

# Energy Tidbits

December 31, 2023

Produced by: Dan Tsubouchi

## Maersk Pause Red Sea Transit Post Houthis Missile/Boat Attack, US Navy Saves & Sinks 3 Houthis Small Boats Killing Crews

**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. Breaking news. Maersk pause its just resumed Red Sea transit after Houthis missile/small boat attack, but US Navy responded to Houthis fire by sinking 3 of the Houthi boats and killing their crews. [\[click here\]](#)
2. More signs of stalled China recovery and consumers sitting on sidelines as China official manufacturing PMI 49.0 in Dec, down for 3rd month and lowest in the last 6 months. [\[click here\]](#)
3. Iraq says US air strikes were "*an unacceptable violation of Iraqi sovereignty*". [\[click here\]](#)
4. Bloomberg's Javier Blas writes "*peak gasoline demand turns out to be a mirage*". [\[click here\]](#)
5. Warm weather continues in NW AB/NE BC sets up risk of an early and abrupt end to winter drilling, and increasing potential for Cdn natural gas M&A in 2024. [\[click here\]](#)
6. Thank you for getting me over 10,000 Twitter/X followers earlier this morning. [\[click here\]](#)
7. Happy New Year and wish everybody good health and happiness in 2024.
8. 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.
9. 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 [\[LINK\]](#).

**Dan Tsubouchi**  
Chief Market Strategist  
dtsubouchi@safgroup.ca

**Ryan Dunfield**  
CEO  
rdunfield@safgroup.ca

**Aaron Bunting**  
COO, CFO  
abunting@safgroup.ca

**Ryan Haughn**  
Managing Director  
rhaughn@safgroup.ca

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## Table of Contents

Natural Gas: -87 bcf draw from US gas storage; now +348 bcf YoY surplus .....	6
Figure 1: US Natural Gas Storage.....	6
Figure 2: US Natural Gas Storage – Historical vs Current .....	6
Natural Gas: NOAA sees cooler temperatures ahead except in NE US & Great Lakes.....	6
Figure 3: NOAA 6-10 day temperature outlook as of Dec 30.....	7
Figure 4: NOAA 8-14 day temperature outlook as of Dec 30.....	7
Natural Gas: 62% of US homes have winter home heating fueled by natural gas .....	7
Figure 5: Fuels for winter home heating of US homes .....	8
Figure 6: Fuels for winter home heating by region .....	8
Natural Gas: US Oct gas production was 104.5 bcf/d, -0.1 bcf/d MoM, +2.3 bcf/d YoY .....	8
Figure 7: US Dry Natural Gas Production .....	9
Natural Gas: US pipeline exports to Mexico at 6.5 bcf/d in September .....	9
Figure 8: US Natural Gas Pipeline Exports to Mexico.....	10
Natural Gas: US LNG exports up +7.3% MoM to 12.4 bcf/d in Oct, up +24.21% YoY .....	10
Figure 9: US Monthly LNG Exports .....	10
Figure 10: US LNG and Natural Gas Exports Oct 2023 vs Oct 2022 and Sep 2023 .....	11
Natural Gas: Early & abrupt end to winter drilling should increase chance for NE BC/NW AB natural gas M&A .....	11
Figure 11: North American LNG capacity growth thru 2027.....	12
Natural Gas: Japan forecasts a warmer than normal Jan/Feb/Mar .....	13
Figure 12: JMA Jan/Feb/Mar Temperature Probability Forecast, made Dec 19, 2023.....	13
Natural Gas: Japan forecasts much warmer than normal next 30 days ie. Jan .....	13
Figure 13: JMA Dec 30 Jan 29 Temperature Probability Forecast .....	14
Figure 14: AccuWeather daily temperature forecast for Tokyo in Jan, made Dec 28.....	14
Natural Gas: Japan LNG stocks down WoW and YoY, well above 5-yr average .....	14
Figure 15: Japan LNG Stocks.....	15
Natural Gas: Warmer than normal temperatures forecast for Europe this week .....	15
Figure 16: ECMWF Jan 1-8 Temperature Probability Forecast .....	15
Figure 17: ECMWF Jan 8-15 Temperature Probability Forecast .....	16
Natural Gas: Europe gas storage is strong in all countries in Europe.....	16
Figure 18: Natural gas storage by country as of Dec 29 .....	16
Natural Gas: Europe storage drops to 86.98%.....	17

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Figure 19: European Gas Storage Level .....	17
Oil: US oil rigs +2 WoW to 500 rigs, US gas rigs flat WoW at 120 rigs .....	17
Figure 20: Baker Hughes Total US Oil Rigs .....	18
Oil: Total Cdn rigs down -60 to 86 total rigs .....	18
Figure 21: Baker Hughes Total Cdn Oil Rigs .....	18
Oil: US weekly oil production estimates flat WoW at 13.300 mmb/d .....	18
Figure 22: EIA's Estimated Weekly US Field Oil Production .....	19
Figure 23: EIA's Estimated Weekly US Oil Production .....	19
Oil: EIA Form 914 – US October oil production actuals +0.870 mmb/d YoY .....	19
Figure 24: EIA Form 914 US Oil Production vs Weekly Estimates .....	20
Oil: US SPR reserves now -83.235 mmb lower than commercial crude oil reserves .....	20
Figure 25: US Oil Inventories: Commercial & SPR .....	20
Figure 26: US Oil Inventories: SPR Less Commercial .....	21
Oil: US gasoline prices -0.01 this week to \$3.12 .....	21
Oil: Crack spreads up \$0.70 WoW to \$23.57 .....	21
Figure 27: Cushing Crude Oil 321 Crack Spread Dec 29, 2013 to Dec 29, 2023 .....	22
Oil: Cdn crude by rail exports at 145,881 b/d in October, up +4.3% YoY .....	22
Figure 28: Cdn Crude By Rail Exports vs WCS Differential .....	23
Oil: EIA estimates total Cdn crude by rail imports +43,000 MoM to 85,000 b/d in Oct .....	23
Figure 29: Canada CBR Exports to US Gulf Coast vs WCS Differential .....	24
Oil: Refinery inputs up +0.058 mmb/d WoW to 16.558 mmb/d .....	24
Figure 30: US Refinery Crude Oil Inputs .....	24
Oil: US net oil imports -0.209 mmb/d WoW as oil imports down -0.415 mmb/d WoW .....	24
Figure 31: US Weekly Preliminary Imports by Major Country .....	25
Oil: Pemex refineries, excl Olmeca, ran at 46.9%, still down vs May 56.2% .....	25
Figure 32: Pemex (Incl Partners) Mexico Oil Production .....	26
Figure 33: Pemex Mexico Oil Exports .....	26
Oil: Russia petroleum product shipments 4-wk average at highest level in 7 months .....	27
Figure 34: Russia's seaborne petroleum products shipments thru Dec 24 week .....	27
Oil: Russian refineries processing oil at increasing seasonal rate .....	27
Figure 35: Russia refinery runs thru Dec 20 week .....	28
Oil: India wants more Middle East oil with Red Sea risk ie. impacting US, Russia .....	28
Oil: 12/25, Houthis warned US only "seen prelude & preliminary steps" .....	28

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Oil: Maersk pauses Suez transits after Houthis missile/boat attack, US Navy responds sinks 3 Houthis small boats killing the crews.....	30
Figure 36: Suez Canal vs Cape of Good Hope shipping routes.....	32
Oil: EIA estimates 8.8 mmb/d & 4.1 bcf/d thru Bab el Mandeb/Red Sea chokepoint .....	32
Figure 37: Bab el-Mandeb Strait, a world oil chokepoint.....	33
Figure 38: Bab el-Mandeb Strait, a world oil chokepoint.....	33
Figure 39: Crude oil, Condensate & Petroleum Products Flows Thru Strait of Hormuz .....	34
Figure 40: Volumes thru the Strait of Hormuz 2018-1H23 .....	34
Oil: Saudi nest egg, its net foreign assets were up +\$11.7b MoM in November .....	35
Figure 41: Saudi Arabia Net Foreign Assets .....	35
Oil: US strikes were “an unacceptable violation of Iraqi sovereignty” .....	35
Oil: Libya oil production at 1.2 mmb/d, to hit 1.4 mmb/d in 2024 .....	36
Oil: China stalled recovery/consumer weakness, official PM in Dec down for 3 <sup>rd</sup> month.....	37
Oil: China reports 2.5 to 3.4 mm respiratory diseases cases.....	37
Oil: Visitors to Hong Kong, from mainland China and elsewhere well below pre-Covid .....	38
Figure 42: Hong Kong Visitor Arrivals in November .....	38
Oil: Vortexa crude oil floating storage est 72.98 mmb at Dec 29, -17.13 mmb WoW .....	38
Figure 43: Vortexa Floating Storage Jan 1, 2000 – Dec 29, 2023, posted Dec 30 at 9am MT .....	39
Figure 44: Vortexa Estimates Posted 9am MT on Dec 30, Dec 23, and Dec 16 .....	40
Oil: Vortexa crude oil floating storage WoW changes by regions .....	40
Figure 45: Vortexa crude oil floating by region .....	40
Oil: Italy petroleum products consumption basically flat YoY in Nov 2023 .....	40
Figure 46: Italy Petroleum Products Consumption for Nov 2023 .....	41
Oil & Natural Gas: Increasing risk for an early & abrupt end to winter drilling .....	41
Figure 47: Fort St. John temperatures for Dec to Dec 27 and Jan Forecast as of Dec 28 .....	42
Figure 48: Grande Prairie temperatures for Dec to Dec 27 and Jan Forecast as of Dec 28 .....	42
Energy Transition: Bloomberg “ <i>peak gasoline demand turns out to be a mirage</i> ”.....	42
Figure 49: Global gasoline demand actual vs IEA medium-term forecast .....	44
Figure 50: Oil displacement by region and mode, 2022-2030.....	46
Capital Markets: USDA Consumer Price Index Nov for food -0.2% MoM, +3.3% YoY .....	47
Capital Markets: Canada’s Food Price Report forecasts food prices +2.5 to 4% in 2024 .....	48
Figure 51: 2024 Food Price Forecasts .....	48
Figure 52: 2023 Food Price Results: 2023 Forecasts vs Observed.....	49

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Capital Markets: Japanese stocks outperform in 2023 post Buffett’s 04/11 interview ..... 49  
 Figure 53: Japanese stocks outperform in 2023 ..... 50  
 Foreign investors in Japanese stocks ramped up post Buffett Apr 11 interview ..... 50  
 Figure 54: Positive flows into Japanese equities for 7<sup>th</sup> straight week ..... 50  
 Capital Markets: Mastercard, US retail sales +3.1% YoY this holiday season ..... 51  
 Figure 55: Mastercard Spending Pulse US Holiday Retail Sales Nov 1-Dec 24, 2023 vs 2022 ..... 51  
 Capital Markets: Bloomberg’s 10 most intriguing science breakthroughs of 2023..... 51  
 Demographics: Will people ever return to “*long form reading*” of books? ..... 52  
 Twitter: Thank you for getting me to 10,000 followers..... 52  
 LinkedIn: Look for quick energy items from me on LinkedIn ..... 53  
 Misc Facts and Figures..... 53

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**Natural Gas: -87 bcf draw from US gas storage; now +348 bcf YoY surplus**

After last week’s gas injection, this week storage saw a draw. For the week of Dec 23, the EIA reported a -87 bcf draw which is the same as the -87 bcf draw reported for the week of Dec 15, 2022. Recall that it started to turn to warmer than normal temperatures in Dec 2022. Total storage is now 3,490 tcf, representing a surplus of +348 bcf YoY compared to a surplus of +240 bcf last week. Total storage is +316 bcf above the 5-year average, up from the +280 bcf surplus last week. Below is the EIA’s storage table from its Weekly Natural Gas Storage report [\[LINK\]](#).

**US gas storage +348 bcf YoY surplus**

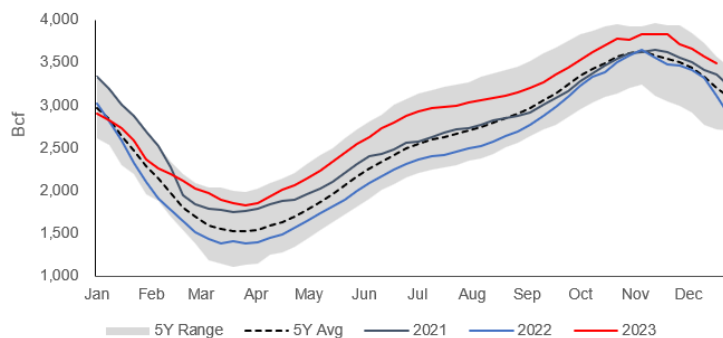
Figure 1: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf)				Historical Comparisons			
	12/22/23	12/15/23	net change	implied flow	Year ago (12/22/22)		5-year average (2018-22)	
					Bcf	% change	Bcf	% change
East	805	834	-29	-29	753	6.9	765	5.2
Midwest	985	1,021	-36	-36	910	8.2	913	7.9
Mountain	232	236	-4	-4	168	38.1	177	31.1
Pacific	280	283	-3	-3	168	66.7	236	18.6
South Central	1,187	1,203	-16	-16	1,145	3.7	1,084	9.5
Salt	329	331	-2	-2	325	1.2	315	4.4
Nonsalt	858	872	-14	-14	819	4.8	769	11.6
Total	3,490	3,577	-87	-87	3,142	11.1	3,174	10.0

Totals may not equal sum of components because of independent rounding

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



Source: EIA, SAF

**Natural Gas: NOAA sees cooler temperatures ahead except in NE US & Great Lakes**

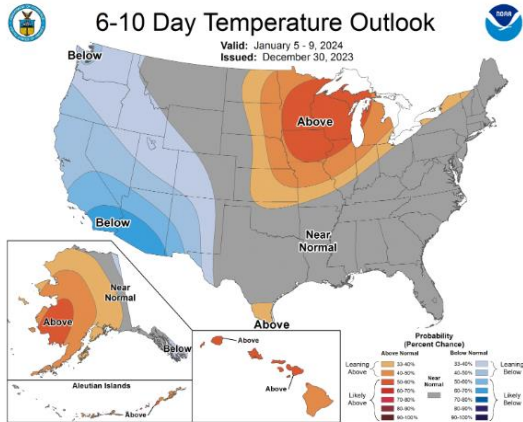
Yesterday, we tweeted [\[LINK\]](#) “Best near-term @NOAA temp outlook in a long time. But may not drive up HH #NatGas prices because key gas heating areas, Great Lakes & NE US, are expected warmer than normal. And need a cold sustained Jan after a warm Nov/Dec start to winter. #OOTT.” It’s been a warm start to winter in Nov and Dec. But we are now seeing NOAA’s near-term, 6-10 and 8-14 day, temperature outlook is showing normal to colder than normal temperatures in most of the US. What has changed vs last week’s NOAA outlook is that NOAA no longer sees the NE and Great Lakes as moving into colder than normal temperatures. Rather they now see this as the regions expected to stay warmer than normal.

**NOAA 6-10 & 8-14 day temp outlook**

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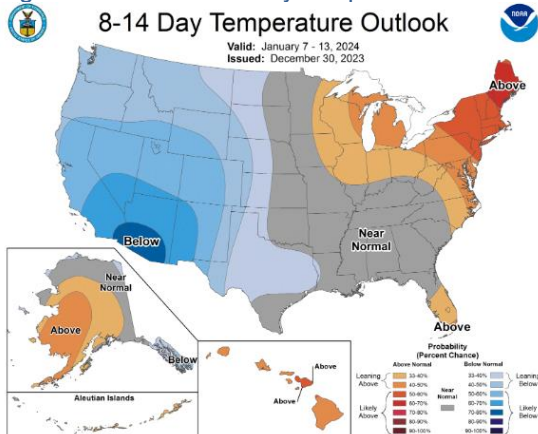
Our concern is unchanged – it’s really tough but not impossible to catch up from a warmer than normal Nov and Dec. But it needs a cold Jan and Feb. Below are the NOAA 6-10 day and 8-14 day temperature outlooks posted yesterday, Dec 30.

Figure 3: NOAA 6-10 day temperature outlook as of Dec 30



Source: NOAA

Figure 4: NOAA 8-14 day temperature outlook as of Dec 30



Source: NOAA

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

Here is what we wrote in our Nov 19, 2023 Energy Tidbits memo on overview of US home heating by fuel. “Our primary focus for winter weather tends to be in the US NE and around the Great Lakes for the combination of population density, areas that have colder winters, and a higher percentage of the US homes in these regions that primarily use natural gas for heating. Below is the EIA’s map from Oct showing the primary fuel source for heating homes. (i) On Thursday, we tweeted [\[LINK\]](#) “62% of US homes winter heated directly (46%) and indirectly (16%) by #natgas. All direct fuel % splits unchanged YoY ie. #natgas 46%, electricity 41%, etc. @EIAgov #natgas fuels 40% of electricity for home heating ie. indirect

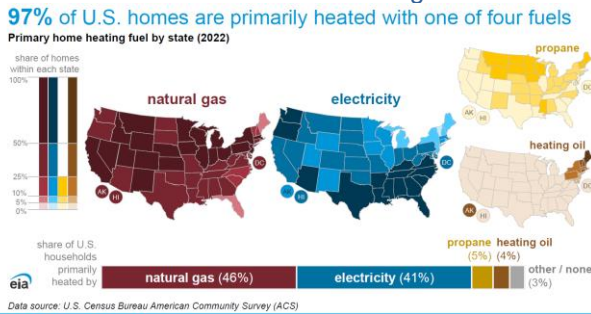
**Natural gas home heating**

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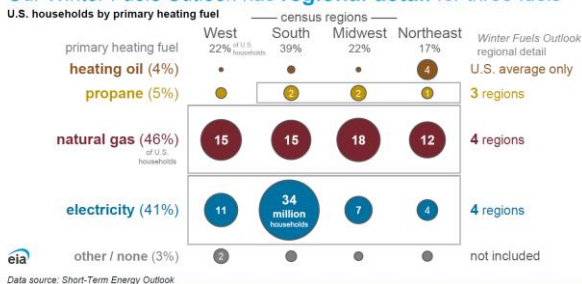
16% #OOTT.” (ii) Natural gas continues to be the major fuel for “direct” fuel for home heating with 46% of US homes followed by electricity 41%, propane 5%, heating oil 4% and other/none at 3%. Note these % shares are unchanged vs last year. (ii) much of the electricity is provided by natural gas. (iii) 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.” iv) Adding the indirect and direct, natural gas provides the fuel for 62% of US homes.”

Figure 5: Fuels for winter home heating of US homes



Source: EIA

Figure 6: Fuels for winter home heating by region



Source: EIA

**Natural Gas: US Oct gas production was 104.5 bcf/d, -0.1 bcf/d MoM, +2.3 bcf/d YoY**

The warm winter 2022/23 around the world 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 increased to over 103 bcf/d in May, June and July, and has now been of 104 bcf/d for Aug, Sept and Oct. On Friday, the EIA released its Natural Gas Monthly [LINK](#), which includes its estimated “actuals” for

**US gas production +2.3 bcf/d YoY in Oct**

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October's dry gas production. Key items to note are as follows: (i) The only revision to monthly data in 2023 was to September, which was revised +0.4 bcf/d to 104.6 bcf/d vs 104.2 bcf/d originally estimated in last month's Natural Gas Monthly. (ii) October's production of 104.5 bcf/d was +2.3 bcf/d YoY from October 2022 of 102.2 bcf/d, and down 0.1 bcf/d MoM vs the revised up September 2023 of 104.6 bcf/d. (ii) US dry gas production is now over 104 bcf/d for the past three months. Our Supplemental Documents package includes excerpts from the EIA Natural Gas Monthly.

Figure 7: 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	104.6
Oct	60.1	65.1	66.5	67.0	73.1	74.2	71.4	77.3	88.4	95.6	89.7	97.2	102.2	104.5
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	103.3

Source: EIA, SAF

### Natural Gas: US pipeline exports to Mexico at 6.5 bcf/d in September

Last week's (Dec 24, 2023) Energy Tidbits memo highlighted the new report by the US Department of Energy called "*U.S. Natural Gas Imports and Exports Monthly*". This report is an enhanced replacement to the DOE's LNG Monthly Report. The old report only used to include LNG imports and exports, whereas the new report also includes pipeline imports and exports ie. pipeline exports to Mexico. We always highlight the DOE's monthly report as it provides the data about 2 weeks before the more referenced EIA Natural Gas Monthly. The EIA is part of the DOE so the data is always the same with the occasional rounding difference. But the new report means that we get the US natural gas pipeline exports about two weeks before the EIA Natural Gas Monthly. Note that the EIA splits the natural gas exports to Mexico by pipeline vs LNG but the LNG is immaterial. On Friday, the EIA released its Natural Gas Monthly, which also provides its "actuals" for gas pipeline exports to Mexico [\[LINK\]](#), which were 6.5 bcf/d in October, down 0.2 bcf/d MoM from 6.7 bcf/d in September 2023, and up 1.0 bcf/d YoY from 5.5 bcf/d in Oct 2022. Note these the same volumes as included in last week's (Dec 24, 2023) Energy Tidbits memo reporting on the DOE's new U.S. Natural Gas Imports and Exports Monthly. 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.

**US pipeline exports to Mexico +1.0 bcf/d YoY**

Figure 8: US Natural Gas Pipeline Exports to Mexico

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

Source: DOE, EIA, SAF

**Natural Gas: US LNG exports up +7.3% MoM to 12.4 bcf/d in Oct, up +24.21% 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. The data is the same as per the DOE's U.S Natural Gas Imports and Exports Monthly. Here is what we wrote in last week's (Dec 24, 2023) Energy Tidbits memo. *"Last Friday, the Department of Energy (DOE) posted its US LNG exports estimates for October 2023 [\[LINK\]](#). Note, the DOE has changed the name from the LNG Monthly to the U.S. Natural Gas Imports and Exports Monthly. This is a reminder that the US LNG export data is available about 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. US LNG exports were up MoM to 12.4 bcf/d in October from 11.6 bcf/d in September. US LNG exports are now averaging 11.6 bcf/d per month YTD for 2023, which is +1.0 bcf/d compared to the same period in 2022. The DOE did not comment on the MoM or YoY increases. Our Supplemental Documents package includes excerpts from the U.S. Natural Gas Imports and Exports Monthly."*

**US October LNG exports**

Figure 9: US Monthly LNG Exports

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

Source: EIA, DOE

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

Volume (Bcf)	Monthly			Percentage Change	
	Oct 2023	Sep 2023	Oct 2022	Oct 2023 vs. Sep 2023	Oct 2023 vs. Oct 2022
<b>Exports</b>					
LNG by Vessel	384.3	346.5	309.4	11%	24%
Pipeline	266.9	279.0	244.5	-4%	9%
Truck	<0.1	<0.1	0.2	-47%	-86%
LNG by ISO Container	<0.1	<0.1	0.2	-30%	-73%
<b>Total</b>	<b>651.3</b>	<b>625.6</b>	<b>554.3</b>	<b>4%</b>	<b>17%</b>

Source DOE

### Natural Gas: Early & abrupt end to winter drilling should increase chance for NE BC/NW AB natural gas M&A

Later in the memo, we again highlight the very warm start to winter and how this is increasing risk to an early and abrupt end to winter drilling season in BE and Alberta. It is important to remember that it's been very warm in western Canada in Nov/Dec and there is an increasing risk to an early and abrupt end to winter drilling season. This could put at risk planned end of winter drilling. We believe an early and abrupt end to winter drill also increases the chance for NE BC/NW Alberta natural gas M&A in the run up to the start of LNG Canada 1.8 bcf/d Phase 1 LNG project. We have been highlighting how there is the need/opportunity for >15 bcf/d of new natural gas supply in US and Canada to support the current building out of new LNG capacity thru the end of the decade. This is a huge task and one that, by itself, is a set up for natural gas M&A. Here is what we tweeted on Dec 1 [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 bcf/d of US/CAN supply by 2030, incl #LNGCanada 1.8 bcf/d Phase 1 startup in a yr or so. #OOTT".

Cdn/US natural gas M&amp;A

### Good timing for strategic buyers with LNG Canada 1.8 bcf/d Phase 1

The reason for our highlighting the warm winter and the risk of an early and abrupt end to winter drilling is that it increases the probability for M&A to support LNG Canada Phase 1. Here is what we wrote in our Dec 3, 2023 Energy Tidbits memo on how a low HH gas price set up this type of M&A. "We expect to see M&A for NE BC/NW Alberta natural gas to 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 acquire 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

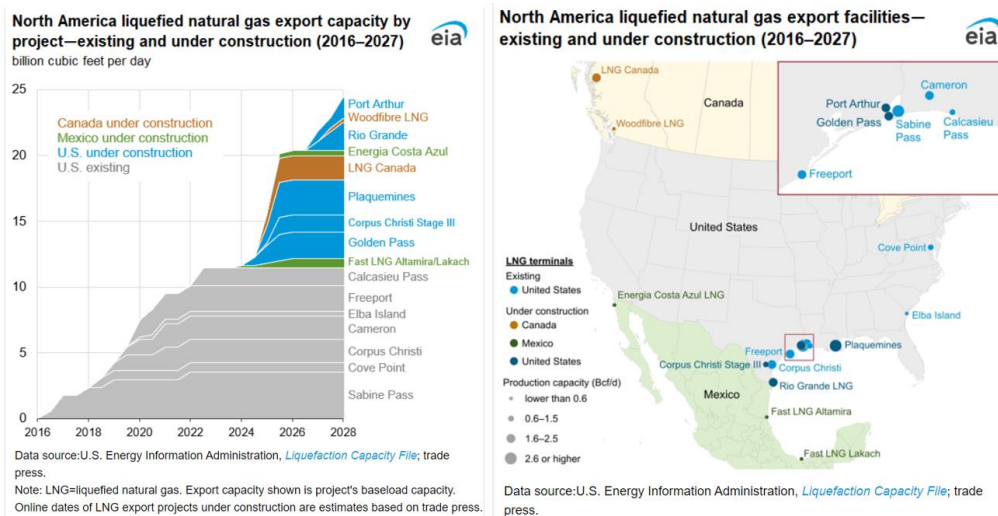
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expected improvement in Cdn natural gas differentials with adding 1.8 bcf/d of export capacity.”

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

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 doesn’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

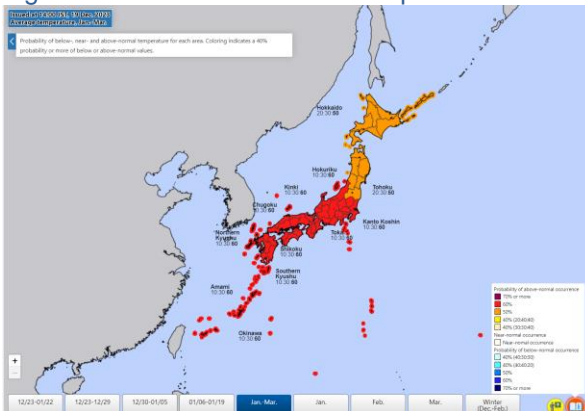
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### Natural Gas: Japan forecasts a warmer than normal Jan/Feb/Mar

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 Jan/Feb/Mar end to winter. Last week (Dec 19, 2023), the Japan Meteorological Agency posted its Jan/Feb/Mar temperature outlook and they call for a much warmer than normal temperature outlook for Jan/Feb/Mar. Below is the JMA Jan/Feb/Mar map.

Japan's JFM temperature forecast

Figure 12: JMA Jan/Feb/Mar Temperature Probability Forecast, made Dec 19, 2023



Source: Japan Meteorological Agency

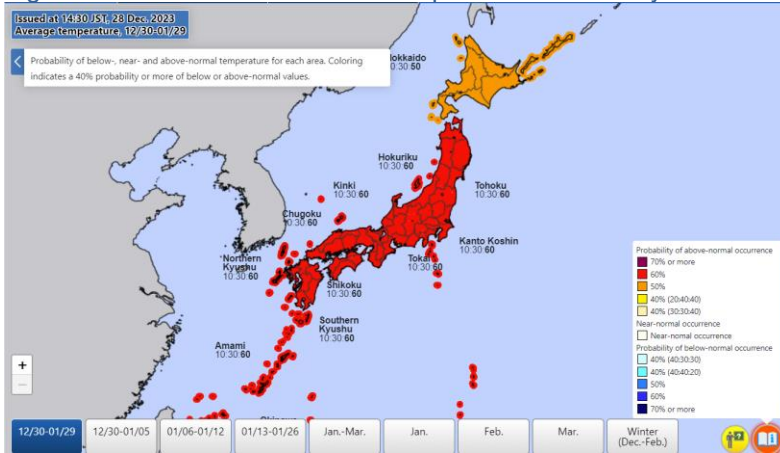
### Natural Gas: Japan forecasts much warmer than normal next 30 days ie. Jan

On Thursday, we tweeted [\[LINK\]](#) "Negative to #LNG prices. JMA forecasts warmer than normal Jan across Japan. ie. @accuweather fcast for Tokyo shows daily highs & lows above normal for next 3 wks. once get past Jan, winter cold fears in Japan for LNG are mostly gone. #NatGas #OOTT." Our concern for Asia, Europe and US is that the warmer than normal start to winter like was seen requires cold Jan/Feb or else it could be a repeat of winter 2022/23 where the warm winter led to LNG and natural gas prices held back for several months. Every Thursday, the Japan Meteorological Agency updates its 30-day outlook [\[LINK\]](#). The Dec 28 update calls for much warmer than normal temperatures for Jan. The JMA forecast is for Dec 30 – Jan 29, and starts off very hot for the first two weeks and then calling for more normal temperatures in the last two weeks for an overall much warmer than normal temperature outlook for Jan. Below is the JMA's 30-day temperature probability forecast for Dec 30 - Jan 29. And the AccuWeather forecast for Tokyo temperatures in Jan that was also attached to our tweet.

Japan's 30-day temperature forecast

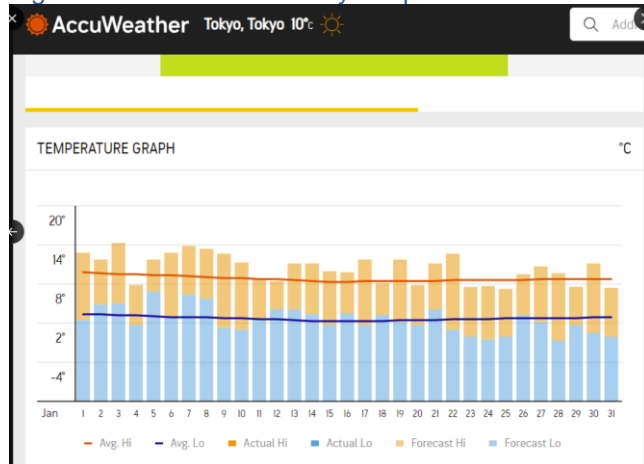


Figure 13: JMA Dec 30 Jan 29 Temperature Probability Forecast



Source: Japan Meteorological Agency

Figure 14: AccuWeather daily temperature forecast for Tokyo in Jan, made Dec 28



Source: AccuWeather

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

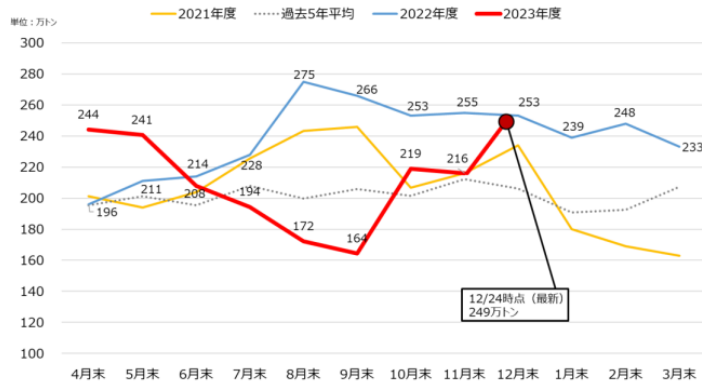
After the build in storage last week, there was a draw this week. Stocks are now just below 2022 levels but are well above the 5-year average. On Wednesdays, Japan’s METI releases its weekly LNG stocks data [LINK](#). LNG stocks on Dec 24 were 119.6 bcf, down-6.0% WoW from Dec 17 of 127.3 bcf, down -1.6% YoY from 121.5 bcf a year earlier, but above the 5-year average for the end of December of 98.9 bcf. METI did not comment on the WoW increase. Below is the Japanese LNG stocks graph from the METI weekly report.

**Japan LNG stocks down -6.0% WoW**

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Figure 15: Japan LNG Stocks



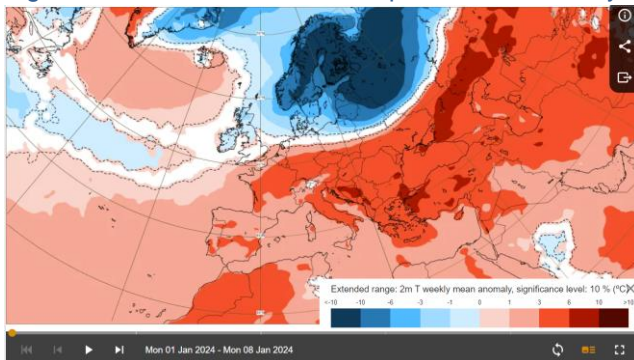
Source: METI

**Natural Gas: Warmer than normal temperatures forecast for Europe this week**

The short-term weather forecasts for Europe have been pretty accurate so far this winter. The ECMWF (European Centre for Medium-Range Weather Forecasts) temperature probability forecasts from yesterday still call for warmer than normal temperatures to start Jan before turning to colder than normal for Jan 8-15. Our view remains for Europe gas prices is that it's been too warm this winter and the worries about winter natural gas start to become less of an issue after Jan. And we aren't seeing sustained cold weather 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.

Europe temperature forecast

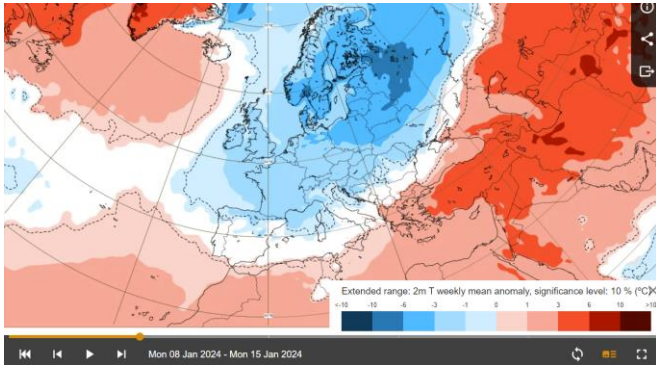
Figure 16: ECMWF Jan 1-8 Temperature Probability Forecast



Source: ECMWF

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Figure 17: ECMWF Jan 8-15 Temperature Probability Forecast



Source: ECMWF

**Natural Gas: Europe gas storage is strong in all countries in Europe**

On Wednesday, we tweeted [LINK](#) “Here’s why most aren’t too worried about EU #NatGas storage for the winter. @GIEBrussels data for Dec 26 shows #NatGas storage in good shape across EU. #OOTT” GIE posts a daily recap of gas storage by EU country. Our tweet showed the Dec 26 data but the table below is the GIE’s data as of Dec 29 close. The takeaway from the GIE by country data is that natural gas storage levels are solid across Europe and it’s now the end of December so the first of the key winter months is over. And the forecasts for Jan are for closer to normal temperatures but not consistently colder than normal and therefore it’s not causing any stress to natural gas markets given the storage levels.

**Gas storage in EU countries**

Figure 18: Natural gas storage by country as of Dec 29

Name	Gas in storage TWh	Full %	Trend %	Consumptio... TWh	Stock/Cons ** %	Injection GWh/d	Withdrawal GWh/d	Technical Ca... TWh	Injection Ca... GWh/d	Withdrawal ... GWh/d
EU	986.7901	86.60	-0.13	3760.8700	26.24	928.62	2356.2	1139.4834	11644.97	20068.34
Austria	90.5864	92.77	0.12	91.0000	99.55	116.04	0.0	97.6438	852.33	1070.84
Belgium	7.2936	82.60	0.15	167.3600	4.36	12.90	0.0	8.8300	88.14	169.66
Bulgaria	4.8560	82.45	0.00	31.0900	15.62	0.00	0.0	5.8898	41.23	40.91
Croatia	3.4768	72.85	-0.15	28.0200	12.41	2.65	16.0	4.7725	43.87	51.57
Czech Republic	40.2085	89.60	0.05	84.8300	47.40	39.47	15.1	44.8731	511.85	695.87
Denmark	9.0929	89.81	0.36	19.5300	46.56	40.75	4.3	10.1250	90.72	180.00
France	112.4846	83.72	-0.23	441.2800	25.49	179.97	483.4	134.3507	1130.85	2487.55
Germany	231.7383	90.94	0.04	888.8300	26.07	382.53	286.8	254.8323	4025.71	6806.96
Hungary	61.2289	87.38	-0.14	105.5600	58.00	0.24	95.9	70.0691	455.22	798.90
Ireland										
Italy	161.0276	81.76	-0.43	750.6000	21.45	17.20	829.9	196.9627	1699.23	2916.10
Latvia	17.9744	79.53	-0.15	9.3200	192.86	0.00	33.8	22.6000	51.00	257.00
Netherlands	117.4778	82.42	-0.13	312.1900	37.63	45.99	230.8	142.5291	1447.05	2829.04
Poland	35.7903	95.41	0.12	206.2000	17.36	50.16	6.7	37.5109	359.01	595.31
Portugal	3.7758	105.76	-1.30	64.4800	5.86	0.00	46.4	3.5700	24.00	85.68
Romania	28.3826	83.81	-0.32	112.3500	25.26	7.56	116.5	33.8636	240.75	341.44
Slovakia	29.8967	81.09	-0.17	59.1600	50.54	33.16	94.8	36.8690	416.96	491.56
Spain	31.4022	92.11	-0.28	380.6100	8.25	0.00	95.9	34.0904	166.57	241.37
Sweden	0.0560	95.35	0.00	8.4600	1.14	0.00	0.0	0.1015	6.49	8.58
United Kingdom (Pre-Brexit)										
Non-EU	98.8707	29.93	-0.14	991.1155	9.98	219.44	690.2	330.3302	2772.74	2048.59
Serbia										
Ukraine	89.2348	27.85	-0.21	221.6400	40.26	0.00	688.5	320.4666	2256.81	1546.81
United Kingdom (Post-Brexit)	9.6360	97.69	2.20	769.4755	1.25	219.44	1.7	9.8636	515.93	501.78

Source: GIE

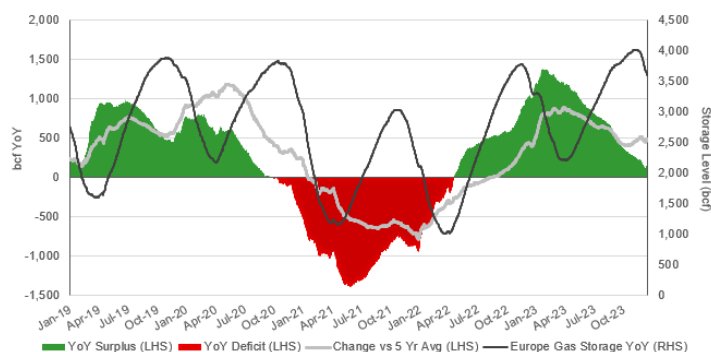
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**Natural Gas: Europe storage drops to 86.98%**

The cooler temperatures were more typical of winter in Europe over the past couple weeks has finally led to consistent 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 -0.65% WoW to 86.98% on Dec 27 vs 87.63% on Dec 20. Storage is now +3.80% greater than last year's levels of 83.18% on Dec 27, 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.

**Europe gas storage**

Figure 19: European Gas Storage Level



Source: Bloomberg, SAF

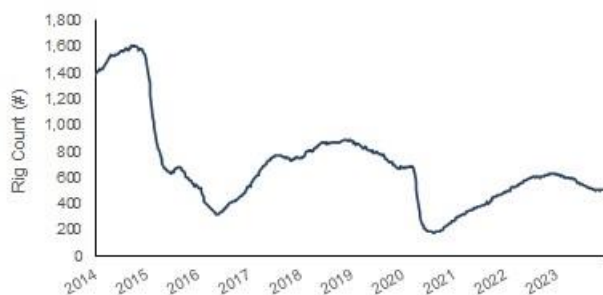
**Oil: US oil rigs +2 WoW to 500 rigs, US gas rigs flat WoW at 120 rigs**

US rigs are different than Canada at Christmas time. Normally, US rigs have a modest decline over Christmas and then rigs come back in Jan. However there are years where natural gas prices and/or oil prices ended December very weak and rigs keep declining in January. This week there was a modest increase in US oil rigs. On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Total US oil rigs were +2 rigs WoW to 500 oil rigs as of Dec 29. US oil rigs went below 520 rigs on Aug 25 and stayed there for 4 weeks and for the last 14 weeks have been between 494 and 507 oil rigs. (ii) The major basin changes for oil rigs were Permian +2 oil rigs WoW to 305 Permian oil rigs, Others +1 oil week WoW to 71 oil rigs, and Eagle Ford -1 oil rigs WOW to 49 oil rigs. (iii) US gas rigs were flat WoW at 120 gas rigs.

**US oil rigs +2 WoW**

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Figure 20: Baker Hughes Total US Oil Rigs



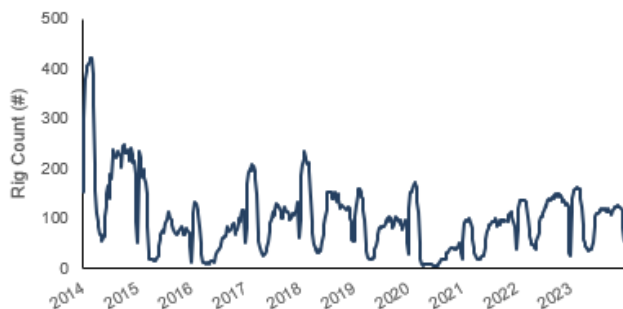
Source: Baker Hughes, SAF

**Oil: Total Cdn rigs down -60 to 86 total rigs**

As expected, there was a big reduction in Cdn rigs with Christmas and we should start to see the normal post Christmas/New Year's increase in rigs this week. For the week of Dec 29, total Cdn rigs were down -60 WoW to 86 total rigs. On a per province basis, Alberta was down -48 rigs WoW to 653 rigs, BC was up +1 WoW to 20 rigs, and Saskatchewan was down -11 rigs WoW to 0 rigs. Cdn oil rigs were down -54 rigs WoW to 27 oil rigs and are up +2 oil rigs YoY. Cdn gas rigs were down -6 rigs WoW to 59 gas rigs, which is flat YoY.

**Cdn total rigs  
down WoW**

Figure 21: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes, SAF

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

Last week, there was a third upward adjustment to the EIA weekly estimates in H2/23, this time a +0.2 mmb/d adjustment. 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. Then, our Oct 15<sup>th</sup> Energy Tidbits memo highlighted the EIA's second big, another +0.4 mmb/d, adjustment to the weekly production estimates. On Wednesday, Dec 20<sup>th</sup>, the EIA wrote "*When we release the Short-Term Energy Outlook (STEO) each month, the weekly estimates of domestic crude oil production are reviewed to identify any differences between recent trends in survey-based domestic 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 189,000 barrels per day, which is about 1.4% of this week's*

**US oil production  
flat WoW**

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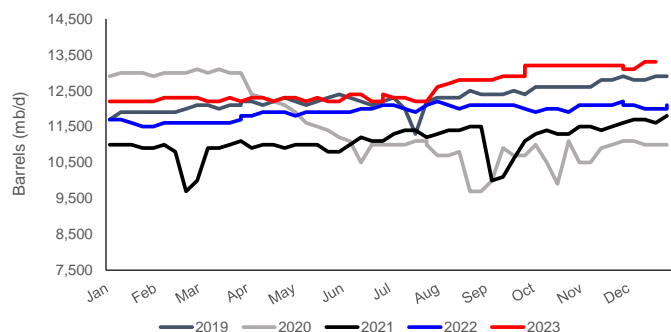
estimated production total". This 3<sup>rd</sup> EIA adjustment was needed to bring the weekly production estimates in line with the EIA's actuals. We saw the 2<sup>nd</sup> adjustment pretty much make up for the October estimates being off in the Nov 30 Form 914. This week, the EIA's production estimates were up flat WoW at 13.300 mmb/d for the week ended December 22. Alaska was up +0.007 mmb/d WoW to 0.437 mmb/d. Below is a table of the EIA's weekly oil production estimates.

Figure 22: EIA's Estimated Weekly US Field Oil Production

Year-Month	Week 1		Week 2		Week 3		Week 4		Week 5	
	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		
2023-Dec	12/01	13,100	12/08	13,100	12/15	13,300	12/22	13,300		

Source: EIA

Figure 23: EIA's Estimated Weekly US Oil Production



Source: EIA, SAF

**Oil: EIA Form 914 – US October oil production actuals +0.870 mmb/d YoY**

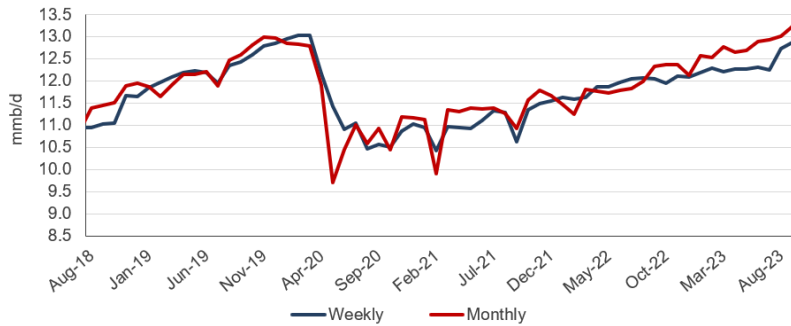
On Friday, the EIA released its Form 914 data [\[LINK\]](#), which is the EIA's "actuals" for October US oil and natural gas production. As noted above and previously, over the past four months the EIA has had to make big upward adjustments to their weekly oil supply estimates to bring them more in line with the Form 914 actuals. The upward adjustments to the EIA weekly oil estimates were +0.4 mmb/d in Aug, then another +0.4 mmb/d in Oct and then last week's +0.2 mmb/d. On Friday, the EIA released its Form 914, which are its "actuals" for oil and gas production in October. (i) Revisions. There were no revisions to the monthly data for Jan thru July. August was immaterially revised up 29,000 b/d to 13.041 mmb/d vs prior estimate

**EIA Form 914  
October**

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of 13.012 mmb/d. September was immaterially revised up 14,000 b/d to 13.252 mmb/d. (ii) EIA estimates October at 13.248 mmb/d, which would be basically flat MoM to 13.252 mmb/d in Sept 2023, and up +870,000 b/d YoY vs 12.376 mmb/d in October 2022. (iii) October at 13.248 mmb/d is close but a little higher than the EIA weekly estimates of 13.190 mmb/d for October.

Figure 24: EIA Form 914 US Oil Production vs Weekly Estimates



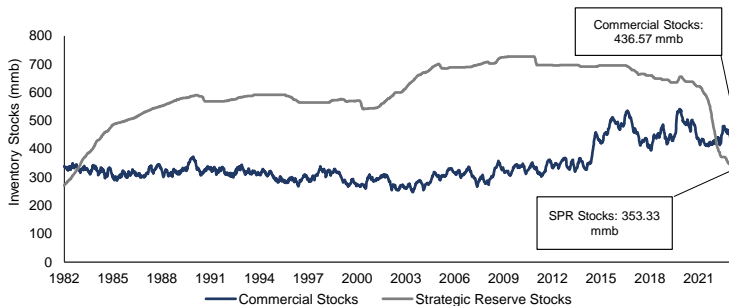
Source: EIA, SAF

**Oil: US SPR reserves now -83.235 mmb lower than commercial crude oil reserves**

**US SPR reserves**

Oil in the US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sept 16, 2022 week. The deficit narrowed this week after a big draw in commercial oil stocks of -7.114 mmb. The EIA’s weekly oil data for December 22 [LINK](#) saw the SPR reserves increase +0.793 mmb WoW to 353.333 mmb, while commercial crude oil reserves decreased -7.114 mmb to 443.568 mmb. There is now a -83.235 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles.

Figure 25: US Oil Inventories: Commercial & SPR

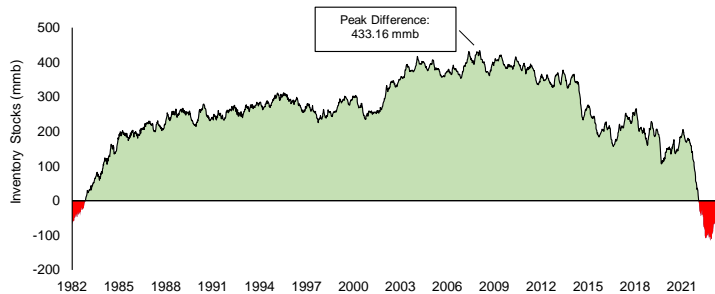


Source: EIA, SAF

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Figure 26: US Oil Inventories: SPR Less Commercial



Source: EIA, SAF

**Oil: US gasoline prices -0.01 this week to \$3.12**

It seems like US gasoline prices, at least for now, seem to be holding around \$3.10 for the past few weeks on a national average. Yesterday, AAA reported that US national average prices were \$3.12, which is down \$0.01 WoW, down \$0.13 MoM and down \$0.06 YoY from \$3.18. Remember the big gasoline crisis last summer saw US gasoline prices started to ease below \$4 in August 2022 and were helped in Q4/22 by the SPR releases.

**US gasoline prices****Oil: Crack spreads up \$0.70 WoW to \$23.57**

We remind that oil demand is driven by refiners and their ability to make money by processing oil and selling petroleum products. So crack spreads are a good indicator if refiners will be looking to buy more or less oil. And crack spreads have been bouncing around +/- \$2 for the last seven weeks. This week, crack spreads were +\$0.70 WoW to \$23.57, which followed \$22.87 as of Dec 22, \$24.79 on Dec 15, \$22.56 on Dec 8, \$22.50 on Dec 1, \$23.36 on Nov 24, \$23.95 on Nov 17, and \$22.39 on Nov 10. Crack spreads at \$23.57 are a little above the high end of the more normal pre-Covid that was more like \$15-\$20, which should support the continued normal seasonal ram up in refinery runs.

**Crack spreads basically flat this week****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 \$22.87 as of the Friday Dec 22, 2023 close.

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Figure 27: Cushing Crude Oil 321 Crack Spread Dec 29, 2013 to Dec 29, 2023



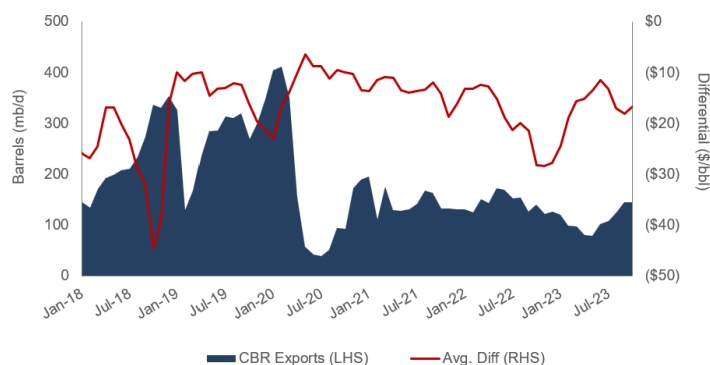
Source: Bloomberg

**Oil: Cdn crude by rail exports at 145,881 b/d in October, up +4.3% YoY**

We have reached out a couple times to the EIA (but never get a response) as to why their crude by rail imports from Canada data are so much lower than the CER data for Cdn crude by rail exports to the US. Our assumption is that the major reason for the difference is likely Cdn crude by rail that goes directly to the Gulf Coast and then onto tankers for export ie. never stay in the US. On Dec 18, the CER released their Canadian crude exports by rail figures for October. October crude exports by rail were 145,881 b/d, essentially flat MoM from 144,614 b/d in September but up +4.3% YoY from 139,915 b/d in October 2022. Below we note the EIA crude by rail imports from Canada that were only 85,000 b/d for Oct. This is 61,000 b/d less than the CER's estimate of crude by rail exports for Oct, which fits our thesis that the large variance likely represents Cdn crude by rail that is shipped directly to the Gulf Coast for loading on tankers for exports ie. the US never receives and keeps the barrels in the US. The WCS–WTI differential still provide the price incentive for crude by rail to the Gulf coast. But May and June and July to a lesser extent were impacted by oil sands maintenance. The CER doesn't provide any explanation for the MoM changes. Below is our graph of Cdn crude by rail exports compared to the WCS–WTI differential.

**Cdn crude by rail up YoY in Oct**

Figure 28: Cdn Crude By Rail Exports vs WCS Differential



Source: Canadian Energy Regulator, Bloomberg

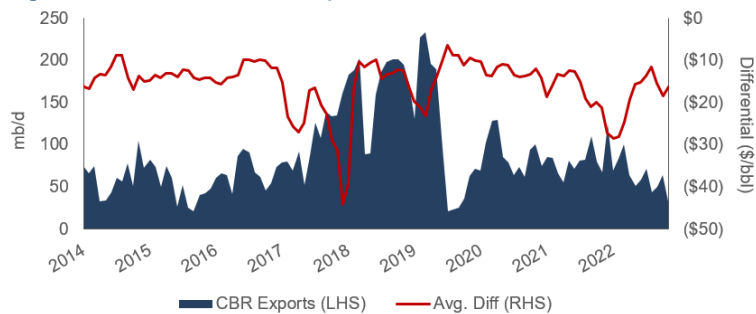
### Oil: EIA estimates total Cdn crude by rail imports +43,000 MoM to 85,000 b/d in Oct

As noted above, there is a 61,000 b/d discrepancy on the CER's estimate of Cdn crude by rail exports vs the EIA's estimate of 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". On Friday, the EIA posted its "U.S. Movements of Crude Oil by Rail" [\[LINK\]](#), which includes the EIA data on US imports of Cdn crude by rail. EIA estimates total US imports of Cdn crude by rail were 85,000 b/d in October, which was +43,000 b/d MoM from 42,000 b/d in Sept. The EIA estimates Cdn crude by rail into PADD 3 (Gulf Coast) were 45,000 b/d in Oct, which was +12,000 b/d MoM from 33,000 b/d in Sept. 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.

### EIA Cdn crude by rail imports

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Figure 29: Canada CBR Exports to US Gulf Coast vs WCS Differential



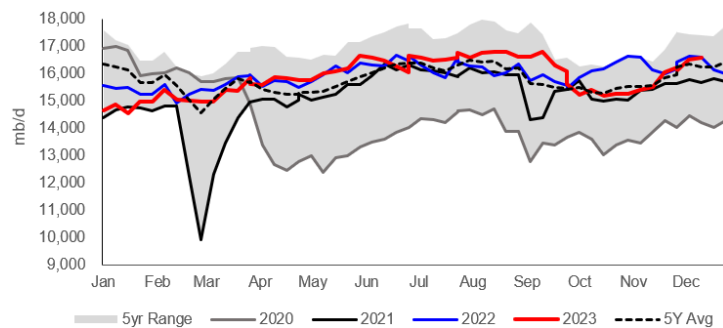
Source: EIA, Bloomberg

**Oil: Refinery inputs up +0.058 mmb/d WoW to 16.558 mmb/d**

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 are in their normal seasonal winter ramp up so we have been seeing a steady increase in crude inputs. On Thursday, the EIA released its estimated crude oil input to refinery data for the week ended December 22 [LINK]. The EIA reported crude inputs to refineries were up +0.058 mmb/d this week to 16.558 mmb/d and are up +0.409 mmb/d YoY. Refinery utilization was up +0.9% WoW to 93.3%, which is +1.3% YoY. We likely hit the seasonal peak in refining in September.

**Refinery inputs  
+0.058 mmb/d  
WoW**

Figure 30: US Refinery Crude Oil Inputs



Source: EIA, SAF

**Oil: US net oil imports -0.209 mmb/d WoW as oil imports down -0.415 mmb/d WoW**

The EIA reported US "NET" imports were down -0.209 mmb/d to 2.361 mmb/d for the December 22 week. US imports were down -0.415 mmb/d to 6.276 mmb/d against exports which were -0.206 mmb/d WoW to 3.915 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

**US net oil  
imports**

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Venezuela into the Gulf Coast. Give the EIA credit for putting out weekly oil import estimates, but it's a reminder that we have to be careful about using the weekly oil import estimates. Rather we need to make sure we go to the monthly data for oil imports. ii) The WoW increase in US imports was driven mostly by "Top 10". The Top 10 was down -0.794 mmb/d. Some items to note on the country data: (i) Canada was down -0.258 mmb/d to 3.428 mmb/d. (ii) Saudi Arabia was down -0.331 mmb/d to 0.075 mmb/d. (iii) Mexico was down -0.471 mmb/d to 0.380 mmb/d. (iv) Colombia was down -0.058 mmb/d to 0.157 mmb/d. (v) Iraq was up +0.358 mmb/d to 0.380 mmb/d. (vi) Ecuador was up +0.093 mmb/d to 0.142 mmb/d. (vii) Nigeria was down -0.082 mmb/d to 0.080 mmb/d.

Figure 31: US Weekly Preliminary Imports by Major Country

(thousand b/d)	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	Dec 1/23	Dec 8/23	Dec 15/23	Dec 22/23	WoW
Canada	3,880	3,291	3,544	3,723	3,387	3,485	3,873	3,835	3,846	3,243	3,972	3,572	3,686	3,428	-258
Saudi Arabia	383	291	67	208	436	294	192	242	224	141	400	316	406	75	-331
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	844	524	656	609	614	1,004	465	366	971	571	876	633	851	380	-471
Colombia	286	143	289	150	146	74	364	316	217	143	289	214	215	157	-58
Iraq	280	306	247	127	182	351	187	283	36	178	166	85	22	380	358
Ecuador	167	125	0	0	92	133	61	36	126	112	252	233	49	142	93
Nigeria	3	0	46	48	89	30	39	70	79	174	226	111	162	80	-82
Brazil	240	209	362	63	221	168	234	135	257	148	274	255	197	238	-58
Libya	0	89	88	47	86	106	0	86	86	0	87	87	86	0	-1
Top 10	6,083	4,978	5,299	4,975	5,253	5,645	5,415	5,369	5,842	4,710	6,542	5,506	5,674	4,880	-794
Others	1,146	1,237	1,030	967	760	780	979	1,004	687	1,123	966	1,011	1,076	1,396	320
Total US	7,229	6,215	6,329	5,942	6,013	6,425	6,394	6,373	6,529	5,833	7,508	6,517	6,750	6,276	-474

Source: EIA, SAF

### Oil: Pemex refineries, excl Olmeca, ran at 46.9%, still down vs May 56.2%

Going into 2023, Mexico's (Pemex) ramp up in its existing refineries capacity utilization and the start up of the new 340,000 b/d Olmeca (formerly known as Dos Bocas) was expected to have a big reduction to Mexico oil exports including to the US Gulf Coast. But that didn't happen as Olmeca start was delayed and Pemex had a series of problems at its refineries in the first 4-months of 2023. But we wonder the recent Oct data is the start of a downward trend in Mexico oil exports as Olmeca is ramping and the existing refineries increases their run times. On Wednesday, Bloomberg wrote "*Pemex's refineries operated below half of installed capacity in November for the seventh straight month as it struggles to raise runs after half of its facilities were hit by fires, according to company data compiled by Bloomberg. \* Utilization rate rose to 46.9% from 37.4% in October \*\* In May, half of the company's refineries were hit by fires; prior to that, they were operating at 56.2% of capacity \*\* Mexico's six refineries have capacity to process 1.627m b/d of crude, according to Pemex \* The Madero refinery, a processor of heavy crude Maya, operated below 10% capacity for the second month \* Pemex didn't disclose data for its new Olmeca refinery near the port of Dos Bocas, which started operations in September.*"

**Pemex refineries  
run at 46.9%**

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Figure 32: Pemex (Incl Partners) Mexico Oil Production

Refinery	November (b/d)	m/m	y/y	Capacity use	NOTE
Cadereyta	147,226	22%	8.5%	53.5%	5-month high
Madero	16,737	174%	-83%	8.8%	
Tula	222,778	50%	-3.2%	70.7%	7-month high
Salamanca	132,864	36%	11%	60.4%	10-month high
Minatitlan	129,799	40%	1.4%	45.5%	6-month high
Salina Cruz	113,107	-21%	-29%	34.3%	Lowest since Nov. 2020
Dos Bocas	not available				
Total	762,512	25%	-13%	46.9%	

Source: Pemex, SAF

**Mexico oil exports in Oct were down 0.160- mmb/d MoM**

As noted above the new 340,000 b/d Olmeca refinery started operations in September but we do not have any indication of how much crude is being processed. But there was an indicator that it is processing some level as Pemex oil exports were down 0.160 mmb/d MoM to 0.883 mmb/d. Here is what we wrote in last week's (Dec 24, 2023) Energy Tidbits memo on the Pemex October oil export data. "On Friday, Pemex posted its oil exports for November [LINK](#) Pemex does not provide any commentary on the data but reported November oil exports were 0.883 mmb/d, which was -1.1% YoY and -16.1% MoM vs 1.053 mmb/d in October. Pemex oil exports were down 0.160 mmb/d MoM and its exports to the US were down 0.126 mmb/d MoM to 0.631 mmb/d vs 0.757 mmb/d in October 2023. The US tends to be a higher margin market so Pemex typically prioritizes oil exports to the US. Please note that Mexico oil exports were expected to decline in Q4/23 with the start up of their new 340,000 b/d Olmeca (formerly known as Dos Bocas) refinery. Pemex does not provide the refinery processing volumes for November but does provide an indicator by noting its production of refined products in November was +0.161 mmb/d MoM and more refined oil means less oil for export. Below is our table of the Pemex oil export data."

Figure 33: 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	883	-1.1%
Dec	1,115	1,401	1,198	1,115	1,243	1,037	900		

Source: Pemex, SAF

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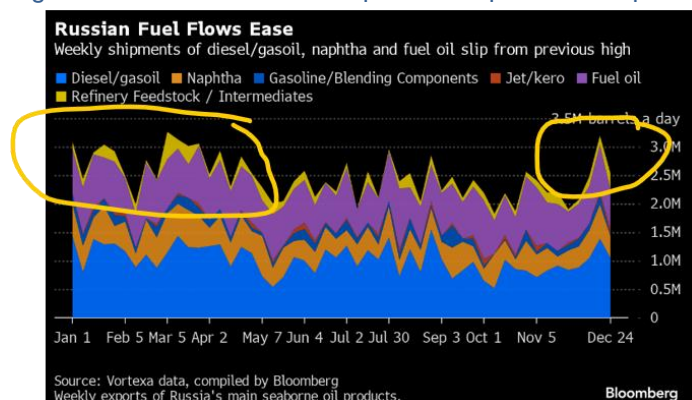


**Oil: Russia petroleum product shipments 4-wk average at highest level in 7 months**

On Thursday, we tweeted [LINK](#) 'Looks like Russia has some work to do to cut petroleum product exports. 4-wk ave RUS petroleum product exports +157 kbd to 2.6 mmbd for wk ended Dec 24. More volatile weekly flows -660 kpb/d to 2.5 mmbd for Dec 24 wk. Note steady exports to Middle East. Thx @prejula #OOTT.' Note we normally report on Bloomberg's weekly crude oil exports but we didn't see any such report this week with Christmas. But Bloomberg did report on Russia petroleum products exports. The weekly petroleum product exports were down -660,000 b/d WoW but the 4-week averages was the highest level in seven months. Bloomberg reported "Russia's oil-product exports dropped on a weekly basis, led by a slump in shipments of diesel, naphtha and fuel oil. The more volatile weekly flows for the period through Dec. 24 slipped to 2.5 million barrels a day, according to data compiled by Bloomberg from analytics firm Vortexa Ltd. That was about 666,000 barrels down from the revised figure for the period to Dec. 17. However, the four-week average climbed to the highest in more than seven months amid a ramp-up in oil processing at Russian refineries. Oil-product flows from the nation reached 2.6 million barrels a day in the four weeks to Dec. 24, up by 157,000 barrels a day from the previous week. Our Supplemental Documents package includes the Bloomberg report.

**Russia petroleum product shipments.**

Figure 34: Russia's seaborne petroleum products shipments thru Dec 24 week



Source: Bloomberg

**Oil: Russian refineries processing oil at increasing seasonal rate**

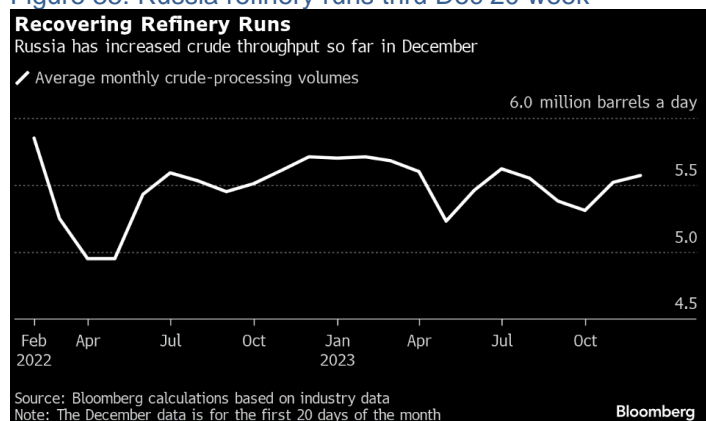
Russia oil refineries oil processing was down 50,000 b/d WoW but continue at increasing seasonal rates. We remind of the fundamental that, absent unusual items, if Russian refineries process more oil, it would mean less oil for export. On Monday, Bloomberg reported "Russia's oil processing in the past week remained close to its highest daily refining runs in more than eight months amid decreased seaborne exports. The nation's refineries processed around 5.65 million barrels of crude a day from Dec. 14 to Dec. 20, according to a person with knowledge of the matter. That's down some 50,000 barrels a day, or 0.88%, from the previous seven days, when average daily refinery runs reached the highest since early April. Russian daily crude refining in the first 20 days of December averaged around 5.57 million barrels a day, up almost 60,000 barrels a day on most of November, according to

**Russia oil refinery runs stay high**

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*Bloomberg calculations based on historic data.* Our Supplemental Documents package includes the Bloomberg report.

Figure 35: Russia refinery runs thru Dec 20 week



Source: Bloomberg

### Oil: India wants more Middle East oil with Red Sea risk ie. impacting US, Russia

On Wednesday, we tweeted [LINK](#) “Can Russia cut deal with Houthis to get their #Oil tankers free from attacks? If not, set to lose market share. India is #3 largest oil importer, refiners are seeking to boost supplies from Middle East & other nearby nations reports @journalakesh @29\_ruchibhatia #OOTT.” (i) On Bloomberg wrote “Refiners in India, the world’s third-largest crude oil importer, are seeking to boost supplies from the Middle East and other nearby nations as recent attacks on ships in the Red Sea raise the risk of longer shipping time and higher costs, according to people familiar with the matter.” And “Shipping companies are asking Indian firms to bear the risk premiums for deliveries via the usual route, said the people, who asked not to be identified because of the sensitivity of the issue. The refiners are not willing to bear the additional liability and are scouting for alternative suppliers, they said. Indian refiners are concerned their margins may come under pressure due to a sharp rise in insurance and freight costs. However, they also need to keep pace with domestic demand, which is rising because of the South Asian nation’s rapid economic growth.” (ii) We don’t have the import data but the key oil supplier to India thru the Suez Canal is likely Russian Urals crude, which is why our tweet asked if Russian can cut deal with the Houthis. We would have thought Russia’s relationship with Iran would given comfort to Russian tankers such that Indian refiners wouldn’t be hit with another cost. (iii) The other India supplier to be hit would be US. US oil exports to India have been cut hugely since India started getting Russian discounted oil. US has still been exporting about 200,000 b/d for the last several months but in the last seven months of 2021, US oil exports ranged from 300,000 to 700,000 bpd to India.

India wants more Middle East oil

### Oil: 12/25, Houthis warned US only “seen prelude & preliminary steps”

The Houthis responded to last week’s US announcement of “Operation Prosperity Guardian” with their own warning to the US that it was only getting started on what it was doing in the Red Sea. The Houthis had a very strong warning to the US and any countries working with them to help Israel. They clear warn they are only now just getting started. On Monday, we

Houthis warn US

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tweeted [\[LINK\]](#) *"#Houthis warn only "seen prelude & preliminary steps". Weapons have greater range. "no red lines in front of us" claim to seas also includes "Arabian Sea" Not just US, also "Britain, France & U those in their orbit" you have seen are a prelude and preliminary steps." #OOTT.*" There were multiple warnings from the Houthis defense minister. The Houthis aren't going away and continue to warn the US, UK, France and anyone else who joins in to help Israel. They warn their weapons have longer range than most expect and there are no red lines in front of them. Saba (Yemen news) wrote *"Major General Al-Atefi said: "Our strategic deterrent weapons and their ranges reach far beyond what the enemies expect, and there are no red lines in front of us. All possibilities are open, all the time distance is absolute, and our fighting spirit is long."* They highlight their claim to seas also includes the "Arabian Sea", whereas most just normally think of them as Red Sea and Bab el Mandeb. They remind its not just the US but *"America, Britain, France, and those in their orbit".* And they aren't stopping as long as Hamas is under attack *"."* *Because we provide you with the painful future as long as you persist in your hostile attitudes against our brothers and people in the besieged and abused Gaza.* " He continued, *"Be certain that we will transform the geography of the seas, from the Red Sea, the Gulf of Aden, the Arabian Sea, and Bab al-Mandab, into the curse of geography that will descend upon your heads like lightning bolts."* And they aren't stopping as long as Hamas is under attack *"."* *Because we provide you with the painful future as long as you persist in your hostile attitudes against our brothers and people in the besieged and abused Gaza.* " He continued, *"Be certain that we will transform the geography of the seas, from the Red Sea, the Gulf of Aden, the Arabian Sea, and Bab al-Mandab, into the curse of geography that will descend upon your heads like lightning bolts."* Our Supplemental Documents package includes the Saba report on the Houthi Defense Minister comments. [\[LINK\]](#)

### **12/30, US no sign Houthis will stop the reckless attacks on ships in Red Sea**

We have to believe the working assumption, until proven to the contrary, is that the Houthis are going to keep attacking ships and US Navy in the Red Sea even with the US-led Operation Prosperity Guardian. Yesterday, we tweeted [\[LINK\]](#) "12/25.

👉 *Houthis warned US only "seen prelude & preliminary steps" in Red Sea. Today, US says Yemen's Houthis show no signs of ending their "reckless" attacks on commercial ships in the Red Sea reports @ruskygal. What did US expect? #OOTT* [\[LINK\]](#)." It almost sounded like the US is surprised the Houthis haven't stopped their attacks on commercial ships and US Navy in the Red Sea. This is despite the Houthis Defense Minister's warning on Dec 25 that the US has only *"seen prelude and preliminary steps"* in their Red Sea attacks as well as they don't see any red lines to their approach. The AP wrote *"Yemen's Houthi rebels show no signs of ending their "reckless" attacks on commercial ships in the Red Sea, the top commander of U.S. naval forces in the Middle East said Saturday, even as more nations join the international maritime mission to protect vessels in the vital waterway and trade traffic begins to pick up. Since Operation Prosperity Guardian was announced just over 10 days ago, 1,200 merchant ships have traveled through the Red Sea region, and none has been hit by drone or missile strikes, Vice Adm. Brad Cooper said in an Associated Press interview."* Cooper did not say how many Houthi missiles or drones were shot at commercial ships and/or US navy ships in this 10 day period.

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### 12/19 Houthis “will turn the Red Sea into a graveyard of the US-led coalition”

Don't forget the Houthis gave a stark warning to the US two weeks ago. Here is what we wrote in last week's (Dec 24, 2023) Energy Tidbits memo. *“The Houthis gave a couple of very direct warnings to the US and its partners in protecting the Red Sea. The question is will it stop the US (i) We were surprised that the Houthis defense minister blunt warning to the US was overlooked. On Tuesday, we tweeted [\[LINK\]](#) ““The Yemeni Armed Forces will turn the Red Sea into a graveyard of the US-led coalition if the alliance decides to take any action against Yemen,” Houthis Defense Minister. Will this keep the US et al from retaliating against drones/missiles shot at their navy? #OOTT.” Iran's PressTV reported “Yemen's defense minister has denounced the formation of a US-led maritime task force in the Red Sea to protect the passage of merchant vessels bound for the Israeli-occupied territories, cautioning the Western alliance that any assault on Yemeni soil will have dire consequences. “We are in possession of munitions and military gear that can sink your warships, submarines and aircraft carriers,” Major General Mohammad al-Atifi said on Monday. “The Yemeni Armed Forces will turn the Red Sea into a graveyard of the US-led coalition if the alliance decides to take any action against Yemen,” he said.” (ii) Houthis leader repeated the warning on Wednesday that the Houthis will target US interests if the US attacks the Houthis. We tweeted [\[LINK\]](#) “Will Houthis leader speech keep US from attacking? Any US attack will be met w/ targeting US “battleships, interests, & navigation with missiles, drones, & military operations. Also warns UK, France, Italy & others. Regrets Arab countries shooting down Houthi missiles. #OOTT.” The Houthis leader made a major speech and he had a similar warning to the US and its allies but didn't have the same colorful description as the Houthis defense minister. Our tweet included the full speech. He said “The Leader of the Revolution stressed that the Yemeni people will not stand idly by if the Americans have a tendency to escalate further and commit foolishness by targeting the country or launching a war against it, and that any “American targeting of Yemen will be met with targeting of American battleships, interests, and navigation with missiles, drones, and military operations.” He said: “We are not among those who stand idly by while the enemy targets them. We are a people who reject injustice, rely on God, and do not fear direct American threats and aggression.” He added, “As long as the American wants to enter into a direct war with us, he should know that we are not among those who fear him, and that he is facing an entire people and not a specific group. If he wants to prevent the Yemeni position towards Palestine, then he is in trouble with all the Yemeni people.” He continued: “If the American sends his soldiers to Yemen, he should know that he will face something harsher than what he faced and suffered in Afghanistan and Vietnam. He should also not imagine that he can strike here or there and then send mediations to calm the situation.” Our Supplemental Documents package includes the PressTV report and the Houthis leader speech.”*

### Oil: Maersk pauses Suez transits after Houthis missile/boat attack, US Navy responds sinks 3 Houthis small boats killing the crews

Breaking news this morning in the Red Sea should likely be the oil story for oil markets. Please note that we have a 7am MT news cut off. But the breaking news was the Houthis attack on a Maersk container ship and the US response, which was significant from a few

**US sinks 3  
Houthis boats  
killing crews**

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fronts. (i) First, no one should have been surprised to see the breaking news this morning that the Houthis attacked a Maersk ship in response to Maersk's resumption of ships thru the Red Sea with the US & allies start of Operation Prosperity Guardian. The Houthis reportedly first hit the container ship with a missile and then tried to board it with 4 small boats. (ii) Second, the US Navy helicopters responded and, in self-defence, sunk 3 of the 4 small Houthi boats killing their crews. The 4<sup>th</sup> small boat escaped. We believe this is the first reported US attack on the Houthis, albeit in self-defence, with reported Houthi casualties. (iii) Third, Maersk has reportedly paused for 48 hours its resumption of ships thru the Red Sea. As noted below, Maersk had just resumed the transits this week after the US & allies began Operation Prosperity Guardian to protect commercial ships in the Red Sea. (iv) Our first tweet this morning was [\[LINK\]](#) "Breaking! Houthis response to Maersk resuming shipments via Suez. Tried to board container ship, but US Navy to the rescue, "returned fire in self-defense, sinking 3 of the 4 small boats, & killing the crews". Won't be surprised if Houthis increase drone attacks. #OOTT." Our tweet forwarded the CENTCOM tweet [\[LINK\]](#) that said the US responded to the distress call about being under attack by 4 Houthi small boats by sending helicopters who "returned fire in self-defense, sinking three of the four small boats, and killing the crews." (v) Our second tweet added one key additional detail – the Maersk container ship had first been hit by a Houthi missile. We tweeted [\[LINK\]](#) "OOPS! Missing from CENTCOM report. @AFP reports Maersk ship was 1st hit by missile before attempted boarding by Houthis. @AFP also reports Maersk has paused Suez transit for 48 hrs. #OOTT [\[LINK\]](#)."

#### **Maersk had just reportedly resumed Red Sea transit, others did not follow**

We were in the camp that was surprised to see last week's reporting that Maersk was going to resume cargo shipments thru the Suez Canal and therefore the Red Sea and Bab el Mandeb. The initial reports were that they expected to do so but didn't specify a time. But that changed on early Thursday. We tweeted [\[LINK\]](#) "What will Houthis do? Maersk updated schedule shows almost all container ships Asia/EU will go thru Suez Canal from now on. Thx @terjesolvik. See 📌 12/25 tweet, Houthis warned only "seen prelude & preliminary steps" "no red lines in front of us" #OOTT [\[LINK\]](#)." We did not look at the new Maersk schedule but relied upon Reuters reporting "Denmark's Maersk (MAERSKb.CO) will sail almost all container vessels travelling between Asia and Europe through the Suez Canal from now on while diverting only a handful around Africa, a Reuters breakdown of the group's schedule showed on Thursday. Major shipping companies, including container giants Maersk and Hapag-Lloyd (HLAG.DE), stopped using Red Sea routes and the Suez Canal earlier this month after Yemen's Houthi militant group began targeting vessels, disrupting global trade. Instead, they rerouted ships around Africa via the Cape of Good Hope to avoid attacks, charging customers extra fees and adding days or weeks to the time it takes to transport goods from Asia to Europe and to the east coast of North America. But Maersk on Dec. 24 said it was preparing a return to the Red Sea, citing the deployment of a U.S.-led military operation to protect vessels, and on Wednesday released schedules showing ships were headed for Suez in the coming weeks. A detailed breakdown showed that while Maersk had diverted 26 of its own ships around the Cape of Good Hope in the last 10 days or so, only five more were scheduled to start the same journey. By contrast, more than 50 Maersk vessels are set to go via Suez in coming weeks, the company's schedule showed." As noted

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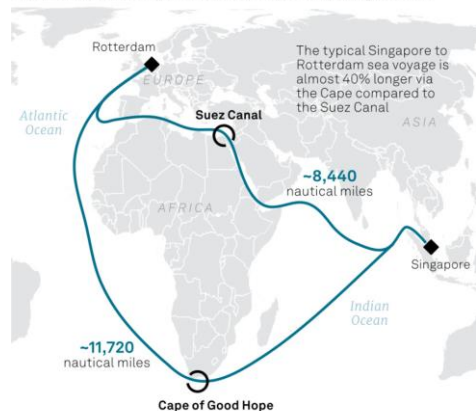
in the breaking news above, Maersk had resumed container ships transit in the Red Sea only to be attacked by the Houthis. Even prior to this morning's attack, we had not seen any reports of the other major shipping companies following Maersk's lead in resuming Suez Canal shipments. Our Supplemental Documents package includes the Reuters report.

### Avoiding the Red Sea adds 3,280 miles and 10-15 days via Cape of Good Hope

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

Figure 36: Suez Canal vs Cape of Good Hope shipping routes

Suez Canal vs. Cape of Good Hope shipping routes



Source: Global Maritime Hub, S&P Global Commodity Insights

Source: Platts

### Oil: EIA estimates 8.8 mmb/d & 4.1 bcf/d thru Bab el Mandeb/Red Sea chokepoint

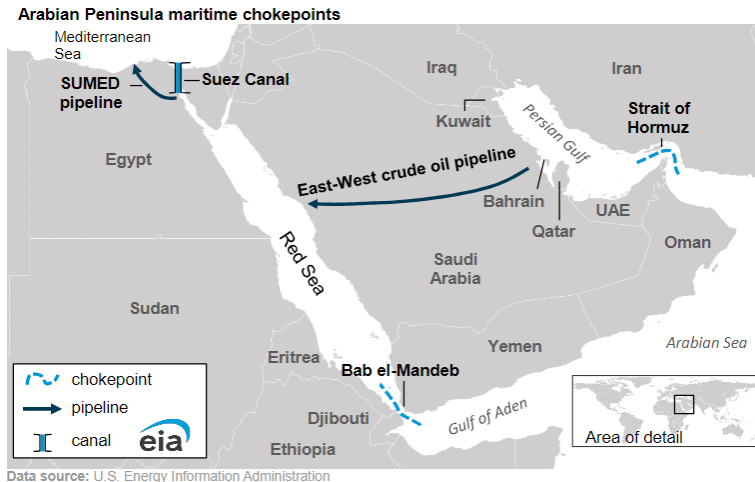
For the past few years and over the past couple months in particular, we have referenced the EIA's Aug 27, 2019 brief "The Bab el-Mandeb Strait is a strategic route for oil and natural gas shipments", which highlighted the volume of oil, petroleum products and LNG that goes thru the Red Sea and Bab el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

**Bab el Mandeb chokepoint.**

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Figure 37: Bab el-Mandeb Strait, a world oil chokepoint



Data source: U.S. Energy Information Administration

Source: EIA

Figure 38: Bab el-Mandeb Strait, a world oil chokepoint

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

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

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

Source: EIA

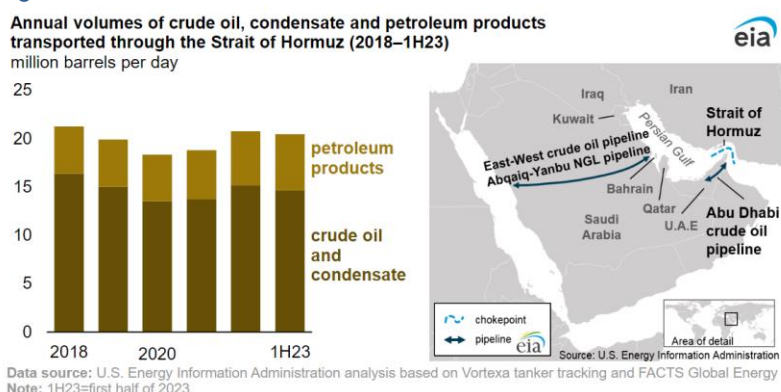
**Bab el Mandeb can be worked around whereas the Strait of Hormiz can't**

The reason why the Strait of Hormuz is considered the most important chokepoint for oil and LNG is that there isn't a workaround, to the most part, if the Strait of Hormuz becomes closed. The Bab el Mandeb can be worked around, it just means a much longer voyage. Here is what we wrote in our Nov 26, 2023 Energy Tidbits memo. "To dated, the market has been focused on the Strati of Hormuz risk as it is the most important world oil chokepoint. We have been more worried to date on interruptions via the Red Sea and Bab el Mandeb but have also been noting how the Strait of Hormuz is more significant to supply if any interruption. And we have been included the EIA's latest Strait of Hormuz blog, which is four years old. But on Tuesday, the EIA updated its Strait of Hormuz blog "The Strait of Hormuz is the world's most important oil transit chokepoint" [LINK]. "The Strait of Hormuz, located between

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



Source: EIA

Figure 40: 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
<b>Total oil flows through Strait of Hormuz</b>	<b>21.3</b>	<b>19.9</b>	<b>18.3</b>	<b>18.8</b>	<b>20.8</b>	<b>20.5</b>
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
<b>World maritime oil trade</b>	<b>77.4</b>	<b>77.1</b>	<b>71.9</b>	<b>73.2</b>	<b>75.2</b>	<b>76.3</b>
<b>World total petroleum and other liquids consumption</b>	<b>100.1</b>	<b>100.9</b>	<b>91.6</b>	<b>97.1</b>	<b>99.6</b>	<b>100.3</b>
<b>LNG flows through Strait of Hormuz (billion cubic feet per day)</b>	<b>10.3</b>	<b>10.6</b>	<b>10.4</b>	<b>10.6</b>	<b>10.9</b>	<b>10.8</b>

Source: EIA

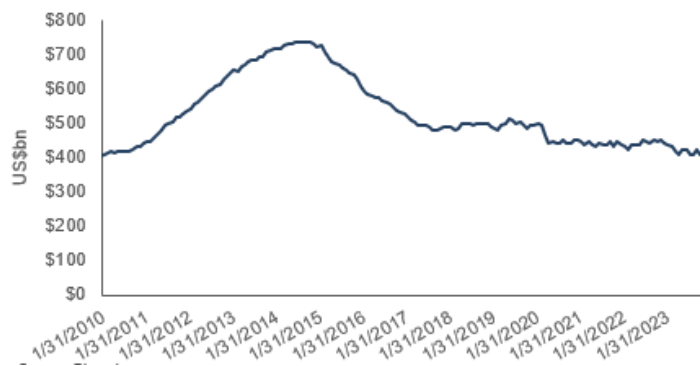
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**Oil: Saudi nest egg, its net foreign assets were up +\$11.7b MoM in November**

On Thursday, the Saudi Central Bank (SAMA) released its Monthly Statistical Bulletin for the month of November [\[LINK\]](#). 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 44.9% or \$319.0b 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 +\$11.7b MoM increase to Saudi Arabia’s net foreign assets which are now \$418.1b in November vs \$406.3b in October. But note that last month, there was a -\$13.9b MoM decrease to \$406.3b vs \$420.2b in September. We have to wonder if there were some timing issues or in and out transactions. But the picture remains, Saudi net foreign assets at November 30 of \$418.1b is a decline of 44.9% or \$319.0b over the last 9 years from its peak of \$737.0b on Aug 31, 2014. That is an average of \$2.9b per month for the last 111 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 November 30 data.

**Saudi net foreign assets**

Figure 41: Saudi Arabia Net Foreign Assets



Source: Bloomberg

**Oil: US strikes were “an unacceptable violation of Iraqi sovereignty”**

We were surprised that the US air strike on Iraq and Iraq’s response didn’t seem to get too much market attention. We don’t know what will happen but it didn’t seem like the type of event that just gets forgotten quickly. Plus the potential impact of conflict in Iraq could be

**US air strikes on Iraq**

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significant on oil markets. It's why we believe this Iraqi/US event and what happens next needs to be on radar screens. On Wed, we tweeted [LINK](#) "Iraq #Oil geopolitical risk. Will Iraq eventually forgive or will this turn out to be a pivot point? Iraq govt statement. "US attack on military sites.... justifying it as a response. constitutes a clear hostile act .....unacceptable violation of Iraqi sovereignty.." #OOTT." Iraq's formal response was to the US air strike on three locations in Iraq that killed one and injured 18 others. Bloomberg reported "US forces on Christmas Day struck three installations linked to an Iran-backed insurgent group, their latest retaliation against militias targeting Americans. The strikes are "intended to degrade and disrupt the ongoing series of attacks against the United States and our partners" and to "deter" Tehran's proxy forces "from conducting or supporting further attacks," Biden wrote Wednesday in a letter to congressional leaders." Our tweet included the Iraqi New Agency (Iraq state media) report of Iraq's response to the air strike. It's worth reading the short Iraqi response "Iraqi government condemns the US attack, considers a violation of sovereignty." Here is part of their response "The statement added, "At the same time, the Iraqi government condemns what transpired early this morning, Tuesday, December 26, 2023, during which Iraqi military sites were targeted by the American side justifying the act as a response. This resulted in the martyrdom of one service member and the injury of 18 others, including civilians. This constitutes a clear hostile act. It runs counter to the pursuit of enduring mutual interests in establishing security and stability, and it opposes the declared intention of the American side to enhance relations with Iraq". "We emphasize that this action undermines the bilateral relations between the two nations and will further complicate the efforts to achieve mutual understandings through collaborative dialogue aimed at concluding the presence of the international coalition. Above all, it constitutes an unacceptable violation of Iraqi sovereignty," the statement continued." Our Supplemental Documents package includes the Iraqi News Agency statement.

#### **Oil: Libya oil production at 1.2 mmb/d, to hit 1.4 mmb/d in 2024**

Libya oil production has been stable for the last several months at ~1.2 mmb/d. On Thursday, the Libya National Oil Corporation (NOC) tweeted [LINK](#) "Crude oil production reached 1,214,000 barrels per day, and condensate production reached 54,000 barrels per day during the past 24 hours." Note that in its tweets and Facebook posts, the NOC has been consistent in providing separate production estimates for crude oil vs condensates.

**Libya oil  
production**

#### **12/07/23: NOC Chair Libya oil production at 1.3 mmb/d, to hit 1.4 mmb/d in 2024**

We noted above how the NOC has been consistent in splitting out crude oil vs condensate. So we were a little surprised that the NOC Dec 28 tweet the like its prior Dec 18 and 11 1 tweet said Libya oil production was just over 1.2 mmb/d, this time at 1.214 mmb/d for crude oil. We had expected to see a higher number given the Libya NOC Chair comments on Dec 7 who said Libya was producing 1.3 mmb/d of "oil". Perhaps he meant oil + condensate or maybe he was just stretching the numbers. Here is what we wrote in last week's (Dec 10, 2023) Energy Tidbits memo. "Libya oil production has been stable for the last several months at ~1.2 mmb/d and been moving up closer to 1.25 mmb/d but, on Tuesday, Libya said oil production was now at 1.3 mmb/d. On Tuesday, Bloomberg reported on its interview with Libya National Oil Corporation Chairman Bengdara. Blomberg wrote "Libya is currently producing 1.3m b/d of oil, and is targeting at least 1.4m a day by the end of next year, Farhat Bengdara, chairman of the National Oil Corporation, said in an interview. \* Oil

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*exports are likely to rise to 1.1m b/d by end-2024 from 1m b/d.” Libya at 1.3 mmb/d is exactly what Bengdara targeted in May.”*

### **Oil: China stalled recovery/consumer weakness, official PM in Dec down for 3<sup>rd</sup> month**

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 or two 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. However, we will also report on the Official Manufacturing PMI for an indicator of the Chinese consumer and domestic demand. Earlier this morning, we tweeted [\[LINK\]](#) *“Chinese stalled recovery & consumer staying on sidelines. Official manufacturing PM down for 3rd mth to 49.0 in Dec vs 49.4 in Nov, lowest in 6 mths. 📌 state media says 3 times, need to boost/expand domestic demand! #OOTT.”* The Official Manufacturing PMI was 49.0 in Dec, down for the 3<sup>rd</sup> consecutive month and the lowest in six months. So not good. But what also struck us was the Global Times (state media under China Communist Party) short report highlight four times the need to boost/expand domestic demand, which reinforced the weak domestic demand and the consumer staying on the sideline. One example was *“We should coordinate the expansion of domestic demand and the deepening of supply-side structural reforms, and integrate the two organically,” Li Chao, an NDRC spokesperson, said at a press briefing for the key macroeconomic policy priorities in 2024 on December 19.”* Our Supplemental Documents package includes the Global Times reporting.

**China  
respiratory  
cases**

### **Oil: China reports 2.5 to 3.4 mm respiratory diseases cases**

We aren't seeing any China reports expressing any significant social concerns on the China population mobility and economy for the increasing respiratory cases. But last Sunday, we saw for the first time we can recall China disclose the number of respiratory cases. Last Sunday, we tweeted [\[LINK\]](#) *“Over/Under? China state media reports National Health Commission says there are 2.5 to 3.4 million respiratory diseases at all medical institutions nationwide in China. Don't recall seeing disclosure of number of millions before. #OOTT.”* Global Times is part of Chinese communist party media so the qualifier is that these reported numbers are what Chinese communist party wants to disclose, which is why we put Over/Under? Global Times reported [\[LINK\]](#) *“According to NHC, from November 26 to Sunday, the daily diagnosis and treatment volume of respiratory diseases at grassroots level medical institutions was between 1 million to 1.37 million, accounting for about 40 percent of the total number of respiratory diseases at all medical institutions nationwide. Mi vowed to further trace the trends of respiratory diseases and changes in pathogens and virus mutations at home and abroad to strengthen situational analysis and monitoring. China CDC also said the period of December 11 to 17 showed that acute respiratory diseases have also been dropping and that this trend is likely to continue next week, adding that influenza viruses still hold a dominant position among pathogens. While influenza activity has slightly decreased but still remains high, infections of mycoplasma pneumoniae, adenovirus, and respiratory syncytial virus rose and fell. COVID-19 activity is at its lowest level this year, according to China CDC. China CDC recommended that the public, especially vulnerable groups such as the elderly, pregnant women, children and people with underlying disease, to wear masks while taking subways, buses, trains and planes as traveling will increase at the end of the year.”* Our Supplemental Documents package includes the Global Times report.

**China  
respiratory  
cases**

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**Oil: Visitors to Hong Kong, from mainland China and elsewhere well below pre-Covid**

On Friday, we tweeted [\[LINK\]](#) “#JetFuel. Still a long way to go for visitors to Hong Kong to get back to pre-Covid. China 48% down, ROW 37% down. Visitors from China lag ROW makes sense as Chinese consumer still being cautious until better clarity on economic recovery. #OOTT [\[LINK\]](#). There was a good reminder that travel in Hong Kong is nowhere near pre-Covid levels. On Friday, the Hong Kong Tourism Board posted its visitor arrival statistics for November. Our tweet included the below table we created of the visitor arrivals totals for China, Rest of World excluding China and Total for each November going back to November 2018. We don’t exactly when rumors of Covid began to impact Chinese travelers, so we compared November 2023 to November 2018 as a pre-Covid measure. The Hong Kong data reminds that roughly ¾ of the visitors to Hong Kong are from mainland China. But also a reminder that visitors to Hong Kong are still only back to 63% for Rest of World and 52% for China. There is no explanation given by the Hong Kong Tourism Board but we have to believe China lagging the ROW is primarily due to the Chinese consumer being cautious until they see better certainty/clarity on the economic recovery. Our Supplemental Documents includes the Hong Kong Tourism Board release.

**Hong Kong visitors still down**

Figure 42: Hong Kong Visitor Arrivals in November

Hong Kong Visitor Arrivals in Total and From China				
In Thousands	Total	ROW excl China	China	China % of Total
Nov-23	3,289	862	2,427	73.8%
Nov-22	114	55	59	51.8%
Nov-21	10	3	7	68.4%
Nov-20	6	2	4	60.0%
Nov-19	2,646	719	1,927	72.8%
Nov-18	5,995	1,364	4,631	77.2%
Nov 23 % of Nov 18	54.9%	63.2%	52.4%	
Source: Hong Kong Tourism Board, Bloomberg				
Prepared by SAF Group				

Source: Hong Kong Tourism Board

**Oil: Vortexa crude oil floating storage est 72.98 mmb at Dec 29, -17.13 mmb WoW**

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 Dec 23 at 9am MT. (i) Yesterday, we tweeted [\[LINK\]](#) “Floating #Oil storage 12/29 is 72.98 mmb, -17.13 WoW vs revised up 12/22 of 90.11 mmb. 12/22 revised +6.43 BUT all other weeks revised down by average -1.5 mmb. Last 7-wk average 80.32 mmb, so want to watch coming into seasonally low demand in Q1. Thx @Vortexa @business. #OOTT.” (ii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Dec 29 at 72.98 mmb, which is -17.13 mmb WoW vs revised up Dec 22 of 90.11 mmb. Note Dec 22 was revised +6.43 mmb vs 83.68 mmb originally posted at 9am on Dec 23. (iii) Revisions. Other than the upward revision to Dec 22, all other weeks had downward revisions. The revisions for the prior seven weeks from the estimates posted yesterday at 9am MT vs the estimates posted on Bloomberg at 9am MT on Dec 23 are as follows: Dec 22 revised +6.43 mmb. Dec 15 revised -1.87 mmb. Dec 8 revised -1.42 mmb.

**Vortexa floating storage**

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Dec 1 revised -2.18 mmb. Nov 24 revised -1.31 mmb. Nov 17 revised -0.55 mmb. Nov 10 revised -1.51 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 80.32 mmb vs last week's then seven-week average of 80.53 mmb.. (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 29 estimate of 72.98 mmb is -32.22 mmb YoY vs Dec 30, 2022 of 105.20 mmb. (viii) Dec 29 estimate of 72.98 mmb is -147.33 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (ix) Dec 29 estimate of 72.98 mmb is +7.37 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 30, 9am MT Dec 23, and 9am MT Dec 16.

Figure 43: Vortexa Floating Storage Jan 1, 2000 – Dec 29, 2023, posted Dec 30 at 9am MT



Source: Bloomberg, Vortexa

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Figure 44: Vortexa Estimates Posted 9am MT on Dec 30, Dec 23, and Dec 16

Posted Dec 30, 9am MT						Dec 23, 9am MT						Dec 16, 9am MT					
FZWWFST VTXA Inde						FZWWFST VTXA Inde						FZWWFST VTXA Inde					
01/01/2020 - 12/29/2023						01/01/2020 - 12/22/2023						01/01/2020 - 12/15/2023					
1D	3D	1M	6M	YTD	1Y	1D	3D	1M	6M	YTD	1Y	1D	3D	1M	6M	YTD	1Y
Date						Date						Date					
Last Px						Last Px						Last Px					
Fr 12/29/2023 72975						Fr 12/22/2023 83681						Fr 12/15/2023 70395					
Fr 12/22/2023 90109						Fr 12/15/2023 76386						Fr 12/08/2023 84214					
Fr 12/15/2023 74522						Fr 12/08/2023 83255						Fr 12/01/2023 71322					
Fr 12/08/2023 81841						Fr 12/01/2023 71610						Fr 11/24/2023 87496					
Fr 12/01/2023 69433						Fr 11/24/2023 87097						Fr 11/17/2023 88559					
Fr 11/24/2023 85790						Fr 11/17/2023 88086						Fr 11/10/2023 71370					
Fr 11/17/2023 87539						Fr 11/10/2023 73571						Fr 11/03/2023 78731					
Fr 11/10/2023 72057						Fr 11/03/2023 80658						Fr 10/27/2023 77790					
Fr 11/03/2023 79349						Fr 10/27/2023 80145						Fr 10/20/2023 63486					
Fr 10/27/2023 79913						Fr 10/20/2023 65283						Fr 10/13/2023 73523					
Fr 10/20/2023 64323						Fr 10/13/2023 73117						Fr 10/06/2023 73574					

Source: Bloomberg, Vortexa

**Oil: Vortexa crude oil floating storage WoW changes by regions**

Bloomberg also posts the Vortexa crude oil floating storage in key regions, but not all regions of the world. The regions covered are Asia, Europe, Middle East, West Africa and US Gulf Coast. We then back into the “Other” or rest of world. (i) As noted above, Dec 22, in total, was revised +6.43 mmb. The main revisions in a region vs the originally posted (as of 9am Dec 23) floating oil storage for Dec 22 was Other revised 4.56 mmb. (iii) The major WoW changes by region were Asia -14.38 mmb WoW, Other -4.16 mmb WoW, Middle East +2.62 mmb WoW and US Gulf Coast -1.98 mmb WoW. (iv) Dec 29 of 72.98 mmb is down a huge 60.36 mmb vs the summer June 23, 2023 peak of 133.34 mmb. Recall Saudi Arabia started its voluntary 1 mmb/d production cuts on July 1, 2023. The major changes by region vs the summer June 23 peak are Asia -39.67 mmb and Other -18.96 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 Dec 22 that was posted on Bloomberg at 9am MT on Dec 23.

Vortexa floating storage by region

Figure 45: Vortexa crude oil floating by region

Vortexa Crude Oil Floating Storage by Region (mmb)				Original Posted	Recent Peak	
Region	Dec 29/23	Dec 22/23	WoW	Dec 22/23	Jun 23/23	Dec 29 vs Jun 23
Asia	33.92	48.30	-14.38	47.98	73.59	-39.67
Europe	7.62	7.47	0.15	6.67	6.44	1.18
Middle East	6.41	3.79	2.62	3.05	7.17	-0.76
West Africa	5.31	4.69	0.62	4.69	7.62	-2.31
US Gulf Coast	1.13	3.11	-1.98	3.10	0.97	0.16
Other	18.59	22.75	-4.16	18.19	37.55	-18.96
Global Total	72.98	90.11	-17.13	83.68	133.34	-60.36

Vortexa crude oil floating storage posted on Bloomberg 9am MT on Dec 30  
 Source: Vortexa, Bloomberg

Source: Bloomberg, Vortexa

**Oil: Italy petroleum products consumption basically flat YoY in Nov 2023**

On Wednesday, we tweeted [\[LINK\]](#) “Italy #PetroleumProducts consumption YTD Nov 30 is basically flat YoY. Note below SAF Group table uses metric tons to barrels conversion by

Italy petroleum products consumption

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specific product and not one overall generic petroleum products conversion. Thx @GioSalzanoWire #OOTT.” Based on the Energy Institute 2022 data (successor to BP’s world statistical review of energy) Italy was the 4<sup>th</sup> largest oil consumption country in Europe behind Germany 2.04 mmb/d, France 1.43 mmb/d, UK 1.22 mmb/d, Italy 1.158 mmb/d, Spain 1.156 mmb/d, Turkey 1.00 mmb/d, and then Netherlands 0.85 mmb/d. On Wednesday, Bloomberg reported the Italy Ministry of Ecological Transition data for consumption by petroleum product for November 2023. The data was reported in metric tons. For our conversions to b/d, we used the individual conversion factor by specific product, whereas most tend to use an overall conversion factor petroleum products in total. Using the specific conversions by product shows that Italy November 2023 consumption was 1.324 mmb/d, which was down 3.65% YoY vs 1.375 mmb/d in November 2022. And for YTD November 30, Italy consumption was 1.311 mmb/d, which was up 0.05% YoY, although the numbers look identical on a rounded basis.

Figure 46: Italy Petroleum Products Consumption for Nov 2023

Italy Petroleum Products Consumption for Nov 2023							
	Tonnes to barrel, multiply by	Nov 23	Nov 22	YoY %	Jan-Nov 23	Jan-Nov 22	YoY %
000/metric tons							
Gasoline		654	675	-3.11%	7,514	7,205	4.29%
Jet-Fuel		342	288	18.75%	4,151	3,422	21.30%
Total Gasoil		2,217	2,287	-3.06%	23,888	24,371	-1.98%
Auto Diesel		1,934	2,044	-5.38%	21,426	21,802	-1.72%
Heating Diesel		81	62	30.65%	499	568	-12.15%
Fuel For Electricity Genration		1	88	-98.86%	328	515	-36.31%
Total Consumption		4,790	4,875	-1.74%	52,781	53,466	-1.28%
000/bpd							
Gasoline	8.350x	182	188	-3.11%	187	180	4.29%
Jet-Fuel	7.880x	90	76	18.75%	98	80	21.30%
Total Gasoil	7.460x	551	569	-3.06%	532	543	-1.98%
Auto Diesel	7.460x	481	508	-5.38%	477	486	-1.72%
Heating Diesel	7.460x	20	15	30.65%	11	13	-12.15%
Fuel For Electricity Genration	6.350x	0	19	-98.86%	6	10	-36.31%
Total Consumption		1,324	1,375	-3.65%	1,311	1,311	0.05%

\* Conversion factors, tonnes to barrel from Energy Institute  
 Source: Bloomberg, SAF Group  
 Prepared by SAF Group <https://safgroup.ca/news-insights/>

Source: Bloomberg, Italy Ministry of Ecological Transition

**Oil & Natural Gas: Increasing risk for an early & abrupt end to winter drilling**

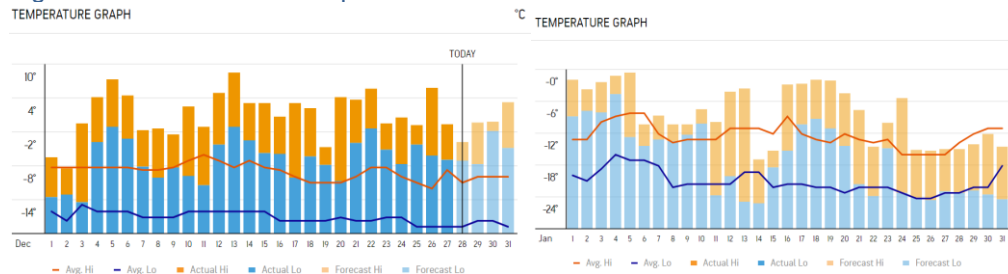
We are increasingly concerned that there will be an abrupt end to winter drilling season, an item we highlighted in last week’s (Dec 24, 2023) Energy Tidbits memo. On Thursday, we tweeted [\[LINK\]](#) “Increasing risk for early & abrupt end to Cdn winter #Oil #NatGas drilling season. Warm temps in key drilling areas for Dec & now forecast for Jan. Warm temps means no deep freeze in ground so risk to abrupt road bans & rig moves. Big pad drilling will help mitigate. #OOTT.” Our tweet included the below AccuWeather temperature graphs that show a much warmer than normal Dec and much warmer than normal forecast for Jan for Fort. St. John (BC) and Grande Prairie (Alberta), the two key cities in the Montney region. Our fear is that, as we look ahead to the end of Feb and early march, there is the increasing risk for an early and abrupt end to winter drilling So instead of seeing the big decline around the 3<sup>rd</sup> or 4<sup>th</sup> week of March, it could happen in early March or even the end of Feb if the temperatures turn out as currently forecast. Why? Because its been really warm in Alberta/BC for the past few weeks. The ideal conditions for a long winter drilling season is good sustained cold weather in Nov/early Dec before the snow hits. Good sustained cold will then make sure there is a deep freeze in the ground. The ideal world is get a good deep

**Risk for abrupt end to winter drilling**

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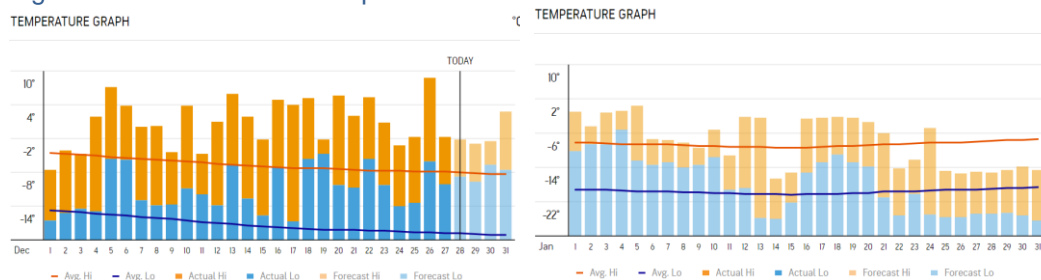
freeze first and then lots of snow over the winter. If you get lots of snow, it will act as an insulating blanket to keep the deep freeze in the ground for longer once it gets to end of Feb/early March and frozen ground allows a longer winter drilling season. Conversely, the negative is that you don't have good sustained cold and so you don't get a good deep freeze in the ground. And then you get the snow and that acts as an insulating blanked from any cold in Jan from getting deep int eh ground for a deep freeze. Recall the concept of how you see documentaries on survival in Alaska and how they keep themselves warm by digging out a snow cave. So the problem is that there isn't a deep freeze so when it starts to get warm in late Feb/early March, the snow melts and there isn't a deep freeze and there is an abrupt end to winter drilling season. Dec is now over, it was warmer than normal and the forecasts are for that to continue in Jan. And last week, we said Alberta needs cold weather soon and a lot of it because, if not, we are concerned the very warm weather in Alberta/BC in December is setting up the conditions for an abrupt end to winter drilling. It's too warm!. Our tweet noted one key difference over the last several years – big players are drilling big multi well pads so tend to work more over breakup by having the big pad ready to go over breakup and that this should help mitigate the impact, at least for these big multi well pads. We we looked at Fort St. John (BC) and Grade Prairie (Alberta) as two key temperature markers for temperature around the key Montney and other plays in NW Alberta and NE BC. Below are the AccuWeather temperature graphs for Fort St. John and Grande Prairie that we attached to our Thurs tweet.

Figure 47: Fort St. John temperatures for Dec to Dec 27 and Jan Forecast as of Dec 28



Source: AccuWeather

Figure 48: Grande Prairie temperatures for Dec to Dec 27 and Jan Forecast as of Dec 28



Source: AccuWeather

**Energy Transition: Bloomberg “peak gasoline demand turns out to be a mirage”**

For years, we have clearly stated our view that the energy transition is happening, but it will take way longer, cost way more and be a bumpy/rocky road. One of our big concerns for why

**No peak gasoline demand yet**

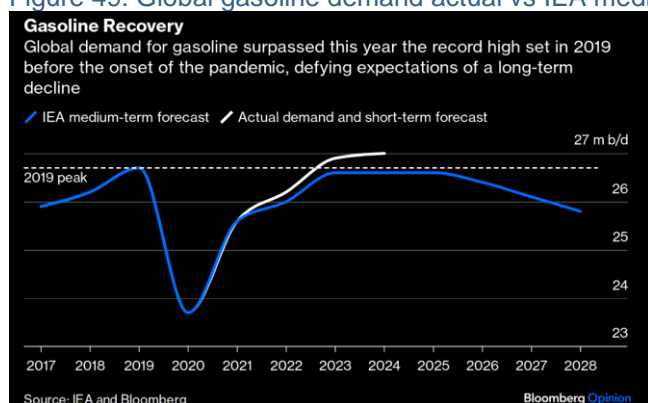
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the world will be going thru a messy and expensive energy transition is that the western governments who fund the IEA use the IEA scenarios, or in this case forecasts, for their policy on doing things like cutting out new ICE sales. And the IEA knowing what their bosses, the western governments, want to hear end up building their forecast assumptions to give the desired answer And we continue to believe the best example is EVs and how fast they will replace gasoline demand, which means peak gasoline demand will not come as fast as the IEA forecasts. (i) Early Thursday morning, we tweeted [\[LINK\]](#) "Must read "Peak Gasoline Demand Turns Out to Be a Mirage" @JavierBlas. Yes, #EVs sales up big, but gasoline demand surges past 2019 peak & IEA forecast for peak demand. see 📌 04/26/23 thread on critical overlooked assumption why IEA's forecast was way too optimistic. #OOTT." (ii) Bloomberg noted that gasoline demand continues to exceed the IEA's expectations. Bloomberg reported "Peak Gasoline Demand Turns Out to Be a Mirage: Javier Blas." "After fueling the 20th century automobile culture that reshape d cities and defined modern travel, gasoline was supposed to begin its long goodbye this year. It didn't. Sure, Tesla Inc. and its rivals sold more electric vehicles in 2023 than ever before, reducing fossil fuel demand. In the moneyed suburbs of London, New York and Beijing, EV cars are a common sight. From that narrow perspective, it looks like the world has already started "transitioning away from fossil fuels," as agreed at the recent COP28 climate talks. But it's a mirage. Even as EV sales increased, the global oil industry sold more gasoline than ever this year, surpassing the previous 2019 peak that the International Energy Agency had expected would remain an unassailable all-time high. Outside wealthy neighborhoods, the internal combustion engine still reigns supreme; in middle- and working-class areas, the energy transition remains a distant prospect." "The theory was that as EV cars became more popular, gasoline demand would be "disproportionally" impacted, the IEA predicted in its most recent five-year oil outlook, released in June. "This means that the fuel is likely to exhibit the earliest and most pronounced peak in demand" of all fractions of the oil barrel, it added. While consumption would recover this year, it wouldn't reach pre-pandemic levels; the outlook was for a gentle, but constant, downward trend. In the middle of the year, the IEA predicted that gasoline usage would "never return to 2019 levels," when demand reached 26.7 million barrels a day. Instead, consumption rose to about 26.9 million barrels a day this year, according to the latest IEA figures. And 2024 is poised for another, even if small, increase, to just above 27 million barrels a day. As thing stand, the peak in gasoline demand has been delayed by five years, to 2024 from 2019. And I won't be surprised if, once more data are available and forecasts are updated, the peak is pushed forward even further." Our Supplemental Documents package includes the Bloomberg report.

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Figure 49: Global gasoline demand actual vs IEA medium-term forecast



Source: Bloomberg

### EVs are driven ~38% less miles than an ICE

Our other Thursday tweet post the Bloomberg report was [LINK](#) “EVs vs ICE 101. EVs sales are big, but EVs tend to be 2nd car ie, driven less miles & don't displace ICE mileage on per car basis. Disconnect is 📌 04/26/23 thread ie. IEA assumes every new EV displaces miles driven by an ICE. Gasoline demand will be stronger for longer. #OOTT.” Our tweet linked to a Nov 7, 2023 tweet on EVs being driven less than ICE vehicles. Here is what we wrote in our Nov 12, 2023 Energy Tidbits memo. “We continue to see more data/indicators to support our longstanding view that EVs aren't displacing the miles driven and therefore gasoline consumption by ICE vehicles as modeled in forecasts like the IEA's on how much oil will be displaced by EVs. (i) On Tuesday, we tweeted [LINK](#) “Gasoline demand stronger for longer vs EV fcsts. EVs aren't displacing ICE mileage on per car basis. @GWmedia. BEV driven 4,500 fewer miles/yr vs ICE. EVs 7,165 vs ICE 11,642. EV SUV 10,587 vs ICE SUV 12,945. [LINK](#) See 📌 04/26/23 thread on this point #OOTT.” (ii) We referenced a GW study [LINK](#) “New Study Finds Electric Vehicles Are Driven Less Than Gas Cars”. “One of the largest studies to date finds the current generation of EV owners drive far fewer miles than owners of gas vehicles, translating to lower emissions savings from EVs.” And “In one of the largest studies on EV mileage to date, researchers at the George Washington University and the National Renewable Energy Laboratory examined odometer data from 12.9 million used cars and 11.9 million used SUVs between 2016 and 2022. They found that battery electric vehicle (BEV) cars were driven almost 4,500 fewer miles annually than gas cars. The study found a gap for both cars and SUVs: electric cars had traveled 7,165 miles while gas-powered cars had traveled 11,642 miles annually, and electric SUVs traveled 10,587 miles while their gas-powered counterparts traveled 12,945 miles annually.” (iii) This is the issue we have been highlighting as the major deficiency in forecasts like the IEA's on how fast and how much gasoline is displaced by EVs. No one disputes the high rate of EV sales. But the issue is what is assumed by how much gasoline is displaced by a new EV. Our concern on forecasts like the IEA is that no one looks at the underlying assumptions to their model. And we have highlighted on numerous occasions that the IEA assumes that every new EV sold effectively replaces the

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*mileage of an ICE vehicle on a one-for-one basis as if an ICE is junked every time an EV is sold. Whereas we have been highlighting items like in Norway that the EV tends to be a 2nd or 3rd vehicle and not a primary vehicle and that the mileage driven by EVs doesn't replace the miles driven by an ICE. So if EVs have less mileage, they don't replace as much gasoline as fast as hoped or as modeled. (iv) This GW study supports the view that EVs aren't driven as much as ICE vehicles."*

#### **04/26/23 tweet: Will EVs displace ~6 mmb/d of oil as IEA forecast**

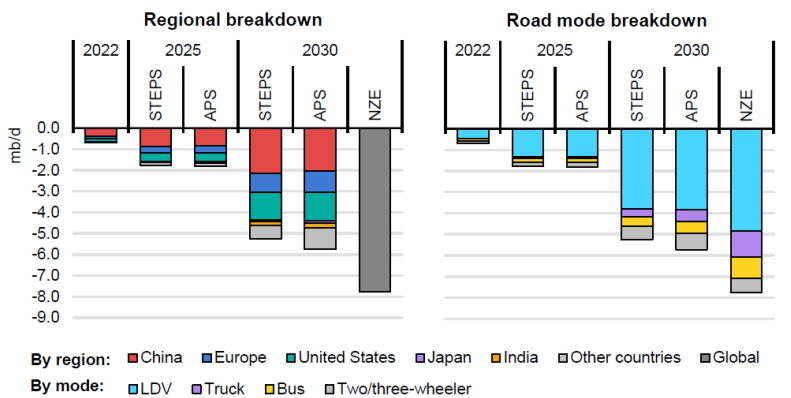
Both of our tweets this week on the Bloomberg gasoline demand report linked to our April 26, 2023 tweet on the overlooked critical assumption in the IEA's Global EV Outlook 2023 that leads to the overly optimistic assumption on how much and how quickly EVs will displace gasoline from ICE vehicles. Here is what we wrote in our April 30, 2023 Energy Tidbits memo. *"The most important assumption on when peak oil demand hits is how quickly the accelerating share that EVs have of all new car sales leads to a big decline in oil consumption. The IEA forecasts EVs will displace nearly 6 mmb/d of oil demand by 2030 if governments deliver on their stated policies. And says that EVs displaced 700,000 b/d of oil demand in 2022. We had a 7-tweet Twitter thread that reminded that the displacement is all about forecast assumptions. We agree that EVs have to displace some oil demand, but we question the primary assumption and therefore believe this nearly 6 mmb/d displacement is too optimistic. (i) On Wed, the IEA released its major report "Global EV Outlook 2023: Catching up with climate ambitions". [\[LINK\]](#). There is no question it is an excellent report with a lot of data and global EV insights. We recommend adding to reference libraries. (ii) We tweeted [\[LINK\]](#) "1/7. @IEA Global EVs Outlook 2023. #Oil Bears and Bulls will both love it! Oil Bears and western leaders like headline, EVs to be 60% of total car sales in 2030, EVs to displace nearly 6 mmbd of oil by 2030, already displaced 0.7 mmbd in 2022. #OOTT." We expect western leaders will just run with the nearly 6 mmb/d displacement and not worry about the key assumption. (ii) Oil bears assume this nearly 6 mmb/d means the IEA expects oil demand to be down ~6 mmb/d by 2030. But we reminded in our tweet [\[LINK\]](#) "2/7. Oil bulls remember @IEA World Energy Outlook Oct/22 incl EVs to be 50% of total car sales in 2030, and IEA forecast #Oil demand to increase 0.8%/yr this decade to peak around 103 mmbd n mid 2030s." The IEA's flagship annual report World Energy Outlook in Oct 2022 assumed EVs would be 50% of total car sales in 2030, so less than its new forecast of 60% in 2030. But even including a 50% assumption, the IEA WEO forecast oil demand to keep increasing in the 2020s and not peak until the mid 2030s at ~103 mmb/d. (iii) Here is the key assumption to displacing ~6 mmb/d that most probably didn't read. We are big believers that it is important to look at the key forecast assumption on pg 132. We tweeted [\[LINK\]](#) "Oil bulls also note KEY assumption to @IEA #EVs replacing 6 mmbd is that distance travelled by EVs basically replaces the distance an ICE or hybrid would have driven. ie. infers a new EV is added to fleet, an ICE is effectively retired from fleet. #OOTT." The IEA wrote "How much oil really gets displaced by electric vehicles? Oil displacement through the use of EVs can be estimated by assuming that the distance (total kilometres) travelled by EVs by segment each year would have otherwise been travelled by ICE vehicles or hybrid electric vehicles (HEVs) (based on the stock shares of each)." Basically, the IEA assumes the EV effectively replaces the distance driven by an ICE vehicle. (iv) We don't believe this*

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effective one-for-one replacement in terms of distance driven has proved out so far. We tweeted [\[LINK\]](#) “4/7. But for many, an EV is a 2nd or 3rd car. Norway is recognized leader in terms of EVs penetration. 03/22 tweet. Yet #EVs distance driven 22.6% in 2022. EVs were >80% of new car sales in 2022, been 60% for ~4 years. [\[LINK\]](#) #OOTT”. (v) On March 25, Equinor highlighted this EVs are 2<sup>nd</sup> or 3<sup>rd</sup> cars in Norway. We tweeted [\[LINK\]](#) “5/7. In Norway, EVs are 2nd or 3rd cars! 03/25 Equinor explains why Norwegians #EV mileage is low relative to new car sales. “We’ve bought an EV instead of taking the bus, or it becomes the second or the third car” says @EWaerness [\[LINK\]](#) #OOTT.” (vi) Absent governments mandating ICE vehicles get junked, the other key factor is that ICE vehicles are lasting longer. We tweeted [\[LINK\]](#) “6/7. A concept everyone has experienced - ICE vehicles are lasting longer. 03/31. @BloombergNEF. at least in China, ICE vehicles retirements are at a very low level even in the face of increasing EV and ICE sales. #OOTT.” (vii) It is important to remember that the IEA forecasting a 60% EV share of total car sales means a displacement of nearly 6 mmb/d in 2030 is not an IEA forecast that says its oil demand forecast will be reduced by 6 mmb/d. It’s WEO Oct 2022 assumed EVs were 50% of total car sales in 2030 and didn’t see peak oil demand until the mid 2030s. So the incremental 10% EV sales penetration, by itself, isn’t likely to move its peak oil demand closer by very much. Our last tweet [\[LINK\]](#) “7/7. #Oil Bears and western leaders will love @IEA EVs headlines on increasing EV sales and oil displacement. #Oil Bulls (Saudi Arabia) will love the IEA report and think this won’t have much impact on @IEA forecast for peak oil demand around 103 mmbd in mid 2030s. #OOTT.” (viii) EVs are having an impact on oil and energy, but it isn’t a one-for-one replacement. Plus we wonder if it’s just additive on an “energy” basis in what it does to the demand for natural gas and other forms of reliable electricity to power the new EV ecosystem. Our Supplemental Documents package includes excerpts from the IEA Global EVs Outlook report.

Figure 50: Oil displacement by region and mode, 2022-2030

Figure 3.13. Oil displacement by region and mode, 2022-2030



IEA. CC BY 4.0.

Notes: STEPS = Stated Policies Scenario; APS = Announced Pledges Scenario; NZE = Net Zero Emissions by 2050 Scenario; LDV = light-duty vehicle. Oil displacement based on internal combustion engine (ICE) vehicle fuel consumption to cover the same mileage as the EV fleet.

Source: IEA

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**Equinor chief economist says Norwegians bought EVs as 2<sup>nd</sup> or 3<sup>rd</sup> cars**

Here is what we wrote in our March 26, 2023 Energy Tidbits memo. *“The Equinor Chief Economist Wærness comment to the FT also supported the above item on how Norwegians aren’t using their EVs as much as would be expected given the massive penetration of new car sales over the past several years. Yesterday, we tweeted [\[LINK\]](#) “Here’s why Norwegians #EV mileage is low relative to new car sales. “We’ve bought an EV instead of taking the bus, or it becomes the second or the third car” says @EWærness. many other reality check energy transition views in his @FT interview [\[LINK\]](#) #OOTT.” Wærness says that Norwegians really have bought EVs as their 2<sup>nd</sup> or 3<sup>rd</sup> cars and not the principal car. Whereas historically car buyers buy new cars as a principal car other than the wealthy who have more than a couple cars. The FT wrote “Norway’s experience with electric vehicles provides an example, Wærness suggested. Subsidies to buy battery-powered cars had rapidly increased their number, and Norway has been repeatedly cited as an example of how quickly customers could switch to EVs. But the overall car fleet had swollen too, Wærness said. “We’ve kept a lot of the diesel cars and gasoline cars, and we’ve added EVs, and it took 10 years before gasoline demand went down,” he said. “We’ve bought an EV instead of taking the bus, or it becomes the second or the third car.”*

**Capital Markets: USDA Consumer Price Index Nov for food -0.2% MoM, +3.3% YoY**

We recognize that the USDA consumer food price index is a much better indicator for grocery store prices than the UN’s food commodity price index. But we still continue to believe the actual prices at the grocery stores are still higher than indicated by the USDA. Last Thursday, the USDA posted its November Consumer Price Index for food [\[LINK\]](#), which reported the all-items Consumer Price Index (CPI) was -0.2% MoM and +2.9% YoY. The +2.9% YoY increase in the Consumer Price Index has a relative weighting for the various food categories. Some YoY index changes to the USDA’s year-end inflation estimates are: Beef and veal +3.6% YoY, processed fruits and vegetables +7.8% YoY, farm-level eggs -28.1% YoY, and pork prices -1.1%. It is important to note the USDA said that the *“Food-at-home prices are predicted to increase 5.0 percent, with a prediction interval of 4.9 to 5.1 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 +2.9% 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. Dufresne said *“Our internal food inflation number was lower than food CPI. In fact, our actual inflation on*

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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.”

Canada’s Food Price Report 2024

**Capital Markets: Canada’s Food Price Report forecasts food prices +2.5 to 4% in 2024**

We have to believe Canadians are hoping that Canada’s food prices only increase 2.5 to 4% in 2024. We missed seeing this on Dec 7, when Dalhousie University released its “Canada’s Food Price Report 2024”, which said “The report forecasts that overall food prices will increase, but by less than last year. Food prices will likely rise by 2.5% to 4.5% (compared to 5% to 7% in 2023). The average family of four is expected to spend \$16,297.20 on food in 2024, an increase of up to \$701.79 from last year (compared to an increase of \$1,065 in 2023). The 2024 increases align with inflation, which is something. Andrea Rankin, Research Associate at the Agri-Food Analytics Lab at Dalhousie University, says the report “offers some good news” and that “Canadians can anticipate possibly calmer food prices through the coming year.” Note they show the below breakdown by food category ie. bakery, fruit, meat, etc to get to the 2.5 to 4% average. When we look at their how they did in their 2023 forecast, we still believe the actual prices at the grocery stores saw much higher inflation in 2023 than the actuals ie. who would believe meat prices only went up 4.4% from Sept 2022 to Sept 2023. Note we could not attach excerpts as the file size was too large, but the report is found at [\[LINK\]](#).

Figure 51: 2024 Food Price Forecasts

Table 1:  
2024 Food Price Forecasts

Food Categories	Anticipated Changes %
Bakery	5% to 7%
Dairy	1% to 3%
Fruit	1% to 3%
Meat	5% to 7%
Other	2% to 4%
Restaurants	3% to 5%
Seafood	3% to 5%
Vegetables	5% to 7%
<b>Total Increase in Food Prices</b>	<b>2.5% to 4.5%</b>

Source: Canada’s Food Price Report 2024

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Figure 52: 2023 Food Price Results: 2023 Forecasts vs Observed

Table 3:  
2023 Food Price Results: 2023 Forecast vs Observed

Food Categories	2023 Canada's Food Price Report Forecast	2023 Actual Change (CPI, Sept. '22 to Sept. '23)
Bakery	5% to 7%	8.0%
Dairy	5% to 7%	4.0%
Fruits	3% to 5%	3.0%
Meat	5% to 7%	4.4%
Other	5% to 7%	6.7%
Restaurants	4% to 6%	6.1%
Seafood	4% to 6%	4.3%
Vegetables	6% to 8%	7.6%
Total Food Categories Forecast	5% to 7%	5.9%

Source: Canada's Food Price Report 2024

**Capital Markets: Japanese stocks outperform in 2023 post Buffett's 04/11 interview**

It's been a good year for Japanese stocks in great part thanks to Warren Buffett's endorsement of the major Japanese trading companies in his April 11 interview with CNBC's Becky Quick. The reality is that Buffett's positive comments on the Japanese trading companies was the catalyst in particular to for more foreign capital coming into to buy Japanese stocks and the resultant outperformance in Japanese stocks since his Apr 11 comments. On Monday, we tweeted [\[LINK\]](#) "#WarrenBuffettEffect. Japan stocks outperform in 2023 led by 5 trading firms Buffett favored earlier this yr - Mitsubishi, Mitsui., Sumitomo, Marubeni & Itochu are up >35% reports @aya\_wagatsuma. See 📌 05//18/23 Buffett 04/11 with @BeckyQuick interview. [\[LINK\]](#)." Bloomberg reported "One of the world's biggest share market rallies this year in Japan may be extended if foreign investors become even more bullish in 2024. The Topix index and the Nikkei 225 Stock Average both touched 33-year highs and rose more than 20% so far for 2023, beating most equity benchmarks in the rest of Asia." And "The five trading firms that Buffett favored earlier this year - Mitsubishi Corp., Mitsui & Co., Sumitomo Corp., Marubeni Corp. and Itochu Corp. — are all up at least 35% since a report in April said he raised holdings in the sector. Investors are watching for what he buys next after Berkshire Hathaway Inc. sold yen bonds in November. The Topix's Wholesale Trade index, which includes those companies, has climbed more than 37% this year." Our tweet included the below Bloomberg graph. Our Supplemental Documents package includes the Bloomberg report.

**Warren Buffett effect**

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Figure 53: Japanese stocks outperform in 2023



Source: Bloomberg

**Foreign investors in Japanese stocks ramped up post Buffett Apr 11 interview**

Our tweet this week forwarded our May 18, 2023 tweet on how Buffett’s April 11 CNBC comments on Japanese trading companies led to big inflows by foreign investors into Japanese stocks. Here is what we wrote in our May 21, 2023 Energy Tidbits memo. *“We aren’t in the category of the Warren Buffett fanatics who think everything he says is gospel and he touches turns to gold. But we really respect what he has accomplished and continues to accomplish over the decades. It’s amazing when someone can be considered to be on the top of his game over many decades. So we couldn’t help tweet a Warren Buffett shout-out on Thursday, when we saw the below Bloomberg TV chart on how foreigners are loving Japanese stocks. We tweeted [LINK] “The #WarrenBuffett effect is still working. @business “foreigners loving Japanese stocks, positive flows into equities for 7th straight week”. Last 5 weeks were since #WarrenBuffett made his positive comments on Japanese trading houses in his @BeckyQuick Apr 12 interview in Japan. #OOTT.” Buffett was in Japan in early April and there was big investor attention to the CNBC Becky Quick interview with Buffett and Greg Abel on April 12, where he made positive comments about the Japanese trading houses. We have to believe this got a lot of attention from investors around the world. Was it coincidental or did people follow? Given his following, we suspect a good portion of this was people following Warren Buffett into Japanese stocks.”* Below is the Bloomberg graph from our May 18, 2023 Energy Tidbits memo.

Figure 54: Positive flows into Japanese equities for 7th straight week



Source: Bloomberg

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**Capital Markets: Mastercard, US retail sales +3.1% YoY this holiday season**

We don't have the economist's data on what the official rate of inflation is by sector or type of retail spending. So our comment in our tweet was based on what we see in the price increases for our everyday living. On Tuesday, we tweeted [\[LINK\]](#) "#Mastercard Spending Pulse for holiday season. NOT adjusted for inflation! US retails sales +3.1% YoY, split online +6.3% YoY vs in-store +2.2% YoY. Restaurants +7.8% YoY, vs Grocery +2.1% YoY. Don't know where you live, but these YoY seem less than price increases!" On Tuesday, Mastercard posted its "Mastercard SpendingPulse: U.S. Retail Sales Grew +3.1%\* This Holiday Season" [\[LINK\]](#) And so the item that jumped out at us was Mastercard reminder that the Mastercard data is "not adjusted for inflation". And as we put in our tweet, at least in our everyday life, we think the inflation in prices is more than the YoY increases in the Mastercard data. And some like Grocery are way, way more than the +2.1% in the Mastercard data. Regardless, Mastercard reported "According to preliminary insights from Mastercard SpendingPulse™, U.S. retail sales excluding automotive increased +3.1% year-over-year this holiday season, running from November 1 through December 24. Mastercard SpendingPulse measures in-store and online retail sales across all forms of payment and is not adjusted for inflation. "This holiday season, the consumer showed up, spending in a deliberate manner," said Michelle Meyer, Chief Economist, Mastercard Economics Institute. "The economic backdrop remains favorable with healthy job creation and easing inflation pressures, empowering consumers to seek the goods and experiences they value most." Key retail trends this holiday season included: • Shopping Extravanzas In-Store & Online: Online retail sales increased +6.3% YOY while in-store sales were up a more modest +2.2% YOY. Spending online is increasing at a faster pace than in-store, therefore taking a growing slice of the retail pie, but shopping in-store still makes up a considerably larger portion of total retail spending. • Winter Wardrobe Wonderland: Apparel was one of the top categories for shoppers this season as consumers shopped for new outfits and upcoming holiday festivities. The sector was up +2.4% YOY. • Season's Eatings: Culinary celebrations continued as family and friends gathered in restaurants to ring in the holidays. The Restaurant sector was up +7.8% YOY, while Grocery was up +2.1% for the season." Our Supplemental Documents package includes the Mastercard report.

**US retail sales +3.1% YoY this holiday season**

Figure 55: Mastercard Spending Pulse US Holiday Retail Sales Nov 1-Dec 24, 2023 vs 2022

Mastercard SpendingPulse™ U.S. Holiday Retail Sales November 1 - December 24, 2023 vs. 2022	
	2023 vs. 2022
Total retail (ex. auto)	+3.1%
E-commerce sales	+6.3%
In-store	+2.2%
Apparel	+2.4%
Electronics	-0.4%
Grocery	+2.1%
Jewelry	-2.0%
Restaurants	+7.8%

Source: Mastercard

**Capital Markets: Bloomberg's 10 most intriguing science breakthroughs of 2023**

We decided to put this in the Capital Markets section because science breakthroughs can become big capital markets stories as seen in 2023 with Ozempic. And even if they don't

**Science breakthroughs**

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become big capital market stories, it is always interesting to read where science may be taking the world. One that was really interesting was reading the minds of the severely paralyzed. Anyone who has known someone in this terrible condition will be pumped to see progress being made. Yesterday, Bloomberg Opinion posted its *“The 10 Most Intriguing Science Breakthroughs of 2023: F.D. Flam. Every year, scientists make amazing new discoveries — findings that often don’t get the attention they deserve. War, tragedy and political controversies understandably dominate social media and the front pages, but not all the news is bad. As 2023 draws to a close, let’s look back on some of the astounding breakthroughs we’ve seen in the last 12 months.”* The list of top ten are *“New drugs help us lose weight — and understand why we gain it”*, *“Climate tipping points become clearer while there’s still time to act”*, *“Physicists repeat a nuclear fusion feat”*, *“Early arrival of humans in the Americas demands a rethink of history”*, *“A new telescope helps us see the universe when it was young”*, *“Giant gravitational waves rock the universe”*, *“A cure for sickle cell disease”*, *“Reading the minds of the severely paralyzed”*, *“ChatGPT learns to play doctor”*, and *“Intelligent life is found on Earth”*. Our Supplemental Documents packaged includes the Bloomberg report.

#### **Demographics: Will people ever return to “long form reading” of books?**

Who doesn’t remember plane flights of 20 years ago when the standard was that people pulled out their book and/or magazines to read on the plane to kill the time. Those days started to go when planes put the video monitors on the back of the seat in front. And those days are gone with the video monitors gone and people using their own devices.. Our flight back to Calgary on Thursday and the holiday programing on CTV early yesterday morning reminded of item from our Oct 15, 2023 Energy Tidbits. Yesterday morning, CTV played a repeat of their Taking Stock show from October with the lengthy interview with Heather Reisman, who returned to take over as CEO of Indigo in Sept. Reisman was talking about reading books and it reminded of a comment from the flight back on Thursday on it was the first time in probably at least a year (we fly at least monthly) that we had seen someone pull out a book to read on the plane. In the handful of times we have seen people pull out a book on an airplane, the demographic is normally older people. In our Oct 15, 2023 Energy Tidbits memo, we didn’t put the full Reisman quote but rather highlighted how we had never heard the *“long-form reading”* and how she knows the challenge facing the book business from e-books, audio books, Amazon, and people’s attention spans. But she reminds the physical book business is a resilient business. We didn’t put the full quote in as Sunday mornings are a big last-minute push focusing on breaking overnight news up until our 7am MT news cut off. After thinking about all the plane trips, we have to wonder about the future of books. Here is the transcript we made of what Reisman said *“But guess what happened. E-books remain 17, 18%. Audio books are there and they have grown but they’re at 7%, 8%. Does this all take away? Yes. And it does affect the economics. But, the first point is the physical article remains a resilient business. It’s not a s big as it was when you didn’t have 20% going or 4% but that’s the underlying point that the underlying point. It’s more resilient than we think. That said, people’s attention spans are affected. We have an opportunity to play in that. We have an opportunity to find ways to inspire long-form reading.”*

**Heather Reisman,  
Indigo CEO**

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

It may not last as followers can drop off but, earlier this morning, we went over 10,000 followers on Twitter/X. I really appreciate the support and, more importantly, some excellent

**@Energy\_Tidbits  
on Twitter**

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

#### **LinkedIn: Look for quick energy items from me on LinkedIn**

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

**Look for energy items on LinkedIn**

#### **Misc Facts and Figures.**

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

#### **New Year's Eve is the night for Toshikoshi Soba in Japan.**

I was talking to a friend in early December what they were looking forward to when they went home to Okinawa for Xmas/New Year's. Their response is the same as they always say – Okinawa sake and soba on New Year's. Anyone who has been to Japan has seen one of the thousands of soba restaurants in Japan, any of which are small on the street soba bars that might seat 6 people. Soba restaurants are everywhere. I have had the opportunity to travel to Japan many times going back to the 70s but never been there on New Year's Eve so I could have the tradition bowl of Toshikoshi soba. This is the bowl of soba to end the year. Japan Times [\[LINK\]](#) describes it *"Eating a bowl of soba noodles to mark the end of the old year and pass into the new is a tradition that became widely established in the early 19th century, although its roots may be even older than that. There are several theories as to why soba was chosen as the noodle of choice for the season. One is that buckwheat is a symbol of strength, since the grain is very resilient to cold and bad weather; another is that the long, thin noodles signify a long — yet quiet and uneventful — life. But today, the best symbolic reason to eat soba noodles is that they can be easily bitten, representing a clean, no-regrets break with the ending year. Other names for the year-end bowl of soba include nengiri ("cut off the year") soba and engiri ("cut off relationships") soba, both of which seem apropos, too. There are really no rules for what goes into a bowl of toshikoshi soba. It can be very simple, topped with chopped leek and yuzu citrus peel."* I have bowls of soba in Japan but I have to believe the bowl of soba would be special on New Year's Eve, kind of like having a Caesar at the Westin Hotel in Calgary (was the Calgary Inn when it was invented) or ginger beef at the Silver Inn in Calgary where it was invented. Below is the simple bowl of Toshikoshi soba, the only difference I remember is that we also had a few slides of barbecue pork.

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Figure 56: A simple Toshikoshi soba



Source: Japan Times

### **New style hybrid work shoes or 80's golf shoe?**

Saw this WSJ report from Sept 13, 2023 tweeted just before Christmas and couldn't help include with the question new style hybrid work shoes or 70's golf shoes? It was probably tweeted because it was only a few days before Christmas so it was retweeted as a gift idea. But when we saw the picture, we couldn't help be reminded of the popularity of white brogue golf shoes in the 80's. Take a look at almost every picture of the top PGA golfers like Jack Nicklaus or Seve Ballesteros and they are wearing white brogue style golf shoes that look like today's work shoes except for the red sole. The WSJ report was *"Looks Like a Dress Shoe, Feels Like a Sneaker: Why Smart Men Are Choosing Hybrid Shoes for Work Created by former athletes and businessmen tired of foot pain, these shoes mix sophistication with ultra-comfortable athletic soles. And they're selling fast—as sneakered-out men crave more formality postpandemic."* [\[LINK\]](#)

Figure 57: Marc Nolan White Leather Sneakers, Jack Nicklaus, Seve Ballesteros



Source: WSJ

### ***"If you carry your own water, you will learn the value of every single drop"***

It's always great to hear a saying from somewhere else, in this case Africa, and realize it's a good life lesson for everyone. I had a Nature show in the background

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yesterday afternoon Chasing the Rains that was a typical African wildlife show on wild dogs, cheetahs, etc, when I heard the narrator talk about the dry season. She named a certain tribe (couldn't recall the name) and how they appreciate every drop of water. She said something like, the XXX tribe have a saying something like "if you carry your own water, you will learn the value of every single drop."

### **BC man convicted for 21<sup>st</sup> time for impaired driving**

On Friday, the Abbotsford Police Department posted its news release [\[LINK\]](#) "Driver receives 21st conviction for impaired driving following AbbyPD Investigation." That's crazy! A 21<sup>st</sup> impaired driving conviction! They wrote "On August 15th, 2022, at 7:40 p.m., AbbyPD responded to a reported motorcycle accident in the 1800 block of Clearbrook Rd. The registered owner of the motorcycle was known to police for a history of prohibited and impaired driving offences. Upon police arrival, a passenger of the motorcycle was being treated by first responders for serious injuries. The driver who attempted to flee the scene before police arrival was identified with the assistance of witnesses. Through the course of the investigation, the driver, 66-year-old Roy Heide, was arrested for driving while prohibited and detained for an impaired driving investigation. Mr. Heide's blood alcohol content was determined to be over two times the legal limit. On December 18th, 2023, Mr. Heide pleaded guilty to impaired driving, driving while disqualified and driving while prohibited, receiving a total sentence of four years and 354 days in jail for this incident. What's incredibly concerning is that this conviction represented Mr. Heide's 21st conviction for impaired driving, which is believed to be the single most conviction for impaired driving offences someone has received in Canadian history."