Energy Tidbits

December 3, 2023

Produced by: Dan Tsubouchi

China Mobility Impact? Its National Health Commission Suggested Reducing Large Gatherings in Public Places

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. Our 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 our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector. Our target is to write on 48 to 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. Will Chinese, especially those with children, pullback, on mobility and getting out & about after China's National Health Commission suggested reducing large gatherings in public places? [click here]

2. Oil markets weren't impressed by the OPEC+ additional voluntary cuts only thru Q1/24. [click here]

3. Breaking news earlier today was UKMTO reporting drone shot from Yemen led to potential explosion around Bab el Mandeb. Infers Houthis may hit something. [click here]

4. Airstrike by Israeli jets reportedly hits Houthi weapons depot in Yemen. [click here]

5. At COP28, global IOCs/NOCs sign charter to make operations net zero by 2050, reduced methane emissions, and eliminated routine flaring by 2030. [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. [click here]

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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US gas storage +341 bcf YoY surplus

Natural Gas: +10 bcf injection in US gas storage; now +341 bcf YoY surplus

A warm US meant rare storage injection last weekFor the week of Nov 24, the EIA reported a +10 bcf injection (vs expectations of +8 bcf injection) and a YoY increase compared to the -81 bcf draw reported for the week of Nov 25, 2022. Total storage is now 3.836 tcf, representing a surplus of +341 bcf YoY compared to a surplus of +251 bcf last week. Total storage is +303 bcf above the 5-year average, up from the +249 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

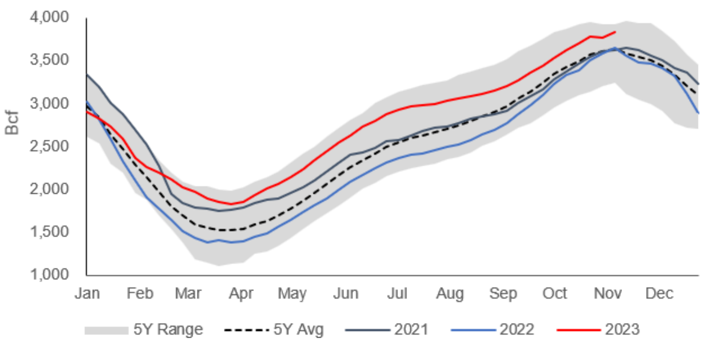
Working gas in underground storage, Lower 48 states — Summary text CSV JSN

Region	Stocks billion cubic feet (Bcf) 11/24/23	11/17/23	net change	implied flow	Historical Comparisons: Year ago (11/24/22) Bcf	% change	5-year average (2018-22) Bcf	% change
East	915	918	-3	-3	844	8.4	864	5.9
Midwest	1,111	1,118	-7	-7	1,043	6.5	1,041	6.7
Mountain	252	255	-3	-3	198	27.3	204	23.5
Pacific	298	296	2	2	227	31.3	271	10.0
South Central	1,260	1,240	20	20	1,184	6.4	1,155	9.1
Salt	343	331	12	12	315	8.9	316	8.5
Nonsalt	917	909	8	8	869	5.5	839	9.3
Total	3,836	3,826	10	10	3,495	9.8	3,533	8.6

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

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



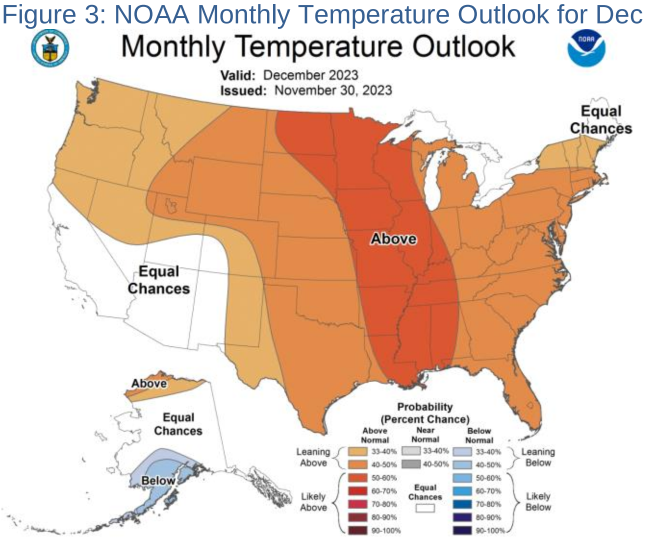
Source: EIA, SAF

NOAA Dec temperature outlook

Natural Gas: NOAA forecasts warmer than normal temp across the US for Dec

On Friday, we tweeted [LINK] "*Never a positive for #NatGas prices when forecasts are warmer than normal temps for Dec. Today's @NOAA Dec outlook calls for warmer than normal temps across US. A warm start to peak winter demand is never good & will keep many on sidelines until see cold temps in Jan. #OOTT.*" Dec is the first crucial month for weather driven natural gas deamand and it continues to look like a warmer than norma start to winter. Our concern is always that a warmer than normal start to winter makes it really tough, but not impossible to catch up up. And a warmer than normal winter can effective cap naturla gas prices for mosf of the year, as seen in 2023. On Friday, NOAA posted its monthly temperature outlook for Dec and it stil expects a warmer than normal Dec across almost all of the US including all the key natural gas home heating regions. Below is the NOAA Monthly Temperature Outlook memp for Dec. [LINK]

Figure 3: NOAA Monthly Temperature Outlook for Dec 2023



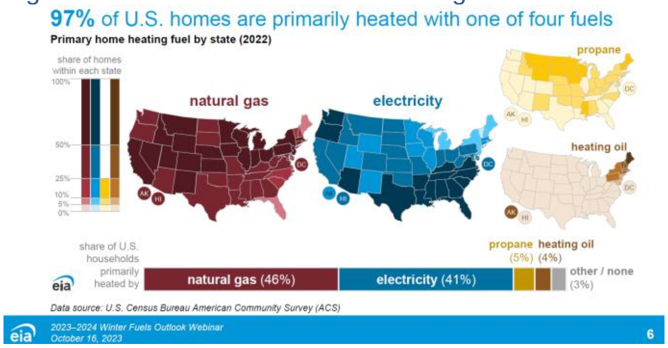
Source: NOAA

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

Natural gas home heating

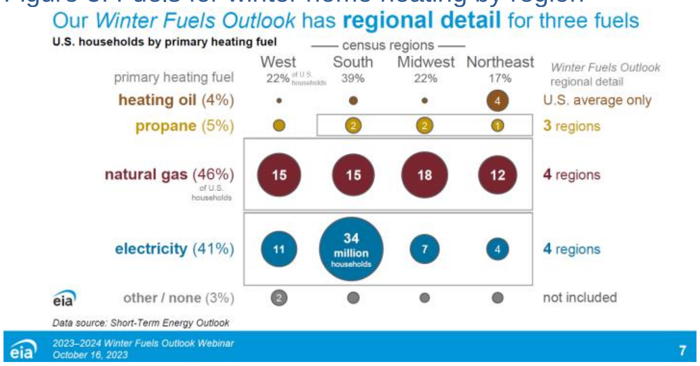
Here is what we wrote in our Nov 19, 2023 Energy Tidbits memo on overview of US home heating by fuel. "*Our primary focus for winter weather tends to be in the US NE and around the Great Lakes for the combination of population density, areas that have colder winters, and a higher percentage of the US 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 4: Fuels for winter home heating of US homes



Source: EIA

Figure 5: Fuels for winter home heating by region



Source: EIA

Natural Gas: US Sep gas production was 104.2 bcf/d, -0.3 bcf/d MoM, +1.8 bcf/d YoY

US gas production +1.8 bcf/d YoY in September

The warm winter 2022/23 was the big reason for the holdback to HH and AECO natural gas prices in 2023, but the other major factor was the continued big YoY growth in US natural gas production. US natural gas production was flat for May, June and July, before increasing in Aug and Sep. On Thursday, the EIA released its Natural Gas Monthly [LINK], which includes its estimated "actuals" for September's dry gas production. Key items to note are as follows: (i) September's production of 104.4 bcf/d was up +1.8 bcf/d YoY from 102.4 bcf/d in September 2022 and down -0.3 bcf/d MoM from August's revised production of 104.5 bcf/d. (ii) US dry gas production is up compared to prior months where for May, June, and July it was around 103.4-103.6 bcf/d before jumping to 104.5 bcf/d in August. Our Supplemental Documents package includes excerpts from the EIA Natural Gas Monthly.

Figure 6: US Dry Natural Gas Production

bcf/d	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Jan	56.0	60.0	66.0	65.3	66.8	73.4	73.6	70.6	78.7	89.3	97.4	92.6	96.2	101.9
Feb	57.2	58.8	67.0	65.4	68.4	73.8	77.3	71.5	80.4	89.9	98.9	85.8	96.0	102.0
March	57.3	61.5	65.0	65.3	68.9	74.1	73.8	73.2	81.3	90.3	95.3	93.6	97.6	102.9
Apr	57.6	62.3	64.8	66.1	70.5	75.2	73.7	73.3	81.2	90.7	95.0	94.3	98.3	102.7
May	58.0	62.4	65.0	65.9	70.2	74.1	72.9	73.3	82.1	91.4	87.9	94.2	99.1	103.6
June	57.2	62.1	64.6	65.8	70.5	74.0	72.2	74.0	82.5	91.7	90.4	93.9	99.3	103.3
July	58.2	62.5	66.3	67.1	72.0	74.2	72.8	74.7	84.2	92.2	90.3	94.8	100.4	103.4
Aug	58.9	63.2	66.0	66.9	72.4	74.3	72.2	74.7	85.9	94.4	90.4	95.0	100.9	104.5
Sept	59.1	63.1	66.4	66.8	72.4	74.7	71.7	76.0	87.3	94.8	91.3	95.7	102.4	104.2
Oct	60.1	65.1	66.5	67.0	73.1	74.2	71.4	77.3	88.4	95.6	89.7	97.2	102.2	
Nov	60.1	65.9	66.6	67.7	72.6	73.9	72.0	79.8	89.9	97.2	92.5	98.3	102.2	
Dec	61.0	65.6	66.0	66.5	73.2	73.9	71.2	80.4	89.5	97.1	93.1	99.1	100.2	
Average	58.4	62.7	65.9	66.3	70.9	74.2	72.9	74.9	84.3	92.9	92.7	94.5	99.6	103.2

Source: EIA, SAF

US pipeline exports to Mexico down MoM, up YoY

Natural Gas: US pipeline exports to Mexico at 6.7 bcf/d in September, up YoY

The EIA Natural Gas Monthly also provides its "actuals" for gas pipeline exports to Mexico [LINK], which were 6.7 bcf/d in September, down -0.2 bcf/d MoM from 6.9 bcf/d in August and is up +1.1 bcf/d YoY from 5.6 bcf/d in September 2022. The EIA doesn't provide explanations for the numbers including the small 0.2 bcf/d WOW decrease. We don't view a +/- 0.2 bf/d WOW swing as material. Mexico's relatively unchanged domestic production over the past seven years has created the need for increased US pipeline exports as Mexico builds out its domestic natural gas infrastructure. Below is our table of the EIA's monthly gas exports to Mexico.

Figure 7: US Pipeline Exports to Mexico

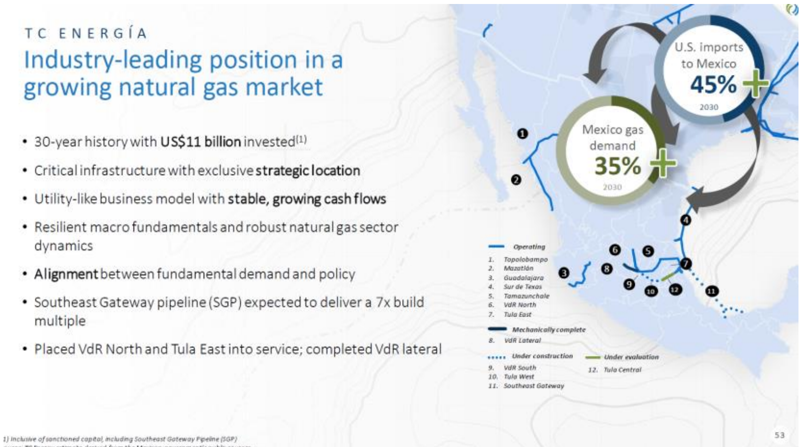
bcf/d	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Jan	1.7	2.2	3.2	3.9	4.4	4.9	5.2	5.6	5.7	5.4
Feb	1.8	2.3	3.5	4.0	4.5	4.8	5.4	4.9	5.5	5.5
March	1.9	2.4	3.3	4.2	4.3	4.8	5.4	5.9	5.5	5.7
Apr	1.9	2.6	3.5	3.7	4.4	4.7	4.6	6.1	5.9	5.6
May	2.0	2.8	3.7	4.0	4.4	5.0	4.7	6.2	6.0	6.2
June	2.2	3.0	3.9	4.5	4.6	5.2	5.4	6.6	6.1	6.8
July	2.2	3.3	4.0	4.4	4.9	5.4	5.8	6.4	6.1	6.7
Aug	2.1	3.3	4.3	4.4	5.0	5.4	6.0	6.2	5.8	6.9
Sept	2.2	3.3	4.1	4.2	5.0	5.4	6.1	6.0	5.6	6.7
Oct	1.9	3.2	4.2	4.2	4.9	5.5	6.0	6.0	5.5	
Nov	1.9	3.0	4.0	4.5	4.7	5.3	5.5	5.5	5.4	
Dec	2.1	3.2	3.6	4.4	4.5	4.9	5.3	5.4	5.1	
Average	2.0	2.9	3.8	4.2	4.6	5.1	5.5	5.9	5.7	6.2

Source: EIA, SAF

TC Energy didn't provide any real Mexico natural as outlook at its investor day

We were surprised that TC Energy's investor day didn't have any real sector and commodity insights. We didn't listen live but reviewed the transcript and slide. The slide deck was over 1/3 less slide YoY and there were very few sector commodity outlook comments including Canada and Mexico natural gas. We suspect that is likely because TC Energy is contemplating joint ventures for both Canada and Mexico. On Mexico, the only real sector outlook was in the Q&A, when mgmt. said "*And when you look at some of our Mexico pipes, particularly on the West Coast, we're seeing record demand approaching 100% load factor. We're seeing record demands over the past couple of months on Sur de Texas.*" There was nothing to hint at Mexico domestic natural as buildout is delayed. We have highlighted several times over the past year that TC Energy's Nov 2022 investor day including their outlook for an additional 3 bcf/d of new pipeline to Mexi o would be up by 2030. We did not see any comments from mgmt. on the call that wouid hint at any potential change on their Mexico natural gas build outlook from a year ago. Here is what we wrote in our Dec 4, 2022 Energy Tidbits. "*One overlooked upside to US natural gas in the 2020s is that the growth Mexico infrastructure projects are starting to kick in. Yesterday, we tweeted [LINK] "Positive for US #NatGas for 2020s. It's not just increasing #LNG exports, it's also Mexico. Mexico #NatGas demand from 9 bcfd to 12 bcfd in 2030. @TCEnergy expects MEX #NatGas pipeline imports from Permian +45% from 6 bcfd in 2022 to 9 bcfd by 2030. #OOTT." The growth in Mexico natural gas demand is a big plus to the Permian. For the last few years, every time we write on Mexico's natural gas production, we say it is still stuck below 5 bcf/d and that any increase in Mexico natural gas demand has to be met by increasing natural gas or LNG imports. For the past 5+ years, other than a few months, Mexico gas production was below 5 bcf/d. Mexico's natural gas demand growth and growing infrastructure was one of the key growth themes at TC Energy's investor day on Tuesday. Mgmt's slide deck included the below slide and mgmt said "We expect Mexican natural gas demand to increase by 3% per year across the country from 9 Bcf to 12 Bcf in 2030, with strategic government projects creating over 1 Bcf a day of incremental gas demand in the southeast alone by 2025. Now given Mexico's limited natural gas production, this increase in demand will likely be served by supplies in the U.S. and more specifically the Permian as we believe Mexican imports from the Permian are likely to increase by 45% from 6 Bcf a day in 2022 to 9 Bcf by 2030."*

Figure 8: TC Energy Sees US Natural Gas Imports TO Mexico +45% to 2030



Source: TC Energy

US September LNG exports

Natural Gas: US LNG exports up +2.7% MoM to 11.7 bcf/d in Sept; up +18.8% YoY

As a reminder, the US LNG export data is always available about two weeks before it is included in the EIA's Natural Gas Monthly report. Here is what we wrote in our Nov 19, 2023 Energy Tidbits memo. "*On Wednesday, the Department of Energy (DOE) posted its US LNG exports estimates for September 2023 [LINK]. This is a reminder that the US LNG export data is available about two weeks 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. On Wednesday, we tweeted [LINK] "US #LNG exports Sep/23 11.7 bcfd, +3% MoM, +20% YoY. Freeport LNG was out in Sep/22.Sep/23 top 5 export mkts: Dutch, Japan, France, Korea, Italy. Aug/22: France, UK, Dutch, Spain, Korea. Note this DOE LNG data is posted 2 wks before same data in @EIAgov #OOTT". US LNG exports were up marginally MoM to 11.7 bcf/d in September from 11.4 bcf/d in August. US LNG exports are now averaging 11.6 bcf/d per month YTD for 2023, which is +0.9 bcf/d compared to the same period in 2022. The DOE did not comment on the MoM or YoY increases*". On Thursday, the EIA's Natural Gas Monthly reported the same data, US LNG exports for September were 11.7 bcf/d, up +0.3 bcf/d MoM from 11.4 bcf/d in August and up +1.9 bcf/d from 9.8 bcf/d in September 2022. The DOE LNG report includes more information on US LNG exports. Our Supplemental Documents package includes excerpts from the DOE LNG report.

Figure 9: US Monthly LNG Exports

(bcf/d)	2016	2017	2018	2019	2020	2021	2022	2023
Jan	0.0	1.7	2.3	4.1	8.1	9.8	11.4	10.9
Feb	0.1	1.9	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
Apr	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
Aug	0.9	1.5	3.0	4.5	3.6	9.6	9.7	11.4
Sept	0.6	1.8	2.7	5.3	5.0	9.5	9.8	11.7
Oct	0.1	2.6	2.9	5.7	7.2	9.6	10.0	
Nov	1.1	2.7	3.6	6.4	9.4	10.2	10.1	
Dec	1.3	2.7	4.0	7.1	9.8	11.1	11.0	
Average	0.5	1.9	3.0	5.0	6.6	9.7	10.6	11.6

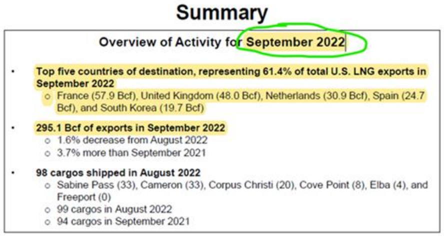
Source: EIA, DOE

Figure 10: US LNG Exports September 2023 vs September 2022

Summary

Overview of Activity for September 2023

- **Top five countries of destination, representing 42.2%of total U.S. LNG exports in September 2023**
  - Netherlands (39.7 Bcf), Japan (33.2 Bcf), France (28.7 Bcf), South Korea (24.1 Bcf), and Italy (22.1 Bcf)
- **350.1 Bcf of exports in September 2023**
  - 0.8% decrease from August 2023
  - 18.6% more than September 2022
- **107 cargos shipped in September 2023**
  - Sabine Pass (33), Cameron (28), Freeport (18), Corpus Christi (17), Elba (6), and Cove Point (5)
  - 114 cargos in August 2023
  - 98 cargos in September 2022



Summary

Overview of Activity for September 2022

- **Top five countries of destination, representing 61.4% of total U.S. LNG exports in September 2022**
  - France (57.9 Bcf), United Kingdom (48.0 Bcf), Netherlands (30.9 Bcf), Spain (24.7 Bcf), and South Korea (19.7 Bcf)
- **295.1 Bcf of exports in September 2022**
  - 1.6% decrease from August 2022
  - 3.7% more than September 2021
- **98 cargos shipped in August 2022**
  - Sabine Pass (33), Cameron (33), Corpus Christi (20), Cove Point (8), Elba (4), and Freeport (0)
  - 99 cargos in August 2022
  - 94 cargos in September 2021

Source: DOE

Natural Gas: ARC to supply long term natural gas to Cheniere Sabine Pass LNG5

ARC 15-yr natural gas supply gas to Cheniere LNG

Cheniere has to keep adding to its long-term natural gas feedstock supply for its Corpus Christi and Sabine Pass LNG projects and that includes from Canada. On Wed, Cheniere announced they have entered a long-term natural gas supply agreement with ARC Energy. This is the 2nd supply deal between ARC and Cheniere. This 2nd deal will see ARC supply 140,000 MMBtu/d (~0.14 bcf/d) to the Sabine Pass Liquefaction project for 15 years, expected to begin in 2029. Our May 8, 2022 Energy Tidbits memo included the first ARC/Cheniere LNG supply deal [LINK] that was a similar size 140,000 MMBtu/d of natural gas to the Cheniere Corpus Christi Stage III for 15 years. For this 2nd deal, Cheniere's press release [LINK] stated *"ARC Resources has agreed to sell 140,000 MMBtu per day of natural gas to SPL Stage 5 for a term of 15 years, commencing with commercial operations of the first train ('Train 7') of the Sabine Pass Liquefaction Expansion Project ('SPL Expansion Project')."* Commencement of commercial operations of the first train of the Sabine Pass Expansion Project is expected to begin in 2029. ARC Resources also issued a press release [LINK]. ARC Energy CEO and president, Jack Fuso, remarked *"This is the second long-term agreement between Cheniere and ARC Resources, and further progresses the commercialization of the SPL Expansion Project. This agreement will enable Cheniere to deliver increased quantities of Canadian natural gas to Europe, where energy security has never been more important… We are pleased to build upon our existing long-term relationship with ARC Resources, and further demonstrate Cheniere's ability to construct innovative solutions that help meet the needs of customers and counterparties along the LNG value chain while delivering value to our stakeholders."* Our Supplemental Documents package includes the ARC and Cheniere releases.

Natural Gas: Will any HH gas prices weakness set up Cdn/US M&A for natural gas

Cdn/US natural gas M&A

After tweeting on NOAA's forecast for warmer than normal temperatures across pretty well all of the US, our first thought was how we could see M&A buyers taking advantage of any HH gas price and gas producers shares weakness to snap up assets and/or companies. There is likely >15 bcf/d of new export capacity being brought on stream over the balance of the decade. We expect to see a lot more natural gs M&A for this reason and anOn Friday, we tweeted [LINK] *"Will any #NatGas price & shares pull back with a warm winter open up opportunity for strategic M&A incl in CAN. See 👇SAF 11/5/23 Energy Tidbits. Need/opportunity for >15 bcfd of US/CAN supply by 2030, incl #LNGCanada 1.8 bcfd Phase 1 startup in a yr or so. #OOTT".*

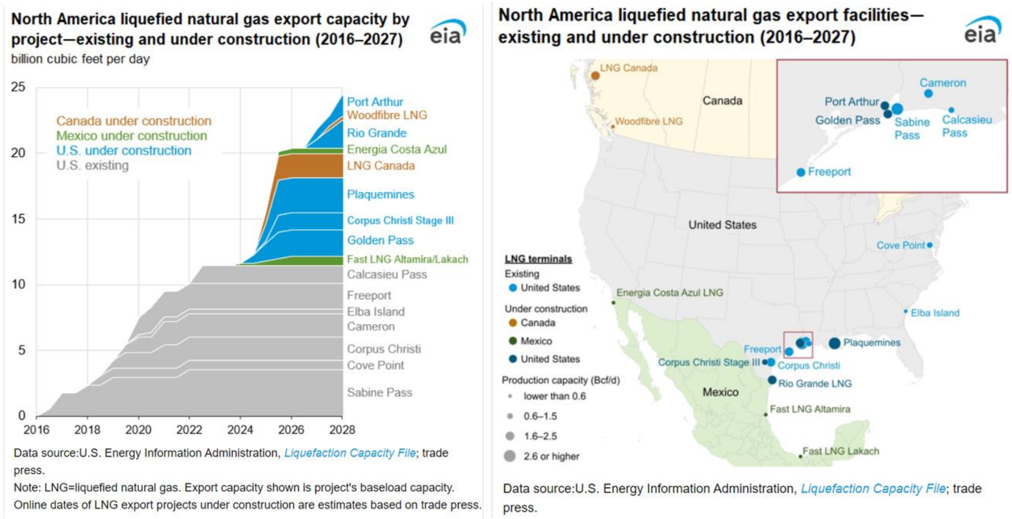
Good timing for strategic buyers with LNG Canada Phase 1

LNG Canada Phase 1 is only part of what we believe is an overlooked major natural gas trend in North America – the start up of >15 bcf/d of export capacity out of Canada, the US and Mexico by 2030. We believe that a warm winter/low natural gas price period is good timing for Cdn natural gas consolidation in the face of the expected start up in approx. 1 year for LNG Canada's 1.8 bcf/d Phase 1. We have stated for months that we continue to believe that LNG Canada 1.8 bcf/d Phase 1 sets up the need for the LNG Canada joint venture partners to acquires supply from M&A and/or long-term supply arrangements. We don't believe they would want to go into start up of LNG Canada 1.8 bcf/d Phase 1 without some certainty of at least several years supply. No question they will assume some level of future Montney drilling but the BC/Blueberry River First Nations deal leads to less clarity to plan multi-year drilling plans. It won't just be Montney gas for LNG Canada, but it will be strategic natural gas buyers to take advantage of an expected improvement in Cdn natural gas differentials with adding 1.8 bcf/d of export capacity.

Also with the need/opportunity for >15 bcf/d of Cdn & US gas in next 5 yrs

As noted above, the overlooked natural gas theme for the 2020s is the build out of >15 bcf/d capacity for export of natural gas from Canada, Mexico and the US that will be supplied by Canada and US natural gas. Here is what we wrote in our Nov 5, 2023 Energy Tidbits memo. "*Need/opportunity for >15 bcf/d of Cdn & US gas in next 5 yrs. There was a good reminder last week there is a need/opportunity for >15 bcf/d of US and Canada natural gas supply over the next five years. The EIA Natural Gas Weekly posted Oct 26 [LINK] highlighted "Over the next five years, we expect North America's liquefied natural gas (LNG) export capacity to expand by 12.9 billion cubic feet per day (Bcf/d) as Mexico and Canada place into service their first LNG export terminals and the United States adds to its 11.4 Bcf/d of existing LNG capacity. By the end of 2027, we estimate LNG export capacity will grow by 1.1 Bcf/d in Mexico, 2.1 Bcf/d in Canada, and 9.7 Bcf/d in the United States from a total of ten new projects across the three countries." Mexico' has been unable to grow natural gas production so the need/opportunity to fill this capacity is for US and Canadian natural gas supply. And this 12.9 bcf/d oesn't include the buildout of Mexico domestic natural gas infrastructure capacity that TC Energy forecast last year to add 3 bcf/d demand for Permian natural gas via pipeline. Of this, only 11% (1.8 bcf/d) is direct Canada natural gas export via LNG Canada Phase 1. But the other big swing factor is the question on how much US natural gas can grow. Obviously more if the price is higher. But there will be the need or opportunity for more Cdn natural gas thru the US, not less. And at the same time, Canada will have the direct LNG Canada 1.8 bcf/d to export markets that will take some of Canada's existing natural gas moving to the US out to the LNG Canada instead. Our Supplemental Documents package includes the EIA blog."*

Figure 11: North American LNG capacity growth thru 2027



Source: EIA

Natural Gas: 2 new Long-term LNG deals – Gunvor/Delfin and OMV/Cheniere

Long-term LNG deals

There was a significant slowdown in long-term LNG deals in since the end of H1/22 compared to the activity seen from July 1, 2021 through June 30, 2022. That's because most, if not all the available long term LNG supply available before 2026 was locked up in the July 1, 2021 through June 30, 2022 rush. Rather, the long-term deals now being done are generally for long-term supply starting in 2026 or later. And the other significant item to note is that we have seen some very long-term LNG deals even out past 2050. This week there were two new LNG supply deals. (i) On Monday, Gunvor Singapore Pte Ltd announced they signed a long-term 15-year LNG supply deal with Delfin Midstream [LINK], whereby Gunvor will purchase between 0.07 and 0.13 bcf/d for a minimum duration of 15 years. There was no specific start date mentioned in the press release. Kalpesh Patel, co-head of LNG Trading of Gunvor, said*: "We continue to support US LNG projects and unlock new sources to meet the growing global LNG demand while further expanding our supply portfolio. We look forward to a successful, long-term relationship with the Delfin LNG team as their project continues to progress*".(ii) On Wednesday, OMV Group (Netherlands) announced they have signed a long-term SPA with Cheniere Energy Inc whereby OMV will purchase up to 0.11 bcf/d over a total of up to 12 cargoes per annum [LINK]. Both separate OMV and Cheneire releases said LNG cargos will start in 2029. Neither release said for how long although it was called a long-term deal and the Cheniere release implied it was a 15-yr terms as they rolled the OMV deal in with the ARC 15-yr natural gas supply deal. Cheniere said *"In addition to the IPM agreement announced today, Cheniere Marketing has entered into an LNG sale and purchase agreement ("SPA") with OMV Gas Marketing and Trading GMBH ("OMV"), a wholly-owned subsidiary of OMV AG. Under the SPA, Cheniere Marketing will supply OMV with up to 12 LNG cargoes per year, or approximately 0.85 mtpa of LNG, at a TTF-linked price commencing in late 2029. The LNG will be sold to OMV on a delivered ex-ship ("DES") basis at the Gate LNG Terminal in the Netherlands where OMV holds regasification* *capacity.al in with the ARC natural gas supply deal*." We have assumed it was for a 15-yr term. Our supplemental documents package contains the Gunvor, Delfin and OMV news releases. Below is a clip from the Cheniere tweet on November 29th. Our Supplemental Documents package includes the Delfin and OMV releases.

Figure 12: Cheniere LNG Supply Diagram

Source: Cheniere Energy Inc, Twitter

There have been 19.19 bcf/d of long-term LNG supply deals since July 1, 2021
We first highlighted this abrupt shift to long term LNG supply deals in our July 14, 2021 8-pg "*Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs".* We included a table of the deals done in that short two week period. We continue to update that table, which now shows 19.19 bcf/d of long-term LNG deals since July 1, 2021. 61% of the deals have been by Asian LNG buyers, but we are now seeing rest of world locking up long term supply deals post Russia/Ukraine. Note in our non-Asian LNG deals will major LNG players (ie. Chevron, Shell, etc) buying for their LNG portfolio supply. China has been particularly active in this space, accounting for 65% of all Asian LNG buyers in long term contracts since July 1, 2021. Below is our updated table of Asian and Europe LNG buyers new long-term supply deals since July 1, 2021. Our Supplemental Documents package includes our July 14, 2021 blog.

Figure 13: Long-Term LNG Buyer Deals Since July 1, 2021

Long-Term LNG Buyer Deals Since July 1, 2021							
Date	Buyer	Seller	Country	Volume	Duration	Start	End
			Buyer / Seller	(bcf/d)	Years		
Asian LNG Deals							
Jul 7, 2021	CNOOC	Petronas	China / Canada	0.30	10.0	2022	2032
Jul 9, 2021	CPC	QatarEnergy	Taiwan / Qatar	0.16	15.0	2022	2037
Jul 9, 2021	Guangzhou Gas	BP	China / US	0.13	12.0	2022	2034
Jul 12, 2021	Korea Gas	QatarEnergy	Korea / Qatar	0.25	20.0	2025	2045
Sep 29, 2021	CNOOC	QatarEnergy	China / Qatar	0.50	15.0	2022	2037
Oct 7, 2021	Shenzhen	BP	China / US	0.04	10.0	2023	2032
Oct 11, 2021	ENN	Cheniere	China / US	0.12	13.0	2022	2035
Nov 4, 2021	Unipec	Venture Global LNG	China / US	0.46	20.0	2023	2043
Nov 4, 2021	Sinopec	Venture Global LNG	China / US	0.53	20.0	2023	2043
Nov 5, 2021	Sinochem	Cheniere	China / US	0.12	17.5	2022	2040
Nov 22, 2021	Foran	Cheniere	China / US	0.04	20.0	2023	2043
Dec 6, 2021	Guangdong Energy	QatarEnergy	China / Qatar	0.13	10.0	2024	2034
Dec 8, 2021	S&T International	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 10, 2021	Suntien Green Energy	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 15, 2021	SPIC Guangdong	BP	China / US	0.03	10.0	2023	2033
Dec 20, 2021	CNOOC Gas & Power	Venture Global LNG	China / US	0.26	20.0	2023	2043
Dec 29, 2021	Foran	BP	China / US	0.01	10.0	2023	2032
Jan 11, 2022	ENN	Novatek	China / Russia	0.08	11.0	2024	2035
Jan 11, 2022	Zhejiang Energy	Novatek	China / Russia	0.13	15.0	2024	2039
Feb 4, 2022	CNPC	Gazprom	China / Russia	0.98	30.0	2023	2053
Mar 24, 2022	Guangdong Energy	NextDecade	China / US	0.20	20.0	2026	2046
Mar 29, 2022	ENN	Energy Transfer	China / US	0.36	20.0	2026	2046
Apr 1, 2022	Guangzhou Gas	Mexico Pacific Ltd	China / Mexico	0.26	20.0	n.a.	n.a.
Apr 6, 2022	ENN	NextDecade	China / US	0.26	20.0	2026	2026
Apr 22, 2022	Kogas	BP	Korea / US	0.20	18.0	2025	2043
May 2, 2022	Gunvor Singapore Pte	Energy Transfer LNG	Singapore / US	0.26	20.0	2026	2046
May 3, 2022	SK Gas Trading LLC	Energy Transfer LNG	Korea / US	0.05	18.0	2026	2042
May 10, 2022	Exxon Asia Pacific	Venture Global LNG	Singapore / US	0.26	n.a.	n.a.	n.a.
May 11, 2022	Petronas LNG	Venture Global LNG	Malaysia / US	0.13	20.0	n.a.	n.a.
May 24, 2022	Hanwha Energy	TotalEnergies	Korea / France	0.08	15.0	2024	2039
May 25, 2022	POSCO International	Cheniere	Korea / US	0.05	20.0	2026	2036
June 5, 2022	China Gas Holdings	Energy Transfer	China / US	0.09	25.0	2026	2051
Jul 5, 2022	China Gas Holdings	NextDecade	China / US	0.13	20.0	2027	2047
Jul 20, 2022	PetroChina	Cheniere	China / US	0.24	24.0	2026	2050
Jul 26, 2022	PTT Global	Cheniere	Thailand / US	0.13	20.0	2026	2046
Jul 27, 2022	Exxon Asia Pacific	NextDecade	Singapore / US	0.13	20.0	2026	2046
Sep 2, 2022	Woodside Singapore	Commonwealth	Singapore / US	0.33	20.0	2026	2046
Nov 21, 2022	Sinopec	QatarEnergy	China / Qatar	0.53	27.0	2026	2053
Dec 26, 2022	INPEX	Venture Global LNG	Japan / US	0.13	20.0	n.a.	n.a.
Dec 27, 2022	JERA	Oman LNG	Japan / Oman	0.11	10.0	2025	2035
Jan 19, 2023	ITOCHU	NextDecade	Japan / US	0.13	15.0	n.a.	n.a.
Feb 7, 2023	Exxon Asia Pacific	Mexico Pacific Ltd	Singapore / Mexico	0.26	20.0	n.a.	n.a.
Feb 23, 2023	China Gas Holdings	Venture Global LNG	China / US	0.26	20.0	n.a.	n.a.
Mar 6, 2023	Gunvor Singapore Pte	Chesapeake Energy	Singapore / US	0.26	15.0	2027	2042
Apr 28, 2023	JERA	Venture Global LNG	Japan / US	0.13	20.0	n.a.	n.a.
May 16, 2023	KOSPO	Cheniere	Korea / US	0.05	19.0	2027	2046
Jun 1, 2023	Bangladesh Oil	QatarEnergy	Bangladesh / Qatar	0.24	15.0	2026	2031
Jun 21, 2023	Petro Bangle	Oman	Bangledesh / Oman	0.20	10.0	2026	2036
Jun 21, 2023	CNPC	QatarEnergy	China / Qatar	0.53	27.0	2027	2054
Jun 26, 2023	ENN LNG	Cheniere	Singapore / US	0.24	20.0	2026	2046
Jul 5, 2023	Zhejiang Energy	Mexico Pacific Ltd	China / Mexico	0.13	20.0	2027	2047
Aug 8, 2023	LNG Japan	Woodside	Japan / Australia	0.12	10.0	2026	2036
Sep 7, 2023	Petrochina	ADNOC	China / UAE	n.a.	n.a.	n.a.	n.a.
Nov 2, 2023	Foran	Cheniere	China / US	0.12	20.0	n.a.	n.a.
Nov 4, 2023	Sinopec	QatarEnergy	China/Qatar	0.39	27.0	2026	2053
Nov 27, 2023	Gunvor Singapore Pte	Delfin Midstream	Singapore / US	0.10	15.0	n.a.	n.a.
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				**11.63**			
Non-Asian LNG Deals							
Jul 28, 2021	PGNiG	Venture Global LNG	Poland / US	0.26	20.0	2023	2043
Nov 12, 2021	Engie	Cheniere	France / US	0.11	20.0	2021	2041
Mar 7, 2022	Shell	Venture Global LNG	US / US	0.26	20.0	2024	2044
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
May 2, 2022	Engie	NextDecade	France / US	0.23	15.0	2026	2041
May 17, 2022	PGNiG	Sempra Infrastructure	Poland / US	0.40	20.0	n.a.	n.a.
May 25, 2022	RWE Supply & Trading	Sempra Infrastructure	Germany / US	0.30	15.0	n.a.	n.a.
Jun 9, 2022	Equinor	Cheniere	Norway / US	0.23	15.0	2026	2041
Jun 21, 2022	EnBW	Venture Global LNG	Germany / US	0.20	20.0	2026	2046
Jun 22, 2022	INEOS Energy	Sempra Infrastructure	UK / US	0.21	20.0	2027	2047
Jun 22, 2022	Chevron	Venture Global LNG	US / US	0.26	20.0	n.a.	n.a.
Jun 22, 2022	Chevron	Cheniere	US / US	0.26	15.0	2027	2042
Jul 12, 2022	Shell	Mexico Pacific Ltd	US / Mexico	0.34	20.0	2026	2046
Jul 13, 2022	Vitol	Delfin Midstream	US / US	0.07	15.0	n.a.	n.a.
Aug 9, 2022	Centrica	Delfin Midstream	UK / US	0.13	15.0	2026	2041
Aug 24, 2022	Shell	Energy Transfer	US / US	0.28	20.0	2026	2046
Oct 6, 2022	EnBW	Venture Global LNG	Germany / US	0.26	20.0	2022	2042
Dec 6, 2022	ENGIE	Sempra Infrastructure	France / US	0.12	15.0	n.a.	n.a.
Dec 20, 2022	Galp	NextDecade	Portugal / US	0.13	20.0	n.a.	n.a.
Dec 20, 2022	Shell	Oman LNG	UK/Oman	0.11	10.0	2025	2035
Jan 25, 2023	PKN ORLEN	Sempra Infrastructure	EU//US	0.13	20.0	2027	2047
Jan 30, 2023	BOTAS	Oman	Turkey / Oman	0.13	10.0	2025	2035
Mar 27, 2023	Shell	Mexico Pacific Ltd	UK / Mexico	0.15	20.0	2026	2046
Apr 24, 2023	Hartree Partners LP	Delfin Midstream	US / US	0.08	20.0	n.a.	n.a.
Jun 21, 2023	Equinor	Cheniere	Norway / US	0.23	15.0	2027	2042
Jun 22, 2023	SEFE	Venture Global LNG	EU//US	0.30	20.0	2026	2046
Jul 14, 2023	ONEE (Morocco)	Shell	Africa/US	0.05	12.0	2024	2036
Jul 18, 2023	IOCL	Adnoc	India/UAE	0.16	14.0	2026	2040
Jul 28, 2023	OMV	BP	Austira/UK	0.13	10.0	2026	2036
Aug 4, 2023	ConocoPhillips	Mexico Pacific Ltd	US/Mexico	0.29	20.0	2025	2045
Aug 22, 2023	BASF	Cheniere	Germany / US	0.10	17.0	2026	2043
Aug 30, 2023	Shell	Oman LNG	US / Oman	0.11	10.0	2025	2035
Oct 11, 2023	TotalEnergies	QatarEnergy	France / Qatar	0.46	27.0	2026	2053
Oct 18, 2023	Shell	QatarEnergy	Netherlands / Qatar	0.46	27.0	2026	2053
Oct 23, 2023	ENI	QatarEnergy	Italy / Qatar	0.13	27.0	2026	2053
Oct 31, 2023	Vitol	Chesapeake Energy	Sweden / US	0.13	15.0	2028	2043
Nov 29, 2023	OMV	Cheniere	Netherlands / US	0.11	15.0	2029	2044
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				**7.56**			
Total New Long Term LNG Contracts since Jul/21				**19.19**			

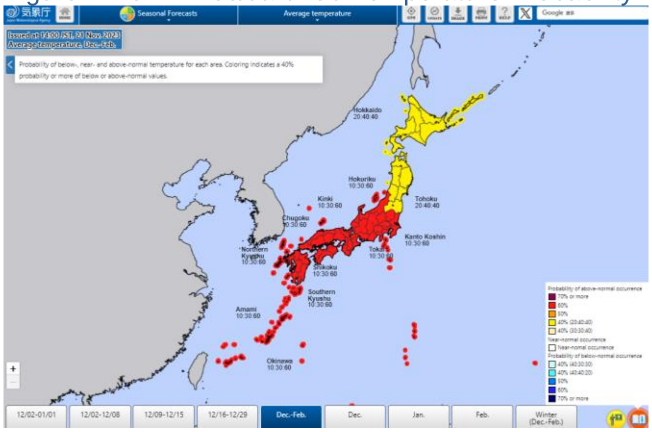
Source: SAF

Natural Gas: Japan forecasts a warmer than normal Dec/Jan/Feb

Japan's DJF temperature forecast

We remind that global LNG and natural gas markets are becoming linked so a warm winter in Asia frees up LNG cargos for Europe and vice versa. It was a warm fall in Japan, it's been a warm start to winter and now the JMA calls for a warmer than normal winter. Last week (Nov 21, 2023), the Japan Meteorological Agency posted its updated Dec/Jan/Feb temperature outlook and they call for a much warmer than normal temperature outlook for Dec/Jan/Feb. Below is the JMA Dec/Jan/Feb map.

Figure 14: JMA Dec/Jan/Feb Temperature Probability Forecast, made Nov 21, 2023



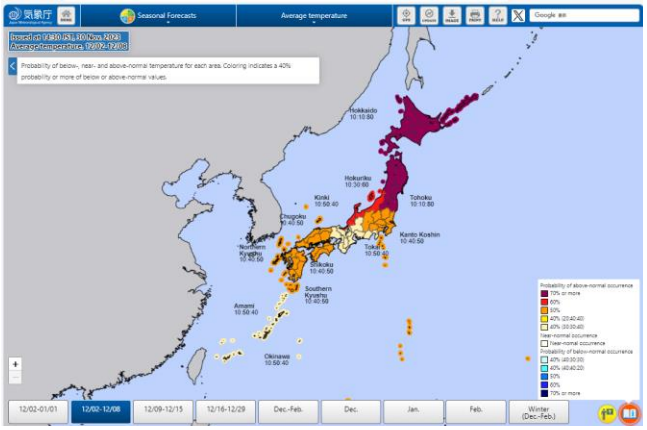
Source: Japan Meteorological Agency

Natural Gas: Japan forecasts a warmer than normal Dec

Japan's 30-day temperature forecast

No surprise here that the JMA forecasts a warm Dec. Every Thursday, the Japan Meteorological Agency updates its 30-day outlook [LINK]. The November 30 update calls warmer than normal temperatures for all of Japan for Dec 2 thru Jan 1.   Below is the JMA's 30-day temperature probability forecast for Dec 2-Jan1.

Figure 15: JMA Dec 2 – Jan 1 Temperature Probability Forecast



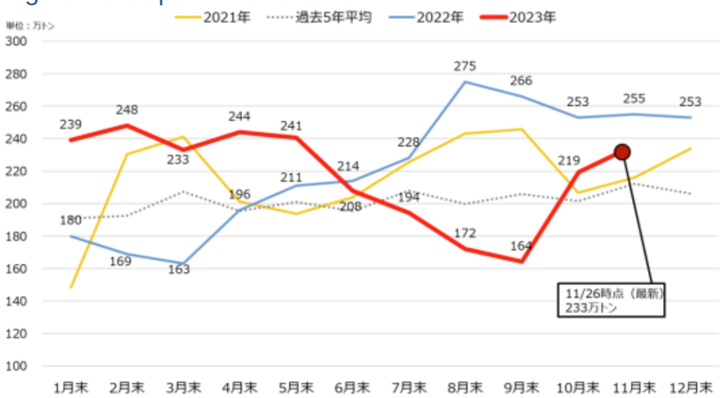
Source: Japan Meteorological Agency

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

Japan LNG stocks down -6.43% WoW

It was hot in Japan through September, and we saw Japan was drawing on its LNG stock in Sept for power generation, which took LNG stocks below year ago and the 5-yr average. After building back storage in October and much of November, there was a draw last week. Stocks are still below 2022 levels but the above the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on Nov 26 were 111.9 bcf, down -6.43% WoW from Nov 19 of 119.6 bcf, and down -8.63% YoY from 122.5 bcf a year earlier, but above the 5-year average for the end of November of 101.8 bcf. METI did not comment on the WoW decrease. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 16: Japan LNG Stocks



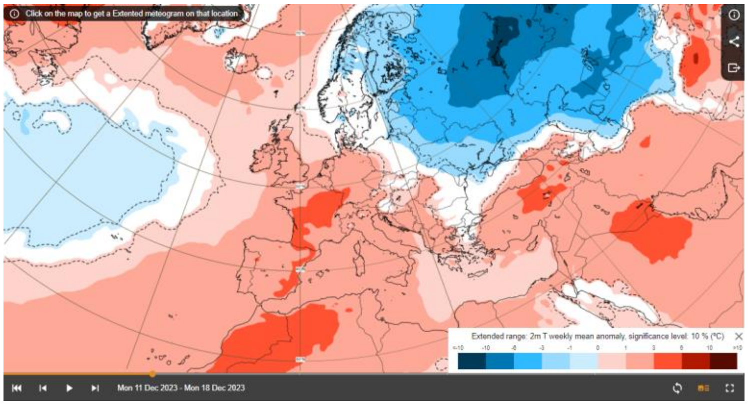
Source: METI

Natural Gas: Cold weather to end Nov/start Dec is turning warmer to end Dec

Europe Dec forecast

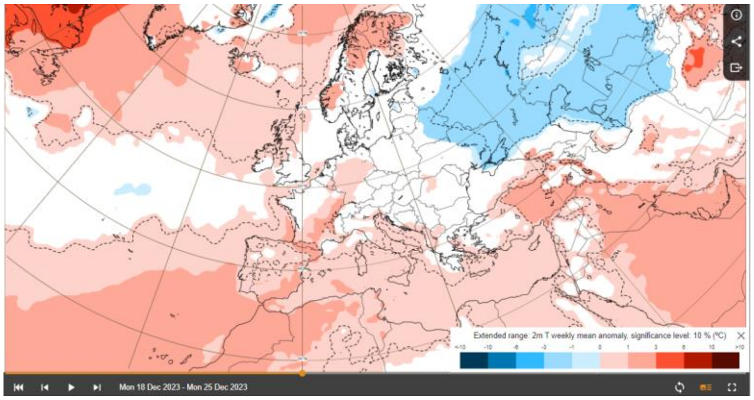
The short term weather forecasts for Europe have been been pretty good as they have been calling for colder than normal temp to end Nov/start Dec for much of Europe. But there is also no significant change in the outlook for Dec temperatures in Europe. Our concern is always a warm start to winter needs to get offset sometime and a warmer than normal winter can be a hold back on natural gas/LNG prices for several months. Last winter 2022/23 was a hot winter and it held back prices all of 2023. It's been a warm start to winter in Europe but has turned cooler than normal to end Nov/start Dec. But then it is turning back to warmer than normal

Figure 17: ECMWF Dec 11-18 Temperature Probability Forecast



Source: ECMWF

Figure 18: ECMWF Dec 18-25Temperature Probability Forecast



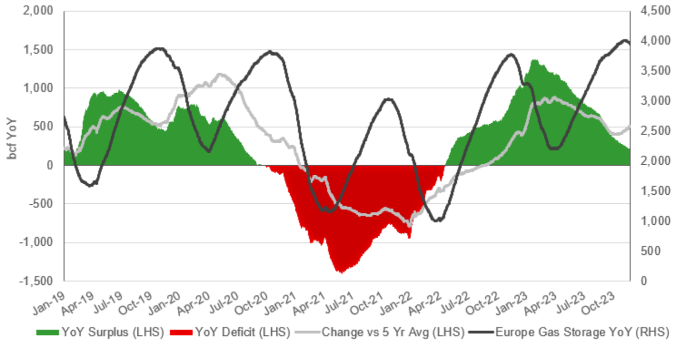
Source: ECMWF

Natural Gas: Europe storage still at 94.79% full to start Dec

Europe gas storage

The colder than normal temperatures in most of Europe has finally led to some draws in EU gas storage. 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%, it looks like Europe has begun to draw on its gas storage. This week, Europe storage decreased by -2.90% WoW to 94.79% on Dec 1 vs 97.92% on Nov 24. Storage is now +2.47% greater than last year's levels of 92.32% on Dec 1, 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 19: European Gas Storage Level



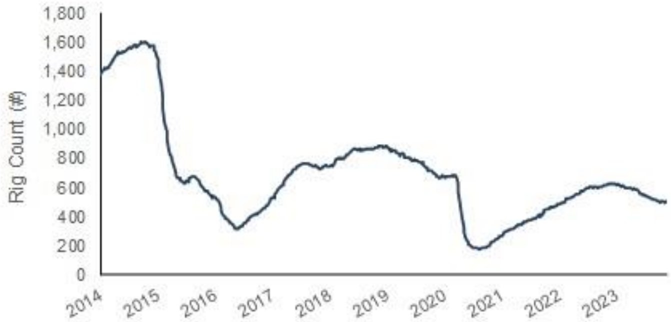
Source: Bloomberg, SAF

Oil: US oil rigs +5 WoW to 505 rigs, US gas rigs up -1 rigs WoW at 116 rigs

US oil rigs up WoW

There was a surprise increase this week to Baker Hughes oil rigs given US rigs normally peak just before US Thanksgiving and then decline thru Xmas. On Friday, Baker Hughes released its weekly North American drilling rig data. Note the WoW comparison is to Wed Nov 22, the day before US Thanksgiving. (i) Total US oil rigs were +5 WoW to 505 oil rigs at Dec 1. We would expect this is likely the peak week until after Xmas. We haven't seen any particular story line for why US oil rigs are increasing after Thanksgiving and WTI oil prices aren't high enough to drive any change in drilling activity. US oil rigs went below 520 rigs on Aug 25 and stayed there for 4 weeks and for the last 13 weeks have been between 494 and 507 oil rigs. (ii) US oil rigs were +5 WoW to 505 rigs. The WoW oil rigs changes were Cana Woodford +3 to 18 oi rigs, Permian +3 to 310 oil rigs and Other -1 to 75 oil rigs. (iii) The Permian is at 310 oil rigs, which is above the recent Oct 6 low of 302 oil rigs that was the lowest since Feb 2022. (iv) Gas rigs were up -1 rigs WoW to 116, and are now down -39 gas rigs YoY. For WoW changes Others were -2 WoW to 30 gas rigs and Marcellus was +1 WoW to 28 gas rigs. Below is our graph of total US oil rigs.

Figure 20: Baker Hughes Total US Oil Rigs



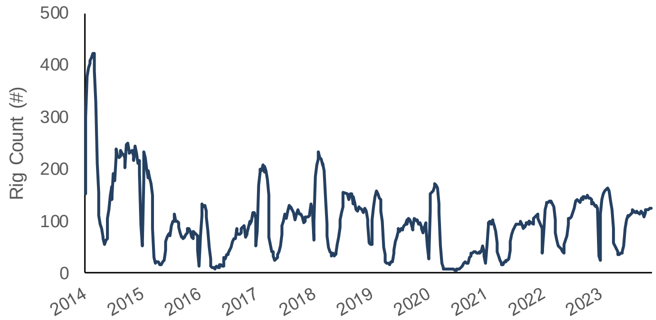
Source: Baker Hughes, SAF

Oil: Total Cdn rigs down -5 rigs to 192 total rigs

Cdn total rigs down WoW

For the week of Dec 1, total Cdn rigs were down -5 WoW to 192 total rigs. Note the WoW comparison is to Wed Nov 22, the day before US Thanksgiving. On a per province basis, Alberta was down -7 rigs WoW to 137 rigs, BC was down -2 rigs and Saskatchewan was +4 WoW to 30 rigs. We were a little surprised by the WoW decrease given Cdn rigs normally increase every week up until just before Christmas. But this year with low AECO, we could see Cdn gas rigs drifting lower instead of increasing to Christmas. dn oil rigs were down -2 to 122 oil rigs are down -6 oil rigs YoY. Cdn gas rigs were down -3 WoW to 70 gas rigs, which is +3 YoY .

Figure 21: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes, SAF

Oil: US weekly oil production estimates flat WoW at 13.200 mmb/d

US oil production flat WoW

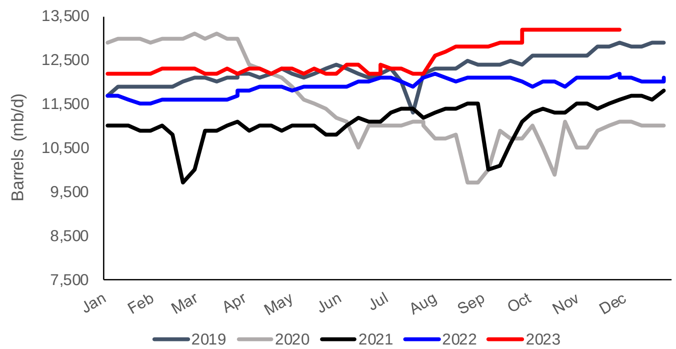
In mid-Oct, there was a second big adjustment to the EIA's weekly oil production estimates. The first was in August, when our Aug 13, 2023 Energy Tidbits memo highlighted the EIA increased their weekly US oil production estimates by +0.4 mmb/d. Our Oct 15th Energy Tidbits memo highlighted the EIA's second big, another +0.4 mmb/d, adjustment to the weekly production estimates. Last month, the EIA wrote *"Crude Oil Production Re-benchmarking Notice: When we release the Short Term Energy Outlook (STEO) each month,* *the weekly estimates of domestic crude production reported in the Petroleum Supply Monthly (PSM) and other current data. If we find a large difference between the two series, we may re-benchmark the weekly production estimate on weeks when we release STEO. This week's domestic crude oil production estimate incorporates a re-benchmarking that increased estimated volumes by 370,000 barrels per day, which is about 2.8% of this week's estimated production total*." This 2nd EIA adjustment was needed to bring the weekly production estimates in line with the EIA's actuals. And as noted in the Form 914 item below, the EIA's Oct adjustment basically makes up for the weekly estimates being below the EIA's actuals for Aug. This week, the EIA's production estimates were flat WoW at 13.200 mmb/d for the week ended November 24. Alaska was up +0.024 mmb/d WoW to 0.439 mmb/d. Below is a table of the EIA's weekly oil production estimates.

Figure 22: 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
2022-Jan	01/07	11,700	01/14	11,700	01/21	11,600	01/28	11,500		
2022-Feb	02/04	11,600	02/11	11,600	02/18	11,600	02/25	11,600		
2022-Mar	03/04	11,600	03/11	11,600	03/18	11,600	03/25	11,700		
2022-Apr	04/01	11,800	04/08	11,800	04/15	11,900	04/22	11,900	04/29	11,900
2022-May	05/06	11,800	05/13	11,900	05/20	11,900	05/27	11,900		
2022-Jun	06/03	11,900	06/10	12,000	06/17	12,000	06/24	12,100		
2022-Jul	07/01	12,100	07/08	12,000	07/15	11,900	07/22	12,100	07/29	12,100
2022-Aug	08/05	12,200	08/12	12,100	08/19	12,000	08/26	12,100		
2022-Sep	09/02	12,100	09/09	12,100	09/16	12,100	09/23	12,000	09/30	12,000
2022-Oct	10/07	11,900	10/14	12,000	10/21	12,000	10/28	11,900		
2022-Nov	11/04	12,100	11/11	12,100	11/18	12,100	11/25	12,100		
2022-Dec	12/02	12,200	12/09	12,100	12/16	12,100	12/23	12,000	12/30	12,100
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		

Source: EIA

Figure 23: EIA's Estimated Weekly US Oil Production



Source: EIA, SAF

Oil: EIA Form 914 – US September oil actuals +0.911 mmb/d YoY

EIA Form 914 September

On Thursday, the EIA released its Form 914 data [LINK], which is the EIA's "actuals" for September US oil and natural gas production. As noted in previous memos, over the past few months the EIA has had to make adjustments to their estimates to bring it in line with actuals.

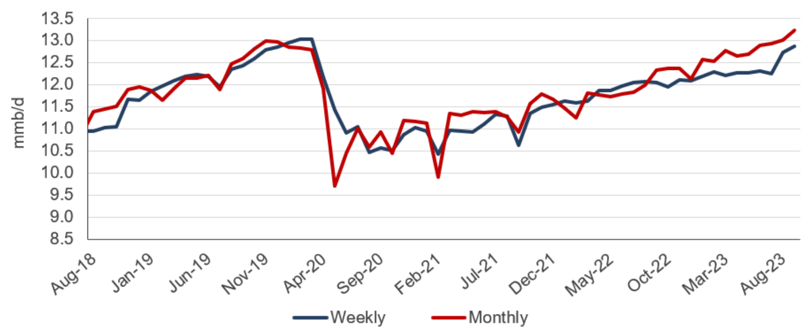
Last month's Form 914 had a +370,000 b/d adjustment to the August weekly estimates because of the Form 914 actuals reported 13.053 mmb/d (which is +328,000 b/d vs the EIA weekly estimates of 12.275 mmb/d). The August actuals were revised down -0.041 mmb/d to 13.012 mmb/d in the most recent Form 914, which further narrows the gap. The reason why we highlighted for months the shortfall in the EIA weekly oil production estimates vs the EIA monthly actuals is that they understated the strong YoY growth in US oil production, which is >1 mmb/d YoY. The EIA made its first +0.4 mmb/d increase adjustment to the Aug 4 week as a catch up, and then its second +370,000 b/d to the Oct 6 week as a second catch up. The Form 914 actuals for September have production at 13.236 mmb/d, which is +356,000 b/d vs the EIA weekly estimates of 12.880 mmb/d. And because of this significant difference, the Form 914 August production is +0.911 mmb/d YoY. The actuals thru September paint a picture of much stronger than expected YoY growth in US oil production.

Figure 24: EIA Form 914 US Oil Production (thousands b/d)

(thousands b/d)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2023	12,568	12,532	12,770	12,650	12,694	12,894	12,925	13,012	13,236			
2022	11,480	11,258	11,806	11,770	11,734	11,800	11,834	11,985	12,325	12,378	12,376	12,138
2021	11,137	9,916	11,351	11,318	11,390	11,366	11,392	11,276	10,921	11,564	11,782	11,678
2020	12,850	12,844	12,795	11,911	9,714	10,446	11,004	10,579	10,926	10,456	11,196	11,172
2019	11,871	11,652	11,911	12,145	12,153	12,216	11,896	12,479	12,584	12,805	13,000	12,980
2018	10,000	10,262	10,466	10,499	10,434	10,640	10,896	11,391	11,443	11,508	11,885	11,944
2017	8,874	9,094	9,164	9,101	9,185	9,110	9,246	9,250	9,516	9,668	10,085	9,983

Source: EIA

Figure 25: EIA Form 914 US Oil Production vs Weekly Estimates



Source: EIA, SAF

Oil: Charlie Munger's recent zinger throwing shade on shale wells

Buffett & Munger throw shade on shale

As everyone knows, Berkshire Hathaway's Charlie Munger passed away this week at the age of 99 years. We have included Warren Buffett and Charlie Munger comments for decades in our Energy Tidbits memo. One of Munger's classic lines was recently on shale wells. On Tuesday, we tweeted [LINK] *"How can you not love #CharlieMunger shale #Oil zinger even though $OXY is a big position. "it really dies fast, those shale wells. if you like quick death in your wells, we have them for you". See 👇05/09/23 SAF Group transcript. He will be missed!*

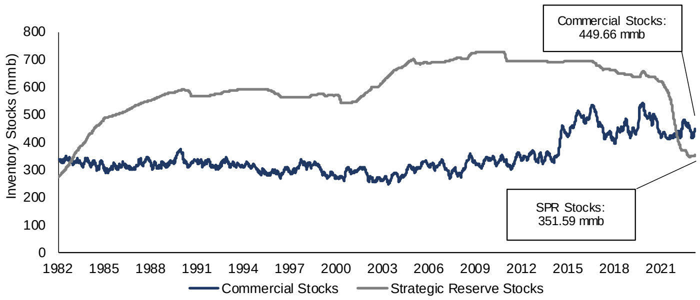
#OOTT." Here is what we wrote in our May 14, 2023 Energy Tidbits memo on Munger's zinger on shale. *Did Warren Buffett & Charlie Munger mean to throw so much shade on shale? We were surprised by the Warren Buffett and Charlie Munger negative comments on shale considering their large position in Permian producer Occidental Petroleum at the Berkshire Hathaway annual meeting last Saturday. They were very negative on the high decline rate of shale and how tough the high decline rate makes it for US shale. We have to believe that, other than a blind Buffett follower, many listeners would have turned negative on shale after listening to Buffett and Munger. The other thing is that its Buffett so it typically means that, in this forum, the answers aren't short. So there wasn't' much doubt on their concern on high decline raes for shale. On Tuesday, we tweeted [LINK] "Is this what #WarrenBuffett & #CharlieMunger wanted? Reason to not like #Shale? Huge initial production but 1 1/2 yrs, "it becomes practically nothing. "it really dies fast, those shale wells, if you like quick death in your wells, we have them for you", "it's not a long-term source" .#OPEC loves it. Doubt about shale oil growth potential is a positive for #Oil in 2020s. See 👇SAF transcript." Here are a couple excerpts from the transcript we made of the Buffett and Munger comments on shale. Buffett "Well, in the Permian, this should sink in on you, in the first day, the first day when you bring in a well, it may be 12,000 barrels, it may be 15,000 barrels. It's dangerous. Occidental had one come in at 19,000 barrels or something like that. One day. And in a year, a year and a half, it becomes practically nothing. It's a different business." Munger "Yeah, it really dies fast, those shale wells. If you like quick death in your oil wells, we have them for you". Our Supplemental Documents package includes the transcript we made of the Buffett and Munger comments."*

Oil: US SPR reserves now -98.077 mmb lower than commercial crude oil reserves

US SPR reserves

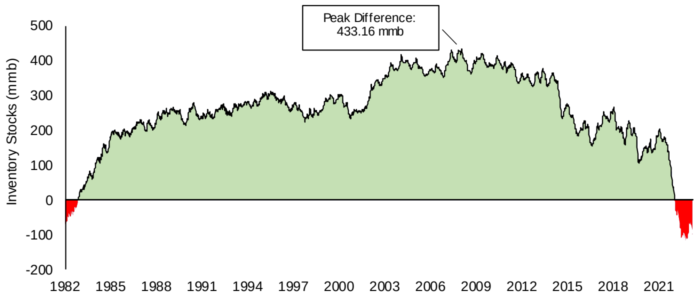
Oil in the US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sept 16, 2022 week. This deficit widened this week after a build in commercial oil stocks of +1.610 mmb. The EIA's weekly oil data for November 24 [LINK] saw the SPR reserves build +0.313 mmb/d WoW at 351.587 mmb, while commercial crude oil reserves increased +1.610 mmb to 449.664 mmb. There is now a -98.077 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles.

Figure 26: US Oil Inventories: Commercial & SPR



Source: EIA, SAF

Figure 27: US Oil Inventories: SPR Less Commercial



Source: EIA, SAF

US gasoline prices

Oil: US gasoline prices -$0.01 this week to $3.25
US gasoline prices were only down $0.01 this week to $3.25. Yesterday, AAA reported that US national average prices were down $0.01 this week to $3.25 on Dec 2, which is also down $0.20 MoM and down $0.20 YoY vs year ago of $3.45. Remember US gasoline prices started to ease below $4 in August 2022 and were helped in Q4 by the SPR releases.

California gasoline prices down big after Newsom allowed move to winter gas
The big reason for the drop in US gasoline prices over the past two months was the expected big drop in California gasoline prices following the surprise late Sept Gov Newsom move to then immediately switch to cheaper winter blend gasoline. That plus lower oil prices has meant a big cut in California gas prices. Yesterday, AAA reported California average gasoline prices were down $0.09 WoW to $4.82 and now down $0.39 MoM and $0.05 YoY. The starting point for the move down in California gas prices was Gov Newsom allowing an early switch to winter blend fuels. On Sept 28, California gas prices hit $6.03 so prices are now down $21l since Sept 28. 6 Here is what we wrote in our Oct 1, 2023 Energy Tidbits memo. "*California gasoline prices to drop as Newsom allows move to winter gas. We expect California gasoline prices to be down this week given Gov Newsom, on Thursday night, has moved an immediate switch to cheaper winter blend fuels. The San Diego Tribune reported [LINK] "In an attempt to curb a recent spike in gasoline prices, Gov. Gavin Newsom late Thursday instructed California regulators to speed the delivery of less expensive winter-blended gas to stations across the state. Winter-blended gas is about 20 to 25 cents per gallon cheaper than summer-blended gas and fuel analysts expect the waiver put in place by the California Air Resources Board at Newsom's behest will lead to a dip in prices within a few days. "This waiver will affect wholesale gas prices probably on Friday," said Patrick De Haan, head of petroleum analysis at GasBuddy, a tech company that helps drivers across the country find the cheapest places to buy gas. "But there's only one day left in the trading week. That may segue into another drop on Monday and theoretically retailers could be passing that along in lower prices this weekend, but it's not going to be much at first."*

Oil: Enbridge Line 5 tunnel gets Michigan agency approval, waiting on US Army Corps

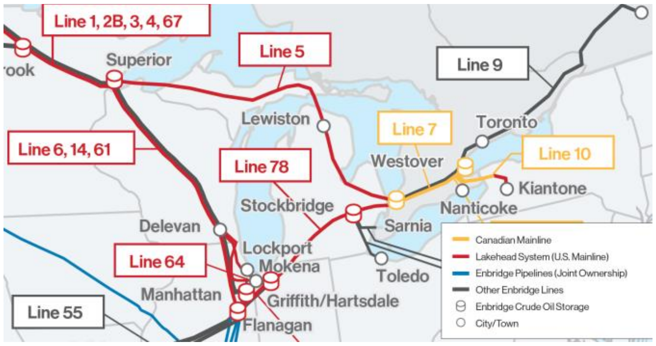
Enbridge Line 5 tunnel

Earlier this morning, we tweeted [LINK] *"Enbridge Line 5 moves 1 step closer.Michigan Public Service Commission okay's ENB's tunnel for Line 5. US Army Corps of Engineers review not expected until late 2025. MI Gov Whitmer reviewing. Thx @DNBethLeBlanc! #OOTT".* Line 5 is in full operations but this is long proposed tunnel project under the Straits of Mackinac to protect the pipeline from potential accident. Michigan Gov Whitmer has for years fought to stop this tunnel project and to force Enbridge to cease operations on Line 5 So it has taken years longer to get all final approvals. And now thy are moving one step closer with, at this time, the only remaining large approval/review being US Army Corps of Engineers. The Detroil News reminded the US Army Corps review is not expected before late 2025. The Detroit News reported "*The Michigan Public Service Commission ruled Friday that the relocation of Enbridge Energy's Line 5 oil pipeline from the lakebed of the Straits of Mackinac to a yet-to-be-constructed tunnel beneath the lakebed is the "best option" to improve safety while still securing the "public need" for fossil fuels.*" We have not seen any specific comment from Gov Whitmer but Detroit News wrote "*Whitmer's office said Friday it was reviewing the decision from the "independent" Michigan Public Service Commission and noted there are still pending federal lawsuits over the pipeline's operation and federal approvals Enbridge must obtain for its project. "Our goal has always been to get the dual pipelines out of the water as quickly as possible while also working to secure our energy independence and lower the cost of energy for Michiganders," Whitmer spokeswoman Stacey LaRouche said."* Our Supplemental Documents package includes the Detroit News report. [LINK]

Reminder, Enbridge Line 5 supplies 55% of Michigan propane needs

This item has showed up several times in our Energy Tidbits memos and it's a reminder that Enbridge Line 5 is critical to Michigan propane needs. Fortunately, as noted earlier in the memo, NOAA is calling for a warmer than normal Dec in Michigan. We first noted this in a June 19, 2020 tweet [LINK] started "*A weekend must read, Enbridge "impact of a Line 5 shutdown" is excellent recap of who, where, what gets hit by Line 5 shut down*." It includes tidbits such as "*Line 5 supplies 65% of propane demand in Michigan's Upper Peninsula, and 55% of Michigan's statewide propane needs*." There would also be a big impact on refineries to the east "*Refineries served by Enbridge in Michigan, Ohio, Pennsylvania, Ontario and Quebec would receive approximately 45% less crude from Enbridge than their current demand."* There was a good map that shows how Line 5 fits into other Enbridge pipelines delivering oil to places like Imperial's Sarnia and Nanticoke refineries in Ontario. [LINK]

Figure 28: Enbridge Line 5 Liquids Pipeline



Source: Enbridge

Oil: Crack spreads decreased $0.86 WoW to $22.50

Crack spreads down 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. This week, crack spreads were -$0.6 WoW to close at $22.50 on Dec 1, which followed $23.36 on Nov 24, $23.95 on Nov 17, $22.39 on Nov 10, $21.65 on Nov 3, and $20.47 on Oct 27. Crack spreads at $22.50 are a little above the high end of the more normal pre-Covid that was more like $15-$20, but not high enough to drive any real change in refiner plans.

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 $22.50 as of the Friday Dec 1, 2023 close.

Figure 29: Cushing Crude Oil 321 Crack Spread Nov 24, 2013 to Nov 24, 2023

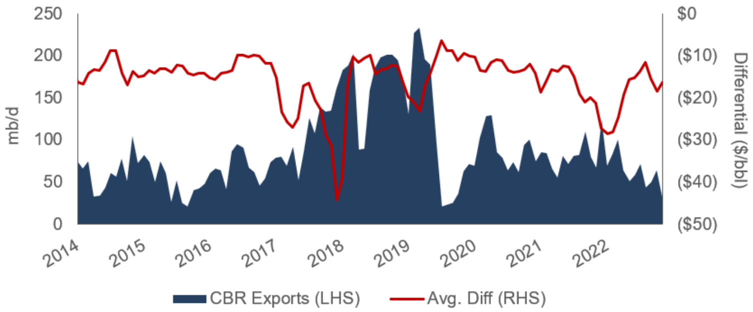
Source: Bloomberg

Oil: EIA estimates total Cdn crude by rail imports down MoM to 41,833 b/d in Sept

EIA Cdn crude by rail imports

Here is what we wrote in our Nov 5 memo: "*Last month, we reached out to the EIA to ask if they could shed some light on why there might be such a large difference to the CER numbers but they did not respond to our question. Last month, there was a 75,000 b/d difference in what the CER estimated as Cdn crude by rail exports to US in July vs what the EIA estimates as Cdn crude by rail imports from Canada. This month, there is 92,000 b/d difference in what the CER estimates as Cdn crude by rail exports to US in Aug vs what the EIA estimate for crude by rail imports from Canada. We have checked to see if somehow the crude by rail went into the US and was turned around and sent back to Canada via truck, rail or pipeline. But the EIA shows zero crude by rail exports Plus we checked the North Dakota Pipeline Authority monthly report as North Dakota will truck oil into Canada and the NDPA showed zero such volumes in July and small amounts in Aug. Our only explanation was that the higher amount of Cdn crude by rail exports to the US is railed to the GoM and directly put on tankers for export from the GoM. That way they wouldn't be included in the EIA's ~30,000 b/d of crude oil by rail imports into PADD 3 in July or the ~47,000 b/d into PADD 3 in Aug*". This week, we only had the EIA rail information so we aren't able to compare the numbers against the CER data, but we will see if this difference is still showing when it comes out, most likely next week. For now, on Friday, the EIA posted its monthly "U.S. Movements of Crude Oil by Rail" [LINK], which includes the EIA data on US imports of Cdn crude by rail. EIA estimates total US imports of Cdn crude by rail was 41,833 b/d in September, which was down -31,715 b/d MoM from 73,548 b/d in August. We noticed that the August numbers were revised upwards by almost 17,000 b/d, which narrows the gap in the difference but not by a lot. US imports of Cdn crude by rail into PADD 3 (Gulf Coast) were 32,800 b/d in September which is down -31,232 b/d MoM from 64,032 in August. The EIA did not comment on the MoM changes. Below is our graph of Cdn CBR exports to the Gulf Coast and WCS differential over time.

Figure 30: Canada CBR Exports to US Gulf Coast vs WCS Differential



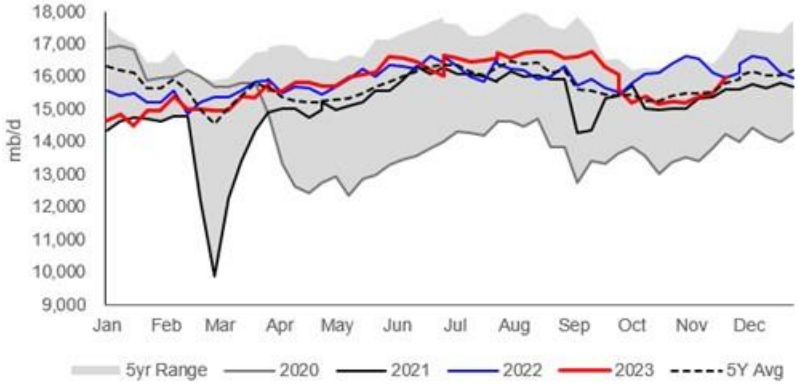
Source: EIA, Bloomberg

Oil: Refinery inputs up +0.518 mmb/d WoW to 16.022 mmb/d

Refinery inputs +0.518 mmb/d WoW

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, but it looks like US refineries have mostly come out of turnarounds so we have been seeing a steady increase in crude inputs, including this week's +0.518 mmb/d add. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended November 24 [LINK]. The EIA reported crude inputs to refineries were up +0.518 mmb/d this week to 16.022 mmb/d and are down -0.616 mmb/d YoY. Refinery utilization was up +2.8% WoW to 89.8%, which is -5.4% YoY. We likely hit the seasonal peak in refining in September.

Figure 31: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil: US net oil imports -0.665 mmb/d WoW as oil imports down -0.696 mmb/d WoW

US net oil imports

The EIA reported US "NET" imports were down -0.665 mmb/d to 1.078 mmb/d for the November 24 week. US imports were down -0.696 mmb/d to 5.833 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 decrease in US imports was driven mostly by "Top 10". Top 10 was up +0.473 mmb/d. Some items to note on the country data: (i) Canada was up +0.011 mmb/d to 3.846 mmb/d. (ii) Saudi Arabia was down -0.018 mmb/d to 0.224 mmb/d. (iii) Mexico was up +0.605 mmb/d to 0.971 mmb/d. (iv) Colombia was down -0.099 mmb/d to 0.217 mmb/d. (v) Iraq was down -0.247 mmb/d to 0.036 mmb/d. (vi) Ecuador was up +0.090 mmb/d to 0.126 mmb/d. (vii) Nigeria was up +0.009 mmb/d to 0.079 mmb/d.

Figure 32: US Weekly Preliminary Imports by Major Country

(thousand b/d)	Aug 25/23	Sep 1/23	Sep 8/23	Sep 15/23	Sep 22/23	Sep 29/23	Oct 6/23	Oct 13/23	Oct 20/23	Oct 27/23	Nov 3/23	Nov 10/23	Nov 17/23	Nov 24/23	WoW
Canada	3,405	3,679	3,645	3,287	3,880	3,291	3,544	3,723	3,387	3,485	3,873	3,835	3,846	3,243	-603
Saudi Arabia	462	567	383	383	383	291	67	208	436	294	192	242	224	141	-83
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	437	699	1,095	603	844	524	656	609	614	1,004	465	366	971	571	-400
Colombia	295	300	211	287	286	143	289	150	146	74	364	316	217	143	-74
Iraq	232	100	248	233	280	306	247	127	182	351	187	283	36	178	142
Ecuador	328	99	0	134	167	125	0	0	92	133	61	36	126	112	-14
Nigeria	144	220	219	0	3	0	46	48	89	30	39	70	79	174	95
Brazil	245	68	545	209	240	209	362	63	221	168	234	135	257	148	-109
Libya	0	90	0	0	0	89	88	47	86	106	0	86	86	0	-86
Top 10	5,548	5,822	6,346	5,136	6,083	4,978	5,299	4,975	5,253	5,645	5,415	5,369	5,842	4,710	-1,132
Others	1,069	948	1,236	1,381	1,146	1,237	1,030	967	760	780	979	1,004	687	1,123	436
Total US	6,617	6,770	7,582	6,517	7,229	6,215	6,329	5,942	6,013	6,425	6,394	6,373	6,529	5,833	-696

Source: EIA, SAF

Pemex refinery utilization rates

Oil: Mexico Pemex refineries run at 37.4% in Oct, lowest utilization since Nov 2020

We have been highlighting how the delay in the start up of the new 340,000 b/d Dos Bocas refinery has been why Mexico oil exports have not declined in 2023. That is true, but that is only part of it. The other part is that Pemex's existing refineries are running less crude oil. And if Pemex is running less crude, it frees up more oil for export. *On Monday, Bloomberg reported "Pemex's refineries ran at 37.4% capacity in October, the lowest utilization rate since Nov. 2020 as the Madero and Salina Cruz plants curtailed rates, according to company data compiled by Bloomberg. * Utilization rate fell from 47.2% in September * Refineries have been operating below the 50% mark since May, when half of the company's plants were hit by fires; prior to that, they were operating at 56.2% of capacity ** NOTE: Mexico's six refineries have capacity to process 1.627mb/d of crude, according to Pemex * The Madero refinery, a processor of heavy crude Maya, operated at less than 5% of capacity; drop in domestic oil processing freed up more barrels for the export market."* Our Supplemental Documents package includes the Bloomberg report.

Figure 33: Pemex refineries, excl Dos Bocas, refinery data for Oct

Refinery	October (b/d)	m/m	y/y	Capacity use	NOTE
Cadereyta	120,963	29%	4.1%	44.0%	4-month high
Madero	6,104	-91%	-94%	3.2%	Lowest since June 2021
Tula	148,805	-30%	-37%	47.2%	4-month low
Salamanca	97,501	-9.0%	-1.6%	44.3%	
Minatitlan	92,458	50%	11%	32.4%	
Salina Cruz	142,412	-37%	-17%	43.2%	Lowest since June 2022
Dos Bocas	not available				
Total	608,243	-21%	-25%	37.4%	Lowest since Nov. 2020

Source: Bloomberg

Dos Bocas refinery gasoline production reported delayed again for two months

Here is what we wrote in last week's (Nov 26, 2023) Energy Tidbits memo. "*As noted above, Mexico hasn't been reducing oil exports in 2023 as expected and this is due to the delayed startup in the new 340,000 b/d Dos Bocas refinery. As soon as Dos Bocas cranks up oi processing, it will be reducing Mexico oil exports. It was supposed to ramp up in November, but that looks to be pushed back to Jan. On Tuesday, Bloomberg reported [LINK] "The Dos Bocas refinery will produce commercial gasoline in January 2024, an executive at Petróleos Mexicanos, a state-owned company known as Pemex, told Bloomberg Línea, a date that exceeds the deadline promised by Mexican President Andrés Manuel López Obrador. Héctor Ruíz, director of projects for gas, petrochemical and refining processes at Pemex, said that the final price of the Dos Bocas refinery will not be Pemex's project director for gas, petrochemical and refining processes, Héctor Gustavo Ruíz Monjaraz, explained in an interview that the real risk conditions of the project have required more time than planned, but the start-up process of Pemex's seventh refinery is going "well." "We're going to do diesel in a jiffy, and gasoline in the first few weeks of next year, there's going to be white smoke and everybody's going to be very happy," he said. AMLO, as the president is known, assured that commercial production of gasoline and diesel in Dos Bocas would begin "at the latest" in November 2023, after multiple breaches in the start date, originally scheduled for July 1, 2022, when the refinery was inaugurated." Our Supplemental Documents package includes the Bloomberg report."*

Mexico exports 1.053 mmb/d of oil in October, -5.90% MoM

Here is another items from last week's (Nov 26, 2023) Energy Tidbits memo. "*On Friday, Pemex posted its oil exports for October. [LINK] Pemex does not provide any commentary on the data but reported October oil exports were 1. 053 mmb/d, which was +8.4% YoY and -5.90% MoM vs 1.119 mmb/d in September. Pemex oil exports were down -0.066 mmb/d MoM overall but its exports to the US was only down slightly in October at 0.757 mmb/d vs 0.771 mmb/d in August. 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 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 it sounds like there are still delays in the ramp up ie. why oil exports haven't really gone down. Below is our table of the Pemex oil export data."*

Figure 34: Pemex Mexico Oil Exports

Oil Exports (thousand b/d)	2016	2017	2018	2019	2020	2021	2022	2023	23/22
Jan	1,119	1,085	1,107	1,071	1,260	979	832	980	17.8%
Feb	1,241	1,217	1,451	1,475	1,093	1,006	925	949	2.6%
Mar	1,062	1,001	1,176	1,150	1,144	925	905	971	7.3%
Apr	1,081	1,017	1,266	1,023	1,179	923	1,024	989	-3.4%
May	1,204	958	1,222	1,205	1,062	1,031	965	1,087	12.6%
June	1,098	1,157	1,110	995	1,114	1,106	1,029	1,203	16.9%
July	1,146	1,255	1,156	1,079	1,051	1,173	1,062	1,052	-0.9%
Aug	1,261	1,114	1,181	1,082	1,190	1,099	915	1,076	17.6%
Sept	1,425	1,159	1,206	995	1,023	983	1,022	1,119	9.5%
Oct	1,312	1,342	1,027	963	908	935	971	1,053	8.4%
Nov	1,273	1,388	1,135	1,114	1,171	1,025	893		
Dec	1,115	1,401	1,198	1,115	1,243	1,037	900		

Source: Pemex, SAF

Oil: Colombia President confirms no new oil, gas, coal exploration agreements

This shouldn't surprise that, yesterday at COP28, Colombia President Petro announced that Colombia would not be issuing any new exploration permits for oil, natural gas and coal. He has backed down from his presidential campaign promise and is still going to have Colombia work its existing agreements instead of pushing for an immediate riddance of oil and gas. Rather he sees the existing agreements providing oil and natural gas. Last night, the office of the President Petro tweeted [LINK] *"The President @petrogustavo presented a visionary climate investment portfolio for 34 billion dollars in #COP28 . There he reiterated that "Colombia has decided not to sign more coal, oil and gas exploration contracts. "It does not mean that we will be left without oil or coal, since there is already* coal, oil and gas in exploitation and there are exploration contracts signed before in force." "

Colombia says no new oil and gas agreements

Oil: Venezuelans vote today on offshore oil and gas border dispute with Guyana

Today, Venezuela President Maduro is expected to get an overwhelming vote for its fight against Guyana on offshore oil and gas rights. Venezuela has been making its case that Guyana has wrongly claimed offshore oil and gas rights. Bloomberg wrote "*On Sunday, Venezuelans are voting on five referendum questions over whether this region should be ruled from Caracas. These include, "Do you agree in opposing, by all legal means, Guyana's pretension to use unilaterally a sea whose borders haven't been defined, illegally and in violation of international law?"* Maduro's opposition shares Maduro's position, which is why there should be a huge vote for the question. Bloomberg also wrote "*In September, Guyana's government provoked Maduro's rage by saying it would award new oil blocks by the end of the year. The Maduro government said some of those blocks are on waters that have not been delimited, or belong to Venezuela. "The referendum is a nationalist political response expressed at a time of weakness for the Maduro government," said Rocío San Miguel, Venezuela-based president of watchdog group Control Ciudadano. Guyana's government has called for the referendum to be canceled. Machado also opposed the vote, saying that it was a distraction and a mistake."* Our Supplemental Documents package includes the Bloomberg report.

Venezuela's border dispute with Guyana

Figure 35: Venezuela/Guyana border dispute

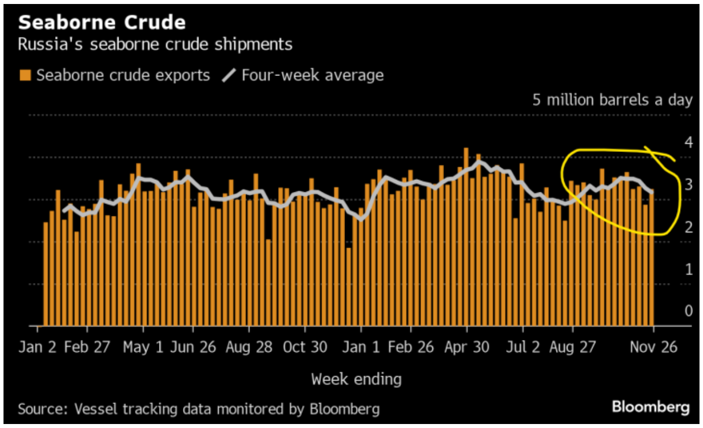
Source: Bloomberg

Russia oil shipments less than commitment

Oil: Russia crude oil shipments up despite Russian refineries runs up

On Tuesday, we tweeted [LINK] "*RUS #Oil shipments +370 kbd to 3.24 mmbd in Nov 19-26 wk yet RUS oil refineries processed +100 kbd in Nov 16-22 wk. Not exact match but normally refineries crude up = oil exports down. But 4-wk down to 3.16 mmbd, below RUS commitment 3.28 mm/d. Thx @JLeeEnergy @ja_herron #OOTT.*" There was a bit of a surprise with Bloomberg's weekly Russian oil shipments this week as shipments were +370,000 b/d WoW to 3.24 mmb/d for Nov 19-26 week. We would have expected Russia oil shipments to be flat or down small given Russia oil refineries process 100,000 b/d more in the Nov 16-22 week. The periods are not a layover but the concept has been holding that refineries process more crude lead to less oil for export. But Bloomberg noted that they revised up the prior week from originally reported ~2.7 mmb/d when they said Russia shipments were down 580,000 b/d to ~2.7 mmb/d for the Nov 12-19 week. This week's report revised the Nov 12-19 week from original reported ~2.7 mmb/d 2.87 mmb/d. Even still there was a big increase when the refinery runs would have point to flat to small decrease in oil shipments. So there may be other items at work. Bloomberg wrote "*About 3.24 million barrels a day of crude was shipped from Russian ports in the week to Nov. 26, tanker-tracking data monitored by Bloomberg show. That was up by 370,000 barrels a day from the revised figure for the period to Nov. 19, even though tanker loading in the Black Sea was disrupted by storms. Four-week average flows slipped." "Moscow said in early August that it would prolong export restrictions at a reduced rate of 300,000 barrels a day below their May-June average level until the end of the year, a policy confirmed earlier this month. If the burden falls entirely on crude, that would imply seaborne shipments of 3.28 million barrels a day." "The less volatile four-week average flow fell for a third week, as the last week of October's export surge dropped out of the calculation. Using this measure, shipments dropped to 3.16 million barrels a day, down by about 100,000 barrels a day from the revised* *figure for the period to Nov. 19. That was the lowest in 12 weeks, but still about 270,000 barrels a day above shipments in the period to Aug. 20, when Moscow's crude export cuts were at their deepest.* Our Supplemental Documents package includes the Bloomberg report.

Figure 36: Russia's seaborne crude shipments thru Nov 26 week

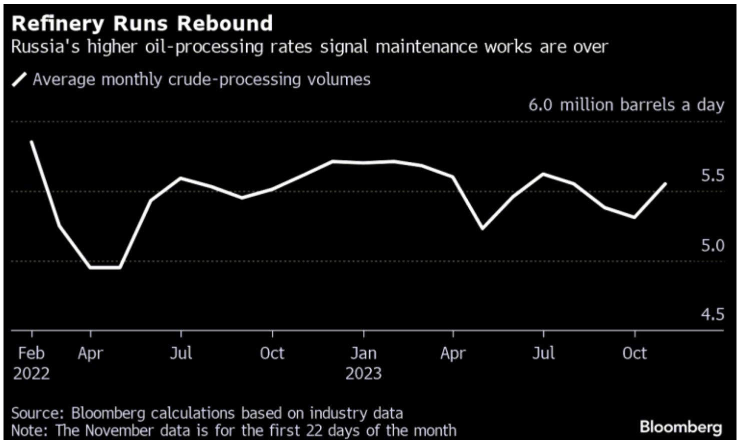


Source: Bloomberg

Russia refineries processed more oil but exports were up a bit

The Russia oil exports came out a day after Bloomberg reported on Russia oil refinery crude and we noted that the data are for slightly different periods. The oil shipments data is for Nov 19-26 whereas the oil refinery data is for Nov 16-22 period. On Monday, we tweeted [LINK] "*More oil processed by Russian oil refineries = Russian #Oil shipments should be down again. Russian refineries processed 5.65 mmb/d in Nov 16-22, over 100,000 b/d more vs prior week. Nov to date is 5.55 mmb/d, +236,000 b/d vs most of Oct. Thx @ja_herron #OOTT.*" Russian oil refineries have come out of fall maintenance so are processing more crude oil. Bloomberg wrote "*The country processed 5.65 million barrels a day in the Nov. 16-22 period, more than 100,000 barrels a day above the previous week, according to a person with knowledge of the matter. Refining totaled 5.55 million barrels a day in the first 22 days of November, up about 236,000 barrels compared with most of October, Bloomberg calculations based on historic data show. Russia's refineries are churning through crude as the government lifted temporary restrictions on exports of gasoline and summer-grade diesel, giving them more incentive to produce the road fuels. Refining runs have also been boosted after seasonal maintenance was completed ahead of winter".* Our Supplemental Documents package includes the Bloomberg Russian refinery report.

Figure 37: Russia refinery crude oil processing volumes



Source: Bloomberg

Oil: OPEC+ 2.196 mmb/d voluntary cuts held oil basically flat

Other OPEC members make voluntary cuts

The delayed OPEC+ meeting to Nov 30 did deliver a better than minimum expectations deal and they were able to hold oil flat. (i) We tweeted numerous times on Thursday morning with our last tweet being [LINK] "*Here is final #OPEC+ cuts post 2nd OPEC release. Final 2.196 mmb/d so +896,000 b/d over prior voluntary Saudi/Russia cuts. See 👇SAF Group table Thx @Amena__Bakr @HermsTheWord @staunovo #OOTT.*" (ii) Recall the meeting was supposed to held last Sunday but was delayed to Nov 30 with the rumors were not being able to get Angola and Nigeria onside, which turned out to be true with respect to Angola. (iii) But they were able to get to a deal on Nov 30, which included an extension of the Saudi 1 mmb/d voluntary production cut to March 31, 2024, six other countries making voluntary production cuts (Algeria, Iraq, Kazakhstan, Kuwait, Oman and UAE) to March 31, 2024, and Russia increasing their export cuts from 300,000 b/d of oil to 300,000 b/d of oil and 200,000 b/d of fuel oil to March 31, 2024. Our tweet included the below table we created that included the official OPEC numbers. (iv) OPEC was criticized for its initial release that provided no mention of the voluntary cuts, either the Saudi and Russian current voluntary cuts or the new voluntary cuts. So we, like others, were looking for country releases/reporting. Later, OPEC came out with a second release that listed the voluntary cuts by member. (v) One of the negatives ws that UAE has made a voluntary cut of 163,000 b/d but, recall they had a previously approved increase for 2024 by 200,000 b/d so it is an effective 37,000 b/d increase vs current production quota. (vi) The other negative is that Angola looks like it never agreed. We have not seen any official Angola statement but Bloomberg reported "*We will produce above the quota determined by OPEC," Angola's OPEC governor Estevao Pedro said in an interview on Thursday. "It is not a matter of disobeying OPEC; we presented our position, and OPEC should take it into consideration." Angola, Africa's second-largest crude producer, will pump 1.18 million barrels a day from January, above the 1.11 million quota set out in the OPEC agreement on Thursday."* (vii) OPEC also announced that Brazil joined the OPEC+ agreement starting in 2024. (vii) The other overall negative market reaction is that these are "voluntary" cuts and not firm cuts. Our Supplemental Documents package includes the two OPEC releases.

Figure 38: OPEC+ Voluntary Cuts from Nov 30, 2023 Meeting

OPEC+ cuts to production and exports post 11/30 meeting			
Updated 11:30am MT post OPEC Secretariat release			
Production Cuts	Before 11/30 meetiung	Added at 11/30 meeting	increased cut thru q1/24
	b/d	b/d	b/d
Algeria	0	51,000	51,000
Iraq	0	223,000	223,000
Kazakhstan	0	82,000	82,000
Kuwait	0	135,000	135,000
Oman	0	42,000	42,000
Saudi Arabia	1,000,000	1,000,000	0
UAE	0	163,000	163,000
	1,000,000	1,696,000	696,000
Cuts to exports		b/d	b/d
Russia - oil	300,000	300,000	0
Russia - fuel oil	0	200,000	200,000
	300,000	500,000	200,000
Total cuts	1,300,000	2,196,000	896,000
Source: OPEC, Energy Intelligence, Platts, UBS			
Preppared by SAF Group https://safgroup.ca/news-insights/			

Source: OPEC, Energy Intelligence, Platts, UBS, SAF Group

Voluntary cuts thru Q1/24 makes sense given Q1 is seasonally low demand

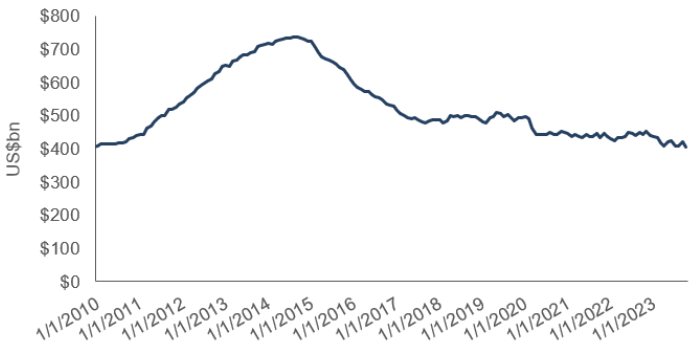
Another criticism of the voluntary cuts is that they were only, at least for now, thru Q1/24. This timing made sense to us for the same reasons why we have been saying for months that Saudi wouldn't stop its voluntary cuts at Dec 31, 2023 – it's because oil demand in Q1 of every year is seasonally QoQ lower than the preceding Q4 and we didn't think Saudi would add back their voluntary 1 mmb/d cut into physical markets in Q1/24 for this reason. On Thursday, we tweeted [LINK] *"Makes sense for same reason why Saudi was expected to continue to keep its 1 mmb/d thru Q1/24 oil demand is always seasonally lower Q1 vs the preceding Q4. before seasonally increasing in Q2 and then the big seasonal ramp up in Q3. Thx @Amena__Bakr for updates #OOTT."* Here is what we wrote in our Nov 12, 2023 Energy Tidbits memo on this demand weakness in Q1/24. "*We still don't expect Saudi to add back oil to physical markets until Q2/24. It was interesting to see more oil market commentators start to move to the potential for Saudi Arabia and Russia to extend their voluntary cuts past Dec 31, 2023. We certainly don't have their global contacts. Rather, our position has been and continues to be that we don't see why Saudi would want to add the voluntary oil barrels back into physical markets in Q1/23 when Q1 oil demand is normally seasonally lower than the preceding Q4. Ie. why would they add barrels into a lower demand period. Here is what we wrote in last week's (Nov 5, 2023) Energy Tidbits before the Saudi and Russia announcements of extending the cuts. "We heard a number of oil watchers comment this week on when will Saudi add back its voluntary 1 mmb/d cuts that, as of now, are only in place until the end of Dec. It seemed like more are moving to the cuts continuing past Dec 31. No one knows, but our view is unchanged – absent a major oil supply interruption, we don't see Saudi Arabia adding back oil to physical markets until Q2/24. Saudi Arabia knows that oil demand is seasonally lower in Q1 each year vs the preceding Q4. And Saudi Arabia knows China oil stocks are high and refinery margins are low. Our latest tweet on this was on Oct 6 [LINK] "Beyond headlines, see paragraph 3 "Still, Saudi negotiators emphasized that market conditions would guide any action on* *production". Hard to see Saudi adding #Oil in early Q1, the seasonally low demand period . But a Q1 decision to add Oil into physical markets in Q2 for seasonal increasing demand could make sense. #OOTT."*

Oil: Saudi nest egg, its net foreign assets were down $13.9b MoM in October

Saudi net foreign assets

On Tuesday, the Saudi Central Bank (SAMA) released its Monthly Statistical Bulletin for the month of October [LINK]. We continue to believe the #1 financial theme for Saudi Arabia in the 2020s will be their continued, and increasing, use of Other People's Money as they try to transition their country to MBS's Vision 2030. We believe this has been obvious with how Saudi Arabia's net foreign assets dropped by 45% or $330.7b over the last nine years. We are surprised that markets and oil watchers didn't seem to pay attention to the Saudi net foreign assets data i.e., what we call their nest egg to help them their push to MBS's Vision 2030. There was a -$13.9b MoM decrease to $406.3b vs $420.2b in September. Saudi net foreign assets at October 31 of $406.3b is a decline of 45% or $330.7b over the last 9 years from its peak of $737.0b on Aug 31, 2014. That is an average of $3.0b per month for the last 110 months since the peak. One factor over the last several years is that Saudi Arabia has been moving more capital to its PIF (Public Investment Fund) but those would generally be into less liquid assets. Saudi Arabia is far from going broke but there has been a huge decline in the last 9 years, but it is still a big nest egg. This net foreign asset depletion is why we have been highlighting that the primary financial theme for Saudi Arabia in the 2020s is getting Other People's Money (OPM) to fund as much of their Vision 2030 as possible. And no question, accessing OPM has helped to slow down and temporarily pause the decline in net foreign assets. Our supplemental documents package includes an excerpt from the SAMA monthly bulletin. Below is our graph of Saudi Arabia net foreign assets updated for the October 31 data.

Figure 39: Saudi Arabia Net Foreign Assets



Source: Bloomberg

Oil: UK: Houthi drone this morning caused potential explosion near Bab el Mandeb

Houthi drone attack this morning

We have a 7am MT news cut off so won't have any updates to the breaking news this morning on a Houthi drone seeming to hit something near the Bab el Mandeb this morning. We don't know what got hit but potential explosion certainly points to something getting hit by a drone. At 6:38am MT this morning, we tweeted [LINK] "*Breaking UKMTO received a report of drone activity "including a potential explosion in the vicinity of the Bab el Mandeb origination from the direction of Yemen". [LINK] See 👇 Suez Canal 101, all tankers/ships go* *thru Red Sea/Bab el Mandeb. #OOTT #Oil."* The United Kingdom Maritime Trade Operations (UKMTO) had just issued an Attack/Hijack/Kidnap incident notice #457 that said "*The UKTMO has received a report of Unscrewed Aerial Systems (UAS) activity including a potential explosion in the vicinity of the Bab el Mandeb originating from the direction of Yemen. Vessels in the vicinity are advised to follow industry guidance on loitering munitions and advised to exercise caution and report any suspicious activity to UKMTO."*

Over 6 mmb/d of oil & products is tankered thru the Bab el-Mandeb

Here is what we wrote in our Aug 1, 2021 Energy Tidbits memo. "*The Bab el-Mandeb is one of the world's most significant chokepoints for moving oil and petroleum products. The EIA Aug 27, 2019 brief "The Bab el-Mandeb Strait is a strategic route for oil and natural gas shipments" reminds "The Bab el-Mandeb Strait is a sea route chokepoint between the Horn of Africa and the Middle East, connecting the Red Sea to the Gulf of Aden and Arabian Sea. Most exports of petroleum and natural gas from the Persian Gulf that transit the Suez Canal or the SUMED Pipeline pass through both the Bab el-Mandeb and the Strait of Hormuz." And the EIA estimates "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. Total petroleum flows through the Bab el-Mandeb Strait accounted for about 9% of total seaborne-traded petroleum (crude oil and refined petroleum products) in 2017. About 3.6 million b/d moved north toward Europe; another 2.6 million b/d flowed in the opposite direction mainly to Asian markets such as Singapore, China, and India". Our Supplemental Documents package includes the EIA brief [LINK].*

Figure 40: Bab el-Mandeb Strait, a world oil chokepoint

Source: EIA

Oil: Israeli air strike on Houthis in Yemen

Israeli jet airstrike on Houthis in Yemen

We are still a little surprised that late Thursday's Israeli airstrike on the Houthis in Yemen didn't get much attention. It was, up until now, the only air strike to date but it is an Israeli jet airstrike. Two things came to our mind after seeing the Time of Israel report. It was the first Israeli airstrike on the Houthis in Yemen. And it meant Israeli jets flew down the Red Sea an disclosed distance to make the air strike. We are assuming they flew down the Red Sea and not over Saudi airspace as we don't think the Saudis would want to be accused of letting Israel use its airspace to attack the Houthis. We tweeted [LINK] "*1st Israel air strike in Yemen at arms depot in Sana'a. Houthis say gas station @TimesofIsrael. Red Sea getting busier, add Israel jets to both US and Israel shooting down Houthi drones. Wonder if Iran can stay on sidelines while another proxy gets hit? #OOTT.*" Our tweet referenced the Times of Israel report that it was an Israeli air strike that hit weapons depot and the Houthis saying it was a gas station. It was inevitable the Israelis would do something as the Houthis have been launching drones and ballistic missiles at Israel. We recognize that most aren't concerned about Red Sea shipping but we have had the Israelis shoot down Houthis drones in the northern part of the Red Sea, US navy having to shot down drones shot at in further south in the Red Sea and now Israeli jets flying somewhere down the Red Sea before launching their missiles at Yemen. Plus the ongoing warning by the Houthis against any Israeli linked ships. We continue to be surprised that there aren't more ships/tankers avoiding the Red Sea and Bab el Mandeb. But, if so, that would mean less ships/tankers thru the Suez Canal. We still believe, at least for now, the Bab El Mandeb and Red Sea is the major risk area for tankers and shipping. But the reality so far is that there is increasing military action in the Red Sea thanks to the Houthis. We say Suez Canal 101 because people overlook that every tanker or cargo ship that goes thru the Suez Canal has to also go thru the Red Sea and Bab el Mandeb. The good news for ships/tankers is that they can take a long way around to avoid the Red Sea and Bab el Mandeb. Our Supplemental Documents package includes the Times of Israel report.

Houthis to include Israeli targets "*that it may not expect on land or at sea*"

It looks like earlier Thursday, Saba, Yemen news, reported that the Houthis leader warned Israel that it would continue to go after Israeli ships in the Red Sea and also land targets. But the Houthis added an expansion to say this could "*include targets that it may not expect on land or at sea.*" Saba wrote [LINK] "*Yemeni Armed Forces confirmed their full readiness to resume their military operations against the Israeli enemy if it decides to resume its aggression against Gaza. The armed forces stated in a statement issued by them that, in implementation of the directives of Commander Abdul-Malik Badr al-Din al-Houthi, in response to the demands of the great Yemeni people, the calls of Arab free people and Islamic nation to stand fully with the choices of the Palestinians and their proud resistance, they confirm their full readiness to resume their military operations against the Israeli enemy in the event that it decides to resume its aggression against Gaza. They also confirmed that it would not hesitate to expand its military operations against the Israeli entity to include targets that it may not expect on land or at sea. The Armed Forces indicated that they continue to prevent Israeli ships in the Red Sea and will take further measures to ensure the full implementation of this decision, stressing that their military operations will stop as soon as the Israeli aggression against the Palestinians in the Gaza Strip stops.*"

Oil: Iran continues to stay on the sidelines despite Houthis getting hit by missiles

Iran stays on sidelines

We probably should stop calling Hamas, Houthis, Hezbollah etc as proxies or surrogates for Iran. Rather they are more soldiers of fortune or mercenaries because we would assume there is a greater obligation for Iran to help defend a proxy or surrogate than a hired gun. Our view on Iran and Saudi Arabia remains that both will do they can to avoid being directly involved in any escalating war. They have bigger picture goals than going back in time. And, at least for now, we keep getting more support that view as Iran continues to stay on the sidelines, talking tough but watch Israel hitting Hamas hard and now seeing Israel hit the Houthis in Yemen. When we saw the Times of Israel report that Israel jets launched the airstrike on the Houthis in Sana'a, our tweet [LINK] said "*Wonder if Iran can stay on sidelines while another proxy gets hit?*" The Houthis reportedly said that the strike did not hit a weapons depot, rather it hit a gas station. Perhaps that is why, as of our 7am MT news cut off, we haven't seen any outrage or threats from Iran on Israel now hitting the Houthis. But, at least for now, there is no indication that the Israeli airstrike on the Houthis in Yemen will bring Iran off the sidelines.

Oil: And Iran continues to build relations with Saudi Arabia

Iran and Saudi continue to make up

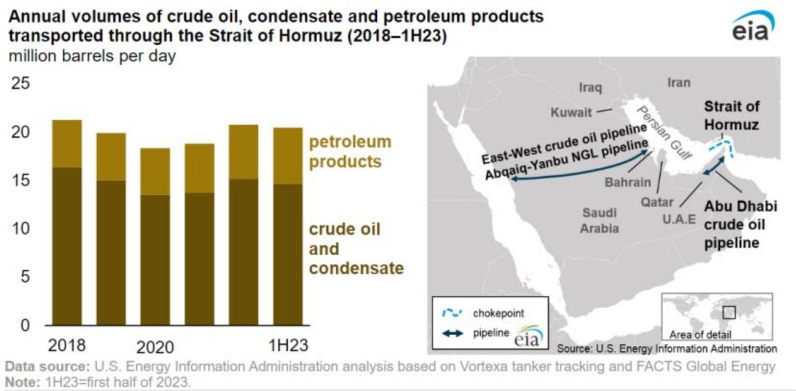
One of the bigger picture themes at work is Saudi And Iran continue to make up. It didn't get much press but one item that didn't get much coverage was the phone call between Iran's Chief of Staff of its Armed Forces, Major Bagheri, with Saudi Defense Minister Khalid bin Salman Al Saud. IRNA (Iran state media) reported [LINK] "*– Chief of Staff of the Iranian Armed Forces Major General Mohammad Bagheri has expressed Iran's readiness to upgrade the country's military relationship with Saudi Arabia. In a phone conversation, Bagheri and Minister of Defense of Saudi Arabia Khalid bin Salman Al Saud exchanged views on the issues of mutual interests on Thursday. The Iranian commander expressed satisfaction with the development of amicable ties between the two nations and appreciated the Saudi government's efforts in hosting the extraordinary summit of the leaders of the member states of the Organization of the Islamic Cooperation (OIC). The Saudi defense minister, for his part, welcomed the proposition of improving cooperation between the armed forces of the two nations. The Iranian and Saudi officials also held talks on important issues concerning the Islamic world, and at the end of the phone call, the two sides invited each other to pay a visit to their respective countries."*

Oil: EIA updates its Strait of Hormuz is the world's most important transit chokepoint

Strait of Hormuz

Here is what we wrote in last week's (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 41: Crude oil, Condensate & Petroleum Products Flows Thru Strait of Hormuz



Source: EIA

Figure 42: 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**

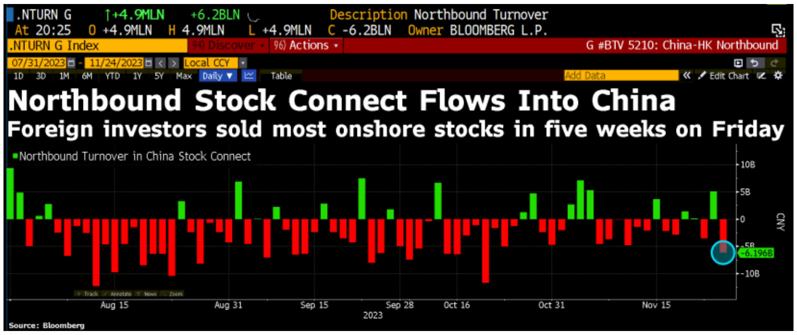
Source: EIA

Oil: Foreign investors still net selling of China stocks

Foreign funds net sellers of China stocks

China is on track to see record net record net selling of China stocks by foreign investors in 2023. Net selling has continued in Nov. Last Sunday night, we tweeted [LINK] *"More sellers than buyers is never a good thing!."foreign investors sold most onshore [China] stocks in five weeks on Friday" @business. #OOTT."* Our tweet included the Bloomberg TV graph "*North bound stock connect flows into China: Foreign investors sold most onshore stocks I five weeks on Friday"*. Below is the Bloomberg graph attached to our tweet.

Figure 43: Foreign investors sold most onshore stocks in five weeks last Friday

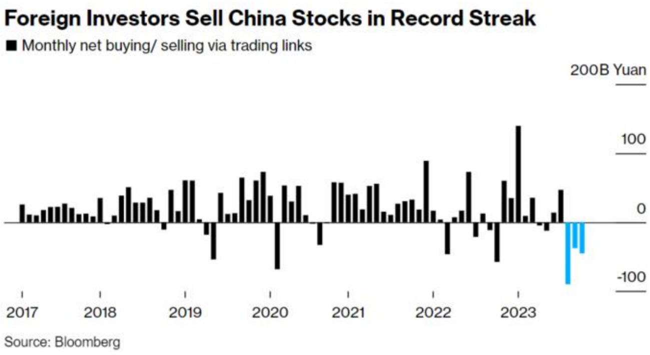


Source: Bloomberg

Foreign investors on record pace for net selling of China stocks in 2023

Here is what we wrote in our Nov 5, 2023 Energy Tidbits memo on foreign investors net selling of China stocks in 2023. "*The net selling by foreign funds in China stocks continued in October for the 3rd big negative month. Oct net selling was $6.1b to bring the last three months to $23.5b. Bloomberg wrote "The three-month selling streak, a record, amounts to 172 billion yuan and threatens to turn this year's flow into negative territory. If that happens, it would be the first time China saw an annual outflow since the second mainland-Hong Kong trading link opened in late 2016." We had Bloomberg TV Asia Open on Tuesday night and they highlighted this trend this net selling. We tweeted [LINK] "Foreign investors continue net selling of China stocks. See 👇 Foreign funds net sellers of $6.1b worth of mainland China shares in Oct. 3-month net outflow of $23.5b and "threatens to turn this year's flow into negative territory". Thx @business John Liu, April Ma. #OOTT." Below is the Bloomberg graph attached to our tweet*."

Figure 44: Foreign Funds Net Buying/Selling in China Stocks



Source: Bloomberg

Oil: Negative China economic indicators in Nov: new home prices, outflows of stocks

We were watching BloombergTV later on Thursday evening with the market shows on China and Asia. It was after the surprise Caixin Manufacturing PMI expansion numbers but all the stories had negative commentary on the Chinese economy. We tweeted [LINK] "*China stalled recovery! 2 continuing key negative indicators for China economy. "China new home prices: prices drop the most since 2015" in Nov. "record selling streak in mainland China stocks: northbound channel saw 4 straight months of outflows" in Nov. Thx @business. #OOTT".* We could have picked other data but included the below graphs on items that we try to track on a regular basis. And these are both significant economic indicators for China. New home sales price dropped in Nov and still seeing net outflows of foreign investors from China stocks.

Negative China economic indicators

Figure 45: China New Home Prices

Source: Bloomberg

Figure 46: Record selling streak in Mainland China stocks

Source: Bloomberg

Oil: China scheduled domestic flights still back to March 21-27 levels

On Monday, we tweeted [LINK] "*Stalled China recovery. China scheduled domestic flights +0.4% WoW to 89,916 flights. 3rd consecutive wk <90,000, back to Mar 21-27 levels. Domestic flights to increase for more feeder flights for increasing international flights. Thx @BloombergNEF Claudio Lubis #OOTT."* (i) BloombergNEF posted its Aviation Indicators Weekly Nov 27 early Monday morning. (ii) Negative. Similar to the last few weeks, we think the takeaway is negative for China's scheduled domestic flights. The message from the "actuals" for China domestic scheduled flights is that the number of domestic flights is back to Mar 21-27 levels. This is even less than the pre-summer early June levels when China was then calling for a peak in Covid wave at the end of June, before the wave of China stimulus

China scheduled domestic flights

and before international flights began to ramp up. China scheduled domestic flights for the Nov 21-27 week were +0.4% TO 89,916 flights, which was the 3rd consecutive week below 90,000 flights and to March 21-27 levels. The next 4-week lookahead is up small to 95,980 flights, which is driven by the increasing international flights that lead to more domestic feeder flights. (iii) China scheduled domestic flights were +0.4% WoW to 89,916 flights for the Nov 21-27 weeks – basically flat for past 3 weeks at less than 90,000 flights and back to March 21-27 levels. This followed 89,562 flights for the Nov 14-20 week and, 89,776 flights for the Nov 6-13 week. Prior to that, flights were stuck for three weeks just over 92,000 flights after falling post the big Golden Week travel that saw flights at 99,490 flights for the Oct 10-16 week, 101,120 flights for the Oct 3-9 week, 97,009 flights for Sept 26-Oct 2 week and start of Golden Week travel. And below 90,000 flights is well below month ago 4-week scheduled flights where the Oct 30 report said ""*The number of scheduled domestic flights is set to grow by 3.6% over the next four weeks to 95,676*." And that report was hugely down from the Oct 23 report that said "the number of scheduled domestic flights is set to grow by 39.3% over the next four weeks to 129,038". Instead, they are back to March 21-27 levels. (iv) The look ahead to the next four weeks is down small vs last week. Today's update says "the number of scheduled domestic flights is set to grow by 6.6% over the next four weeks to 95,980.". This is down small from the Nov 20- report "the number of scheduled domestic flights is set to grow by 7.3% over the next four weeks to 96,104 flights:", which was down small from the Nov 14 report that said "*the number of scheduled domestic flights is set to grow by 8% over the next four weeks to 96,920 flights*". But these are all hugely below the Oct 23 report that said *"the number of scheduled domestic flights is set to grow by 39.3% over the next four weeks to 129,038".* The increasing domestic flights in the look ahead is likely mostly due to the increasing international flights as more international flights means more need for domestic feeder flights. Today's report says the combined number of international flights out of China for seven major airlines "will rise by more than 355 a week to around 3,370 by the third week of December." This is up a bit from the Nov 20 report ""will rise by more than 370 a week to around 3,315 by the second week of December." Both are higher than the Nov 6 report that had 3,160 international flights by the 1st week of Dec. The increasing international flights is the key factor for increasing domestic flights. Below is our running WoW changes from the prior BloombergNEF reports and the BloombergNEF charts from the Nov 2y report.

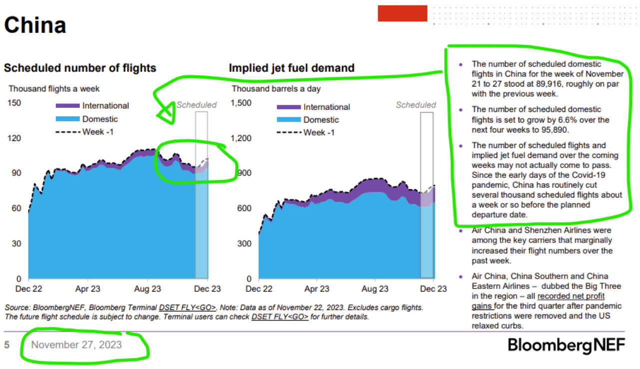
Figure 47: China scheduled domestic flights from BNEF Aviation Indicators Weekly reports

Nov 21-27: +0.4% WoW to 89,916 flights
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

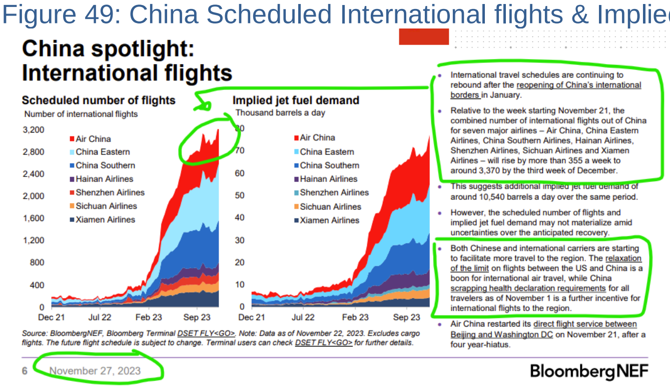
Source: BloombergNEF

Figure 48: China Scheduled Domestic flights & Implied jet fuel demand Nov 21-27



Source: BloombergNEF

Figure 49: China Scheduled International flights & Implied jet fuel demand Nov 21-27



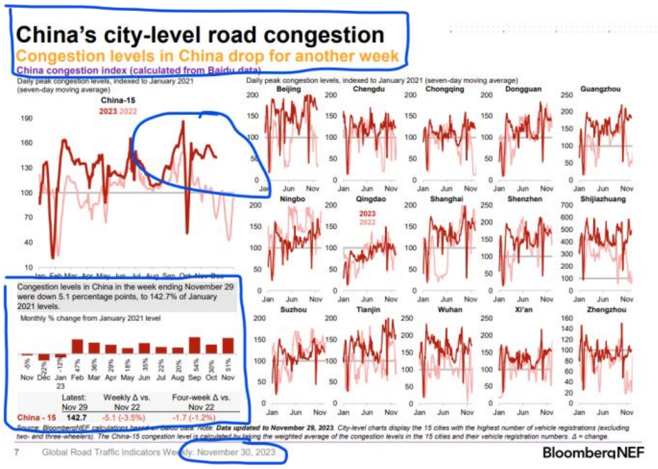
Source: BloombergNEF

Oil: Baidu China city-level road congestion down for 2nd consecutive week

China city-level traffic congestion

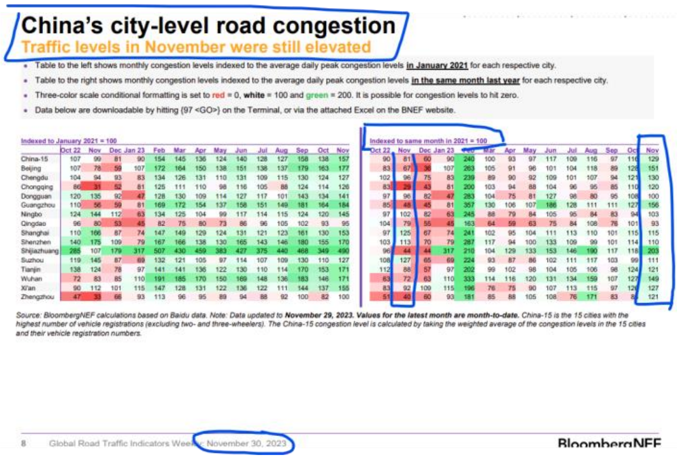
On Thursday, we tweeted [LINK] "*Stalled China recovery, increasing respiratory infections or some of both? China Baidu city-level road congestion -3.5% WoW for 11/29 wk, after -5.9% WoW for 11/22 wk. Top 15 cities big YoY & vs Nov/21 BUT Covid restrictions weren't lifted till 2023..Thx @BloombergNEF. #OOTT.*" (i) BloombergNEF posted its Global Road Traffic Indicators Nov 30, which includes the China Baidu city-level road congestion data for week ended Nov 29. (ii) BNEF's headlines were "*Congestion levels in China drop for another week*" and "Traffic levels in November were still elevated". (iii) There can always be weather related issues at this time of year in northern China that might be a factor but, assuming nothing unusual, but the city-level road congestion was down 3.5% WoW for Nov 29 week, which followed the -5.9% WoW for the Nov 22 week. And lower road congestion will support the concern on a stalling China recovery and perhaps also some lower mobility with the rising respiratory infections. (iv) For the week ended Nov 29, Baidu data for China city-level road congestion was -3.5% WoW to 142.7 of Jan 2021 level. The Baidu data is up to Nov 29 so basically the full month of Nov. For the MTD Nov 29, China city-level road congestion continues to be up strongly YoY and vs Nov 2021. But China was under Covid restrictions prior to 2023. For Nov 2023 MTD, the Top 15 cities in aggregate were 129% of Nov 2021 levels vs Nov 2022 that was 81% of Nov 2021 levels. So a big increase in city-level congestion YoY but China was still in Covid restrictions of some sort prior to 2023.. Nov 2023 is the best month relative to the same month in 2021 other than Feb 2023 that was the first Chinese New Year without Covid restrictions in China city-level congestion was 240% of Feb 2021 levels. (v) As noted above, the Baidu data is for 29 days of Nov so almost all of Nov. Remember China was still under Covid restrictions a year ago. For the Top 15 cities in aggregate, MTD to Nov 29, 2023 is 129% of Nov 2021 levels vs Nov 2022 that was 81% of Nov 2021 levels. Twelve of the top 15 cities are higher YoY and three are lower. The 3 lower YoY cities are Shanghai (China's most populous city), Shenzhen (18 mm population, adjacent to Hong Kong), and Suzhou ((13 mm population, right to the west of Shanghai). All but one of the top 15 cities in Nov 2023 are higher than Nov 2021. The exception being Qingdao (11 mm population, port city across Yellow Sea from South Korea), Our tweet included the below two charts from the BloombergNEF Road Traffic Indicators Nov 30 weekly report.

Figure 50: China city-level road congestion for the week ended Nov 29



Source: BloombergNEF

Figure 51: China city-level road congestion for the week ended Nov 29.



China's city-level road congestion

Traffic levels in November were still elevated

- 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

	Oct 22	Nov	Dec	Jan 23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
China-15	107	99	81	90	154	145	136	124	140	128	127	158	138	157
Beijing	107	78	59	107	172	164	150	138	151	138	137	179	163	177
Chengdu	104	94	93	83	134	126	131	110	131	109	115	130	124	127
Chongqing	86	31	52	81	125	111	110	98	116	105	88	124	114	126
Dongguan	120	135	92	47	128	130	109	114	127	117	101	143	134	141
Guangzhou	110	56	59	81	169	172	154	137	158	151	149	181	164	184
Ningbo	124	144	112	63	134	125	104	99	117	114	115	124	120	145
Qingdao	96	80	53	45	82	75	80	73	86	96	105	102	93	95
Shanghai	110	166	87	74	147	149	129	124	131	121	123	161	130	153
Shenzhen	140	175	109	79	167	166	138	130	165	143	146	180	155	170
Shijiazhuang	285	107	179	317	507	430	459	383	427	375	440	468	349	490
Suzhou	119	145	87	69	132	121	105	97	114	107	109	130	110	127
Tianjin	138	124	78	97	141	141	136	122	130	110	114	170	153	171
Wuhan	72	83	85	110	191	185	170	150	169	148	136	183	146	171
Xi'an	90	112	101	115	147	128	131	122	136	122	111	144	137	155
Zhengzhou	47	33	66	93	113	96	95	89	94	88	92	100	82	100

Indexed to same month in 2021 = 100

	Oct 22	Nov	Dec	Jan 23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
China-15	90	81	60	90	240	100	93	97	117	109	116	97	116	129
Beijing	83	67	36	107	263	105	91	96	101	104	118	89	126	151
Chengdu	102	96	75	83	239	89	90	92	109	101	107	94	121	130
Chongqing	83	29	43	81	200	103	94	88	104	96	95	85	110	120
Dongguan	97	96	82	47	283	104	75	81	127	98	80	95	108	100
Guangzhou	85	48	45	81	357	130	106	107	186	128	111	111	127	156
Ningbo	97	102	82	63	245	88	79	84	105	95	84	83	94	103
Qingdao	104	79	55	45	163	64	59	63	75	84	108	76	101	93
Shanghai	97	125	67	74	241	102	95	104	111	113	110	101	115	115
Shenzhen	103	113	70	79	287	117	94	100	133	109	99	101	114	110
Shijiazhuang	96	44	44	317	210	104	129	133	153	146	190	117	118	203
Suzhou	108	127	65	69	224	93	87	86	102	111	117	103	99	111
Tianjin	112	88	57	97	202	99	102	98	104	105	106	98	124	121
Wuhan	83	72	63	110	333	114	116	120	131	134	159	107	127	149
Xi'an	83	92	109	115	196	76	75	90	107	113	115	97	126	127
Zhengzhou	51	40	60	93	181	85	88	105	108	76	171	83	[illegible]	121

Source: BloombergNEF calculations based on Baidu data. Note: Data updated to ***November 29, 2023. Values for the latest month are month-to-date.*** *China-15 is the 15 cities with the highest number of vehicle registrations (excluding two- and three-wheelers). The China-15 congestion level is calculated by taking the weighted average of the congestion levels in the 15 cities and their vehicle registration numbers.*

8 Global Road Traffic Indicators Weekly November 30, 2023 BloombergNEF

Source: BloombergNEF

Oil: China NHC "suggested reducing large gatherings in public places"

China reducing large gatherings in public places

Please note we look at the Chinese increasing hospitalizations and National Health Commission suggestions from the perspective do we think it will impact Chinese mobility and getting out and about. Our focus is there a risk to energy consumption. And we do not suggest that the increasing respiratory cases are another Covid. For us, it's all about will people's behaviour change on mobility. Last night, we tweeted [LINK] '*Negative to China recovery - Looks like less Chinese will be out and about. China National Health Commission briefing "In addition, the NHC suggested reducing large gatherings in public places." "high incidence of respiratory diseases in children and the significant increase in visits to medical institution" China state media. #OOTT."* Our tweet included the Global Times (China communist party media reporting of yesterday's briefing by China's National Health Commission. No one but the Chinese know the situation, but we look at Chinese communist party media as putting the best possible spin. They continue to confirm the high incidence of respiratory diseases in children and the "significant increase" in hospital visits. But what was different in this briefing was the NHC "*suggested reducing large gatherings in public places*". No one knows the situation and we certainly aren't suggesting this is like Covid. Rather we look at it from a mobility perspective and will people be less inclined to get out and about? We think it would be yes for us and also for them, especially for families with kids. Recall what happened as Covid was recovering and how it was the young single group that were first to get out and about but older people and families with young kids were waiting to be cautious. So when we see a NHC recommendation to reduce large gatherings in public places as something that has to lead to less people getting out and about they see how this plays out in the short term. And certainly families with children have to be wary. So we may not know the true story, but we don't think we need to know that to expect less Chinese getting out and about.

Global Times "hospitals across China grapple with respiratory illnesses surge"

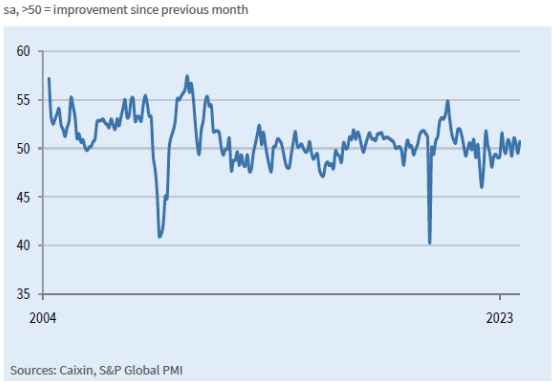
On Wednesday, Global Times report "*Hospitals across China grapple with respiratory illnesses surge*" [LINK] noted "*hospitals across China grapple with respiratory* *illnesses surge"* Note this is for respiratory illnesses, not just the spike in mycoplasma pneumonia. "*Zhou's hospital has opened pediatric wards previously used for treating COVID-19 patients to accommodate the surge in cases*". Re-opening wards not used since Covid. "*with a decrease in the number of children seeking treatment for mycoplasma pneumonia infection and an increase in cases of influenza, an expert from Shanghai Children's Medical Center*" ie. flu cases increasing. Also note that it's not just Beijing that is advising students/teachers to stay home if sick. It's also "East China's Shandong Province", which is the 2nd most populous province in China with over 100 million people. "*Both educational and health authorities in provinces including East China's Shandong Province as well as Beijing have also advised students not to take classes or do their homework when they are sick. Personal health always comes first*." But China reassures world, its fine to travel to China. "*Hypes are biased. Amid a surge in respiratory illnesses in China, which the country's health authorities have already attributed to known pathogens, certain overseas media reports have been sensationalizing the severity of the diseases and even raising doubts about China's transparency in dealing with respiratory illnesses. These reports have hyped concerns about whether travel restrictions should be imposed on China." "On Tuesday, when a reporter from Antara asked the spokesperson of China's Foreign Ministry about rising concerns among the international public about the safety of traveling to China as well as people who travel from China, Wang Wenbin, the spokesperson, said, "Let me assure you that it is safe to travel and do business here in China and there's no need to worry*." Our Supplemental Documents package includes the Global Times report.

Oil: Caixin Manufacturing PMI surprise 50.7 in Nov

Oct PMI 50.7

We wish we weren't flying on Thursday night so we could have seen how the guests on BloombergTV and CNBC Asia open shows to see how they explained the China Caixin Manufacturing PMI for Nov of 50.7. We were surprised so had to read it twice to make sure we didn't make a mistake before tweeting [LINK] "*Had to read it twice to make sure" China Caixin Manufacturing PMI Nov 50.7 (est 49.8), vs Oct 49.5, Sep 50.6, Aug 51.0, Jul 49.2. See 👇lookahead ".. sustained and quicker rise in overall new business received by Chinese goods producers in November". Thx @SPGlobalPMI #OOTT."* The statement that caught our attention was on the order book for Nov. "*Supporting the above 50.0 PMI figure was a sustained and quicker rise in overall new business received by Chinese goods producers in November. Though modest, the rate of new order growth was the best seen since June, with firms often noting that firmer market conditions had helped to lift sales.:*As a reminder, there are two China manufacturing PMI data from S&P Global that come out each month. The Official Manufacturing PMI that normally comes out the day before the Caixin Manufacturing PMI data that we track. We have focused on the Caixin PMI as it is viewed as more of a leading indicator for how the China recovery is doing as it is a more export-oriented PMI and export have been the big driver of China for the past 20 years. The Caixin Manufacturing PMI for Nov was released at 6:45pm MT Thursday night [LINK]. The Nov number was a surprise at an expansion of 50.7 and we didn't hear any economists, in the runup, expecting an expansionary number. Our Supplemental Documents package include excerpts from the PMI.

Figure 52: China Caixin General Manufacturing PMI



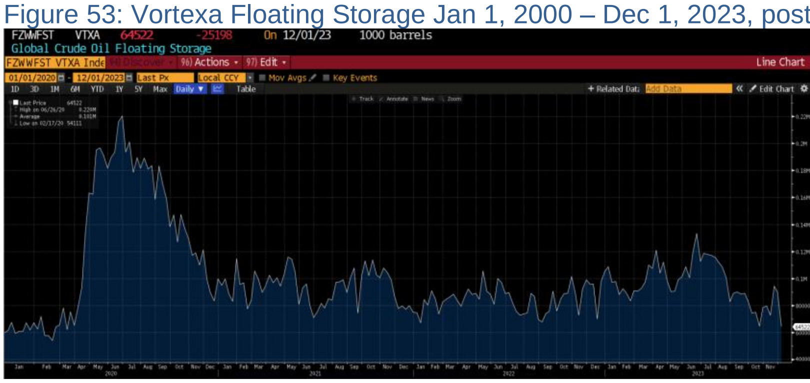
Source: S&P Global

Oil: Vortexa crude oil floating storage est 64.52 mmb at Dec 1, -25.20 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 Nov 25 at 9am MT. (i) Yesterday, we tweeted [LINK]. "*Are tankers repositioning but stiil looking for place to unload? And/or will we see upward revisions? If not & are unloading, #Oil floating storage of 64.52 mmb at 12/01 is 1 of only 5 wks since Covid less than 70 mmb & the lowest since Covid. Thx @Vortexa @business #OOTT.*" (ii) The new Dec 1 floating storage is vey low at 64.52 mmb and it follow two weeks around 90 mmb. Our concern last week was that we were seeing floating storage creep up. So we will want to see if the drop is due to tankers repositioning or it there will be repositioning. Some could be tankers finding a home as US Gulf Coast was down 5.81 mmb WoW. But the wildcard is Asia that was down 16.08 mmb WoW. If not, then Dec 2 at 64.52 mmb is the lowest floating oil storage since Covid and one of only five weeks below 70 mmb since Covid. (iii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Dec 1 at 64.52 mmb, which is -25.20 mmb WoW vs revised up Nov 24 of 89.72 mmb. Note Nov 24 was revised +2.75 mmb vs 86.97 mmb originally posted at 9am on Nov 25. (iii) Revisions. All revisions were the past seven weeks were upward revisions. The revisions from the estimates posted yesterday at 9am MT vs the estimates posted on Bloomberg at 9am MT on Nov 25 are as follows: Nov 24 revised +2.75 mmb. Nov 17 revised +5.64 mmb. Nov 10 revised +3.76 mmb. Nov 3 revised +0.75 mmb. Oct 27 revised +1.16 mmb. Oct 20 revised +1.53 mmb. (iv) There is a wide range of floating storage estimates for the past seven weeks, but a simple average for the past seven weeks is 77.73 mmb vs last week's then seven-week average of 77.21. The upward revisions for the past seven weeks offset the addition of an extremely low 64.52 mmb week and dropping a higher 75.19 mmb week. (v) 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. (vi) 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. (vii) Dec 1 estimate of 64.52 mmb is -31.25 mmb YoY vs Dec 2, 2022 of 95.77 mmb. (viii) Dec 2 estimate of 64.52 mmb is -155.79 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (ix) Dec 1 estimate of 64.52 mmb is -1.08 mmb vs pre-Covid Feb 28, 2020 of 65.61 mmb. (x) Below are the last several weeks of estimates posted on Bloomberg as of 9am MT Dec 2, 9am MT Nov 25, and 9am MT Nov 18.

Figure 53: Vortexa Floating Storage Jan 1, 2000 – Dec 1, 2023, posted Dec 2 at 9am MT



Source: Bloomberg, Vortexa

Figure 54: Vortexa Estimates Posted 9am MT on Dec 2, Nov 25, and Nov 18

Posted Dec 2, 9am MT Date	Last Px	Nov 25, 9am MT Date	Last Px	Nov 18, 9am MT Date	Last Px
Fr 12/01/2023	64522	Fr 11/24/2023	86969	Fr 11/17/2023	84101
Fr 11/24/2023	89720	Fr 11/17/2023	89557	Fr 11/10/2023	70228
Fr 11/17/2023	94198	Fr 11/10/2023	69970	Fr 11/03/2023	79175
Fr 11/10/2023	72726	Fr 11/03/2023	78780	Fr 10/27/2023	78027
Fr 11/03/2023	79527	Fr 10/27/2023	77387	Fr 10/20/2023	63582
Fr 10/27/2023	78547	Fr 10/20/2023	63318	Fr 10/13/2023	74171
Fr 10/20/2023	64853	Fr 10/13/2023	74512	Fr 10/06/2023	70940
Fr 10/13/2023	75093	Fr 10/06/2023	71912	Fr 09/29/2023	84410
Fr 10/06/2023	74243	Fr 09/29/2023	86287	Fr 09/22/2023	89165
Fr 09/29/2023	83049	Fr 09/22/2023	90733	Fr 09/15/2023	89655
Fr 09/22/2023	89151	Fr 09/15/2023	90608	Fr 09/08/2023	89374

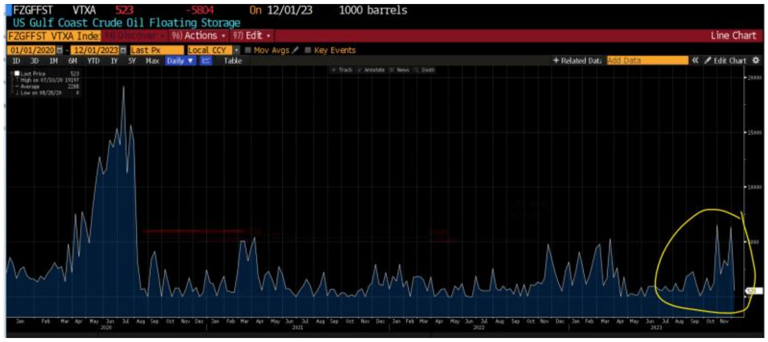
Source: Bloomberg, Vortexa

Oil: Is Panama Canal leading to huge volatility in Gulf Coast floating oil storage

Vortexa Gulf Coast floating storage

We have to believe Panama Canal backup is a factor in the big volatility in crude oil floating storage in the US Gulf Coast. And we have to wonder if the lack of visibility for Panama Canal to get back to reasonable levels is going to make any smaller oil tankers that use the Panama Canal just move onto a long route ie. we should see a return to prior levels that were, to the most part, less than 1.5 mmb. This week, Gulf Coast floating storage was estimated at 0.52 mmb, whjich is -5.81 mmb WoW vs last week's Nov 24 high 6.33 mmb.Nov 24 was + 3.53 mmb WoW vs Nov 17 of 2.80 mmb. The other prior recent weeks were Nov 10 of 3.30 mmb, Nov 3 of 2.05 mmb. Oct 27 of 6.54 mmb. Oct 20 of 1.25 mmb. Oct 13 of 0.57 mmb. Normally Gulf Coast floating storage has been much smaller, normally closer to 1 than 2 mmb. But crude oil tankers that are small enough to get thru the Panama Canal do not have the luxury of being able to pre-book slots, like cargo ships, for Panama Canal slots so we have to believe this week's spike up and the Oct 28 spike of 6.64 mmb are linked to the Panama Canal. And we would expect that we could see more weekly spikes.

Figure 55: Vortexa crude oil floating for Gulf Coast



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, Nov 24, in total, was revised up +2.75 mmb. The main revisions in a region vs the originally posted (as of 9am Nov 18) floating oil storage for Nov 17were Asia revised +1.35 mmb. (iii) The major WoW changes by region were Asia -16.08 mmb WoW, US Gulf Coast -5.81 mmb, Other -2.10 mmb WoW and West Africa -2.07 mmb WoW. (iv) Dec 1 of 64.52 mmb is down a huge 68.76 mmb vs the recent June 23, 2023 peak of 133.39 mmb. Recall Saudi Arabia started its voluntary 1 mmb/d production cuts on July 1, 2023. The major changes by region vs the recent June 23 peak are Asia -45.83 mmb and Oher -19.01 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 Nov 10 that was posted on Bloomberg at 9am MT on Nov 11.

Figure 56: Vortexa crude oil floating by region

Vortexa Crude Oil Floating Storage by Region (mmb)				Original Posted	Recent Peak	
Region	Dec 1/23	Nov 24/23	WoW	Nov 24/23	Jun 23/23	Dec 1 vs Jun 23
Asia	27.77	43.85	-16.08	42.50	73.6	-45.83
Europe	4.97	6.83	-1.86	6.81	6.47	-1.50
Middle East	8.17	9.65	-1.48	9.02	7.17	1.00
West Africa	4.54	6.61	-2.07	6.77	7.62	-3.08
US Gulf Coast	0.52	6.33	-5.81	5.71	0.97	-0.45
Other	18.55	16.45	2.10	16.16	37.56	-19.01
Global Total	64.52	89.72	-25.20	86.97	133.39	-68.87
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Dec 2						
Source: Vortexa, Bloomberg						

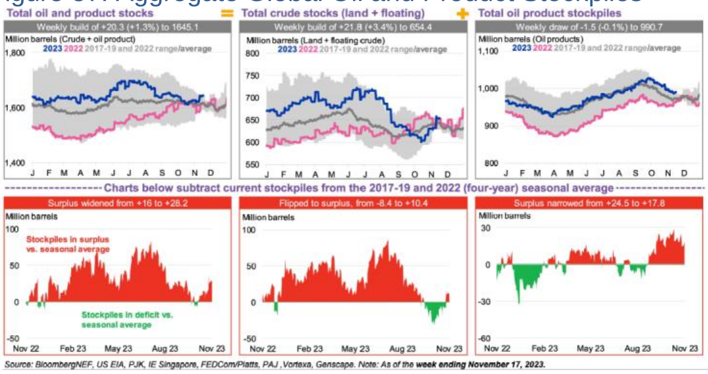
Source: Bloomberg, Vortexa

Oil: BNEF – global oil and product stocks surplus widens WoW to 28.2 mmb

Please note that the BloombergNEF global oil and products stocks estimate are for the week ending Nov 17, which is a week earlier than the normal EIA US oil inventory data that is for the week ending Nov 24 which was a build/draw of +8.59 b/d. On Monday, BloombergNEF posted its “Oil Price Indicators” weekly, which provides good charts depicting near-term global oil demand and supply indicators. (i) Note BloombergNEF uses different periods to determine the surplus/deficit, sometimes using a four-year average for 2017-2019 + 2022, and other times using a five-year average 2016-2019 + 2022. In both cases they do not include 2020 and 2021 in the averages. (ii) The global stockpile for crude oil and products surplus widened from 16.0 mmb to 28.2 mmb for the week ending Nov 17. (iii) Total crude inventories (incl. floating) increased by +3.4% WoW to 654.4 mmb, while the stockpile deficit flipped to a surplus from -8.4 mmb to +10.4 mmb. (iv) Land crude oil inventories increased by +0.4% WoW to 565.3 mmb, narrowing the deficit to -27.0 mmb against the five-year average (2016-2019 + 2022). (v) The gas, oil, and middle distillate stocks increased by +0.4% WoW to 140.6 mmb, with the deficit against the four-year average widening to -15.2 mmb. Jet fuel consumption by international departures for the week of December 4 is set to decrease by -17,200 b/d WoW, while consumption by domestic passenger departures is forecast to decrease by -41,900 b/d WoW. Below is a snapshot of aggregate global stockpiles.

SAF GROUP

Figure 57: Aggregate Global Oil and Product Stockpiles



Source: BloombergNEF

Oil: Asia Pacific Airlines Oct traffic results, growth in passenger and freight markets

Asian Pacific air traffic in October

On Thursday, the Association of Asia Pacific Airlines released its October traffic results [LINK] which is comprised of aggregate data across a total of 40 Asia Pacific airline carriers. (i) Air travel. International passenger air travel on the 40 airlines is up big YoY, but still well below 2019 levels. The AAPA reports preliminary October travel figures "*showed strong growth in international passenger demand, in tandem with the ongoing recovery in traffic performance across major routes in the region and the rest of the world. A combined 25.3 million international passengers flew on the region's carriers in October, 102.8% more than the 12.5 million recorded in the same month last year. Demand averaged 80.5% of the corresponding month in 2019. In revenue passenger kilometre (RPK) terms, demand climbed 85.6% higher, reflecting the relative strength of short haul markets. After accounting for a 77.9% expansion in available seat capacity, the average international passenger load factor rose by 3.4 percentage points to reach 80.4% for the month, slightly above pre-pandemic levels."* (ii) Air cargo is now down to -5.4% YTD, up from -6.4% YTD last month. "*Meanwhile, the region's airlines posted a second consecutive month of growth in international air cargo demand in October, ahead of major promotional retail sales periods such as Singles Day, supporting higher volumes of e-commerce shipments going into the year-end festive season. As a result, the decline in international air cargo demand narrowed to 5.4% for the ten-month period".* Below is a snapshot of the APAA's traffic update.

Figure 58: APAA Preliminary International Air Traffic Data

International	Oct-23	Oct-22	% Change
Passengers (Thousand)	25,329	12,491	+ 102.8%
RPK (Million)	91,959	49,553	+ 85.6%
ASK (Million)	114,426	64,329	+ 77.9%
Passenger Load Factor	80.4%	77.0%	+ 3.4 pp
FTK (Million)	5,805	5,626	+ 3.2%
FATK (Million)	9,491	8,716	+ 8.9%
Freight Load Factor	61.2%	64.5%	- 3.3 pp

Source: AAPA

Oil: Singapore's airport gets back to 90% of pre-Covid levels for first time

Singapore airport back to 90% pre-Covid

On Tuesday, the Straits Times reported [LINK] that Singapore's airport "*Changi Airport traffic crosses 90% of pre-pandemic levels for first time, fuelled by S. Korea travel*." The Straits Times wrote "*This growth has, in turn, helped to drive the airport's post-pandemic rebound, with overall passenger figures in October recovering to 90.7 per cent of 2019 levels, the highest percentage since Covid-19 struck. This is also the first time monthly passenger traffic has crossed 90 per cent of pre-pandemic levels, said Changi Airport Group (CAG). The previous peak was in May, when the recovery stood at 89.5 per cent. Since then, the recovery rate has been hovering below 90 per cent, due to the number of visitor arrivals to Singapore, CAG said. In October, 5.12 million travellers passed through the airport, compared with 5.65 million in October 2019, according to data released by CAG and the Civil Aviation Authority of Singapore. About 28,700 commercial flights took off from or landed at Changi, amounting to 89.8 per cent of the flights in October 2019. CAG said the South Korean market has seen the strongest recovery so far in 2023 among the airport's top 10 markets. Behind it are India, which is at 102 per cent of pre-pandemic levels compared with 2019, and Australia, at 94 per cent.*" The report didn't mention China at all, but that has to be the key reason for not at 100%. Separately, we have seen reports that China/Singapore reported flights pre Covid were close to 400 per week. Our Supplemental Documents package includes the Stratits Times report.

Oil: All-time record travelers at US airports last Sunday

Record US air travelers

It looks like US air travelers blew thru the AAA forecast for air travel over the US Thanksgiving. Our Nov 19, 2023 Energy Tidbits memo highlighted the AAA forecast [LINK] "*AAA expects 4.7 million people will fly over Thanksgiving, an increase of 6.6% compared to 2022 and the highest number of Thanksgiving air travelers since 2005. Tuesday and Wednesday before Thanksgiving are the busiest air travel days ahead of the holiday and the most expensive. While Sunday is typically the busiest day to return home, AAA data shows Monday is also a popular day to fly back after Thanksgiving.*" They were right on Sunday being the busiest day for flying back but were low on the volume. On Monday, we tweeted [LINK] "*Americans doing their bit to boost #JetFuel consumption. TSA says yesterday saw 2.907 million people, the largest single-day number of travelers ever seen in US airport as Americans fly after Thanksgiving weekend. Thx @business. #OOTT.*" Our tweet included the below Bloomberg graph that noted Sunday after Thanksgiving saw the all-time record number of air travelers at US airports.

Figure 59: Busiest day ever at US airports on Nov 26

Source: Bloomberg

Oil & Natural Gas: Finally, no Out of Control BC wildfires

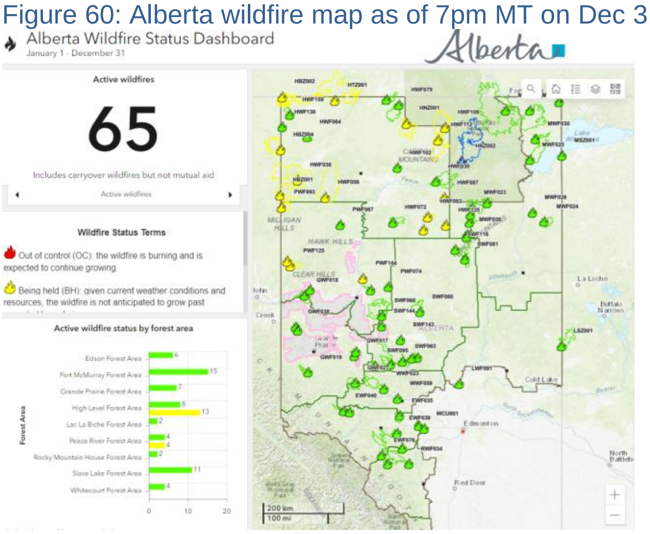
BC and Alberta Wildfires

This is crazy that there are still this many wildfires at the end of Nov and there are still 24 Out of Control wildfires in BC. There was actually a very small increase in Alberta wildfires this week and BC wildfires were down a bit. As of 7pm MT last night, there were 65 Albera wildfires and zero Out of Control, which compares to a week ago at 69 Alberta wildfires including zero Out of Control.   As of 7pm MT last night, there were 154 BC wildfires including zero Out of control, which compares to a week ago at 160 wildfires including 24 Out of Control.

Links to Alberta and BC wildfire status maps

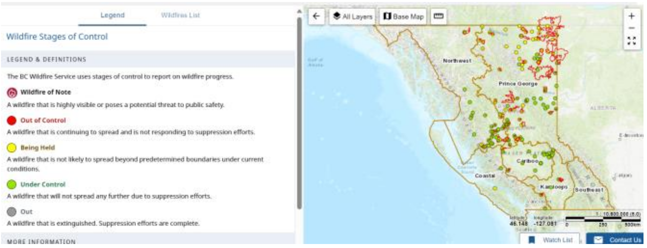
We recommend bookmarking the starting points for wildfire information are the Alberta Wildfire Status interactive map [LINK] and the BC Active Wildfires interactive map [LINK]. Please note these links have changed over the past few years. Both maps are interactive and open up for the information on any particular fire. Here are the wildfire maps as of 7pm MT last night.

Figure 60: Alberta wildfire map as of 7pm MT on Dec 3



Source: Alberta Wildfire Status Dashboard

Figure 61: BC wildfire map as of 7pm MT on Dec 3



Source: BC Wildfire Service

Energy Transition: Didn't get to writing up a number of COP28 items

It's the early days at COP28 and one thing is clear – UAE COP28 President Dr. Al Jaber is producing what looks like to be actionable items. Unfortunately, I had a travel day on Thursday so had to compress more into Friday/Saturday and I ran out of time to get all the items and will get to next week such as the 22 nations pledge to triple nuclear power generation capacity by 2050, the UAE led move to get real money into the loss and damage fund, and much more.

Lots happening at COP28

Energy Transition: It's early but looks like UAE COP 28 President is winning

It looks like UAE COP28 President Al Jaber may have turned to be the right person at the right time IF the world is to try to get on an executable plan that can reduce emissions instead of kicking the can down the road focusing on aspirations but not making the as much progress as could be made. No question that has been his stated focus from Day 1. But he has also been aided by energy security, availability and affordability issues around the world that have forced many governments to back off their energy transition aspirations so they can try to deal with energy security, availability and affordability. We have been highlighting how he has shaped the key focus to items like methane emissions. And think about nuclear power

UAE COP28 President

that was a huge negative for climate change and that is back on the agenda as big win for countries. It's not just the focus on methane emissions, tripling of nuclear power but also focus on unabated coal and not just getting rid of coal.

Do western leaders have to go along with UAE COP28 approach?
Here is another item from our Nov 19, 2023 Energy Tidbits memo. *"The EU highlighting methane emissions from the energy industry reinforces our view on COP28. Here is what we wrote in our Nov 5, 2023 Energy Tidbits memo. "This isn't what anyone on the climate change side including the western government leaders would ever say, but when we read the UAE COP28 President Al Jaber comments on Monday, at the pre-COP meeting, we can't help but wonder if Al Jaber knows western leaders have no choice but to go along with his approach. We recognize that the climate change side never wanted UAE's Al Jaber as COP28 President or they are probably still mad that UAE was even made the host of COP28. We divide the climate change side at COP28 into two parts: those on the climate change side that are the rank and file delegates. And then there are government leaders (ie the politicians and the senior bureaucrats) that have led theEnergy Transitiuon and Net Zero push. The delegates will never be happy because Al Jaber is an oil and gas guy from the #2 OPEC producer and they are trying to get rid of oil and gas. They may not say this as the primary directive as the that is to reduce emissions, but the focus for the COPs to date have been on replacing and getting rid of coal, oil and natural gas as the key to the solution. So they can't be happy if Al Jaber focuses on methane reduction because he knows that is doable and can be successful and done so quickly. But that isn't a get rid of oil and gas approach. However, we continue to think the government leaders know (even if they don't want to directly say so) that they are far behind so are going to be trying to salvage something at COP28. And that mean they need to come out of COP28 with some plan that they can sell to some degree as being keeping them on track or at least giving the world a chance at 1.5C. We think the timing may be right for Al Jaber. And we think Al Jaber knows this. It's why we think he says what he says. We think he knows that the western leaders have to give in to some degree. And he is making it clear to them that this is the best they are going to get from COP28 under his leadership and that they can message they are staying on track to 1.5c. So they will ultimately have to agree with his approach to include oil and gas as part of "all", COP28 has to take a "<u>pragmatic</u>" approach and come up with "solid" solutions. The climate change side hasn't said this but the part that will be one of Al Jaber's biggest accomplishments is that seems to have got the oil and gas industry as part of the "all" in COP28 negotiations. And the second part is that he is able to try to direct the negotiation to a "pragmatic" type conclusion and not the normal aspiration negotiation. Here is is one of his key quotes "We need solid solutions for a 43 percent cut in emissions by 2030 because that is exactly what the science tells us," Dr. Al Jaber said. On the issue of fossil fuels, he said, "I know there are strong views about the idea of including language on fossil fuels and renewables in the negotiated text. I need you to work together to come forward with solutions that can achieve alignment, common ground and consensus between all parties. We must be responsible. We must be pragmatic. And we must leave no-one behind."* The Emirates News Agency report "COP28 President says world must unite on climate action" is at [LINK] "

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

Energy Transition: IOCs/NOCs commit to Net Zero operations by 2050 & more
One of the big early announcements was that 50 large IOCs/NOCs signed the "*Oil & Gas Decarbonization Charter.*" Some of the big NOCs were ADNOC, Equinor, Libya NOC, ONGC, Petrobras, Petronas, Saudi Aramco & YPF. Some of the big IOCs were BP, EQT, ExxonMobil, Occidental, OMV, Repsol, Shell, TotalEnergies and Woodside. These

IOCs/NOCs Net Zero commitment

companies in total represent >40% of the world's oil production. The major emissions commitments were to reach net zero in their operations by 2050, zero out methane emissions (no timetable given), and eliminate routine flaring by 2030. They also committed to continue to work towards industry best practices in emission reduction and they highlighted four areas including (i) investing in the energy system of the future incl renewables, low carbon fuels and negative emissions technologies. (ii) increasing transparency incl independent verification of GHG and progress in reducing emissions. (iii) increasing alignment to implement best practices by 2030 to collectively reduce emissions intensity. (iv) "*Reducing energy poverty and providing secure and affordable energy to support the development of all economies.*" We wrote out the last point as it has always been the big oil concern on the energy transition that it doesn't and can't yet provide reliability, affordable and available energy to the world. Our Supplemental Documents package includes the Charter.

EU's shift to methane emissions from oil & gas showed Al Jaber is winning

There have been many complaints from delegates that the IOCs/NOCs did not go far enough in their charter but, to the most part, the criticism from the western leaders hasn't been huge. This isn't unexpected as, in the run up to COP28, we already saw major climate leaders, like the EU shift their focus on oil and gas to reducing methane emissions. Here is what we wrote in our Nov 19, 2023 Energy Tidbits memo. *"On Tuesday, we tweeted [LINK] "Is UAE Al Jaber The Climate Man? Criticized for wanting impact/practical COP28 actions ie. 03/06 #Oil #NatGas methane emissions to net zero by 2030. Now EU to prioritize methane emissions "we want to do something that's really meaningful for the climate" Thx @johnainger #OOTT." The climate change side and western governments aren't going to come out and say UAE COP28 President Al Jaber was right after all, but the actions being portrayed as wins now are really what Al Jaber tried to get people to join in several months ago. Our tweet included the National UAE March 7, 2023 report on how Al Jaber was pushing the need to get the oil and gas industry to reach net zero methane emissions by 2030. At that time, the climate change side didn't want to jump on board as they wanted the to get rid of fossil fuels and not focus on reducing methane emissions. Al Jaber has been working on the basis that focus for Paris has been to reduce emissions. The report that led to our tweet was that the EU has reached an agreement to focus on energy companies reducing methane emissions – basically Al Jaber's March priority. Our tweet also noted how the EU climate leaders bragging that this was so they were going to do something really meaningful to the climate. Bloomberg wrote "A key comment here is "We're watching you," Jutta Paulus, the Green lawmaker who is parliament's lead negotiator, said in a message to fossil fuel companies outside of the bloc. "We want to do something that's really meaningful for the climate." We have always said methane is the worst for the enivronment but reducing methane emissions from oil and gas has been done for at least a decade in the Cdn oil patch going back to when the one of our friends was the group leader for the then big company (PanCanadian) in capturing methane emissions from pneumatic deviices and compressors, etc and he then explained to us how it was easy to do. It's why the E&P companies are quick to sign on to reducing methane emissions. .So when we see the european leader talk about how this is doing something really meaningful for the climate seems to be positioning for*

COP28 and this would fit one of the UAE COP28 president areas of focus. Our Supplemental Documents package includes the Bloomberg report".

Energy Transition: COP28 President warns of risk to sending world back into caves

UAE warns on fossil fuel phase out

We missed these comments from UAE COP28 President Al Jaber from Nov 21 until, earlier this morning, we saw The Guardian report "*Cop28 president says there is 'no science' behind demands for phase-out of fossil fuels. Exclusive: UAE's Sultan Al Jaber says phase-out of coal, oil and gas would take world 'back into caves?.* [LINK] We are surprised that it took this long to get these Al Jaber quotes out to the climate change side. The Guardian wrote "*Al Jaber made the comments in ill-tempered responses to questions from Mary Robinson, the chair of the Elders group and a former UN special envoy for climate change, during a live online event on 21 November. As well as running Cop28 in Dubai, Al Jaber is also the chief executive of the United Arab Emirates' state oil company, Adnoc, which many observers see as a serious conflict of interest."* And "*Al Jaber said: "I accepted to come to this meeting to have a sober and mature conversation. I'm not in any way signing up to any discussion that is alarmist. There is no science out there, or no scenario out there, that says that the phase-out of fossil fuel is what's going to achieve 1.5C." Robinson challenged him further, saying: "I read that your company is investing in a lot more fossil fuel in the future." Al Jaber responded: "You're reading your own media, which is biased and wrong. I am telling you I am the man in charge." Al Jaber then said: "Please help me, show me the roadmap for a phase-out of fossil fuel that will allow for sustainable socioeconomic development, unless you want to take the world back into caves." "I don't think [you] will be able to help solve the climate problem by pointing fingers or contributing to the polarisation and the divide that is already happening in the world. Show me the solutions. Stop the pointing of fingers. Stop it," Al Jaber said."*

11/20/19: Putin, getting rid of natural gas would see humans end up in caves

After seeing The Guardian reports, we tweeted [LINK] "*Reminds of Putin's back to caves "neglecting a pure hydrocarbon such as #natgas is, in my opinion, uncalled for, because it is the purest hydrocarbon out there. When ideas like this are promoted, it sounds like humanity will once again end up in caves." Thx @ARaj_Energy #OOTT."* Our tweet include what we wrote in our Nov 24, 2019 Energy Tidbits memo *" Putin: abandoning natural gas may put humans back in caves. Last week's (Nov 17, 2019) Energy Tidbits memo noted the FT report [LINK] the European Investment Bank was phasing out lending to fossil fuel projects by 2021 including natural gas. We tend to agree with Putin that if the environmental push means puts natural gas at risk along with coal, then there is a real risk to the future reliability of the electricity supply around the world. We just wouldn't describe the way he did. On Wed, we tweeted [LINK] "How could i not note Putin's comments "discarding the purest hydrocarbon like gas seems utterly bizarre", re the complete abandonment of hydrocarbons "it seems to me that the human race may find itself again in caves". Hope not!" Putin had a lengthy Q&A at the Russian Investment Forum on Wed. And he jumped in on the potential abandonment of natural gas. Putin said "In this sense, neglecting a pure hydrocarbon such as natural gas is, in my opinion, uncalled for, because it is the purest hydrocarbon out there. When ideas like this are promoted, it sounds like humanity will once again end up in caves, but this time because it will consume nothing, if all energy is reduced to zero, or if we rely solely on solar energy or wind energy or tidal energy. Today's technology is such that* *without hydrocarbons, nuclear energy or hydropower, humanity will not be able to survive or preserve its civilisation. This must be taken seriously or, as people say, in an adult-like manner." Later in the memo, we note his comments on US oil production and Russia not going to use technologies that drive fracking. Our Supplemental Documents package includes Putin's energy references from his long Q&A session.* [LINK]

Energy Transition – Natural gas saves the day for UK power with low wind generation

UK needs natural gas

It was still Nov 30 and the UK had to give its first winter warning on electricity supply might not be at risk. It's been colder than normal to end Nov but not as cold as it can get in the Dec and Jan. Even still, on Thursday, UK National Grid warned they were "*activating a Live Demand Flexibility Service event between 16:30-18.00 tomorrow*" due to "*our forecasts show electricity supply margins are expected to be tighter than normal on Friday evening*. " They didn't say why the tight markets so we went to their live grid data showing energy sources and tweeted [LINK] "*UK needs #NatGas for longer. Yes, National Grid is warning on #Electricity supply tomorrow. Fortunately, it's only Dec 1 in UK so not full winter cold. And more importantly, UK still has #NatGas to fill in when #Wind power is low. "#OOTT."* The reason the tight supply is very low wind generation, it shows up clearly in the National Grid data we attached to our tweet. Wind generation is low so the UK has to call on natural gas to fill in. At that time, wind was down to ~10% and natural gas was ~70% of the power generation. The UK better hope for the warmer than normal winter being forecast by ECMWF.

Figure 62: UK National Gird Power supply for past week as of Nov 30

Source: UK National Grid

Capital Markets: Charlie Munger's zinger what makes high IQ investors dangerous

On Tuesday, we tweeted [LINK] "*Who didn't love #CharlieMunger zingers. "lot of people who are geniuses on IQ tests think they are a lot smarter than they are and what they are is dangerous." See 👇05/08/23 SAF Group transcript. Never had the honor of meeting him but will certainly miss him! #OOTT.*" There are many reports out this week on Charlie Munger lines but here is another item we wrote about him in our May 14, 2023 Energy Tidbits memo. "*Many Charlie Munger investor insights in one response. We listened to the 5+ hours of Berkshire Hathaway annual meeting last Saturday and one of the items that got our attention was one Warren Buffett and Charlie Munger answer that had multiple investor reminders in a short answer. On Monday, we tweeted [LINK] "#Berkshire2023. Lots in this one short #CharlieMunger answer. See 👇SAF transcript not easy to have a vast plethora of good opportunities that are easily identified. some people can't tell their best ideas from their worst and in deciding that an investment idea is already good, they get to thinking it is better than it is. lot of people who are geniuses on IQ tests think they are a lot smarter than they are and what they are is dangerous. #OOTT." There was actually more in a short answer. Our tweet included the transcript we made of their reply. Items in "italics" are SAF Group created transcript. At 2hr 6:10 min mark, Munger "I think one of the inane things that is taught in modern university education is that a vast diversification is absolutely mandatory in investing in common stocks. That is an insane idea. It's not that easy to have a vast plethora of good opportunities that are easily identified. if you only got three, I'd rather it be invest in my best idea not my worst. Now some people can't tell their best ideas from their worst and in deciding that an investment idea is already good, they get to thinking it's better than it is. I think we make fewer mistakes like that than other people. And that is a blessing to us. We're not so smart but we kind of know where the edge of our smartness is. That is a very important part of practical intelligence. A lot of people who are geniuses on IQ tests think they are a lot smarter than they are and what they are is dangerous. But If you know the edge of your own ability pretty well, you should ignore most of the notions of our experts about what I call de-worseification of portfolios".*

Charlie Munger investor insights

Capital Markets: USDA Consumer Price Index Oct for food +0.3% MoM, +3.3% YoY

Last Wednesday, the USDA posted its October Consumer Price Index for food [LINK], which reported the all-items Consumer Price Index (CPI) was +0.3% MoM and +3.7% YoY. The +3.2% 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: sugar and sweets +8.9% YoY, beef and veal +4.0% YoY, processed fruits and vegetables +8.5% YoY, cereals and bakery products +8.5% YoY, eggs +0.4% YoY, and dairy products +4.0% YoY. It is important to note the USDA said that the "food-at-home (grocery store or supermarket food purchases) CPI" was +0.3% MoM and +2.1% YoY. The USDA wrote *"Food-at-home prices are predicted to increase 5.2 percent, with a prediction interval of 4.9 to 5.4 percent. Food-away-from-home prices are predicted to increase 7.1 percent, with a prediction interval of 7.0 to 7.2 percent*."

USDA CPI for food +3.3% 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."*

Demographics: Putin wants Russian women revive having 7, 8 or even more children

Russia's goal is to increase population

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

Russia's shrinking population was Putin's greatest concern pre-Ukraine

Putin's focus on Russians having bigger families is not a new focus and not a new focus post Ukraine. Rather Russian's shrinking population, pre-Ukraine, was his greatest concern. Here is what we wrote in our Dec 26, 2021 Energy Tidbits memo. "*Putin's big press conference comments on Russia's population reminded us of an item we forgot to include in our Dec 5, 2021 Energy Tidbits – Putin's greatest* *concern is the shrinking Russia population. This week, Putin noted "There are issues that cannot but cause concern, including life expectancy, which has slightly decreased from 71.5 to 70.1 years." The item we forgot to include was Putin's comments at the "Russia Calling! Investment Forum" on Nov 30. [LINK]. Putin was asked "What keeps you awake at night?" In the sense, "What is your greatest concern?". Putin responds "We have domestic issues typical of Russia, primarily demographic problems. We had two natural declines in our demographic development: during World War II or the Great Patriotic War, as we call it, in 1943–1944, and in the early and middle 1990s after the collapse of the Soviet Union. There was an equal drop in the birth rate. It was the lowest in 1999 – I believe a little over 1,200,000. In 2006, we already had almost two million births – more than 1,900,000. This problem has acquired a systemic and economic character due to the shortage of workforce in the labour market. We have a little over 80 million there and our losses amount to 1.1–1.2 percent a year. In this context, demographics is one of our main problems both for humanitarian and economic considerations, and because we need to strengthen our statehood as well. I will not enumerate all the measures and instruments we are using and intend to continue using in the future in order to tackle this problem. In general, we managed to get things moving in the recent past. Overall, we understand what we can do and know how to do it."*

Demographics: Are Munger & Kissinger reminders to use your brain?

Don't retire your brain

One of the items that came to mind in thinking about the passings this week of Charlie Munger at the age of 99 and Henry Kissinger at the age of 100 is how they never stopped going hard on using their brain. On Thursday, we tweeted [LINK] "*Don't retire your brain! Charlie Munger 99 yrs old Henry Kissinger 100 yrs old. Surely not just good genes, but both gentlemen never stopped learning and using their brain power. Lesson for us baby boomers. You can retire from work but don't retire your brain."* Everyone has seen it in older generations or the same generation on how some people seem to age more quickly when they retire from work. People tell them to pick up a hobby or learn a language or get your golf game better. Remember the expression he died of boredom? We don't know the backgrounds of Munger's and Kissinger's families but we have to believe their never stopping use their brain played a role in their longevity.

Demographics: Sports Illustrated called out for using "fake, AI-generated writers"

Fake AI generated writers

We don't know how it will play out over the coming years as AI becomes the way of life for stories and people. It's one thing to have an AI story and know it's an AI generated story and another thing to have an AI story that is portrayed as a person generated story. Our concern is that the latter means that the reader has one less verification step ie. no person is responsible. It's why, on Tuesday, we tweeted [LINK] "*Why i only follow real people. "Bylines exist for a reason: they give credit where it's due, and just as importantly, they let readers hold writers accountable." [LINK] They're not right 100% of the time, but don't make up stuff. #OOTT."* Our tweet linked the Futurism report "*Sports Illustrated Published Articles by Fake, AI-Generated Writers. We asked them about it — and they deleted everything*." And "*There was nothing in Drew Ortiz's author biography at Sports Illustrated to suggest that he was anything other than human. "Drew has spent much of his life outdoors, and is excited to guide you through his never-ending list of the best products to keep you from falling to the perils of nature," it read. "Nowadays, there is rarely a weekend that goes by where Drew isn't* *out camping, hiking, or just back on his parents' farm." The only problem? Outside of Sports Illustrated, Drew Ortiz doesn't seem to exist. He has no social media presence and no publishing history. And even more strangely, his profile photo on Sports Illustrated is for sale on a website that sells AI-generated headshots, where he's described as "neutral white young-adult male with short brown hair and blue eyes."* And "*The AI authors' writing often sounds like it was written by an alien; one Ortiz article, for instance, warns that volleyball "can be a little tricky to get into, especially without an actual ball to practice with." According to a second person involved in the creation of the Sports Illustrated content who also asked to be kept anonymous, that's because it's not just the authors' headshots that are AI-generated. At least some of the articles themselves, they said, were churned out using AI as well. "The content is absolutely AI-generated," the second source said, "no matter how much they say that it's not."* What we thought was the good reminder from the Futurism report was them reminding that a person is someone has to take responsibility. Futurism wrote "*Needless to say, neither fake authors who are suddenly replaced with different names nor deplorable-quality AI-generated content with no disclosure amount to anything resembling good journalism, and to see it published by a once-iconic magazine like Sports Illustrated is disheartening. Bylines exist for a reason: they give credit where it's due, and just as importantly, they let readers hold writers accountable."* It's a good article and worth a read. Our Supplemental Documents package includes the Futurism report.

Fake profiles don't have to be AI generated

There was a good reminder this week that fake profiles don't have to be AI generated. On Monday around dinner time MT, Bloomberg reported "T*ech Conference Faces Backlash on Claims of Fake Women Speakers. Several tech executives have pulled out of an upcoming developers conference after accusations that the event's organizer fabricated female speakers' profiles. High-profile engineering leaders in the developer community — including Microsoft Corp.'s Scott Hanselman and Kelsey Hightower, a former developer advocate at Alphabet Inc's Google — canceled their appearances at DevTernity, an upcoming online conference with tickets costing as much as $870. Participants discovered the fake profiles late last week after Gergely Orosz, who runs a popular tech newsletter, posted on social media that he had identified fabricated profiles of women on DevTernity's speakers list and notified attendees. He also claimed to have found fake women's profiles on the speakers lists for previous and future events. Women who had previously dropped out of the conference or declined to speak were also not removed from the event's website. It struck a chord with the developer community, which saw the practice as misleading and potentially deceitful, and a step backward from their goal of diversity in male-dominated tech events."* Hours later, The Register on MSN reported [LINK] " *DevTernity conference collapses amid claims women speakers were faked."* And "*What's more, it's clear from the debut of Anna Boyko on January 21, 2023, in the conference's website code repo, who gained a different image two days later, that fake profiles were not a recent innovation. Fong-Jones and others said the YAML file appears to have been hand-crafted and not auto-generated as claimed."*

Twitter: Look for our first comments on energy items on Twitter every day

For new followers to our Twitter, we are trying to tweet on breaking news or early views on energy items, most of which are followed up in detail in the Energy Tidbits memo or in separate blogs. Our Twitter handle is @Energy_Tidbits and can be followed at [LINK]. We wanted to use Energy Tidbits in our name since I have been writing Energy Tidbits memos for over 20 consecutive years. Please take a look thru our tweets and you can see we aren't just retweeting other tweets. Rather we are trying to use Twitter for early views on energy items. Our Supplemental Documents package includes our tweets this week.

@Energy_Tidbits on Twitter

LinkedIn: Look for quick energy items from me on LinkedIn

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

Look for energy items on LinkedIn

Misc Facts and Figures.

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

For golfers who *blame their* clubs, Carlos says *It's not the arrow, it's the Indian*

I have had the good fortune to get in nine holes when I am remote working from San Jose del Cabo. This week, I had a good zinger from one of the starter's team, Carlos as we were all standing around cathing up Carlos noted the new clubs my wife bought me for my birthday to replace my six-year old set. And I said I still remember the zinger he gave me when I started playing again 18 years ago. I was on the range with some clubs that were probably several years old. Of course hit a crappy shot, blamed the old clubs and Carlos said "*Senor Tsubouchi, my father always it's not the arrow, it's the Indian."* So this week, Carlos picks up one of the new clubs and says "th*ese are nice clubs your wife bought you for your birthday, for your next birthday, she should buy you a new swing."*

Eagles Jalon Hurts delivers again under pressure at end of game

Any NFL fan would have to say the Eagles-Bills game was the best of the US Thanksgiving NFL games. And no one was too surprised to see Eagles QB Jalen Hurts rally the Eagles to tie it up at the end of 4th quarter and then score a TGD to win in OT. After the game Eagles center Jason Kelce was talking about Hurts and said "'*There's not too many guys that I've played with, probably no one that I've played with, that's been more clutch down the stretch*" "*When you look at, especially last year, two-minute situations, game on the line, a touchdown straight down the stretch, he's been so good in crucial situations, things that have to happen. That's a trait not to take lightly. If you look at most of the best players, that is a trait that they have to have. Let's be reasonable, the only reason we won the last three weeks is his ability to really get it done down the stretch when it matters most*.' When I heard the Kelce comments, it reminds of some of the superstars I have been fortunate to work with some of the very best in the investment business in Canada in my career and I always admired how these superstars went about their business and led our companies to being best in class. It's tough enough to get to the top but it's even harder to stay on top but they did. And one of the things these superstars did was deliver under pressure and do it regularly. It's one thing to flash, it's more significant to flash on a regular basis.

Cowboys Seahawks was 6th NFL game ever with no punts

Unfortunately, I was flying on Thursday night so didn't see the Cowboys/Seahawks game live but could only follow online. But did catch the replay on Friday. Besides it being a great game, it was only the 6th game in NFL history that did not have a punt. The other no-punt games were Bills-49ers in 1992 that had two hall of fame QBs Jim Kelly and Steve Young. Surprisingly the Packers had two no-punt games in the 2014 season, one against the Bears and one vs the Saints. There was the great game two years ago with the Eagles and Chiefs in 2021. There was one playoff game with non-punts in 2003 between Chiefs and Colts.