.005 mmb/d, +0.144 mmb) MoM leaving ~0.109 mmb/d of unexplained MoM items. There is always some minor unexplained variance, and this was a lot smaller than October's variance, but still could indicate some unreported Russian imports as the missing input for the surprise build.

Figure 49: Saudi Arabia Oil Inventories (million barrels)



Source: JODI, SAF

Oil: Libya oil production stable at ~1.2 mmb/d

Libya oil stable at 1.2 mmb/d

Last week's (Jan 21, 2024) Energy Tidbits memo highlighted that morning's breaking news that the protests had ended and oil production was being restored at the Sharara oil field. On Wednesday, the Libya National Oil Corporation tweeted [LINK] "*Crude oil production reached 1,214,000 barrels per day, and condensate production reached 53,000 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 the NOC confirmed that production has come right back to those levels.

Oil: China oil imports 11.64 mmb/d in December, up 12% MoM

China oil imports 11.64 mmb/d in Dec

Two weeks ago, China's General Administration for Customs (GACC) reported on the summary data of China's oil and natural gas imports for December. China's imports of crude oil in December were 4.836 ten thousand tons, or 11.64 mmb/d, a 12% increase from 10.37 mmb/d in November, and +11% YoY from 10.36 mmb/d in December 2022. This was solid YoY and MoM growth but it isn't enough to convince oil markets that China oil domestic consumption is about to take off.

China oil production +4.6% YoY in December

One of the holdbacks to China oil and LNG imports is that China has been increasing its domestic oil and natural gas production. What is often overlooked is the fact that China is one of the world's top producers of crude oil, just behind Iraq in 2022, according to the EIA [LINK]. On Wednesday, Bloomberg reported that China crude oil production was +4.6% YoY in December to 4.25 mmb/d, i.e. +0.19 bcf/d YoY from December 2022. The government of China also noted [LINK] on January 9th that crude oil production over 2023 was overall 4.25 mmb/d, which was +0.06 mmb/d YoY from 2022.

Oil: China importing Iran oil rebranded as Malaysian

Rebranded Iranian oil

It looks like China continues to import Iranian oil that has been rebranded as Malaysian oil. On Monday, we tweeted [LINK] "*Iran #Oil being re-branded as Malaysian oil. Dec China oil imports. Zero from Iran/Venezuela. Yet 1.1 mmb/d from Malaysia. Malaysia produces ~0.5 mmb/d crude oil, has refinery capacity ~0.8 mmb/d & historically imported oil for its refineries.*

Thx @business @EIAgov #OOTT." Malaysia crude oil production is approx. 0.5 mmb/d. Malaysia has refining capacity of approx. 0.8 mmb/d and has historically been an oil importer to fill up its refineries. Yet in December, China supposedly imported 1.1 mmb/d from Malaysia. And the data said that China imported zero barrels from Iran in Dec. SO we suspect most of the 1.1 mmb/d of Malaysian oil is really rebranded Iranian oil.

Oil: China 40-day Spring Festival travel rush started on Friday

Spring Fetival travel rush

Yesterday we tweeted [LINK] "*China Baidu city level road congestion will plunge this week. See @BloombergNEF 👇chart below. Because China 40-day Spring Festival travel rush started yesterday with 189 passenger trips nationwide, +19.7% YoY. Xinhua. More Chinese travelling = less people working. #OOTT,"* China's 40-day Spring Festival travel rush started on Friday. Our tweet included Xinhua's yesterday report [LINK] that noted how the frirst day of Spring Festival travel saw a +19.7% YoY increase in passenger trips to 189 million passenger trips on Friday. Xinhua wrote "*A total of 189 million passenger trips were made nationwide on Friday, up 19.7 percent from last year, according to a special work team comprising multiple government departments including the Ministry of Transport, the Ministry of Public Security, and the China State Railway Group Co., Ltd. Specifically, railway passenger trips hit 11 million, marking a surge of 78 percent year on year. Passenger trips via road, waterway and air increased 16.6 percent, 48.6 percent and 111.8 percent, respectively, as per the work team."*

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

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: China scheduled domestic flights +3.1% WoW

China scheduled domestic flights

Yesterday, we tweeted [LINK] "*China scheduled domestic flights +3.1% to 94,749 flights for Jan 16-22 week. Spring Festival travel rush started Friday Jan 26. Smaller WoW increase for Jan 23-29 week but then a bigger ramp for Jan 30-Feb 5 week with Feb 10 Lunar New Year. Thx @BloombergNEF C Lubis #OOTT."* (i) On Monday, BloombergNEF posted its Aviation Indicators Weekly Jan 22, 2024 report, which covers China scheduled domestic flights for the Jan 16-22 period. For those who have the terminal, BloombergNEF did not include the normal data but the weekly data is available via excel. (ii) Scheduled domestic flights were

+3.1% to 94,749 flights for Jan 16-22 week. (iii) The 40-day Spring Festival travel rush started Friday Jan 26 so ramp up over next couple weeks. There should be a smaller WOW increase for the Jan 23-29 week but then a bigger ramp for Jan 30-Feb 5 week that should be a big week with last minute travel for the Lunar New Year on Feb 10. Scheduled domestic flights are expected to increase 10.5% to 104,722 in the next four weeks.

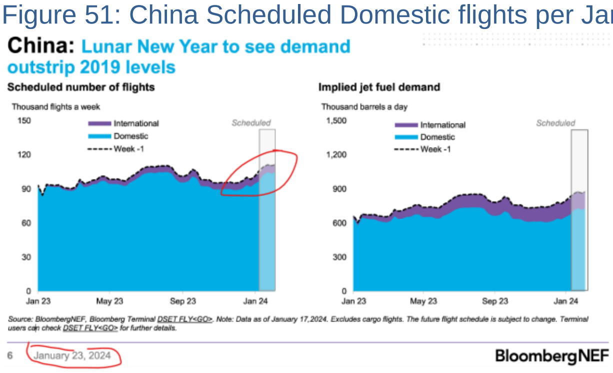
Figure 50: China scheduled domestic flights from BNEF Aviation Indicators Weekly reports

Jan 16-22: +3.1% WoW to 94,749 flights
Jan 9-15: -1.6% WoW to 91,926 flights
Jan 2-8: +3.3% WoW to 93,455
Dec 26-Jan 1: +1.3% WoW to 90,490
Dec 19-25: 89,330
Dec 12-18: n/a
Dec 5-11: +0.2% WoW to 90,012 flights
Nov 28-Dec 4: -0.1% WoW to 89,810
Nov 21-27: +0.4% WoW to 89,916
Nov 14-20: -0-.2% WoW to 89,562
Nov 7-13: -2.6% WoW to 89,776
Oct 31-Nov 6: -0.2% WoW to 92,146
Oct 24-30: -0.3% WoW to 92,361
Oct 17-23: -6.9% WoW to 92,638
Oct 10-16: -1.6% WoW to 99,490
Oct 3-9: +4.2% WoW to 101,120
Sept 26-Oct 2: +1.3% WoW to 97,009
Sept 19-25: essentially flat WoW to 95,742
Sept 12-18: -2.7% WoW to 95,853
Sept 5-11: -5.0% WoW to 98,469
Aug 29-Sep 4: -1.2% WoW to 103,637
Aug 22-28: +0.2% WoW to 104,932
Aug 15-21: -0.1% WoW to 104,716
Aug 8-14: +0.8% WoW to 104,823
Aug 1-7: -0.4% WoW to 104,000
July 25-31: +0.4% WoW to 104,436
July 18-24: +1.3% WoW to 104,011
July 11-17: +2.8% WoW to 102,709
Jul 4-10: +2.4% WoW to 99,904

Jun 27-Jul 3: +1.9% WoW to 97,572
Jun 20-26: +3.4% WoW to 95,724
Jun 13-19: -0.9% WoW to 92,568
June 6-12: -1.2% WoW to 93,328
May 30-Jun 5: +0.2% WoW to 94,486
May 23-29: -0.1% WoW to 94,321
May 16-22: -2.8% WoW to 94,417
May 9-15: basically flat at 97,049
May 2-8: +2.8% WoW to 97,087
Apr 25-May 1: +0.04% to 94,471
Apr 18-24: +2.1% WoW to 94,138
Apr 11-17: +0.7% WoW to 92,231
Apr 3-10: -4.2% WoW to 91,567
Mar 28-apr 3: +6.8% WoW to 95,624
Mar 21-27: +1.5% WoW to 89,513
Mar 14-20: -0.6% WoW to 88,166
Mar 7-13 week: -0.8% WoW to 88,675
Feb 27-Mar 3 week: -2.6% WoW to 89,430
Feb 21-27 week: +0.0% WoW to 91,828
Feb 14-20 week -0.5% WoW to 91,561
Feb 7-13 week -0.7% WoW to 92,007
Jan 31- Feb 6 week +10.9% WoW
Jan 24-30 week -9.2% WoW to 83,500
Jan 17-23 week +7% WoW to 91,959
Jan 10-16 week +20% WoW to 85,910
Jan 3-9 week: -5.3% WoW to 71,642
Dec 27-Jan 2 week: -5.6% WoW to 75,652

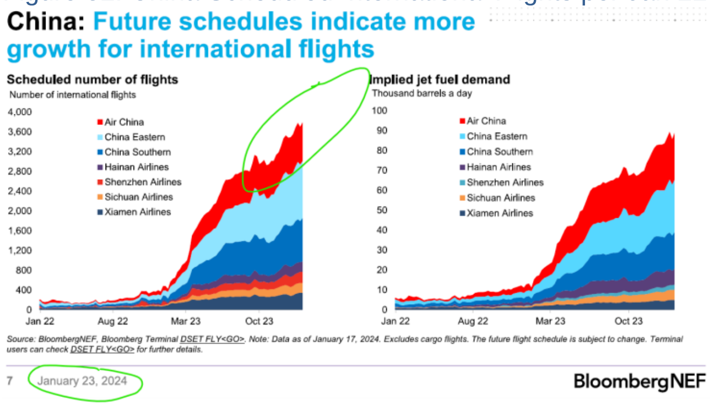
Source: BloombergNEF

Figure 51: China Scheduled Domestic flights per Jan 22 report



Source: BloombergNEF

Figure 52: China Scheduled International Flights per Jan 22 report



Source: BloombergNEF

Oil: LVMH seeing 30% less Chinese customers in France

Hong Kong visitors still down

On Thursday, we tweeted [LINK] "*Chinese customers flying less overseas. #LVMH "when they tend to travel, they travel to Hong Kong & Macau. No surprises there. But regarding France in Q4, I myself was surprised by the numbers we are looking at about 30% below what we used to do with the Chinese in 2019" #OOTT*." LVMH held its Q4 call on Thursday. In the Q&A, mgmt. was asked if they could give some color on their customers. And one item that jumped out was that they are still seeing less Chinese customers in Europe. At the same time, mgmt. also noted on the trends we have written that Chinese foreign travel is primarily to nearby Asian countries. Mgmt replied "*Well, the fundamental question then, I mean, it's easy enough to measure customer movement, but it's difficult to correlate customer trends and regions because up until last year, chinese customers were domestic, but now they're traveling all over the world. And when you see, when they tend to travel, they travel to Hong Kong and Macau. No surprises there. But regarding France in Q4, I myself was surprised by the numbers we are looking at about 30% below what we used to do with the Chinese in 2019. So we're not back to where we were. I mean, Vuitton is the bit. We are close to where we were, say, in 2019, it's not the same customers, fewer groups, much more independent travelers with higher worth. So this is a trend we can adjust to. We'll see whether this is a lasting trend. We're not particularly concerned, neither pessimistic nor optimistic, but we don't see the big bus loads of chinese customers coming in groups. But we're still doing significant business with the Chinese in Europe and in France.*"

Oil: Visitors to Macau picking up, now at 93.7% of pre-Covid and up MoM

Visitors to Macau picking up

China is still fighting a pause in its domestic economy recovery but one area that has rebounded is domestic travel, which we include to Macau. On Thursday, Bloomberg posted the updated Macau tourist visitors for Nov. For the updated tourist visitors to Macau data for Nov. Visitors to Macau from China in Dec is back to 93.7% of pre-covid levels. Last month, Nov was back to 88.8% of pre-Covid Oct 2019. Dec saw 2.944 mm total, incl 1.962 mm from mainland China. Nov 2023 was 2.584 mm total, incl 1.771 mm from mainland China. Dec 2022 was 0.389 mm total, incl 0.336 mm from mainland China, while Dec 2019 was 3.083 mm total, incl 2.095 mm from mainland China.

Figure 53: Visitors to Macau – total

Source: Bloomberg

Figure 54: Visitors to Macau – Mainland China

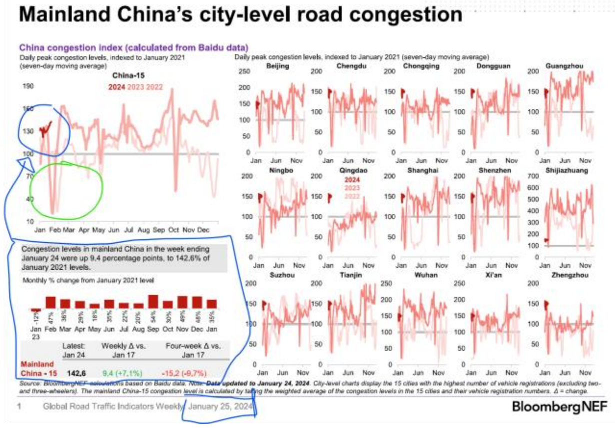
Source: Bloomberg

China city-level traffic congestion

Oil: Baidu China city-level road congestion about to plunge this week

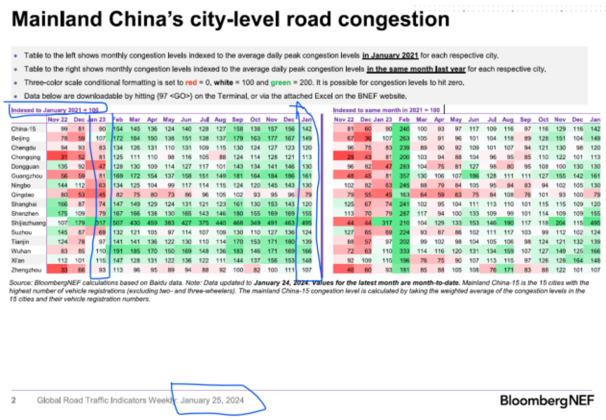
On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly Jan 25 report, which includes the Baidu city-level road congestion for the week ended Jan 24. (i) Yesterday we tweeted [LINK] "*China Baidu city level road congestion will plunge this week. See @BloombergNEF 👇chart below. Because China 40-day Spring Festival travel rush started yesterday with 189 passenger trips nationwide, +19.7% YoY. Xinhua. More Chinese travelling = less people working .#OOTT.*" (ii) The BloombergNEF report was titled "*China traffic rises, defying usual seasonal trend*". (iv) The city-level road congestion was +7.1% WoW to 142.6 of Jan 2021 levels. Please note the below graph that reminds that the Baidu city-level road congestion is about to abruptly drop with the start of traffic for Spring Festival. (v) The MTD Jan 24 for the top 15 cities is 142 of Jan 2021 levels, which is up huge YoY vs Jan 23 tht was only 90 of Jan 2021 level. But recall China only removed Covid restrictions at the end of 2022. Compared to Jan 2021, 14 of the 15 cities are up and only one, Qingdao, is down. All of the top 15 cities are up YoY vs Jan 2023.

Figure 55: China city-level road congestion for the week ended Jan 24



Source: BloombergNEF

Figure 56: China city-level road congestion for the week ended Jan 24



Mainland China's city-level road congestion

- Table to the left shows monthly congestion levels indexed to the average daily peak congestion levels **in January 2021** for each respective city.
- Table to the right shows monthly congestion levels indexed to the average daily peak congestion levels **in the same month last year** for each respective city.
- Three-color scale conditional formatting is set to red = 0, **white** = 100 and green = 200. It is possible for congestion levels to hit zero.
- Data below are downloadable by hitting {97 <GO>} on the Terminal, or via the attached Excel on the BNEF website.

Indexed to January 2021 = 100

	Nov 22	Dec	Jan 23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
China-15	99	81	90	154	145	136	124	140	128	127	158	138	157	156	142
Beijing	78	58	107	172	164	150	138	151	138	137	179	163	177	167	149
Chengdu	94	93	83	134	126	131	110	131	109	115	130	124	127	123	120
Chongqing	31	52	81	125	111	110	98	116	105	88	124	114	128	121	113
Dongguan	135	92	47	128	130	109	114	127	117	101	143	134	141	146	130
Guangzhou	56	59	81	169	172	154	137	158	151	149	181	164	184	186	161
Ningbo	144	112	63	134	125	104	99	117	114	115	124	120	145	143	130
Qingdao	80	53	45	82	75	80	73	86	96	105	102	93	95	96	79
Shanghai	166	87	74	147	149	129	124	131	121	123	161	130	153	143	120
Shenzhen	175	109	79	167	166	138	130	165	143	146	180	155	169	169	155
Shijiazhuang	107	179	317	507	430	459	383	427	375	440	468	349	491	463	495
Suzhou	145	87	69	132	121	105	97	114	107	109	130	110	127	136	124
Tianjin	124	78	97	141	141	136	122	130	110	114	170	153	171	180	139
Wuhan	83	85	110	191	185	170	150	169	148	136	183	146	171	169	166
Xi'an	112	101	115	147	128	131	122	136	122	111	144	137	156	153	148
Zhengzhou	33	66	93	113	96	95	89	94	88	92	100	82	100	111	107

Indexed to same month in 2021 = 100

	Nov 22	Dec	Jan 23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
China-15	81	60	90	240	100	93	97	117	109	116	97	116	129	116	142
Beijing	67	36	107	263	105	91	96	101	104	118	89	128	151	104	149
Chengdu	96	75	83	239	89	90	92	109	101	107	94	121	130	98	120
Chongqing	29	43	81	200	103	94	88	104	96	95	85	110	122	101	113
Dongguan	96	82	47	283	104	75	81	127	98	80	95	108	100	130	130
Guangzhou	48	45	81	357	130	106	107	186	128	111	111	127	155	142	161
Ningbo	102	82	63	245	88	79	84	105	95	84	83	94	102	105	130
Qingdao	79	55	45	163	64	59	63	75	84	108	76	101	93	100	79
Shanghai	125	67	74	241	102	95	104	111	113	110	101	115	115	109	120
Shenzhen	113	70	79	287	117	94	100	133	109	99	101	114	109	109	155
Shijiazhuang	44	44	317	210	104	129	133	153	146	190	117	118	204	115	495
Suzhou	127	65	69	224	93	87	86	102	111	117	103	99	112	102	124
Tianjin	88	57	97	202	99	102	98	104	105	106	98	124	121	132	139
Wuhan	72	63	110	333	114	116	120	131	134	159	107	127	149	125	166
Xi'an	92	109	115	196	76	75	90	107	113	115	97	126	128	164	148
Zhengzhou	40	60	93	181	85	88	105	108	76	171	83	88	122	101	107

*Source: BloombergNEF calculations based on Baidu data. Note: Data updated to **January 24, 2024. Values for the latest month are month-to-date.** Mainland China-15 is the 15 cities with the highest number of vehicle registrations (excluding two- and three-wheelers). The mainland China-15 congestion level is calculated by taking the weighted average of the congestion levels in the 15 cities and their vehicle registration numbers.*

2 Global Road Traffic Indicators Weekly January 25, 2024 BloombergNEF

Source: BloombergNEF

Oil: Haliburton doesn't see peak oil demand

Peak oil demand

Haliburton held its Q4 call on Tuesday. We tweeted [LINK] "*Peak #Oil #NatGas demand? Not so says $HAL CEO "long-term expansion of the global economy will continue to create enormous demands on all forms of energy. I expect oil & gas remains a critical component of the global energy mix, with demand growth well into the future " #OOTT.*" In his prepared remarks, Haliburton CEO Jeff Miller gave his view for oil and he sees a positive outlook and doesn't see peak oil demand. Miller said "*Second, long-term expansion of the global economy will continue to create enormous demands on all forms of energy. I expect oil and gas remains a critical component of the global energy mix, with demand growth well into the future. With this positive macro outlook, I believe Halliburton's strong execution, leading technology and collaborative approach will drive demand for Halliburton's products and services around the world.*"

Oil: Baker Hughes, OPEC+ cuts may have to be maintained thru end of 2024

Baker Hughes on oil markets

On Wednesday, we tweeted [LINK] *".$BKR continued challenge for #Oil in 24. "demand growth remains the biggest unknown in the face of global economic uncertainty & heightened geopolitical risk...supply side, the biggest risk factor is non-OPEC supply outpacing demand, possibly requiring OPEC+ to maintain the current level of cuts through the end of 2024" #OOTT."* Baker Hughes held its Q4 call on Wednesday and CEO Simonelli signaled another challenging year for OPEC+ on holding oil prices and one where they will need to maintain the current level of OPEC+ cuts through 2024 and not stop them at March 31 if they want to keep the oil market balanced. At this point, the only commitment for OPEC+ is to continue thru March 31. Simonelli said "*Ultimately, weaker than anticipated oil demand coupled with robust production growth led to an unexpected inventory build into year-end. However, prices still remain at levels that are favorable for growth across our core OFSE markets. For 2024, demand growth remains the biggest unknown in the face of global economic uncertainty and heightened geopolitical risk. On the supply side, the biggest risk factor is non-OPEC supply outpacing demand, possibly requiring OPEC+ to maintain the current level of cuts through the end of 2024*."

Figure 57: Baker Hughes multi-year upstream growth cycle continues

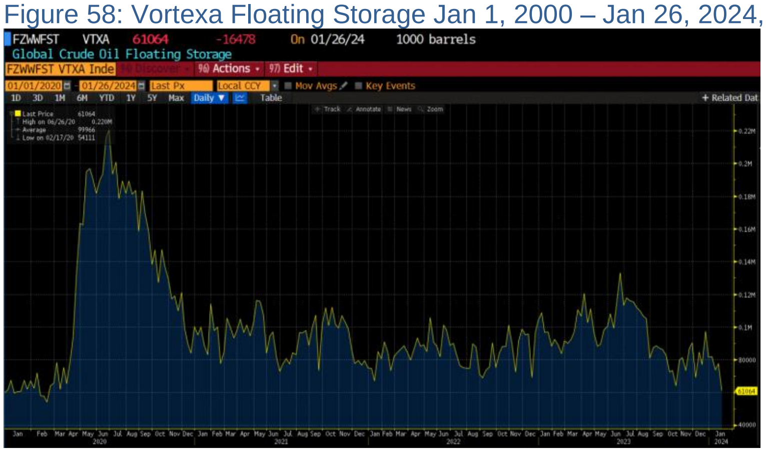
Source: Baker Hughes

Oil: Vortexa crude oil floating storage est 61.06 mmb at Jan 26, -16.48 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 Jan 20 at 9am MT. (i) Yesterday, we tweeted [LINK]"*Houthis Red Sea impact? Lowest floating #Oil storage since Covid. 01/26 61.06 mmb. Only been 6 wks in 60s since Covid. Are some floating storage barrels filling any delivery gaps from tankers having to go via Cape of Good Hope to avoid Red Sea? Thx @Vortexa @business #OOTT."* (ii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Jan 26 at 61.06 mmb, which is -16.48 mmb WoW vs revised up Jan 19 of 77.54 mmb. Note Jan 19 was revised +3.83 mmb vs 73.71 mmb originally posted at 9am on Jan 20. (iii) Jan 26 of 61.06 mmb will inevitably be revised but, prior to any revisions, this is the lowest week since Covid. There have only been six weeks since Covid in the 60s and all of them are close to 70 mmb other than Oct 10, 2023 that was 63.92 mmb. We have to wonder if this is linked to the Red Sea causing much longer voyages for oil and products, and some previously floating storage barrels have to move to fill any delivery gaps. (iv) Revisions. We have been expecting to see more revisions re revisions than usual, most likely between regions, given the Red Sea interruptions and continued Panama Canal lower throughput. Jan 19 was revised +3.83 mmb, but all the rest of the revisions for the past several weeks were small vs the estimates originally posted on Bloomberg at 9am MT on Jan 20. Jan 19 revised +3.83 mmb. Jan 12 revised +1.24 mmb. Jan 5 revised -0.84 mmmb. Dec 29 revised +0.30 mmb. Dec 22 revised +0.47 mmb. Dec 15 revised -0.57 mmb. Dec 8 revised -0.67 mmb. (v) There is a wide range of floating storage estimates for the past seven weeks, but a simple average for the past seven weeks is 78.64 mmb vs last week's then seven-week average of 81.50 mmb. The big drop is from adding a very low week 61.06 mmb for Jan 26 and dropping a higher week 84.60 mmb for Dec 8 from the rolling 7-week average (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 now goes back to Jan 1, 2020 and not just three years as floating storage in Apr 2020 had started to reflect the Covid impact. (viii) Jan 26 estimate of 61.06 mmb is -27.07 mmb YoY vs Jan 27, 2023 of 88.13 mmb. (ixi) Jan 26 estimate of 61.06 mmb is -`159.25 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (x) Jan 26 estimate of 61.06 mmb is -4.55 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 Jan 27, 9am MT Jan 20, and 9am MT Jan 13.

Figure 58: Vortexa Floating Storage Jan 1, 2000 – Jan 26, 2024, posted Jan 27 at 9am MT



Source: Bloomberg, Vortexa

Figure 59: Vortexa Estimates Posted 9am MT on Jan 27, Jan 20 and Jan 13

Posted Jan 27, 9amMT			Jan 20, 9am MT			Jan 13, 9am MT		
FZWWFST VTXA Inde			FZWWFST VTXA Inde			FZWWFST VTXA Inde		
01/01/2020 - 01/26/2024			01/01/2020 - 01/19/2024			01/01/2020 - 01/12/2024		
	Date	FZWWFST VT... Last Px		Date	FZWWFST VT... Last Px		Date	FZWWFST VT... Last Px
Fr	01/26/2024	61064	Fr	01/19/2024	73708	Fr	01/12/2024	71844
Fr	01/19/2024	77542	Fr	01/12/2024	72559	Fr	01/05/2024	87254
Fr	01/12/2024	73796	Fr	01/05/2024	82708	Fr	12/29/2023	81292
Fr	01/05/2024	81873	Fr	12/29/2023	81956	Fr	12/22/2023	95772
Fr	12/29/2023	81657	Fr	12/22/2023	96907	Fr	12/15/2023	76307
Fr	12/22/2023	97378	Fr	12/15/2023	77733	Fr	12/08/2023	85351
Fr	12/15/2023	77156	Fr	12/08/2023	85271	Fr	12/01/2023	68416
Fr	12/08/2023	84601	Fr	12/01/2023	70512	Fr	11/24/2023	86661
Fr	12/01/2023	69306	Fr	11/24/2023	89399	Fr	11/17/2023	86611
Fr	11/24/2023	90436	Fr	11/17/2023	88115	Fr	11/10/2023	74885
Fr	11/17/2023	86704	Fr	11/10/2023	77492	Fr	11/03/2023	80652

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

Vortexa floating storage by region

Bloomberg also posts the Vortexa crude oil floating storage in key regions, but not all regions of the world. The regions covered are Asia, Europe, Middle East, West Africa and US Gulf Coast. We then back into the “Other” or rest of world. (i) As noted above, Jan 19, in total, was revised +3.83 mmb. The main revisions in a region vs the originally posted (as of 9am Jan 20) floating oil storage for Jan 19 were Asia revised +3.04 mmb and Other revised +2.99 mmb. (iii) The major WoW changes by region were Asia -11.13 mmb WoW, Other -4.53 mmb WoW and West Africa +2.41 mmb WoW. (v) Jan 26 of 61.06 mmb is down a whopping 72.09 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 -46.04 mmb and Other -21.51 mmb. (iv) Below is the table we created of the WoW changes by region posted on Bloomberg at of 9am MT yesterday. Our table also includes the “Original Posted” regional data for Jan 19 that was posted on Bloomberg at 9am MT on Jan 20.

Figure 60: Vortexa crude oil floating by region

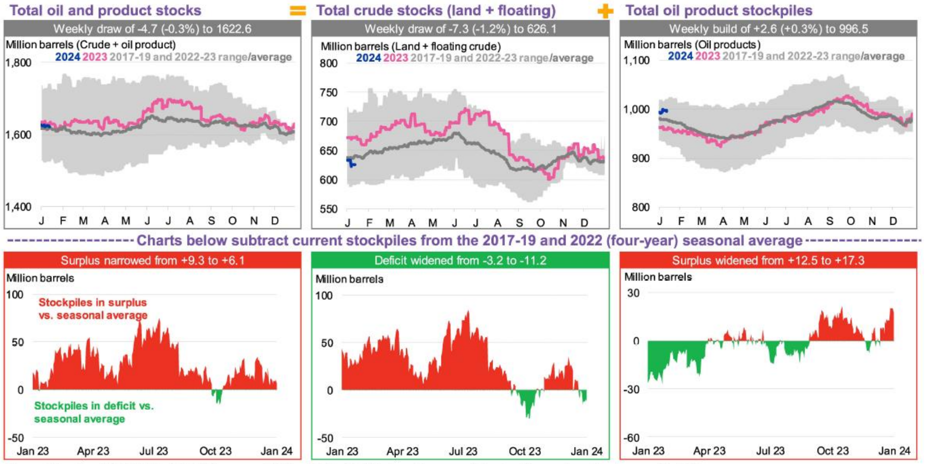
Vortexa Crude Oil Floating Storage by Region (mmb)				Original Posted	Recent Peak	
Region	Jan 26/24	Jan 19/24	WoW	Jan 19/24	Jun 23/23	Jan 26 vs Jun 23
Asia	27.78	38.91	-11.13	35.87	73.82	-46.04
Europe	2.84	4.43	-1.59	4.46	6.44	-3.60
Middle East	6.12	7.39	-1.27	9.25	6.76	-0.64
West Africa	5.85	3.44	2.41	3.70	7.62	-1.77
US Gulf Coast	2.52	2.89	-0.37	2.94	1.05	1.47
Other	15.95	20.48	-4.53	17.49	37.46	-21.51
Global Total	61.06	77.54	-16.48	73.71	133.15	-72.09
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Jan 27						
Source: Vortexa, Bloomberg						

Source: Bloomberg, Vortexa

Oil: BNEF – global oil and product stocks surplus narrows WoW to 4.8 mmb

Please note that the BloombergNEF global oil and products stocks estimate are for the week ending Jan 12, which is a week earlier than the normal EIA US oil inventory data that is for the week ending Jan 19 which was a draw of -9.23 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 2016-2019 + 2022-2023. In both cases they do not include 2020 and 2021 in the averages. (ii) The global stockpile for crude oil and products surplus narrowed from +8.0 mmb to +4.8 mmb for the week ending Jan 12. (iii) Total crude inventories (incl. floating) decreased by -1.2% WoW to 626.1 mmb, while the stockpile deficit widened from -3.2 mmb to -11.2 mmb. (iv) Land crude oil inventories increased by +0.4% WoW to 553.2 mmb, widening the deficit to -17.0 mmb against the five-year average (2016-2019 + 2022). (v) The gas, oil, and middle distillate stocks increased by +0.7% WoW to 168.1 mmb, with the deficit against the four-year average narrowing from -19.5 mmb to -18.1 mmb. Jet fuel consumption by international departures for the week of January 29 is set to decrease by -45,400 b/d WoW, while consumption by domestic passenger departures is forecast to decrease by -54,900 b/d WoW. Below is a snapshot of aggregate global stockpiles.

Figure 61: Aggregate Global Oil and Product Stockpiles



*Source: BloombergNEF, US EIA, PJK, IE Singapore, FEDCom/Platts, PAJ ,Vortexa, Genscape. Note: As of the **week ending January 12, 2024**.*

Source: BloombergNEF

Bloomberg oil demand monitor

Oil: Bloomberg Oil Demand Monitor “Market Watchers Dividend on Growth Outlook”

We recommend reading the Bloomberg Terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. The major message in this month’s report is similar to the last one in that major agencies are divided on their demand outlooks for 2024. It seems everyone agrees that non-OPEC+ supply is set to rise again this year, with increased production in the US (the latest STEO has it at 13.21 mmb/d), Canada, Guyana (developing their offshore reserves), and Brazil (developing their pre-salt reserves). The IEA reckons global demand growth will be cut in half in 2024 (to +1.20 mmb/d), whereas OPEC in their MOMR has it pegged at almost double the IEA’s numbers at +2.25 mmb/d. The EIA sides more with the IEA in terms of a growth forecast as their STEO has it at +1.40 mmb/d in 2024 and +1.20 mmb/d in 2025. Overall, there’s a lot of variables, but no one is really predicting negative demand growth. Given the conflict in the middle east, the war in Ukraine, and unusual weather, the forecasts could change very quickly and very drastically with any new development. Looking at consumption indicators, the demand monitor showed that global commercial flights continued to track comfortably above both 2023 and 2022 levels during the week of Jan 22, but fell -5.9% on a MoM basis (remember last month this week was Christmas). Chinese congestion is above 2023 and 2022 levels as the Lunar New Year approaches. Refinery utilization in the US as of Dec 8 was down -7.8% MoM and -0.6% YoY to 85.5% (recall the cold weather and associated shut-ins). Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Oil: ATA Truck tonnage index in Dec up +2.1% MoM, -0.5% YoY, 2023 overall -1.7%

December Truck Tonnage +2.1% MoM

We look to items like truck tonnage for indicators on the US economy, and the December truck tonnage is in line with the expectations for a stalling US economy. Truck tonnage increased +2.1% MoM but is down -0.5% YoY from December 2022. The American Trucking Association released its seasonally adjusted Truck Tonnage Index for December on Tuesday [LINK]. Chief Economist Bob Costello noted "*While 2023 ended on a better note, truck tonnage remained in a recession as it continued to fall on a year-over-year basis…With that said, for-hire contract freight, which is what comprises our index, in December was 2.6% above the trough in April. For the entire year, tonnage contracted 1.7% from 2022 levels. This makes 2023 the worst annual reading since 2020 when the index fell 4% from 2019, and the only year since 2020 that tonnage contracted*." 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 62: Truck Tonnage Index

Source: ATA

Oil & Natural Gas: TIPRO Texas oil and natural gas jobs UP MoM in December

TIPRO December jobs update

On January 19, the Texas Independent Producers and Royalty Owners Association (TIPRO) updated their employment figures for the Texas upstream sector for December [LINK]. December saw an increase of 3,100 jobs MoM, and employment is up to 211,700 active jobs across direct oil and gas extraction and services and is 15,300 more jobs than in December 2022. TIPRO wrote "*TIPRO's new employment data yet again indicated strong job postings for the Texas oil and natural gas industry during the month of December. According to the* *association, there were 10,928 active unique jobs postings for the Texas oil and natural gas industry in December, including 3,622 new job postings added during the month by companies. In comparison, the state of California had 2,970 unique job postings last month, followed by Louisiana (1,680), Oklahoma (1,406), and Pennsylvania (1,349). TIPRO reported a total of 49,895 unique job postings nationwide last month within the oil and natural gas sector. Among the 17 specific industry sectors TIPRO uses to define the Texas oil and natural gas industry, Gasoline Stations with Convenience Stores led in the ranking for unique job listings in December with 2,962 postings, followed by Support Activities for Oil and Gas Operations (2,532), and Crude Petroleum Extraction (1,010). The leading three cities by total unique oil and natural gas job postings were Houston (2,881), Midland (815) and Odessa (488), said TIPRO".* Our Supplemental Documents package includes the TIPRO release.

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

Sector insights from Q4 calls

Q4 calls started to ramp up this week and should be a big ramp up this week. This is our favorite time each time of each quarter as it is quarterly reporting and this is when we get the best insights into a range of oil and gas themes/trends, sectors and plays. As a reminder, our Energy Tidbits memo does not get into the quarterly results, forecasts, or valuation. Rather the purpose of highlighting a company is to note themes/trends and plays that will help shape a reader's investment thesis to the energy sector. In the conference calls, we also tend to find the best insights from the Q&A portion as opposed to the prepared remarks. Plus, we tend to get the best E&P sector insights from services, pipelines, refineries, and utilities

Halliburton: multi year upcycle for international activity

Haliburton held its Q4 call on Tuesday. (i) Earlier in the memo, we noted Halliburton's views on US oil growth and oil demand growth will continue well into the future. (ii) See multiple years of sustained international E&P activity growth. This is the same messaging that came out of the big service companies a year ago. In their prepared remarks, CEO Miller said "*In 2024, we expect international E&P spending to grow at a low double-digit pace and foresee multiple years of sustained activity growth. Although we anticipate regional differences in growth rates for 2024, we believe the Middle East/Asia region will likely experience the greatest increases in activity, with other regions closely behind. As we look out to 2025, we expect Africa and Europe, among others, to demonstrate above average growth. Beyond 2025, we see an active tender pipeline with work scopes extending through the end of the decade, which gives me confidence in the duration of this multiyear upcycle"* (iii) Upside to gas as LNG comes on and for North America natural gas from LNG. In the Q&A, mgmt. said ""*But look, the gas work that we have is not a significant part of our overall portfolio, and so we plan for what we can see. I think, legitimately, there could be equal upside on gas as LNG comes on. But we haven't baked it into our outlook today, but I would say that's clearly one of the upsides to North America, maybe more so than a downside to North America*." (iv) Expects North America 2024 activity to be fairly flat vs 2023, but Q1/24 activity is seasonally up vs Q4/23. In their prepared remarks, CEO Miller said "*Turning to our 2024 North America outlook. We expect a continued strong business with a combination of stable levels of activity in the market and the contracted nature of Halliburton's portfolio."* Then in the Q&A, CEO Miller said "*Look, we think that Q1 is up from Q4. So there's activity that comes* *back that was seasonal in Q4. As we look at the balance of the year, I think that there are, as we plan the business for what we got visibility of and we can see our fleets are largely contracted for '24 that's what we know. Are there factors that may add to that? I think gap could do that. I think, production levels are low. Clients may speed up. There's a lot of variables that could happen that I think are to the positive, but nevertheless, as we look out to '24 and we plan a business that generates the kind of returns we expect to generate, that's what we see."*

Murphy Oil: Some of their best IP 30 rates at Tupper Montney

Murphy Oil held its Q4 call on Thursday. (i) Eagle Ford is not a growth area for 2024, basically flat YoY. The Eagle Ford is the big Murphy Oil capital spend region. But it is also an area that they don't look to for growth, rather they try to manage the asset in the 30,000 to 35,000 boe/d range. Their outlook for 2024 is for production of 30,000 boe/d with 71% oil volumes. Then later in the Q&A, mgmt. noted the slight slowdown in 2024 vs 2023. Mgmt replied "*Yeah, thanks, Leo. This is Eric. I'll just give you a little bit of my thoughts on that. In the Eagle Ford, we are expecting 30,000 barrels a day in 2024, down about 3,000 barrels a day from 2023, and we're pulling back our capital program there just a little bit. Some of that's driven by just the timing, around when we're bringing on the wells. We're bringing on the average new well a little bit later this year than before. We-- capital decisions we made decisions we made in '23 had us entering the year without any wells to complete early, so we're drilling wells in Eagle Ford before we can complete them."* (ii) Some of the Gulf of Mexico wells have 3-4 month payout and >150% IRRs. "In the Q&A, mgmt. said '*Yeah, further on that, Neil, we have our board meeting and we project our projects. These are well in excess of 100% rate of return. Later on in this slide deck, we talk about workovers, which are unfortunate. Some of these wells had some chemical problems they have to fix. The payout in these wells are three or four months. So everything we do offshore, 150%, 170%, 200% rate of return. So near infrastructure and unlike onshore, they're spending on things without necessarily drilling".* (iii) It's worth noting Murphy Oil's comments on Tupper Montney wells. Improved completions get passed quickly to other industry players. Tupper is generally a low liquids Montney plays ie. more of a dry gas play. In their prepared remarks, mgmt. said "*Slide 16. Turning to Tupper Montney our 2024 capital plan of $90 million includes bringing online 13 operated wells, all scheduled for the second quarter. We are drilling in this area today and are 85% complete on our first 10-well pad. We forecast average production of $370 million cubic feet per day in 2024 with this plan and look forward to continuing our real-time FRAC optimization, which has helped us achieve some of our highest IP30 rates 30 rates in company history in recent years*."

American Airlines: ico oil into Gulf of Mexico

American Airlines reported Q4 on Thursday and CEO Roert Isom was on CNBC Squawk Box ahead of the Q4 call. We reviewed the Q4 call and Isom's comments were better on Squawk Box. (i) Personal travel is going to be really busy in Q1 and Q2. Isom was bullish on personal travel in the near term as he looks into 2024. Isom said "*Look, we're really pleased with the results, we closed out the year strong. And you know I've been telling you for a while, that at American, we're focused on reliability, profitability, and really strengthening our balance sheet. We've done all* *those and I have to give a big shout out to our team. Look, as we go into the first quarter, we see demand strong. I think we're going to see a really busy first and second quarter. I think the time to buy is right now for travel, it's going to be a busy year."* (ii) Corporate travel at 90% of pre-Covid levels. Isom was askled if corporate travel was back to 2019 levels. Isom replied "*No, it's not, not quite yet. But I think that represents upside especially as people return to the office. So we're about at 90%, but don't forget, travel patterns have changed too. We've talked a lot about business and leisure combining, so as we take a look at the future, we think that that's going to be something beneficial as people return to the office, and as the economy gets stronger, and it's also, look, people want to travel, there's a tremendous, tremendous demand for it. So I see strength in corporate."*

Valero: Not "yet" seeing any drop off of Mexico oil into Gulf of Mexico
Valero held its Q4 call on Thursday. (i) Earlier in the memo, we noted Valero's view that TMX startup will cut Cdn oil that is exported out of the Gulf Coast. (ii) Not yet seeing any impact from start up of Pemex's 340,000 b/d Olmeca refinery. Note Valerio says this is as of "y*et*". Mgmt was asked about the impact of Mexcian refineries on Gulf Coast crude supply. Mgmt replied "*Yeah so we're not seeing any impact as of yet from the Mexico refineries when we talk about crude supply there is always the discussion that we may see some fall-off in our supply of Maya. But that really hasn't impacted us yet and we don't see any delta on the product side of the business yet either."* (iii) Importing more Venezuela crude oil into their Gulf Coast refineries but didn't say how much. Mgmt was asked about Venezuela oil into the Gulf of Mexico. Mgmt replied "*Venezuelan okay, yeah, so we've continued to ramp-up our volume of Venezuelan crude. I think the lifting of sanctions, more than additional volume into our system probably had more of a price impact. So we did see a little bit more value in the fourth-quarter on the Venezuelan barrels that we're running. As a result of further reducing some of the sanctions that they have on Venezuelan."*

Energy Transition: Hochstein on EVs

Hochstein on EVs

US Amos Hochstein (energy security advisor to White House) with Bloomberg's Jonathan Ferro, Lisa Abramowicz and Annmarie Hordern on Bloomberg Surveillance on Jan 25, 2024. Yesterday, we tweeted [LINK] "*Good @amoshochstein interview. Sees lack of charging stations the holdback to EVs ramp. Seems to recognize insufficient IRRs for charging stations so govt needs to step up. Wouldn't touch Kerry's range anxiety is a misinformation campaign. See 👇transcript. Thx @FerroTV @lisaabramowicz1 @annmarie #OOTT."* (i) "*I think that people want to be able to have an affordable car that they can manage their day to day lives with."* It's hard to disagree with that statement. It's just too bad the Administration didn't start with that objective in their planning for EVs adoption. If they had, they would neer have assumed the growth rate of high-income early adopters would carry thru to middle and lower income people. (ii) Lack of charging is the key holdback. Hochstein says they have been able to accelerate EV sales "*beyond expectations*" but they need to be able to accelerate charging stations. Hochstein said "*the fact that you have to accelerate the infrastructure that needs to be there to support it, how many charging stations. People in multiple polls will say that one of the things that worries them about EVs is the charging stations;"* (iii) Hochstein seemed to acknowledge that charging stations don't generate high enough IRRs to get the private to invest. Rather he knows the govt has to step up to close the gap on the IRRs. Hochstein said "*The private sector is not going to make these investments because if they're not 20% IRRs, or 18%. So what we need to do is to have that incentive both on the tax side, credits, other incentives and the actual spending so that the private sector then comes in and make those investments."* (iv) Hochstein wouldn't touch Bloomberg's question "*Secretary Kerry says the range anxiety is a misinformation campaign. What's that about?""* This was the comments Kerry made to the same Bloomberg team a week ago in Davos. Our Supplemental Documents package includes the transcript we made of Hochstein's comments.

01/17/24: Kerry blames EV misinformation on EV concerns
Bloomberg asked Hochstein the misinformation question because they interviewed John Kerry last week and he blamed misinformation on EVs for the changing views on EVs. Here is what we wrote in last week's (Jan 21, 2024) Energy Tidbits memo. "*The other noteworthy part of the Bloomberg John Kerry interview was how Kerry blamed misinformation for why EVs aren't as strong as expected and communities holding up wind projects for why wind capacity additions are delayed. Oil/gasoline will be needed for longer if EV sales are less than expected and natural gas power generation will be needed for longer if wind projects keep getting delayed. EVs and wind are two of the critical success factors fo the Energy Transition. So if they are late, it means the Energy Transition is taking longer than expected. (i) On Wednesday, we tweeted [LINK] "#Oil #NatGas is needed for longer! 👇Kerry blames communities for wind delays & misinformation for lower EV sales. @FerroTV didn't buy EV misinfo. BUT the unsaid message is #EnergyTransition is taking longer, costing more and & is bumpy road. @lisaabramowicz1 @annmarie #OOTT." On EVs, Kerry blamed misinformation as to why EV sales are less than expected. Bloomberg did not buy into Kerry's misinformation. On wind and renewable generation, Kerry blamed communities for holding up approvals of these projects. Below is the transcript we made of his comments*. "

SAF transcript of John Kerry comments on Bloomberg on Jan 17
Here is another item from last week's (Jan 21, 2024) Energy Tidbits memo on Kerry's comments. "*SAF Group created transcript of comments by John Kerry (US climate envoy) with Lisa Abramowicz, Jonathan Ferro and Annmarie Hordern from Davos on Jan 17, 2024. [LINK] Items in "italics" are SAF Group created transcript. At 5:41 min mark, Abramowicz "Joe Biden has talked a lot about electric vehicles but we've seen a lot of companies pull back from electric vehicle production because there isn't demand, do you get the sense there is a successful coherent policy that is being prescribed by Joe Biden to achieve what you are talking about while also pumping record amounts of oil?" Kerry "Yes. There has been a very very clear policy, which regrettably has been attacked by people who are engaged in high levels of disinformation. They have been trying to scare people about the range of vehicles. So there's range anxiety out there. But in addition to that, you've had some pull back because communities aren't moving fast enough to give permitting to deploy some of the renewables that we need. So you've had wind farms that were going to be built that have now taken years longer than that was calculated in making the deals. And people have had to recalculate now how that deal is going to work. So the answer is*

we have to all of us have to embrace this transition. If we're going to take five and ten years and have years of litigation over whether or not you're going to have a renewable plant somewhere nearby, we're in trouble. We're not going to get there. And we have to accelerate that and that's a lot of the message right here in Davos." Ferro "Just to jump in, it's difficult for me to believe that the poor EV sales are a consequence of a misinformation campaign about range anxiety. Let's take Hertz. Not my view, view of the car rental company. They come out and they're going to dump 20,000 EV cars. They just don't talk about rebalancing supply with demand, they talk about the cost of carry. It's really expensive to keep these vehicles." Kerry "Sure." Ferro "It's really expensive to go and buy one. I think what we're seeing is a reality check, not just about the ultimate destination, but the pace at which we get there. Reality check because for most every day Americans, they can't afford this." Kerry "Let me tell you what's happening. The price is going down as the price of renewables has gone down. The price of renewable, solar, has gone down 83% in the last years. The price of wind has gone down 50% in the last years. The price of Lithium has gone down something like 97% in the last years. And we do need to send stronger demand signals to the market place. Now we have an entity here that we've created a number of years ago called the first movers coalition. We have 100 of the top corporations of the world in this first movers coalition. That includes Apple, Microsoft, Salesforce, Boeing, FedEx, Ford, General Motors. A whole bunch of major American and other international companies. And they have agreed they're going to pay a Green Premium, voluntarily, in order to send a market signal to have green steel created now. Volvo has said we'll buy 10% of our steel is going to be green. So they're making green steel. Cement is now on sale, Lafarge Holcim, largest cement dealer in the world, they're making green cement. And it's better cement, people are buying it not because it's green, because it is better. So we're seeing a movement towards a rational transition with those biggest companies. And I'll tell you if the CEOs of those companies can persuade their boards and their shareholders that this is a valuable enterprise, then more people are going to buy into this over a period of time. This is a transition, it doesn't have to happen overnight. There will be ups and downs. There will be bumps in the road but I'm telling you, EVs now, there is sufficient level of penetration, about 92% in Norway. Major levels in China. The front page of the Economist has a big picture, you know, electric vehicles from China coming in towards the United States. And those are selling for something like $22,500. And it's going to become the bone of contention. You watch. We'll have some discussions about that. But the point I make is this will even out over time. General Motors and Ford and Mercedes and Volkswagen and Hyundai and Toyota, these companies have all spent billions of dollars retooling their plants. I'm telling you, I don't care it doesn't matter who comes in, whoever the President of the United States is or public official is, those CEOS are not going to suddenly go back and say Oh lets' go back and we will make."

Energy Transition: "if you can't move Tesla's", what does it mean for EV sales

Tesla sees "*notably lower*" growth rate

It was a bad last two days of trading for Tesla, being down 11.8% from $207.83 on Wed night to close at $183.25 on Friday. Tesla released Q4 on Wednesday after the close. At 3:11pm MT on Wed, we tweeted [LINK] "*Tesla shares -3.4% in after market post Q4 based on the "notably lower than the growth rate achieved in 2023". Should be the first question on the Q4* *call at 3:30pm MT. #EVs #OOTT."* The negative views all came from the lack of any specific guidance on volumes. Rather Tesla said they would be "*notably lower than the growth rate achieved in 2023."* We were surprised that analysts did not drill down on what was meant by "*notably lower*" on the call. Maybe they felt they would be cut off by Elon and the company. But there was no color on notably lower from the Q4 call on Thursday morning. As a result, markets were left to interpret what "*notably lower*" meant. And the other big concern was what does this mean to EV sales in general. We thought CNBC's Becky Quick said it best and, on Thursday morning, we tweeted [LINK] ""*if you can't move Tesla's ....". Great @BeckyQuick lead in just now then says something like it's indicative of the #EV market and not a good sign for EVs. Never a positive for any market when the dominant market leader slows down. #Oil #Gasoline needed for longer. #OOTT."* Quick didn't specifically use the never a positive comment but that is what the issue is – if the market leader isn't selling as many EVs as they expected, it can't be a positive for any market.

Energy Transition: UK NAO says govt not showing biomass meets sustainability

UK biomass

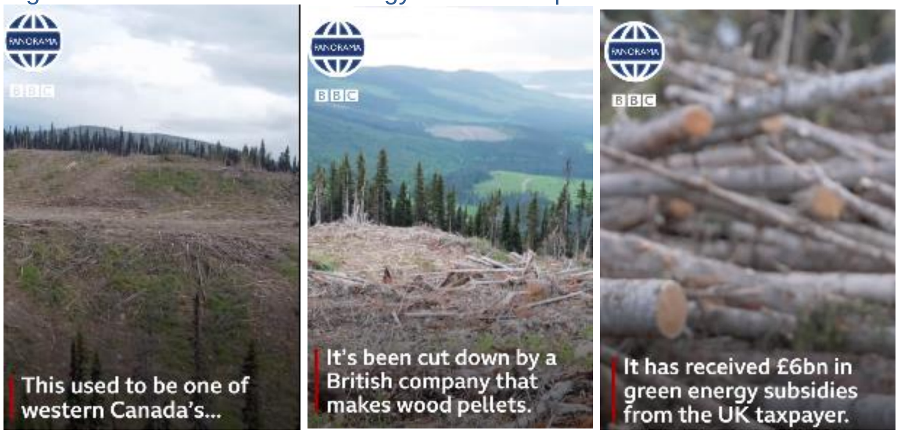
On Wednesday, the UK National Audit Office posted its report "*The government's support for biomass*" that concludes "*in our view the lack of an evaluation of how effective these arrangements have been, particularly given the long supply chains involved, means the government cannot demonstrate that its current arrangements are adequate to give it confidence industry is meeting sustainability standards*." The NAO noted *"£22bn government support to businesses using biomass to generate power and heat – 2002 to 2023, in cash terms. 11%of UK electricity generated from biomass (known as bioenergy) in 2022. 6.4%of UK heat generated from biomass."* Biomass is a significant electricity source in the UK. And the NAO is saying the UK govt can't show that biomass is meeting sustainability standards. We have always been skeptical on how biomass can reduce emissions. Cutting trees that take decades to grow, cutting them down, compressing them into wood pellets and then burning the wood pellets defies logic on how this is environmentally friendly and the biomass sector gets huge incentives from governments. On Wednesday, we tweeted [LINK] "*What else but #NatGas to fill any gap here? @NAOorguk : UK relying on #Biomass but hasn't shown it meets sustainability requirements. Wasn't this inevitable? Remember the 👇10/03/22 tweet on BBC @joe_crowley @TimRobinsonTV expose on the wood pellets to fuel UK biomass. #OOTT."* Our Supplemental Documents package includes excerpts from the NAO report.

10/02/22: BBC expose UK firm clearing Cdn forest for wood pellets

Our tweet this week reminded of the Oct 2022 BBC exposure on the BC trees being chopped down for the Drax wood pellet burning facility in the UK. Here is what we wrote ion our Oct 9, 2022 Energy Tidbits memo. *"On Monday, we tweeted [LINK] "Inconvenient Truth! Burning wood pellets fits into a clean energy plan, gets UK green subsidies to add higher emissions power. No wonder companies don't want to talk about it, especially if wood pellets come from clearing Cdn forest. Thx @joe_crowley @TimRobinsonTV #OOTT," We are surprised that the BBC's Oct 3 report didn't raise outrage from the Liberals in Canada. We didn't see any coverage of the Liberals saying they would get to the bottom of this BBC expose. BBC Panorama posted a video report [LINK] "Drax is chopping down trees and taking logs from some of the world's most precious forests to burn at its Yorkshire power station, which provides 12% of the UK's renewable energy The Green Energy Scandal*

Exposed is on @BBCOne at 8pm and on @BBCiPlayer [LINK]" Perhaps the tweet headline didn't say Canada, but the BBC's posted report [LNK] "Drax: UK power station owner cuts down primary forests in Canada. Drax, Britain's biggest power station, generates electricity by burning millions of tonnes of imported wood pellets. A company that has received billions of pounds in green energy subsidies from UK taxpayers is cutting down environmentally-important forests, a BBC Panorama investigation has found. Drax runs Britain's biggest power station, which burns millions of tonnes of imported wood pellets - which is classed as renewable energy. The BBC has discovered some of the wood comes from primary forests in Canada. The company says it only uses sawdust and waste wood." Our Supplemental Documents includes the BBC report."

Figure 63: BBC The Green Energy Scandal Exposed



Source: BBC

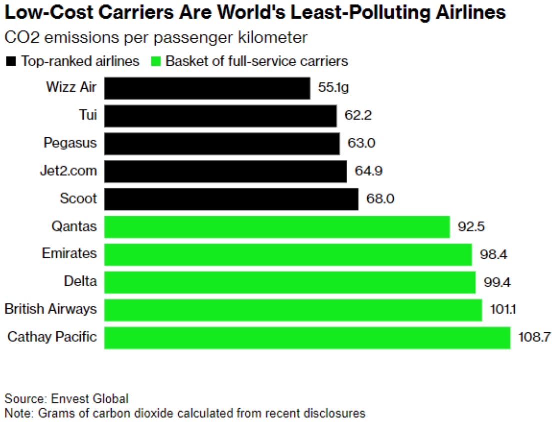
BBC reminds cutting primary forests is not good
Here is another item from our Oct 9, 2022 Energy Tidbits memo. "*The BBC investigation said this was a primary forest. The BBC report also noted why primary forests shouldn't be cut. The BBC wrote "How green is burning wood?
Burning wood produces more greenhouse gases than burning coal. The electricity is classed as renewable because new trees are planted to replace the old ones and these new trees should recapture the carbon emitted by burning wood pellets.
But recapturing the carbon takes decades and the off-setting can only work if the pellets are made with wood from sustainable sources. Primary forests, which have never been logged before and store vast quantities of carbon, are not considered a sustainable source. It is highly unlikely that replanted trees will ever hold as much carbon as the old forest."*

Energy Transition: Airlines can reduce emissions /passenger by cramming more seats

Emissions per air passenger

There was a good common sense reminder that if airlines want to reduce emissions per passengers all they have to do is cram in more passengers as the more passengers per plane, the less emissions per passenger. On Monday, Bloomberg Green report [LINK] "*No-Frills Flying Emerges as Travel's Painful, Greener Future"* included the below graphic that notes how los cost carriers have the lowest CO2 emissions per passenger kilometer. Bloomberg wrote “*The low-cost, low-luxury business model that democratized air travel in recent decades has now become an unlikely template for reducing pollution. That’s because budget airlines’ obsession with lowering weight in order to save fuel — by installing paper-thin seats, ripping out business-class thrones and ditching heavy extras like booze and blankets — also happens to produce the best emissions metrics in the skies.”*

Figure 64: CO2 emissions per passenger kilometerTruck Tonnage Index



Source: Bloomberg

Capital Markets: Liberals eyeing 2025 election, reducing international student permits

Liberals already eyeing 2025 election

On Monday, we tweeted [LINK] “*Unofficial kickoff for Liberals for next Canada election that is by Oct 20, 2025? Stress on housing, home/rent prices, health care, etc. CAN to decrease # of "NEW" international students permits to 360,000 in 2024, down from ~550,000 in 2023. 2025 is TBD. What's next? #OOTT.”* No one should be surprised to see big moves from the Liberals in what will likely be the critical year to see if they can start to turn around their negative poll numbers. Our view remains that this will determine if Trudeau stays on to fight the next election as we can’t see him going into an election knowing he will be wiped out. (i) On Monday Canada announced [LINK] “*Canada to stabilize growth and decrease number of new international student permits issued to approximately 360,000 for 2024*”.”*The Honourable Marc Miller, Minister of Immigration, Refugees and Citizenship announced today that the Government of Canada will set an intake cap on international student permit applications to stabilize new growth for a period of two years. For 2024, the cap is expected to result in approximately 360,000 approved study permits, a decrease of 35% from 2023*.” (ii) Note that this limit is designed to carry thru any potential 2025 election to try to minimize what is a growing concern for more Canadians – how very high immigration is impacting housing, medical, etc. (iii) This suggests That suggests approx. 550,000 student permits in 2023. That would be well over half of what net non-permanent residents for 2023 would be for 2023. Below is a table we created that shows the immigration data until the end of Q3/23. (iv) Note that this Liberals action is on student permits, which falls into the category of non-permanent residents and does not have any impact on immigration. Our Supplemental Documents package include s the Liberals announcement.

Figure 65: Canada international migration components to end of Q3/23

International migraton components, Canada	Q1/23	Q2/23	Q3/23	Q4/23	2023
Immigrants	145,455	117,872	107,972		371,299
Net emigration	-12,240	-5,183	-7,151		-24,574
Net non-permanent residents	108,435	233,361	312,758		654,554
Net international migration	261,650	344,050	413,579		1,019,279
Source: Statistics Canada					

Source: Statistics Canada

Does Trudeau have to go big on tax and spend in 2024?

As noted above, we believe 2024 is the critical year for Trudeau to determine if he will stay to lead the Liberals into any 2025 election. We believe that he wouldn't lead the Liberals into the election has polls, like today, that project the Liberals will be wiped out in an election. It's why we believe the Liberals are going to be making big policy announcements in 2024. Here is what we wrote in our Jan 14, 2024 Energy Tidbits memo. *"We were watching CTV News on Saturday morning when Nick Nanos came on to update his latest poll numbers on Canadians view of the federal government. The numbers are so bad for the Liberals that our first thought was Trudeau and the Liberals will have to take some big swings in 2024 to have any chance of turning the tide. We tweeted [LINK] "Brutal poll #s with <21 mths to Canada election. Does Trudeau have any choice but to go big on tax and spend if he wants to try to avoid what he did to Harper in 2015? Logical targets: high income, corporates, wealth tax, 2nd homes, fossil fuels, etc? Thx @niknanos #OOTT." Nanos was speaking on the results of their just released poll "Feelings of satisfaction toward the federal government hit all time low since tracking started in 2018". But what caught our attention was the graphics Nanos used on to note how Trudeaus was down to somewhat poor or very poor at 54% in Dec 2023 compared to 23% when he took over in 2015. Nanos also showed how former Conservative PM Harper had what was then considered a brutal somewhat poor or very poor of 45% before Trudeau's Liberals thumped the Conservatives in the 2015 election. The current polling shows strong negative views in all regions among all age groups and both genders. So when we see the brutal pool numbers, it makes us believe the Liberals will have no choice but to go big on tax and spend. And if so, the logical targets will be the usual suspects like high income, wealthy, corporations, fossil fuels and likely items like 2nd homes. Our Supplemental Documents package includes excerpts from the Nanos poll and the graphics he used on CTV News, and the results of the 2015 election that saw the Trudeau Liberals thump the Harper Conservatives.* "

Figure 66: Feelings towards the federal government by region

Feelings towards the federal government by region

Q | Which of the following feelings best describes your views of the federal government in Ottawa? [RANDOMIZE]

	Canada			Atlantic			Quebec			Ontario			Prairies			British Columbia		
	2023-12 (n=1006)	2023-09 (n=1058)	2023-06 (n=1055)	2023-12 (n=106)	2023-09 (n=100)	2023-06 (n=72)	2023-12 (n=255)	2023-09 (n=226)	2023-06 (n=239)	2023-12 (n=339)	2023-09 (n=362)	2023-06 (n=354)	2023-12 (n=195)	2023-09 (n=212)	2023-06 (n=222)	2023-12 (n=111)	2023-09 (n=158)	2023-06 (n=168)
Pessimism	30.1%	33.8%	30.6 %	34.0%	36.8%	33.4%	29.9%	36.4%	25.4%	27.7%	32.6%	31.2%	31.6%	32.4%	32.8%	33.5%	33.5%	33.4%
Anger	25.1%	24.9%	24.7 %	20.7%	24.8%	21.2%	11.7%	14.4%	16.1%	27.1%	27.7%	25.0%	38.1%	32.1%	36.7%	27.2%	25.6%	24.4%
Disinterest	12.8%	7.9%	10.9 %	5.1%	7.0%	8.6%	25.3%	8.0%	10.6%	11.0%	6.7%	13.2%	6.7%	8.6%	8.5%	8.5%	10.6%	8.8%
Satisfaction	11.9%	15.3%	16.1 %	19.1%	15.8%	19.7%	11.0%	14.0%	18.6%	13.0%	16.8%	14.5%	6.1%	12.6%	12.5%	14.3%	16.8%	18.9%
Optimism	11.9%	12.0%	10.9 %	13.8%	10.4%	10.1%	13.1%	19.4%	20.7%	11.8%	11.1%	8.3%	10.6%	9.7%	5.5%	10.6%	6.3%	9.3%
Unsure	8.2%	6.0%	6.9 %	7.3%	5.2%	7.0%	8.9%	7.9%	8.5%	9.3%	5.2%	7.8%	6.9%	4.6%	4.0%	5.9%	7.3%	5.2%

Source: Nanos Research, RDD dual frame hybrid telephone and online random survey, December 27th to 29th, 2023, n=1006, accurate 3.1 percentage points plus or minus, 19 times out of 20.

NANOS

© NANOS RESEARCH

Source: Nanos Research

Capital Markets: USDA Consumer Price Index Dec for food -0.1% MoM, +3.4% YoY

We recognize that the USDA consumer food price index is a much better indicator for grocery store prices than the UN's food commodity price index. But we still continue to believe the actual prices at the grocery stores are still higher than indicated by the USDA. On Thursday, the USDA posted its December Consumer Price Index for food [LINK], which reported the all-items Consumer Price Index (CPI) was -0.1% MoM and +3.4% YoY. The +3.4% YoY increase in the Consumer Price Index has a relative weighting for the various food categories. Some YoY index changes to the USDA's year-end inflation estimates are: Beef and veal +8.7% YoY, fresh fruits and vegetables were both -0.6% MoM, but +3.6% YoY for fruit and -4.8% YoY for vegetables, retail eggs are +8.9% MoM and -28.1% YoY after a flu outbreak affected 4.5mm chickens in December, and pork prices are -1.4% MoM and +0.1% YoY. It is important to note the USDA said that the "*Food prices are expected to continue to decelerate in 2024. In 2024, all food prices are predicted to increase 1.3 percent, with a prediction interval of -1.4 to 4.2 percent. Food-at-home prices are predicted to decrease 0.4 percent, with a prediction interval of -4.5 to 4.0 percent, and food-away-from-home prices are predicted to increase 4.7 percent, with a prediction interval of 3.1 to 6.2 percent*".

USDA CPI for food +3.4% YoY

Q3/23 call, Loblaw says "*grocers are not the reason for high food prices*"

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."*

Capital Markets: IFIC Equity and balanced funds net redemptions -$82.5b in 2023

IFIC Cdn mutual fund data

On Friday, we tweeted [LINK] "*Brutal year for net redemptions in balanced and equity mutual funds in Canada. @ific reflects $82.5 billion net redemptions including $56.9b from balanced mutual funds and $25.6b from equity mutual funds. #OOTT."* One of the big Cdn equity stories in 2022 continued to play out in an even bigger way in 2023 – the continued net redemptions from active managed Cdn equity and balanced mutual funds. This flipped in Q2/22 from massive net sales into balanced and equity mutual funds to massive net redemptions in equity and balanced mutual funds. This year, the 2023 net redemption total dwarfed those in 2022. On Wednesday, IFIC (Investment Funds Institute of Canada) reported [LINK] mutual funds and ETF sales for November. IFIC reported net redemptions for balanced mutual funds were $4.612b in December vs $6.510b in November and $8.569b in October. IFIC also reported net redemptions for equity mutual funds were $2.514b vs net redemptions of $3.178b in November and $4.142b in October. This means, barring any major revisions, that in 2023 there were $82.5b of net redemptions in balanced and equity mutual funds! This is more than double the net redemptions of 2022. Last year net redemptions in balanced and equity funds totalled $38.47b, which was a massive YoY crashing of $138.92b vs 2021 that saw net sales in balanced funds and equity funds of $100.45b. Note that Q2/22 was when it flipped from net sales into the massive net redemptions to end 2022. Our Supplemental Documents package includes the IFIC release.

Figure 67: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

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

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

Source: IFIC

There were massive redemptions in Cdn active equity/balanced funds in 2022

2023 was a brutal year for net redemptions for Cdn balanced and equity funds and even more than in 2022. Here is what we wrote in our Jan 29, 2023 Energy Tidbits memo. "*One of the big Cdn equity stories in 2022 continued to play out in the final* *month of the year – the massive net redemptions from active Cdn equity fund manager's balanced and equity mutual funds in 2022, which is a huge change from the massive net sales into balanced and equity mutual funds in 2021. On Thursday, we tweeted [LINK] "WOW! @IFIC balanced & equity mutual funds net sales/redemptions data for 2022. YTD 12/31/22 net REDEMPTIONS of $38.5b. YTD 12/31/21 net SALES $100.4b. YoY diff is -$138.9b!! Makes #Oil #NatGas stocks big outperformance vs TSX and oil prices even more impressive. #OOTT." On Tuesday the IFIC (Investment Funds Institute of Canada) reported [LINK] mutual funds and ETF sales for Dec. IFIC reported net redemptions for mutual funds balanced funds were $4.97b (vs $5.07b in Nov and $5.66b in Oct) and YTD Dec 31 of $29.99b. IFIC reported net redemptions for mutual funds equity funds were $3.08b in Dec (vs $3.01b in Nov and $1.89b in Oct) and YTD Dec 31 of $8.48b. The change vs 2021 is huge and has widened since the Nov update. YTD Dec 31, net redemptions in balanced funds and equity funds was $38.47b, which is a YoY crashing of $138.92b vs YTD Dec 31, 2021 that saw net sales in balanced funds and equity funds of $100.45b.*"

Figure 68: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual Fund Net Sales/Net Redemptions ($ Millions)*

Asset Class	Dec. 2022	Nov. 2022	Dec. 2021	2022	2021
Long-term Funds					
Balanced	(4,969)	(5,066)	1,628	(29,999)	63,346
Equity	(3,080)	(3,014)	462	(8,480)	37,102
Bond	(2,254)	(1,104)	(1,276)	(13,790)	14,530
Specialty	(37)	(10)	415	1,16[illegible]	6,010
Total Long-term Funds	(10,340)	(9,194)	1,229	(51,103)	120,988
Total Money Market Funds	1,642	551	185	7,026	(7,414)
Total	(8,698)	(8,643)	1,415	(44,077)	113,574

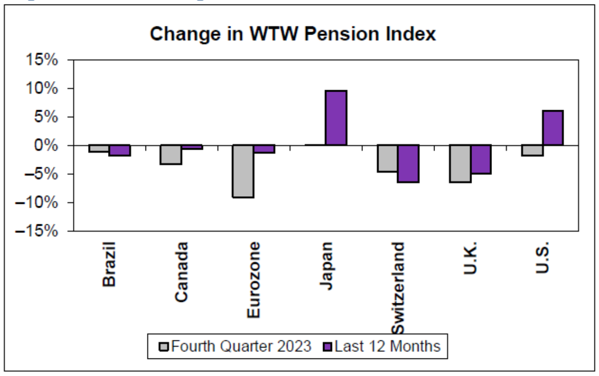
Source: IFIC

Capital Markets: wtw, pension liabilities increase with decrease in interest rates

WTW Pension Finance Watch

Interest rates going lower is good for most but one group that gets hurt in their liabilities is pension funds as lower interest/discount rates mean the discounted liability of their future pension payouts is higher. We used wtw's Canada Q4 update to show how the lower discount rate impact on liability more than offset the increase in portfolio benchmark. On Friday, we tweeted [LINK] "*Interest rates go down = discounted liability of pensions go up. See 👇wtw Global Pension Finance Watch. Canada Q4: portfolio benchmark +12.1%, but lower discount rate increased liability +15.5% ie. combined effect was -3.3%. Pensions will need higher returns. #OOTT."* On Friday, wtw posted its Pension Finance Watch Q4 2023 [LINK], which showed some volatility in pension valuations impacted on pensions due to a decrease in discount rates over the quarter. The Pension Fund Watch update for Q3 2022 highlighted negative investment returns. wtw stated *"Overall, the combined effects drove negative third quarter pension index results for all countries, with the exception of Japan* ***The*** *pension index decreased in all regions over the full year, with decreases in the single digits, except for in Japan and the United States, where strong equity performance drove single digit increases."* Our Supplemental Documents package includes excerpts from the wtw Pension Finance Watch Q4 2022.

Figure 69: Change in WTW Pension Index



Source: Willis Towers Watson

Capital Markets: Rolex buyers trade down from gold to steel

Rolex watches

Watches of Switzerland held its revised down guidance call on Jan 18. (i) The CEO started off "*We're obviously disappointed to be announcing a downwards revision to our guidance this morning. As widely reported across retail and luxury sectors, Christmas trading was very difficult to predict and ultimately below projections. This trend continued into January, and we believe the trend will continue for the remainder of the fiscal year*." (ii) A key trend is high end watch buyers are buying cheaper watches, still buying Rolex at same *levels but buying steel and not gold so average selling price is lower. In the Q&A, CEO said 'And what we've been enjoying over the last few years has been an improvement in average selling price, driven by consumer demand, buying more gold, more steel and gold, and less steel globally. That's come off a bit as the market has normalized. Without doubt Rolex and the other brands are aware of that, and consequently they've produced more steel and less of the precious metal, and that was a surprise to us, and fairly late on in the period. So average selling price has gone down, but unit supply has been -- has always been exactly as was committed.*" (iii) The other factor that must be playing a role is prices of luxury goods have gone up like crazy. My understanding is that high end watch prices in Canada have probably doubled in the last five years. CEO didn't' give a percentage price rise but acknowledges prices have gone up. In the Q&A, mgmt. said "*Thanks, Melania. Yeah. I mean I think it's a good point that you make on pricing if you look cumulatively over the last few years that there's been a like-for-like significant increase in the prices of watches, justified by a strong Swiss franc, justified by increases in the price of gold and other commodities and whatever so justified, but nevertheless to the consumer, it's a big increase at a time where cost of living is clearly a major factor for them around the world and I'd say again particularly here in the UK.*
So undeniably, pricing you would say, would have had an impact on the consumer sentiment overall. And again, I think when you look at it and look at the strength of the Swiss franc and so on, I think the brands have been reasonably conservative overall, but nevertheless the cost of product has gone up significant, and it's been reflected in the price increases. And we expect therefore to be a lot more sort of conservatism going forward in the next calendar year at least." (iv) Watches and jewelry have moved down the priority list. Here is another CEO comment from the Q&A "*Last year was somewhere in between, this year there was no concerns and availability at all. There was concerns on cost of living and whatever, but*

clearly everybody was shopping late.And the other surprise that we see is that consumer sentiment may be more predictable, but the consumer preference about where they were spending money, and there's no doubt that travel, leisure, food, beverage, hospitality and so on beauty, were all favored categories, and watches and jewelry went down the priority list. And again, if you compare it to a couple of years ago, watches and jewelry was at the top, so we didn't fully anticipate that. We didn't anticipate either the average selling price impact that I referred to a couple of times. So I mean, we came out of Q2 with improving trends, we had a lot of good things that we articulated that were going to be positive in the second half of the year, we felt positive. We'd never have confirmed our guidance back then unless we felt good about it, but the season was very unpredictable, the underlying trend got more negative, and we are now anticipating that everything that we've looked at over the last several weeks effectively continues through to the end of the fiscal year. I can't say any more than that, I was just reflecting, we're being conservative in what we're looking at, of course, but we'd like to think we always were, but we got some projections wrong for this period, which is very, very evident."

EU manufacturing PMIs

Capital Markets: EU manufacturing PMIs still contracting but hopefully bottoming

On Wednesday, we tweeted [LINK] "*Imagine how much worse this would have been if not for two warm winters that kept power/#NatGas prices low? EU manufacturing PMIs hopefully bottoming. Jan PMIs for Germany 45.23, France 43.20, Eurozone 46.6, UK 47.3. Thx @business #OOTT."* Our tweet was based on the just released PMIs for a some of the countries. They continue to be contacting. It isn't clear if they are going to keep moving up down along a bottom or finally able to move up. Our tweet included the below Bloomberg chart that we added when Putin invaded Ukraine and how that sent Manufacturing PMIs down. Our tweet noted that the saving grace for why PMIs haven't been way worse is that it's been two warm winters and that means natural gas and electricity prices have been way lower than feared.

Figure 70: European Manufacturing PMIs

Source: Bloomberg

eBay layoffs

Demographics: eBay is another to use modern alyoffs communications method

Our primary concern with the modern way of communicating layoffs is that it doesn't help develop managers. Anyone who has had to layoff someone knows it is one of the toughest things to do as it should be. If you think you have it tough as a manager, put yourself in the shoes of the person being laid off. But now technology companies do mas layoffs by zoom and email like seen this week when the eBay CEO sent out his letter [LINK] "*ensuring eBay's*

Long-Term Success", wherein he advised "*The most significant and toughest of these decisions is to reduce our current workforce by approximately 1,000 roles or an estimated 9% of full-time employee"* and that they would be advising employees "S*hortly, we will begin notifying those employees whose roles have been eliminated and entering into a consultation process in areas where required. Leaders will communicate the news directly via Zoom, and your VP or eLT member will send an email once the notifications in their group have been completed. We request that all U.S. employees work from home on January 24th to provide some space and privacy for these conversations. We're committed to treating everyone with respect and empathy through this transition and providing impacted employees with support and resources."* *E*very company, or at least almost every company, always talks about people as their most important asset or their competitive advantage. But we continue to believe firing people via zoom and email can't be a positive from the perspective of employees being fired and other employees who watch it happen. And we don't see how it makes the managers better managers of people. Firing people by email may make it easier to do, but the fear is that is that it doesn't make the manager think really hard about hiring someone. Anyone who has managed people knows that the hardest and most stressful thing to do as a manager is to sit face-to-face with someone and tell them they are being fired. But that is nowhere near as bad as the person getting fired. When a manager has to do that, it means they also think twice before hiring because you don't want to hire people if they aren't right or you don't need to position. So when we see eBay's process, we don't believe it has the impact on the manager's approach to staffing. They don't have some basic level of respect to someone who has been part of the team to tell them face-to-face. And as we see now, hiring and layoffs are now just part of a more regular part of business. Our Supplemental Documents package includes the eBay CEO note.

Demographics: Japan's foreign worker population hits 2 million

Japan's foreign worker population

We have noted previously how Japanese people are working to older ages as one way of coping with a shrinking workforce. But Japanese working to even older ages doesn't help sectors like construction. Japan needs younger workers, which is why they are increasing foreign workers. Earlier today, Japan Today reported [LINK] "*The number of foreign workers in Japan as of the end of last October topped 2 million for the first time, government data showed Friday, as the country grapples with labor shortages amid an aging population. The rise to a record 2,048,675 foreign workers, up 225,950, or 12.4 percent, from the previous year, was also due to a recovery in the number of technical interns following the end of Japan's strict coronavirus border controls. The foreign worker population has logged consecutive annual highs since 2013, but last year's increase dwarfed the 5.5 percent rise in the previous year. The number of workplaces employing foreign nationals climbed 6.7 percent to a new high of 318,775, as firms increase hiring to cope with labor shortages. "With the construction and medical and welfare sectors hiring more (foreign workers), the rate of increase has come close to pre-pandemic levels," a labor ministry official said. By nationality, Vietnamese workers accounted for the largest proportion, at 518,364 people, accounting for 25.3 percent of the total."*

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

@Energy_Tidbits on Twitter

It may not last as followers can drop off but, last Sunday, we 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.

Biden and Trump are already the oldest living President's

One of the common criticisms of the expected Republican nominee, Donald Trump, and President Biden is age. There are five living US that were in office for the past 30 years. Biden and Trump are the two oldest living Presidents, which is a bit of surprise when you realize that they are older than a President, Bill Clinton, who left office 23 years go. To be fair, Trump is only older than George W Bush by one month and Bill Clinton by two months. Below is the table we put together showing their respective ages.

Figure 71: State Individual Income Tax Rates 2023

Living Presidents	Age as of Jan 26, 2024	BirthDate	Term Served
Joe Biden	81	20-Nov-42	2021-today
Donald Trump	77	14-Jun-46	2017-2021
George W Bush	77	16-Jul-46	2001-2009
Bill Clinton	77	19-Aug-46	1993-2001
Barack Obama	62	04-Aug-61	2009-2017

Source: Wikipedia

Matt Damon's closing speech to students in The Martian

We had the Matt Damon movie "*The Martian*" on in the background on Tuesday. In the closing of the movie, Damon is speaking to some NASA students about his ordeal and how he survived. It as that he started to solve problems. Damon said "*At some point, everything's going to go south on you. Everything is going to south. And you're gonna say this is it. This is how I end. Now you can either accept that or you can get to work. That's all it is. You just begin. You do the math. You solve one problem then you solve the next one. And then the next. And If you solve enough problems, you get to come home*."

Edmonton Oilers win 16th straight game, one win away NHL 17 games record
Edmonton Oilers are going into a long mid-season break happy for a break but also probably preferring to keep playing while on this near-record winning streak. The Oilers beat Nashville last night 4-1 for their 16th consecutive win, which ties them with the Columbus Blue Jackets in 2016-17, and one short of the all-time record of 17 straight held by the Mario Lemieux led Pittsburgh Penguins in 1992-93. And talk about a successful mid-season coaching change. The Oilers replaced Jay Woodcroft on Nov 12 with Kris Knoblach and are now 26-6-0 since that move. And what has been hugely impressive is that they have increased their goals scored by over a goal a game and reduced their goals against by over a goal a game. The Oilers don't play until Feb 6 in an away game vs Vegas Golden Knights.