

Energy Tidbits

November 12, 2023

Produced by: Dan Tsubouchi

Bad Week For US Net Zero: 1st Likely SMR Terminated, PLUG's Green Hydrogen Cost Warning, EVs 38% Less Mileage vs ICE

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. NuScale Power shares down 33%, terminated nuclear small modular reactor project in Utah, was expected to be 1st SMR in the US. [\[click here\]](#)
2. Plug Power shares down 40%, warned "we may not be able to produce [green] hydrogen internally at competitive prices." [\[click here\]](#)
3. EV study finds EVs driven 38% less mileages vs ICE. [\[click here\]](#)
4. Last Sunday, Vitol's Mike Mueller warned China oil stocks unseasonably high + low crack spreads = less oil imports ie. theme for oil market weakness. [\[click here\]](#)
5. Negative for near term LNG/natural gas continues – warmer than normal start to winter. [\[click here\]](#)
6. Please follow us on Twitter at [\[LINK\]](#) for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [\[LINK\]](#).

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

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Table of Contents

Natural Gas: No EIA Nov 3 storage data, last data was as of Oct 276
 Figure 1: US Natural Gas Storage.....6
 Figure 2: US Natural Gas Storage – Historical vs Current6
 Natural Gas: NOAA, Oct was the 18th hottest in the last 129 yrs6
 Figure 3: NOAA Statewide Average Temperature Ranks – Oct 20237
 Natural Gas: NOAA sees El Nino conditions for Dec/Jan/Feb7
 Figure 4: El Nino Probability Nov 2023.....7
 Natural Gas: El Nino correlations to warm winters aren’t perfect.....7
 Figure 5: Winter (Dec-Feb) Temp In Strong, Moderate And Weak El Ninos Since 19508
 Natural Gas: EIA leaves US gas production forecast for 2023, 2024 unchanged9
 Figure 6: EIA STEO Natural Gas Production Forecasts9
 Figure 7: EIA STEO Natural Gas Production Forecasts by Month..... 10
 Natural Gas: EIA STEO forecasts Apr 1/24 storage 1.994 tcf, +0.01 tcf vs Oct STEO 10
 Figure 8: EIA STEO US Natural Gas in Storage (2016-2024) 10
 Natural Gas: BloombergNEF increases its forecast for gas storage levels in 2024..... 10
 Natural Gas: Crescent Point highlights contiguous lands in Montney acquisition..... 11
 Natural Gas: Coastal GasLink ready to deliver commission gas to LNG Canada in Dec 11
 Figure 9: Coastal GasLink ready to deliver commissioning gas by yr end 2023..... 12
 Natural Gas: Need/opportunity for >15 bcf/d of Cdn & US gas in next 5 yrs 14
 Figure 10: North American LNG capacity growth thru 2027..... 14
 Natural Gas: EIA sees LNG stocks and storage in good shape for winter demand..... 14
 Figure 11: Natural Gas storage figures (US and Europe), 2023 vs. 2022 15
 Figure 12: EU Natural Gas Storage and Consumption, 2022 vs 2023 16
 Natural Gas: Record high floating LNG 16
 Figure 13: Floating LNG cargos are above the levels observed at this point last year 16
 Natural Gas: Japan forecast normal/slightly warmer temps for rest of Nov/early Dec..... 17
 Figure 14: JMA Nov 11 – Dec 10 Temperature Probability Forecast..... 17
 Natural Gas: Japan LNG stocks up big WoW, down YoY, and above 5-yr average 17
 Figure 15: Japan LNG Stocks..... 18
 Natural Gas: Washington Post Ukrainian Officer Coordinated Nord Stream Attack 18
 Natural Gas: Engie sees 10-20% demand destruction at major EU industrial consumers 19
 Natural Gas: Copernicus forecasts another warmer than average winter for Europe..... 19
 Figure 16: Copernicus Temperature outlook Dec/Jan/Feb 20

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

| | |
|---|----|
| Figure 17: DJF 2022/2023 Land & Ocean Temperature Percentiles | 20 |
| Natural Gas: Still looking warmer than normal 1 st half Dec in all of Europe | 21 |
| Figure 18: ECMWF Dec 4-11 Temperature Probability Forecast | 21 |
| Figure 19: ECMWF Dec 11-18 Temperature Probability Forecast | 21 |
| Natural Gas: Europe storage continues to be effectively full at 99.53%, new 5-year high | 21 |
| Figure 20 European Gas Storage Level | 22 |
| Oil: US oil rigs -2 WoW to 494 rigs, US gas rigs flat WoW at 118 rigs | 22 |
| Figure 21: Baker Hughes Total US Oil Rigs | 22 |
| Oil: Patterson UTI says US rig activity need to increase to build up DUCs | 23 |
| Oil: Total Cdn rigs up +3 rigs WoW to 199 total rigs | 23 |
| Figure 22: Baker Hughes Total Cdn Oil Rigs | 23 |
| Oil: No EIA Nov 3 US oil production data, last data was as of Oct 27 | 23 |
| Figure 23: EIA's Estimated Weekly US Field Oil Production – Oct 27 data | 24 |
| Figure 24: EIA's Estimated Weekly US Oil Production – Oct 27 data | 24 |
| Oil: EIA Oct STEO decreases 2023, increases 2024 US oil production estimates | 24 |
| Figure 25: EIA STEO Oil Production Forecasts by Month | 25 |
| Figure 26: Estimated US Crude Oil Productions by Forecast Month | 25 |
| Oil: Another 5.3 earthquake to add more costs/time for Permian water disposal | 25 |
| Figure 27: 5.2 earthquake on Nov 8, 2023, >20 km west-southwest of Mentone, Texas | 26 |
| Oil: EOG saves 15-25% by drilling 3-mile wells in Permian, Eagle Ford and Utica | 26 |
| Oil: Helmerich & Payne drilling efficiencies mean each rig can drill more wells | 28 |
| Oil: Patterson-UTI sees stable outlook for US oil, needs to pick up drilling in 2024 | 28 |
| Oil: US gasoline prices -\$0.05 this week to \$3.38 | 29 |
| Oil: Crack spreads increased \$0.74 WoW to \$22.39 | 29 |
| Figure 28: Cushing Crude Oil 321 Crack Spread Nov 10, 2013 to Nov 10, 2023 | 30 |
| Oil: No EIA Nov 3 US refinery crude inputs data, last data was as of Oct 27 | 30 |
| Figure 29: US Refinery Crude Oil Inputs – Oct 27 data | 30 |
| Oil: No EIA Nov 3 US net imports data, last data was as of Oct 27 | 31 |
| Figure 30: US Weekly Preliminary Imports by Major Country – Oct 27 data | 31 |
| Oil: Colombia oil production still below pre-Covid, August was 0.775 mmb/d | 31 |
| Figure 31: Colombia Oil Production | 32 |
| Oil: Argus, Venezuela oil exports will also hurt Cdn heavy oil to China and Colombia | 32 |
| Oil: Russia and Saudi Arabia extended their cuts thru Dec | 33 |
| Oil: Russia oil shipments still +200,000 vs commit to cut shipments by 300,000 b/d | 33 |

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

| | |
|---|----|
| Figure 32: Russia's seaborne crude shipments thru Nov 5 week | 34 |
| Oil: US drone shot down by Houthi yet no real worries re Red Sea/Bab el Mandeb | 34 |
| Figure 33: Bab el-Mandeb Strait, a world oil chokepoint | 35 |
| Oil: Iran still warning, but not yet getting drawn directly into the Israel/Hamas war | 35 |
| Figure 34: Crude oil, Condensate & Petroleum Products Flows Thru Strait of Hormuz | 36 |
| Oil: We still don't expect Saudi to add back oil to physical markets until Q2/24 | 37 |
| Figure 35: Saudi Budget is Expected to Fall Back into Deficit This Year | 38 |
| Oil: Saudi reminds oil exports are seasonal ie. less in summer/more in winter | 38 |
| Figure 36: Saudi Arabia Direct Use of Crude Oil for Electricity Generation | 39 |
| Oil: Will Iraq's "keenness" actually lead to a deal to resume Kurdistan oil exports | 39 |
| Oil: Libya oil production stable at ~1.2 mmb/d | 40 |
| Oil: Vitol, China oil stocks unseasonably high + low crack spreads = less oil imports | 40 |
| Oil: 1 st net outflow of net foreign direct investment in China | 40 |
| Figure 37: Foreign Direct Investment in China | 41 |
| Oil: Foreign investors return to net selling China after a three-day rally of net buying | 41 |
| Figure 38: Net selling by foreign investors | 41 |
| Oil: China scheduled domestic flights back down to early June levels | 42 |
| Figure 39: China scheduled domestic flights from BNEF Aviation Indicators Weekly reports | 43 |
| Figure 40: China scheduled domestic air flights as of Nov 6 | 43 |
| Figure 41: China scheduled international air flights as of Nov 6 | 43 |
| Oil: Baidu China city-level road congestion MTD Nov 2023 is 128% of Nov 2021 levels | 44 |
| Figure 42: China city-level road congestion for the week ended Nov 8 | 44 |
| Figure 43: China city-level road congestion for the week ended Nov 8 | 45 |
| Oil: BNEF China steel industry PMI staying in contraction for 8 th consecutive month | 45 |
| Figure 44: China steel industry activity | 46 |
| Figure 45: Air quality index for Chinas | 46 |
| Oil: China imports less Iran oil should mean more Iran oil in floating storage | 46 |
| Figure 46: Iran oil exports by destination country, kbd | 47 |
| Oil: Vortexa crude oil floating storage est 53.77 mmb at Nov 10, -22.27 mmb WoW | 47 |
| Figure 47: Vortexa Floating Storage Jan 1, 2000 – Nov 10, 2023, posted Nov 11 at 9am MT | 48 |
| Figure 48: Vortexa Estimates Posted 9am MT on Nov 11, Nov 4, and Oct 28 | 49 |
| Oil: Vortexa crude oil floating storage WoW changes by regions | 49 |
| Figure 49: Vortexa crude oil floating by region | 49 |
| Oil: BNEF – global oil and product stocks deficit flipped to surplus WoW to 9.9 mmb | 49 |

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

| | |
|---|----|
| Figure 50: Aggregate Global Oil and Product Stockpiles | 50 |
| Oil: Gunvor forecasts oil demand +1.4 mmb/d YoY in 2024 | 50 |
| Oil: TomTom mobility indicators: EU, North America, Asia-Pacific all decrease WoW | 50 |
| Figure 51: Mobility Indicators..... | 51 |
| Oil: IATA, air passenger data, travel now 97.3% of pre-Covid levels..... | 51 |
| Oil: IATA, global air cargo Sept modest uptrend in volumes amid soft demand drivers” | 51 |
| Figure 52: September 2023 Air Cargo Market..... | 52 |
| Oil: Asia Pacific Airlines Sept solid passenger growth, 1 st cargo increase in 18 mths | 52 |
| Figure 53: APAA Preliminary International Air Traffic Data | 53 |
| Oil: Singapore Airlines, soft cargo demand, passenger to pre-Covid in summer 2024 | 53 |
| Oil & Natural Gas: Alberta and BC wildfires down | 53 |
| Figure 54: Alberta wildfire map as of 7pm MT on Nov 11 | 54 |
| Figure 55: BC wildfire map as of 7pm MT on Nov 11 | 54 |
| Oil & Natural Gas: sector/play/market/global insights from Q3 calls | 54 |
| Energy Transition: Sunak King’s speech priority is the economy..... | 55 |
| Energy Transition: NuScale terminates 1 st US nuclear small modular reactor project | 56 |
| Energy Transition: PLUG may not be able to produce green hydrogen at competitive \$ | 57 |
| Energy Transition: Liberals defeat Conservatives exempt all home heating carbon tax | 59 |
| Energy Transition: EVs are driven ~38% less miles than an ICE | 59 |
| Figure 56: Oil displacement by region and mode, 2022-2030..... | 61 |
| Capital Markets: Cyber attack shuts down 4 major DP World Australia ports | 62 |
| Figure 57: DP World Ports & Terminals | 62 |
| Capital Markets: Plug Power Q3 reminds need to go to 10Q, not rely on press release | 63 |
| Capital Markets: Not a forecast but Bank of Canada outlines higher for longer rates | 63 |
| Capital Markets: Record inflows to money market funds,. parked on sidelines till when?..... | 63 |
| Figure 58: ICE Money Market Funds Assets vs S&P 500 | 64 |
| Twitter: Look for our first comments on energy items on Twitter every day | 64 |
| LinkedIn: Look for quick energy items from me on LinkedIn | 64 |
| Misc Facts and Figures..... | 64 |

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Natural Gas: No EIA Nov 3 storage data, last data was as of Oct 27

Note the EIA did not publish its normally scheduled data on Nov 8-10 to complete a system upgrade and will resume its regular publishing on Nov 13. There is no weekly gas storage data for the week ended Nov 3, rather the last posted storage data is as of Oct 27. Last week's (Nov 5, 2023) Energy Tidbits wrote "For the week of October 27, the EIA reported a +79 bcf build (in line with expectations of a +79 bcf build), and a YoY decrease compared to the +107 bcf build reported for the week of October 27, 2022. This is close to the official number for the storage to start the Nov 1 winter withdraw season. Total storage is now 3,779 tcf, representing a surplus of +293 bcf YoY compared to a surplus of +313 bcf last week. Total storage is +205 bcf above the 5-year average, up from the +183 bcf surplus last week. Below is the EIA's storage table from its Weekly Natural Gas Storage report [LINK](#)."

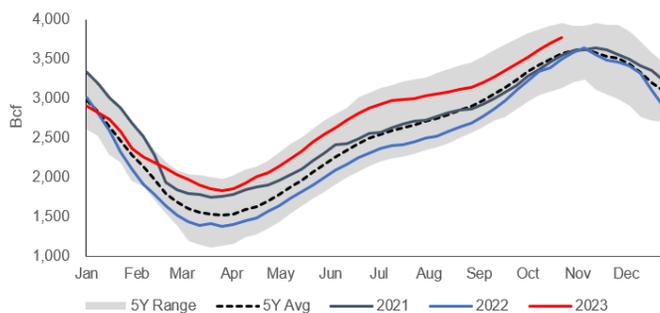
No updated EIA gas storage data

Figure 1: US Natural Gas Storage

| Region | Stocks billion cubic feet (Bcf) | | | | Historical Comparisons | | | |
|---------------|------------------------------------|----------|------------|--------------|------------------------|------|-----------------------------|------|
| | 10/27/23 | 10/20/23 | net change | implied flow | Year ago (10/27/22) | | 5-year average (2018-22) | |
| East | 925 | 908 | 17 | 17 | 845 | 9.5 | 886 | 4.4 |
| Midwest | 1,100 | 1,075 | 25 | 25 | 1,037 | 6.1 | 1,056 | 4.2 |
| Mountain | 255 | 252 | 3 | 3 | 203 | 25.6 | 210 | 21.4 |
| Pacific | 285 | 283 | 2 | 2 | 247 | 15.4 | 277 | 2.9 |
| South Central | 1,214 | 1,182 | 32 | 32 | 1,154 | 5.2 | 1,146 | 5.9 |
| Salt | 313 | 299 | 14 | 14 | 296 | 5.7 | 299 | 4.7 |
| Nonsalt | 901 | 883 | 18 | 18 | 858 | 5.0 | 847 | 6.4 |
| Total | 3,779 | 3,700 | 79 | 79 | 3,486 | 8.4 | 3,574 | 5.7 |

Source: EIA

Figure 2: US Natural Gas Storage – Historical vs Current



Source: EIA, SAF

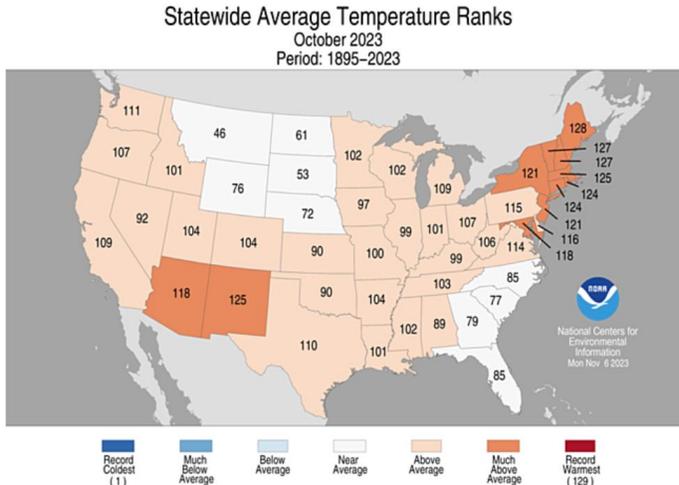
Natural Gas: NOAA, Oct was the 18th hottest in the last 129 yrs

Coming off a very hot summer, fall started warmer than normal as well which doesn't do much for natural gas demand, as "hot" doesn't mean a big A/C pull in October, rather it is good "leave your windows open" temperatures. On Wednesday, NOAA posted its National Climate Recap for October [LINK](#). October was the 18th hottest in the last 129 years. The average temperature across the US during October was 56.1°F, 2.0°F above the historical average. It was particularly warm in the NE US as well as New Mexico and Arizona. Below is NOAA's by state ranking for September and July/Aug/Sept temperatures.

NOAA Oct temperature recap

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 3: NOAA Statewide Average Temperature Ranks – Oct 2023



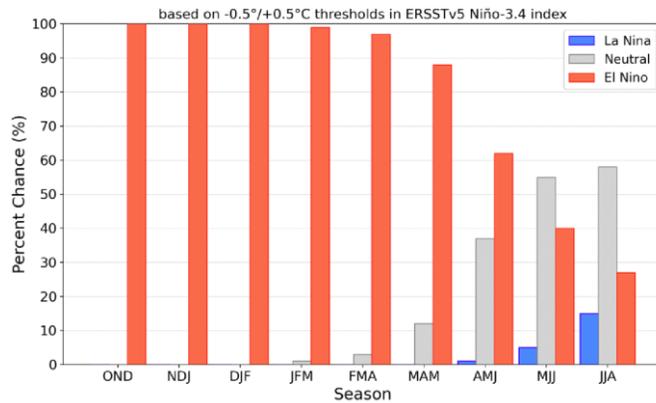
Source: NOAA

Natural Gas: NOAA sees El Nino conditions for Dec/Jan/Feb

The focus for El Nino conditions is for the winter. On Thursday, NOAA posted the updated monthly El Nino/La Nina outlook, which is issued on the 2nd Thurs of every month [\[LINK\]](#). NOAA continues to forecast El Nino conditions in the Northern Hemisphere Winter and Spring 2023-24. NOAA provided a probabilistic forecast for meeting El Nino thresholds for Dec/Jan/Feb at 100%.

El Nino forecast for Dec/Jan/Feb

Figure 4: El Nino Probability Nov 2023



Source: NOAA

Natural Gas: El Nino correlations to warm winters aren't perfect

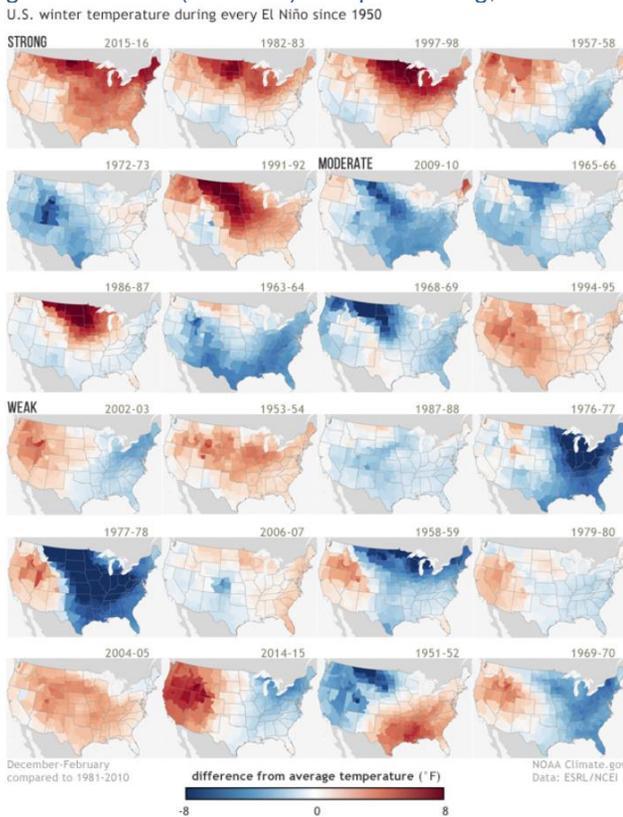
El Nino winters are typically warmer than normal in the northern US. But we remind of a Oct 24, 2018 NOAA brief “U.S. winter temperatures for every El Niño since 1950” where NOAA looked at all El Ninos since 1950, classified them as strong, moderate or weak El Ninos and

El Nino can bring cold winters

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

then showed the average winter (Dec thru Feb) temperature map. We checked this weekend and the link still works [\[LINK\]](#). NOAA wrote “The tropical Pacific climate pattern known as “ENSO,” which is short for El Niño-Southern Oscillation, has its strongest influence on the U.S. climate during winter (December-February). El Niño in general acts to tilt the odds toward wetter- and cooler-than-average conditions across much of the South, and toward drier and warmer conditions in many of the northern regions. El Niño’s influence on temperature is less reliable than its influence on precipitation. The collection of maps at right show the difference from average (1981-2010) winter temperature (December-February) in each U.S. climate division during all El Niño events since 1950. Years are ranked from strongest El Niño (top left) to weakest (bottom right), based on the December–February Oceanic Niño Index value. There is no universal way to define the strength of El Niño events, but for this graphic, events with ONI values above 1.5 are ranked as strong, events with ONI values between 1 and 1.5 are ranked as moderate, and events with ONI values between 0.5 and 1 are ranked as weak.” “Four of the six strong events have a warm signal that is nearly nationwide, but even among them, the geographic details—the location of the biggest anomalies, where the few cool spots are—vary from one event to another. Looking at both strong and moderate events, the patterns become even less consistent. Eight of the twelve events have a warm signal in the Northern Plains (a much smaller area than is affected in the strong events), but 4 are colder than normal.” Below are the Nino maps from the NOAA brief.

Figure 5: Winter (Dec-Feb) Temp In Strong, Moderate And Weak El Ninos Since 1950



Source: NOAA

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

EIA US natural gas production forecast

Natural Gas: EIA leaves US gas production forecast for 2023, 2024 unchanged

The EIA left unchanged its forecast of US natural gas production for 2023 and 2024. Last month, the EIA made the expected catch-up adjustment in its natural gas production forecast linked to a needed catch-up adjustment in its oil production forecasts. We saw this catch up in last month’s STEO, with a +1.0 bcf/d adjustment to 2023 and a +0.2 bcf/d adjustment to 2024, but this month’s STEO kept annual forecasts flat. As a reminder the key oil plays produce associated natural gas and NGLs, any increase in US oil production lead to increases in associated natural gas production from these oil plays. (i) On Tuesday, the EIA released its monthly Short Term Energy Outlook for November 2023 [\[LINK\]](#). The EIA left unchanged its 2023 US natural gas production forecast at 103.7 bcf/d, which, on a full year average basis, gives solid YoY growth of +4.1 bcf/d from 2022. The EIA’s overall unchanged 2023 forecast still had some quarterly changes to estimates. The revisions by quarter were Q1/23 -0.1 bcf/d to 102.3 bcf/d, Q2/23 +0.0 bcf/d at 103.2 bcf/d, Q3/23 -0.3 bcf/d to 104.1 bcf/d, and Q4/23 exit +0.2 bcf/d to 105.1 bcf/d. (ii) The EIA left its 2024 forecast unchanged at 105.1 bcf/d, which, on a full year average basis, is up vs 2023 forecast of 103.7 bcf/d. The EIA did not comment on the changes in their natural gas consumption forecast. (iii) The EIA increased its HH natural gas price expectations to \$2.78/mcf in 2023 and as well as the 2024 expectation to \$3.25/mcf (was \$3.36/mcf). The EIA did not comment on the change in HH gas prices. (iv) Our Supplemental Documents package includes excerpts from the STEO.

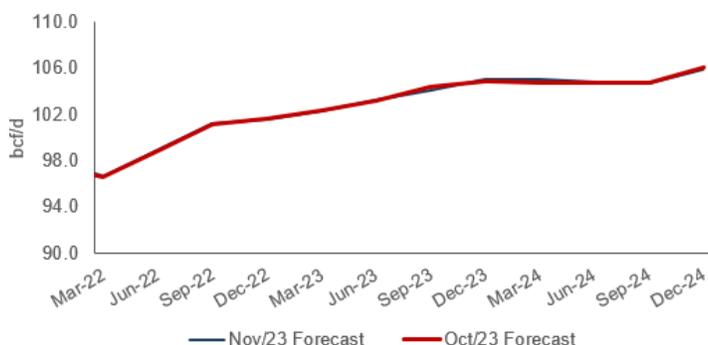
Figure 6: EIA STEO Natural Gas Production Forecasts

| bcfd | 2021 | Q1/22 | Q2/22 | Q3/22 | Q4/22 | 2022 | Q1/23 | Q2/23 | Q3/23 | Q4/23 | 2023 | Q1/24 | Q2/24 | Q3/24 | Q4/24 | 2024 |
|-----------|------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Nov-2023 | 94.6 | 96.6 | 98.9 | 101.2 | 101.6 | 99.6 | 102.3 | 103.2 | 104.1 | 105.1 | 103.7 | 105.1 | 104.8 | 104.7 | 105.9 | 105.1 |
| Oct-2023 | 94.6 | 96.6 | 98.9 | 101.2 | 101.6 | 99.6 | 102.4 | 103.2 | 104.4 | 104.9 | 103.7 | 104.7 | 104.8 | 104.8 | 106.1 | 105.1 |
| Sep-2023 | 94.6 | 95.1 | 97.8 | 99.5 | 100.3 | 98.1 | 102.1 | 102.8 | 102.7 | 103.1 | 102.7 | 104.3 | 104.7 | 104.9 | 105.9 | 104.9 |
| Aug-2023 | 94.6 | 95.1 | 97.8 | 99.5 | 100.3 | 98.1 | 102.1 | 102.8 | 103.4 | 103.8 | 103.0 | 104.0 | 103.9 | 104.0 | 104.6 | 104.1 |
| July-2023 | 94.6 | 95.1 | 97.8 | 99.5 | 100.3 | 98.1 | 102.0 | 102.2 | 103.0 | 102.2 | 102.4 | 101.8 | 101.5 | 102.5 | 103.7 | 102.4 |
| June-2023 | 94.6 | 95.1 | 97.8 | 99.5 | 100.3 | 98.1 | 102.0 | 103.7 | 103.4 | 101.9 | 102.7 | 102.8 | 102.8 | 103.0 | 103.6 | 103.0 |
| May-2023 | 94.5 | 95.1 | 97.8 | 99.5 | 100.3 | 98.1 | 102.1 | 101.9 | 99.9 | 100.4 | 101.1 | 100.7 | 101.1 | 101.4 | 101.8 | 101.2 |
| Apr-2023 | 94.5 | 95.1 | 97.8 | 99.5 | 100.2 | 98.1 | 101.6 | 100.5 | 100.5 | 100.9 | 100.9 | 101.2 | 101.5 | 101.8 | 101.8 | 101.6 |
| Mar-2023 | 94.5 | 95.1 | 97.8 | 99.5 | 100.2 | 98.1 | 101.0 | 100.2 | 100.6 | 101.0 | 100.7 | 101.4 | 101.4 | 102.0 | 102.0 | 101.7 |
| Feb-2023 | 94.6 | 95.1 | 97.8 | 99.5 | 100.1 | 98.1 | 99.9 | 100.0 | 100.3 | 100.9 | 100.3 | 101.2 | 101.6 | 102.0 | 101.9 | 101.7 |
| Jan-2023 | 94.6 | 95.1 | 97.8 | 99.4 | 99.9 | 98.0 | 100.8 | 99.9 | 100.1 | 100.8 | 100.3 | 101.1 | 101.8 | 102.7 | 103.6 | 102.3 |
| Dec-2022 | 93.6 | 95.1 | 97.8 | 99.2 | 100.5 | 98.1 | 99.9 | 99.5 | 100.5 | 101.8 | 100.4 | | | | | |
| Nov-2022 | 93.6 | 95.1 | 97.8 | 99.4 | 100.1 | 98.1 | 99.0 | 99.4 | 100.0 | 100.3 | 99.7 | | | | | |
| Oct-2022 | 93.6 | 95.1 | 97.8 | 98.5 | 99.1 | 97.5 | 99.2 | 99.6 | 99.7 | 100.0 | 99.6 | | | | | |
| Sep-2022 | 93.6 | 94.6 | 96.9 | 97.9 | 99.0 | 97.1 | 99.7 | 100.5 | 100.6 | 100.7 | 100.4 | | | | | |
| Aug-2022 | 93.6 | 94.6 | 96.6 | 97.0 | 98.1 | 96.6 | 98.9 | 100.1 | 100.5 | 100.5 | 100.0 | | | | | |

Source: EIA, STEO

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 7: EIA STEO Natural Gas Production Forecasts by Month



Source: EIA, STEO

Natural Gas: EIA STEO forecasts Apr 1/24 storage 1.994 tcf, +0.01 tcf vs Oct STEO

Given the continued strong YoY increase in forecast US gas production, the EIA Oct STEO increased its forecast for storage to end winter 2023/24. (i) The EIA STEO also forecasts US gas storage. Gas storage started the summer 2023 refill season at 1.850 tcf on April 1, 2023, which was +0.448 tcf YoY. For the summer 2023 draw season, the EIA forecasts storage on Nov 1, 2023 at 3.835 tcf, which is +0.266 tcf YoY but down vs Oct STEO of 3.854 tcf. (ii) The increasing US natural gas production has a bigger impact on storage to end winter 2023/24. The EIA forecasts gas storage to end the winter at 1.993 bcf, which would be +0.144 tcf YoY and up vs Oct STEO of 1.982 tcf. Below is a table tracking the working gas inventory forecasts and actuals since 2016.

EIA November STEO storage forecast

Figure 8: EIA STEO US Natural Gas in Storage (2016-2024)

| | Storage Level | 2016-2024 | | | | |
|----------|---------------|-----------|---------|---------|---------|-----------|
| | | Low | High | Range | Average | Deviation |
| Mar 2016 | 2,486.3 | 1,184.9 | 2,486.3 | 1,301.4 | 1,835.6 | 35.4% |
| Oct 2016 | 4,012.7 | 3,236.3 | 4,012.7 | 776.4 | 3,624.5 | 10.7% |
| Mar 2017 | 2,062.5 | 1,184.9 | 2,486.3 | 1,301.4 | 1,835.6 | 12.4% |
| Oct 2017 | 3,816.5 | 3,236.3 | 4,012.7 | 776.4 | 3,624.5 | 5.3% |
| Mar 2018 | 1,390.3 | 1,184.9 | 2,486.3 | 1,301.4 | 1,835.6 | -24.3% |
| Oct 2018 | 3,236.3 | 3,236.3 | 4,012.7 | 776.4 | 3,624.5 | -10.7% |
| Mar 2019 | 1,184.9 | 1,184.9 | 2,486.3 | 1,301.4 | 1,835.6 | -35.4% |
| Oct 2019 | 3,762.0 | 3,236.3 | 4,012.7 | 776.4 | 3,624.5 | 3.8% |
| Mar 2020 | 2,029.4 | 1,184.9 | 2,486.3 | 1,301.4 | 1,835.6 | 10.6% |
| Oct 2020 | 3,928.5 | 3,236.3 | 4,012.7 | 776.4 | 3,624.5 | 8.4% |
| Mar 2021 | 1,801.2 | 1,184.9 | 2,486.3 | 1,301.4 | 1,835.6 | -1.9% |
| Oct 2021 | 3,665.4 | 3,236.3 | 4,012.7 | 776.4 | 3,624.5 | 1.1% |
| Mar 2022 | 1,401.5 | 1,184.9 | 2,486.3 | 1,301.4 | 1,835.6 | -23.7% |
| Oct 2022 | 3,569.4 | 3,236.3 | 4,012.7 | 776.4 | 3,624.5 | -1.5% |
| Mar 2023 | 1,849.6 | 1,184.9 | 2,486.3 | 1,301.4 | 1,835.6 | 0.8% |
| Oct 2023 | 3,835.4 | 3,236.3 | 4,012.7 | 776.4 | 3,624.5 | 5.8% |
| Mar 2024 | 1,993.8 | 1,184.9 | 2,486.3 | 1,301.4 | 1,835.6 | 8.6% |
| Oct 2024 | 4,010.6 | 3,236.3 | 4,012.7 | 776.4 | 3,624.5 | 10.7% |

Source: EIA, STEO

Natural Gas: BloombergNEF increases its forecast for gas storage levels in 2024

The EIA isn't the only one pointing out the demand headwinds for gas given current storage levels and warm weather. On Thursday, BloombergNEF posted their US Gas Monthly titled "Warm Winter Kickoff Hits Demand". In the report, Bloomberg forecasts end-of-winter 2023-24 US gas storage to be 1.843 tcf, end-of-summer 2024 storage 4.076 tcf, and 1.948 tcf going into winter 2024-25 next year. Bloomberg decreased their demand forecast by ~1.8 bcf/d for November due to warmer temperatures and fewer heating degree days (HDD).

BloombergNEF gas storage forecast

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Bloomberg also increased their US natural gas production estimates after the revised EIA data, now at 101.1 bcf/d in 2023 and 102.4 bcf/d in 2024. Bloomberg wrote “*The winter has kicked off by delivering warmer weather than normal and adding looseness to the market. The resulting heating demand destruction manages to outweigh the overall strength observed across other gas demand sectors. In the longer term, the tide could be turned by a wave of new LNG terminals positioned to start consuming feedgas in the second half of 2024, especially as some of them move ahead of schedule*”. Our supplemental documents package includes an excerpt of the BloombergNEF report.

Natural Gas: Crescent Point highlights contiguous lands in Montney acquisition

In our Oct 15, 2023 Energy Tidbits memo, we noted our comments to the Canadian Press if there were any sector takeaways relevant to Canada from the Exxon/Pioneer deal. We highlighted how Exxon stressed the contiguous land blocks were the key for Exxon to take advantage of their development and technology. We said the analogous situation was the Montney where there are big contiguous land blocks in great rock. The Montney is certainly the obvious candidate, with its contiguous land blocks, for companies to move to longer horizontals especially if they can be like Exxon and get good completions from heel to toe. On Monday, Crescent Point announced its big Montney acquisition and highlighted this concept of contiguous lands. The first point in their Strategic Rationale was “*Establishes Dominant Position in the Alberta Montney with 350,000 Net Acres of Contiguous Land Providing Synergies: The Transaction is accretive to Crescent Point’s portfolio and allows the Company to consolidate approximately 105,000 net acres of land with Montney rights, directly adjacent to its existing Alberta Montney position at Gold Creek and Karr. The acquired assets are highly attractive with favourable royalty rates on Crown lands and include a high working interest rate of primarily 100 percent with limited expiry concerns. The acquired lands also have attractive geological characteristics with significant net pay, similar to Crescent Point’s Gold Creek assets, and higher than normal pressure. The Company expects to be able to drive significant operational synergies across the combined asset base with respect to drilling and completion design, shared infrastructure, well-pad development continuity and supply chain management efficiencies.*”

Contiguous lands in the Montney

Natural Gas: Coastal GasLink ready to deliver commissioning gas to LNG Canada in Dec

On Tuesday morning, TC Energy reported Q3 and gave more detail on the completion of the Coastal GasLink pipeline that will deliver natural gas to LNG Canada’s 1.8 bcf/d Phase 1 and ultimately its 1.8 bcf/d Phase 2. Early Tuesday morning, we tweeted [\[LINK\]](#) “*2024 is huge year for Cdn #Oil #NatGas. Ready for 📌 11/03 #Shell #LNGCanada to start 1.8 bcf/d Phase 1. #CoastalGasLink "to be ready to deliver commissioning gas to the LNG Canada facility by the end of the year". TC Q3. Trans Mountain #TMX 590,000 b/d start in Q1/24. #OOTT.*” TC Energy said that Coastal GasLink would be able to deliver commissioning natural gas to LNG Canada by the end of this year, which means it’s all on Shell and LNG Canada for when LNG Canada’s 1.8 bcf/d Phase 1 starts up as natural gas supply will be able to be delivered whenever they are ready to accept the natural gas supply. TC Energy wrote “*We are pleased to announce that the Coastal GasLink project has achieved mechanical completion ahead of our year-end target. In October, the project achieved 100 per cent pipe installation following the final weld at the base of Cable Crane Hill. This monumental milestone includes the installation of all 800 water crossings and the successful hydrotesting of the full length of the 670 km pipeline. Achieving mechanical completion allows us to safely commence the introduction of natural gas. With the most challenging work completed, we have substantially*

Coastal GasLink ready to deliver commissioning gas

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

mitigated the remaining risks associated with the project, and the cost estimate of approximately \$14.5 billion remains on track. Throughout the remainder of 2023, the project will complete pipeline commissioning activities to be ready to deliver commissioning gas to the LNG Canada facility by the end of the year.” Below is TC Energy’s Coastal GasLink slide from the Q3 call.

Figure 9: Coastal GasLink ready to deliver commissioning gas by yr end 2023

TC ENERGY THIRD QUARTER 2023 CONFERENCE CALL

DELIVERING ON 2023 PRIORITIES

Coastal GasLink achieves mechanical completion

COASTAL GASLINK

- 100% pipe installation and hydrotesting completed across the 670 km length
- 100% of the 800 classified water crossings are complete
- Reached mechanical completion ahead of year-end target
- Pipeline commissioning activities to be carried out during remainder of 2023
 - Expect to be ready to deliver commissioning gas to LNG Canada facility by year-end 2023
- Project remains on track with the approximately \$14.5 billion cost estimate

Source: TC Energy

Shell expects LNG Canada 1.8 bcf/d Phase 1 start by the middle of this decade

Here is what we wrote in last week’s (Nov 5, 2023) Energy Tidbits memo on Shell’s latest comments for the timing of LNG Canada 1.8 bcf/d Phase 1 startup . “Shell held its Q3 call on Thursday and one of the first questions to Shell CEO Sawan was on the timing for LNG Canada 1.8 bcf/d Phase 1 startup given Coastal GasLink has completed 100% pipe installation. On Friday, we tweeted [LINK](#) “#Shell CEO #LNGCanada 1.8 bcf/d Phase 1 update. #CoastalGasLink completed the "golden weld" ie. 100% pipe installation. LNG Canada recently passed 85% completion threshold. "expect to have a startup by the middle of this decade" Sounds like 1st LNG next 12 mths or so! #OOTT.” Sawan wasn’t going to be caught up given a new date, rather reminded LNG Canada had recently passed the 85% completion mark and that he still expected startup “by the middle of the decade”. Sawan said “LNG Canada, we have indeed been pleased with the progress that has been made. You will have seen early October when TCE, the pipeline developer and Coastal Gas Link, the pipeline itself has in essence completed the golden weld, the final weld on that pipeline, and since then have also hydro tested the pipeline successfully. So, very pleased with that because as you know, that was very much on our watch. The second bit then is more the facilities at site. that the joint venture announced not too long ago that they had just passed the 85% completion threshold. And so that all continues to go according to plan. We’re not announcing anything new. We continue to say today that we expect to have a startup by the middle of this decade. What could go wrong? I mean, typically teething issues in the startup of the plant, but that is what we are very focused on. What we have said to the joint venture is our focus is not just on the first cargo and when it starts up, it’s on when can we get to the 100th cargo because that will show us the stability of the overall plant. And that’s what the team is focused on. And so, so far we’ve seen good quality or the joint venture has

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

seen good quality overall in the materials that we have received, the equipment was received. And so far the progress has been as we would have hoped for.”

LNG Canada 1.8 bcf/d Phase 1 should drive Montney M&A

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. Here is what we wrote in our July 30, 2023 Energy Tidbits memo. “Yesterday, we tweeted [\[LINK\]](#) “Here’s why a Shell FID on #LNGCanada 1.8 bcf/d Phase 2 should drive M&A in Cdn #NatGas. See 🗨️ 02/21/22 tweet, Shell CEO Sawan wants to have enough #NatGas supply to match their LNG offtake share. In Q2/23 call, Phase 1 supply seems in good shape based on CFO Gorman comments. But a Phase 2 FID would be another question. #OOTT.” (i) In Feb 2022, Shell CEO Swan, in his previous role, spoke about LNG Canada and it jumped out at us that his comments were pointing to the likelihood for M&A for the natural gas supply for LNG Canada. On February 21, 2022, we tweeted [\[LINK\]](#) “Buckle up, could be huge for Cdn #NatGas M&A. @Shell just said like to align equity #NatGas supply and offtake obligations, used #LNGCanada, Shell has 40% interest so would be 1.44 bcf/d if it FIDs #LNGCanada phase 2. It’s why #LNGCanada Phase 2 is the must watch event #OOTT #LNG.” Shell held its Integrated Business Deep Dive on Feb 21, 2022. Our tweet included the transcript we made of Sawan’s comments. At approx. 9:18am MT, an analyst asks if the future equity percentage you have for the natural gas supply be less than the offtake percentage you have for the LNG? Sawan replied “.. typically, what I would say, as much as possible, having access across the entire value chain in as close of a percentage as you can, helps ensure that wherever value might rate at any point in time, you are capturing that value. So in general. Take our LNG Canada investment that you just referenced in the second question, we would look to be able to at least assure ourselves that we are not caught up by vagaries of one part of the market. let’s say the gas supply, but we would want to have enough on the gas supply equity side to be able to make sure if gas prices go up there, we benefit from them while maybe disadvantaging the midstream or vice versa depending on where prices go. So we are not in the game of necessarily taking undue risk. we are in the game of creating integrated value chains that we can leverage as part of the broader portfolio.” Unless Sawan has changed his mind since becoming CEO, he clearly says that for LNG Canada, he wants to have enough Shell natural gas supply to meet its LNG offtake share ie. 1.44 bcf/d if both Phase 1 and 2 go ahead. (ii) Our tweet yesterday said it looks they are in good shape for Phase 1. And we included CFO Gorman’s comments in the Q&A on LNG Canada. Gorman said “Again, it’s your upstream, which we have good confidence in as you know, a large part of the gas that’s coming from this is coming for us from our own assets, Groundbirch and otherwise.” We would think they would be able to get there with drilling their lands over the next 18 months. (iii) But an FID on LNG Canada 1.8 bcf/d Phase 2 would be another question. And we have to wonder, if Shell is looking to FID LNG Canada Phase 2 over the coming months, will this M&A cycle happen sooner than later before valuations of BC and Alberta natural gas reflect 1.8 bcf/d of LNG Canada

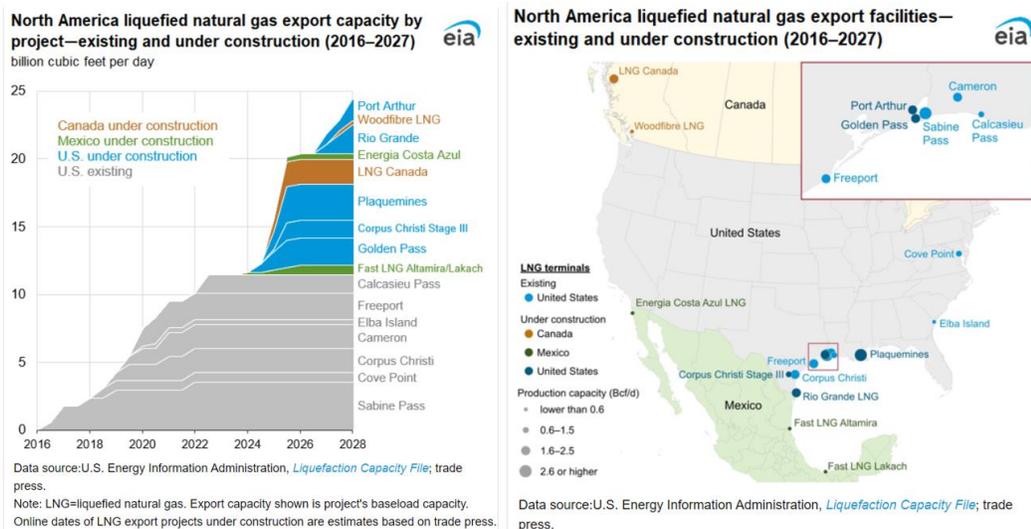
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Phase 1 sometime around 2025 and then another 1.8 bcf/d LNG Canada Phase 2 to follow perhaps in the 2030 range.”

Natural Gas: Need/opportunity for >15 bcf/d of Cdn & US gas in next 5 yrs

Here is an item from last week’s (Nov 5, 2023) Energy Tidbits memo that led to a number of discussions this week. “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 10: North American LNG capacity growth thru 2027



Source: EIA

Natural Gas: EIA sees LNG stocks and storage in good shape for winter demand

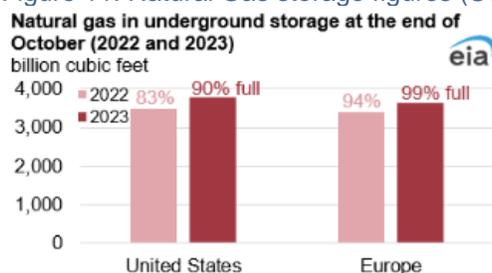
We remind that the most important factor for natural gas demand in the winter is how cold is the winter. A warmer than normal winter or a hot winter like last winter has a huge impact on natural gas consumption. And, at least for now, forecasts are for a warmer than normal winter

Global LNG supplies & gas stocks

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

in Europe. On Monday, the EIA posted its blog “*Global LNG supplies and natural gas stocks will likely meet demand this winter 2023-24, but risks remain*”. [\[LINK\]](#): We have reported weekly on LNG storage figures in the US and Europe, which continue to be very full. All things equal, given the storage levels, warmer weather in Europe and NA, stocks are in a good place to meet winter demand especially now that the draw season in both NA and Europe. The EIA highlights both storage and capacity are up YoY. In the US, natural gas underground storage is 90% as of October 2023, up +7% from 83% in 2022, and in the EU they are at 99% capacity, up +5% from 94% in October 2022. The EIA wrote “*Europe has enacted policies requiring storage operators to maximize storage injections during the refill season to ensure availability of natural gas during the winter. Natural gas storage inventories in Europe (EU-27) as of October 31, 2023, were approximately 3,657 billion cubic feet (Bcf). We estimate this storage volume represents 65 days of natural gas consumption at peak five-year (2019–2023) winter rates and 84 days of natural gas consumption at rates like we saw last winter*”. In terms of capacity, global LNG export capacity is projected to increase +7% YoY from 60 bcf/d in March 2023 to 64 bcf/d in March 2024, while import capacity should increase +9% YoY from 147 bcf/d to 161 bcf/d in the same time period. Large additions to LNG import capacity are expected in Asia Pacific at ~+7bcf/d and Europe at ~+5 bcf/d. The EIA noted that periods of sustained colder than normal temperatures still pose a risk to the current outlook. Asian countries have little underground storage capacity, making them dependent on consistent import flows, and many European power providers lack long-term supply contracts which would raise spot prices in both cases if unplanned supply shortages or export disruptions occur this winter during a long cold snap. Our Supplemental Documents package includes the EIA blog.

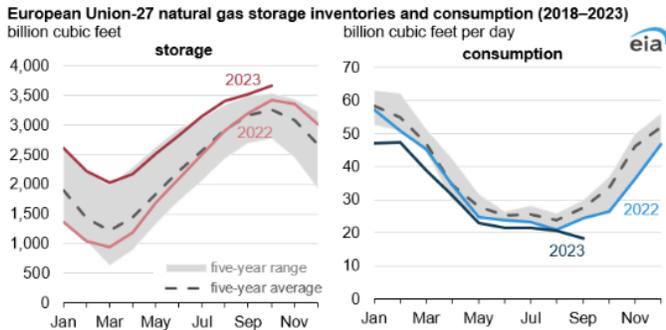
Figure 11: Natural Gas storage figures (US and Europe), 2023 vs. 2022



Source: EIA

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 12: EU Natural Gas Storage and Consumption, 2022 vs 2023

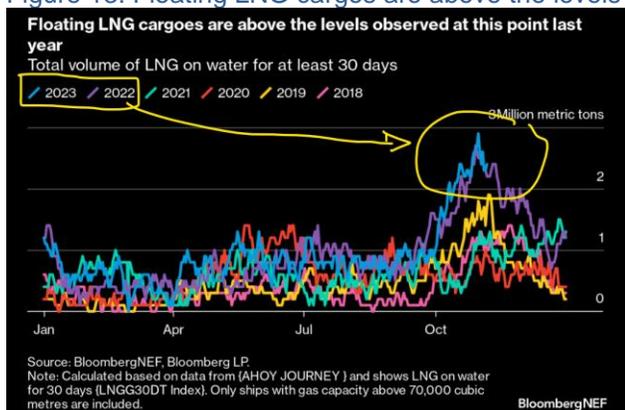


Natural Gas: Record high floating LNG

On Thursday, we tweeted [LINK](#) “Warmer than normal temps in Nov is not a good start to winter #LNG #NatGas prices. Record high 2.4 million tons of LNG in floating storage vs yr ago 2.2 and 5-yr ave 1.4. Reminder, warm winter 22/23 kept a lid on prices in all of 2023. Thx @BloombergNEF #OOTT.” We have been highlighting the forecasts for a warm start to winter in most of the major natural gas regions of the world and how a warm start to winter means it needs to get colder. Oct is the deemed start of winter natural gas season in Europe and Nov for the rest of the world. These may not be the big natural gas demand months but the warm start to winter is holding back demand and that is also being reflected in increasing floating LNG storage. BloombergNEF wrote “For the second winter in a row, mild temperatures and significant demand destruction are piling up high volumes of floating liquefied natural gas storage. A record high 2.4 million metric tons of LNG is estimated to be floating as of Nov. 6, according to Bloomberg’s mapping tool. This is LNG that was exported or re-exported at least 30 days ago and has not yet unloaded at a destination. It compares to 2.2Mt in the same period last year, and a 1.4Mt average over the previous five years.” Our Supplemental Documents package includes the BloombergNEF report.

Global LNG supplies and natural gas stocks

Figure 13: Floating LNG cargoes are above the levels observed at this point last year



The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Natural Gas: Japan forecast normal/slightly warmer temps for rest of Nov/early Dec

We continue to stress that it's hard to catch up from a warm start to winter in natural gas regions. And if there is a warm start to winter, it means it has to be cold in Jan/Feb. It looks like Japan will be cooler than previous forecasts for the rest of the month of November and into the first week of December. Every Thursday, the Japan Meteorological Agency updates its 30-day outlook [\[LINK\]](#). The November 9 update calls for normal to slightly warmer than normal temperatures for the rest of November into December. We checked AccuWeather who forecasts the first week of December for Tokyo daily highs in the 12-14C and nighttime lows of around 4-8C. This may generate more demand than in previous weeks, which were "leave the windows open" temperatures. Below is the JMA's 30-day temperature probability forecast for Nov 11 – Dec 10.

Japan's 30-day temperature forecast

Figure 14: JMA Nov 11 – Dec 10 Temperature Probability Forecast



Source: Japan Meteorological Agency

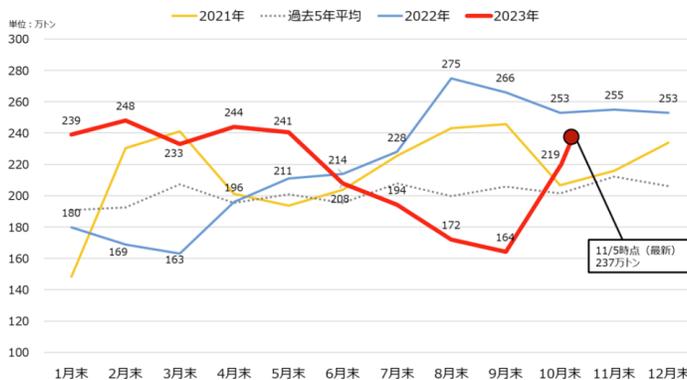
Natural Gas: Japan LNG stocks up big WoW, down YoY, and above 5-yr average

It was hot in Japan through September, and we saw Japan was drawing on its LNG stock in Sept for power generation, which took LNG stocks below year ago and the 5-yr average. Through October, Japan was building up their stocks again, and it looks like that build continued into the first week of November. Stocks are still below 2022 levels but now above the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [\[LINK\]](#). LNG stocks on Nov 5 were 113.8 bcf, up +8.7% WoW from Oct 29 of 104.7 bcf, and down -7.06% YoY from 122.5 bcf a year earlier, but above the 5-year average of 96.5 bcf. METI did not comment on the WoW increase. Below is the Japanese LNG stocks graph from the METI weekly report.

Japan LNG stocks up +8.7% WoW

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 15: Japan LNG Stocks



Source: METI

Natural Gas: Washington Post Ukrainian Officer Coordinated Nord Stream Attack

We don't think anyone will be surprised to see the Washington Post report yesterday "Ukrainian military officer coordinated Nord Stream pipeline attack". [\[LINK\]](#) The Nord Stream pipeline was bombed on Sept 27, 2022 and the immediate and loud accusations by most was that Russia blew it up and demanding an international investigation. Recall those soon went quiet in particular the demand for an international investigation. Then in January, I. Recall that those western calls for an international investigation went quiet. And then the official Swedish investigation (see our Jan 1, 2023 Energy Tidbits) went to there was no concrete evidence on who blew up Nord Stream. The finger turned to Ukraine but that was denied by Zelensky. Washington Post reported "A senior Ukrainian military officer with deep ties to the country's intelligence services played a central role in the bombing of the Nord Stream natural gas pipelines last year, according to officials in Ukraine and elsewhere in Europe, as well as other people knowledgeable about the details of the covert operation. The officer's role provides the most direct evidence to date tying Ukraine's military and security leadership to a controversial act of sabotage that has spawned multiple criminal investigations and that U.S. and Western officials have called a dangerous attack on Europe's energy infrastructure. Roman Chervinsky, a decorated 48-year-old colonel who served in Ukraine's special operations forces, was the "coordinator" of the Nord Stream operation, people familiar with his role said, managing logistics and support for a six-person team that rented a sailboat under false identities and used deep-sea diving equipment to place explosive charges on the gas pipelines. On Sept. 26, 2022, three explosions caused massive leaks on the Nord Stream 1 and 2 pipelines, which run from Russia to Germany under the Baltic Sea. The attack left only one of the four gas links in the network intact as winter approached. Chervinsky did not act alone, and he did not plan the operation, according to the people familiar with his role, which has not been previously reported. The officer took orders from more senior Ukrainian officials, who ultimately reported to Gen. Valery Zaluzhny, Ukraine's highest-ranking military officer, said people familiar with how the operation was carried out. They spoke on the condition of anonymity to discuss sensitive details about the bombing, which has strained diplomatic relations with Ukraine and drawn objections from U.S. officials."

Nord Stream pipeline attack

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Natural Gas: Engie sees 10-20% demand destruction at major EU industrial consumers

The issue of industrial natural gas demand destruction in Europe started well before Russia invaded Ukraine and Europe moved to cut out Russia pipeline natural gas via Germany's Nord Stream. Rather in 2019, we started to see industrial gas demand destruction when natural gas prices went to record levels for the summer. Post Russia, the issue for Europe industry hasn't been the high natural gas prices but the economics of replacing cheap natural gas pipeline supply from Russia with higher priced LNG. On Tuesday, we tweeted [\[LINK\]](#) "EU #NatGas industrial demand destruction. #Engie: 10-20% from main industrial customers, "don't think it will worsen, but we think it's quite structural". Note warning warm start to this winter hitting #NatGas demand, "not hugely significant right now". #OTT." In the Q&A, mgmt. replied "Maybe I'll start on the gas demand. And here I'm talking about gas demand that we see in Europe from our main industrial customers. Depending on the size of these customers today, we have not seen the demand recovery from what happened last year. So in other words, we have a range of ten to 20% demand destruction depending again on the type of activities of our customers. And we think that this is here to stay to a large extent obviously this winter because the volumes of gas demand are not hugely significant right now. So it's a little bit difficult to tell you with certainty, but we anticipate that these are the type of demand extraction that we have seen post Ukraine war that will stay with us. We don't think that it will worsen, but we think it's quite structural and of course, given our business, our results and of course the role, the critical role of our gas infrastructure, it has."

EU industrial demand destruction**Natural Gas: Copernicus forecasts another warmer than average winter for Europe**

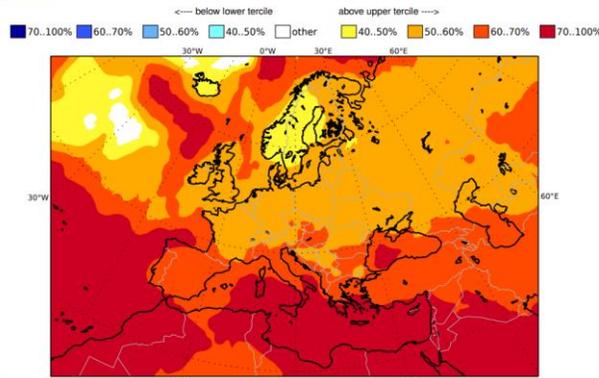
We have been tracking the temperature forecasts for the start of winter and winter itself because our concern for near-term natural gas and LNG prices is that there will be a holdback until markets start to see a move to normal winter temperatures. And that is especially so this winter with Europe gas storage full. As seen with winter 2022/23, when it starts warm, it's hard to catch up and a warm winter can also hold back natural gas and LNG prices for the rest of the year. On Friday, we tweeted [\[LINK\]](#) "Good news for Europeans. The #1 factor driving power prices is winter temperatures and Copernicus updated Dec/Jan/Feb temperature outlook is for another warmer than average winter across Europe. As seen in 2023, a warm winter can hold back EU #NatGas prices for all year #OTT." On Friday, Copernicus released its latest seasonal forecast and it calls for warmer than average temperatures in Europe for Dec/Jan/Feb. Below is their temperature forecast. Our Supplemental Documents package includes the Copernicus forecast. [\[LINK\]](#)

Europe still expected warmer than normal

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 16: Copernicus Temperature outlook Dec/Jan/Feb

C3S multi-system seasonal forecast ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA/ECDC
 Prob(most likely category of 2m temperature) DJF 2023/24
 Nominal forecast start: 01/11/23
 Unweighted mean



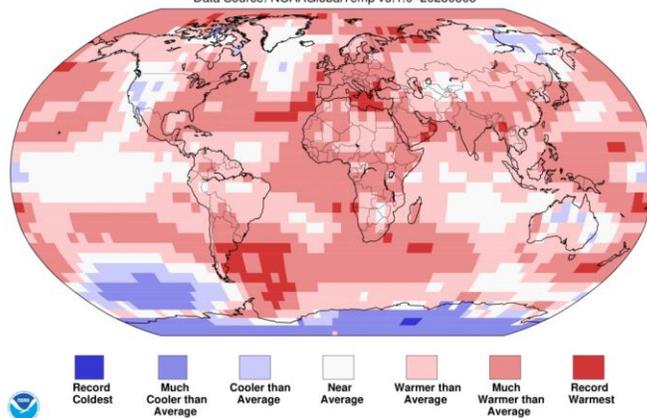
Source: Copernicus

Winter 2022/23 was the 2nd warmest on record in Europe

At least for now, the Copernicus winter forecast for Europe doesn't look like it will be really hot like last winter. NOAA wrote "Europe recorded its second-warmest winter on record at 2.50°C (4.50°F) above the 20th century average. Meanwhile, Africa's December to February period ranked fourth warmest on record." For the world overall, NOAA wrote "The December 2022–February 2023 global surface temperature was 0.90°C (1.62°F) above the 20th-century average of 12.1°C (53.8°F). This ranks as the fifth-warmest December–February period (tied with 2018 and 2022) in the 174-year record. The past nine December–February periods have ranked among the ten warmest such periods on record."

Figure 17: DJF 2022/2023 Land & Ocean Temperature Percentiles

Land & Ocean Temperature Percentiles Dec 2022–Feb 2023
 NOAA's National Centers for Environmental Information
 Data Source: NOAAGlobalTemp v5.1.0–20230308



Source: NOAA

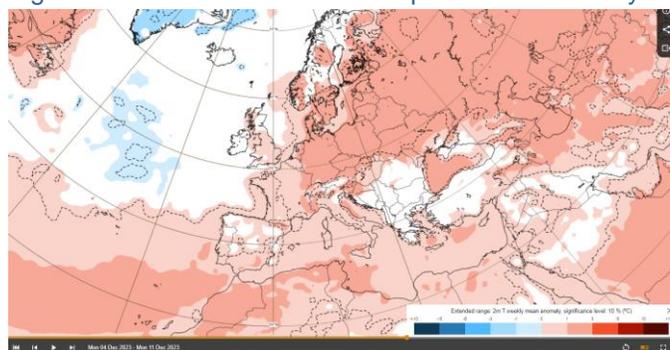
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Natural Gas: Still looking warmer than normal 1st half Dec in all of Europe

Our concern for near-term natural gas and LNG prices is that there will be a holdback until markets start to see a move to normal winter temperatures. And that is especially so this winter with Europe gas storage full. As seen with winter 2022/23, when it starts warm, it's hard to catch up. For terminology, much of Europe uses Oct 1 as the start of winter natural gas season. We tend to focus more on later Nov and early Dec as when we might expect to see the start of any decent weather driven natural gas demand. The ECMWF provides daily short-term forecasts. ECMWF is European Centre for Medium Range Forecasts. Yesterday's ECMWF's near term forecast calls for warmer than normal temperatures across Europe for most of Nov, in particular to end Nov and to start Dec.

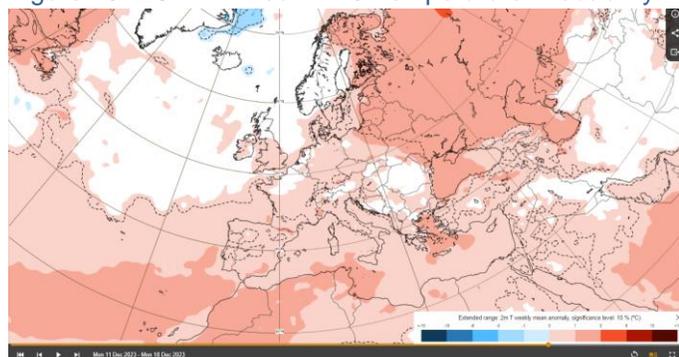
Europe still expected warmer than normal

Figure 18: ECMWF Dec 4-11 Temperature Probability Forecast



Source: ECMWF

Figure 19: ECMWF Dec 11-18 Temperature Probability Forecast



Source: ECMWF

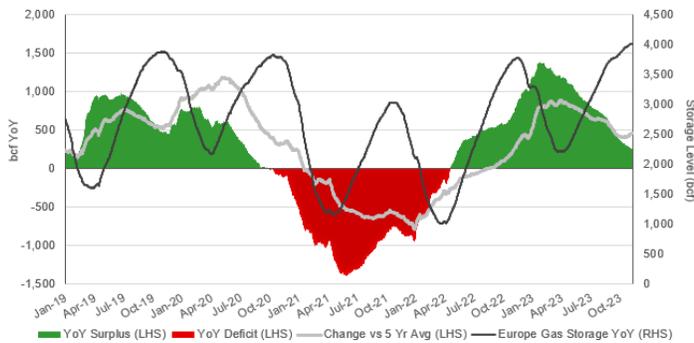
Natural Gas: Europe storage continues to be effectively full at 99.53%, new 5-year high

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. Europe storage is now over 99% full, which means they entered winter essentially completely full. This week, Europe storage increased by +0.04% WoW to 99.53% on Nov 9. Storage is now +4.17% greater than last year's levels of 95.36% and is +9.70% above the 5-year average of 89.83%. Earlier this week, storage levels hit a 5-year high at 99.63% full. Below is our graph of Europe Gas Storage Level.

Europe gas storage

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 20 European Gas Storage Level



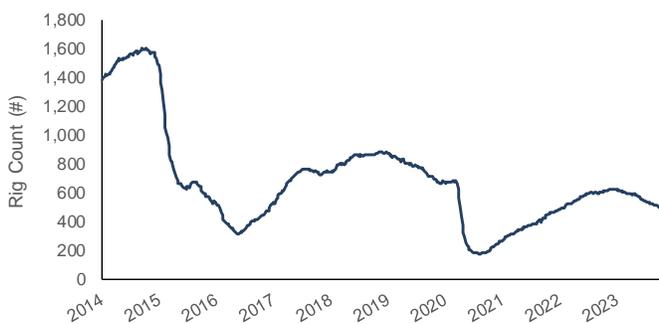
Source: Bloomberg, SAF

Oil: US oil rigs -2 WoW to 494 rigs, US gas rigs flat WoW at 118 rigs

On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Total US oil rigs were -2 WoW to 494 rigs. US rigs normally start their seasonal decline just before US Thanksgiving, which is on Thurs Nov 23. That means we should expect either this week, Nov 10, or next week's Nov 17 rigs to be the peak thru Christmas. (ii) Total US oil rigs were down -8 rigs WoW at 494 total rigs and are down -128 rigs YoY for the week of November 10. This is up +13 rigs from the 2022 low of 481 rigs in January. (iii) There were no changes on a per basin basis in the major US basins for oil rigs in the week of November 10. All major basins were flat WoW, while Others were down -2 rigs WoW at 76 oil rigs. (iv) The Permian is near its lowest level since March 18, 2022, and is down -54 rigs from its recent high of 357 rigs on April 28, 2023. (v) Gas rigs were flat WoW to a total of 118 rigs and have now decreased -37 rigs YoY. On a per basin basis, Haynesville was down -1 rig WoW at 37 rigs, Marcellus was down -1 rig WoW at 26 rigs, Utica was up +1 rig WoW to 13 rigs and Others were up +1 rig WoW to 31 rigs. Below is our graph of total US oil rigs.

US oil rigs down WoW

Figure 21: Baker Hughes Total US Oil Rigs



Source: Baker Hughes, SAF

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Oil: Patterson UTI says US rig activity need to increase to build up DUCs

Patterson-UTI held its Q3 call on Wednesday. One of their sector insights was that there are “really no DUCs out there”, which means US rig activity has to increase. This is not a new issue but they confirm the concern that DUCs have to the most part being drawn down so there needs to be able to increase rigs to DUCs up. Mgmt said “Because we can already see the inflection in our own rig count at Patterson-UTI, and I realize we've been outperforming the market in general and with our drilling rig count but based on, how commodity prices have been trading especially the forward strip on natural gas. I think you'll see an inflection in the overall rig count. Now, we're going to see the traditional lag between the drilling rigs picking up, and the frac operations just because there's really no ducts out there right now, that we've got frac spreads bumping into drilling rigs and drilling rig activity does need to pick up so the frac activity can pick up. So as, as we see those increases in early '24, we're already seeing the inflection now, but as we see the increases in early '24 on the drilling side, there's going to be a bit of lag on the completion, but then you're going to see completion activity pick up following drilling activity.”

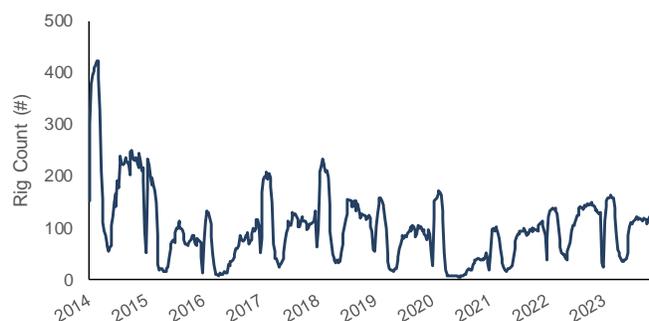
US rigs need to ramp up

Oil: Total Cdn rigs up +3 rigs WoW to 199 total rigs

For the week of November 10, total Cdn rigs were up +3 rigs WoW to 199 rigs. On a per province basis, BC was up +1 rig WoW to 20 rigs, Alberta was up +8 rigs WoW to 146 rigs, Saskatchewan was down -6 rigs WoW to 28 rigs, while Manitoba was flat WoW at 4 rigs and Newfoundland also flat WoW at 1 offshore rig. We still expect to see some modest increases over the next few weeks before Xmas especially with decreasing wildfires. Cdn oil rigs were up +3 WoW at 125 rigs, one of which is an offshore rig, along with Cdn gas rigs at 74 rigs. Cdn oil rigs are down -8 rigs YoY, while gas rigs are up +7 rigs YoY. Below is our graph of total Cdn oil rigs.

Cdn total rigs up WoW

Figure 22: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes, SAF

Oil: No EIA Nov 3 US oil production data, last data was as of Oct 27

Note the EIA did not publish its normally scheduled data on Nov 8-10 to complete a system upgrade and will resume its regular publishing on Nov 13. There is no weekly US oil production data for the week ended Nov 3, rather the last posted production data is as of Oct 27. Last week's (Nov 5, 2023) Energy Tidbits wrote “the EIA's production estimates were flat WoW at 13.200 mmb/d for the week ended October 27 [\[LINK\]](#). Alaska was up +0.003 mmb/d WoW to 0.433 mmb/d. Below is a table of the EIA's weekly oil production estimates.”

No updated EIA US oil production data

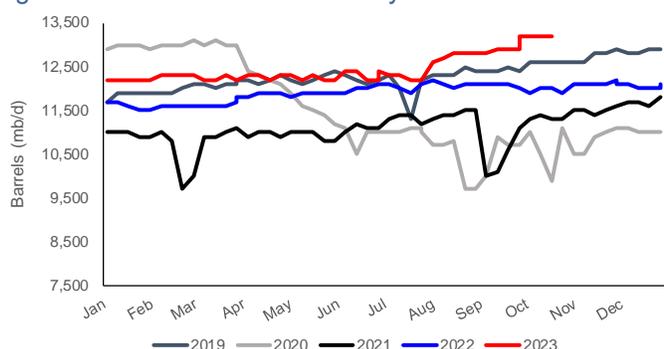
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 23: EIA's Estimated Weekly US Field Oil Production – Oct 27 data

| Year-Month | Week 1 | | Week 2 | | Week 3 | | Week 4 | | Week 5 | |
|------------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--------|
| | 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 | | |

Source: EIA

Figure 24: EIA's Estimated Weekly US Oil Production – Oct 27 data



Source: EIA, SAF

Oil: EIA Oct STEO decreases 2023, increases 2024 US oil production estimates

On Tuesday, the EIA released its Short-Term Energy Outlook for November 2023 [\[LINK\]](#) and decreased its oil production forecasts slightly for 2023 but made a small increase to its 2024 forecast. (i) The Oct STEO forecasts for 2023 US oil production estimates have decreased vs the last STEO in October. The November STEO forecast for 2023 is down -20,000 b/d to 12.90 mmb/d from the October STEO of 12.92 mmb/d. This comes after a big +140,000 b/d revision in October's STEO from the September STEO's forecast of 12.78 mmb/d, so our expected adjustment happened last month. The revisions by quarter were Q1/23 +0.00 mmb/d, Q2/23 +0.00 mmb/d, Q3/23 -0.06 mmb/d, and Q4/23 exit +0.01 mmb/d. (ii) The EIA increased its 2024 oil production forecast by +30,000 b/d to 13.15 mmb/d compared to 13.12 mmb/d in the October STEO, which is a YoY increase of +0.25 mmb/d. The revisions by quarter were Q1/24 -0.01 mmb/d, Q2/24 +0.06 mmb/d, Q3/24 +0.04 mmb/d and Q4/24 exit at +0.04 mmb/d from the October forecast to 13.35 mmb/d (was 13.31 mmb/d). Below is our EIA STEO forecast comparison by month.

EIA STEO US oil production

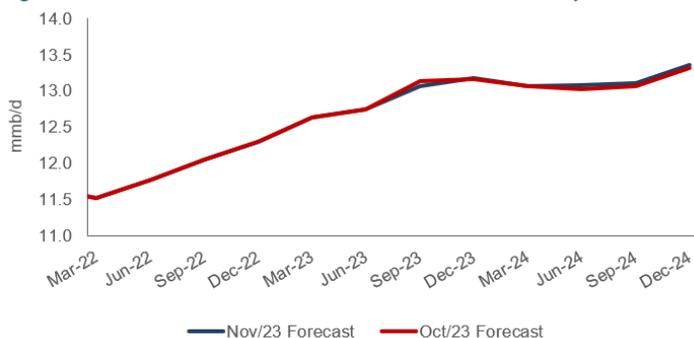
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 25: EIA STEO Oil Production Forecasts by Month

| (million b/d) | 2021 | Q1/22 | Q2/22 | Q3/22 | Q4/22 | 2022 | Q1/23 | Q2/23 | Q3/23 | Q4/23 | 2023 | Q1/24 | Q2/24 | Q3/24 | Q4/24 | 2024 |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Nov-23 | 11.27 | 11.52 | 11.77 | 12.05 | 12.30 | 11.91 | 12.63 | 12.75 | 13.07 | 13.17 | 12.90 | 13.06 | 13.08 | 13.11 | 13.35 | 13.15 |
| Oct-23 | 11.27 | 11.52 | 11.77 | 12.05 | 12.30 | 11.91 | 12.63 | 12.75 | 13.13 | 13.16 | 12.92 | 13.07 | 13.02 | 13.07 | 13.31 | 13.12 |
| Sep-23 | 11.27 | 11.52 | 11.77 | 12.05 | 12.30 | 11.91 | 12.63 | 12.71 | 12.86 | 12.94 | 12.78 | 13.03 | 13.09 | 13.15 | 13.36 | 13.16 |
| Aug-23 | 11.27 | 11.52 | 11.77 | 12.05 | 12.30 | 11.91 | 12.63 | 12.67 | 12.81 | 12.93 | 12.76 | 12.98 | 13.01 | 13.08 | 13.27 | 13.09 |
| Jul-23 | 11.25 | 11.47 | 11.70 | 12.06 | 12.31 | 11.89 | 12.61 | 12.55 | 12.48 | 12.63 | 12.56 | 12.67 | 12.71 | 12.88 | 13.13 | 12.85 |
| Jun-23 | 11.25 | 11.47 | 11.70 | 12.06 | 12.31 | 11.89 | 12.60 | 12.56 | 12.57 | 12.70 | 12.61 | 12.69 | 12.63 | 12.76 | 13.00 | 12.77 |
| May-23 | 11.25 | 11.47 | 11.70 | 12.06 | 12.31 | 11.89 | 12.54 | 12.51 | 12.46 | 12.61 | 12.53 | 12.63 | 12.58 | 12.68 | 12.85 | 12.69 |
| Apr-2023 | 11.24 | 11.47 | 11.70 | 12.06 | 12.30 | 11.88 | 12.54 | 12.50 | 12.50 | 12.61 | 12.54 | 12.69 | 12.71 | 12.77 | 12.83 | 12.75 |
| Mar-2023 | 11.24 | 11.47 | 11.70 | 12.06 | 12.30 | 11.88 | 12.31 | 12.43 | 12.48 | 12.54 | 12.44 | 12.58 | 12.58 | 12.64 | 12.71 | 12.63 |
| Feb-2023 | 11.25 | 11.47 | 11.70 | 12.06 | 12.36 | 11.90 | 12.44 | 12.46 | 12.49 | 12.56 | 12.49 | 12.63 | 12.62 | 12.65 | 12.70 | 12.65 |
| Jan-2023 | 11.25 | 11.47 | 11.70 | 12.05 | 12.23 | 11.86 | 12.37 | 12.34 | 12.40 | 12.51 | 12.41 | 12.63 | 12.72 | 12.86 | 13.03 | 12.81 |
| Dec-2022 | 11.25 | 11.46 | 11.70 | 12.03 | 12.29 | 11.87 | 12.24 | 12.24 | 12.34 | 12.51 | 12.33 | | | | | |
| Nov-2022 | 11.25 | 11.46 | 11.70 | 11.99 | 12.15 | 11.82 | 12.22 | 12.24 | 12.32 | 12.48 | 12.31 | | | | | |
| Oct-2022 | 11.25 | 11.46 | 11.70 | 11.83 | 11.99 | 11.74 | 12.27 | 12.29 | 12.36 | 12.50 | 12.35 | | | | | |
| Sep-2022 | 11.25 | 11.47 | 11.70 | 11.81 | 12.16 | 11.79 | 12.42 | 12.55 | 12.70 | 12.87 | 12.63 | | | | | |
| Aug-2022 | 11.25 | 11.46 | 11.69 | 12.01 | 12.28 | 11.86 | 12.39 | 12.50 | 12.82 | 13.10 | 12.70 | | | | | |

Source: EIA STEO

Figure 26: Estimated US Crude Oil Productions by Forecast Month



Source: EIA, STEO

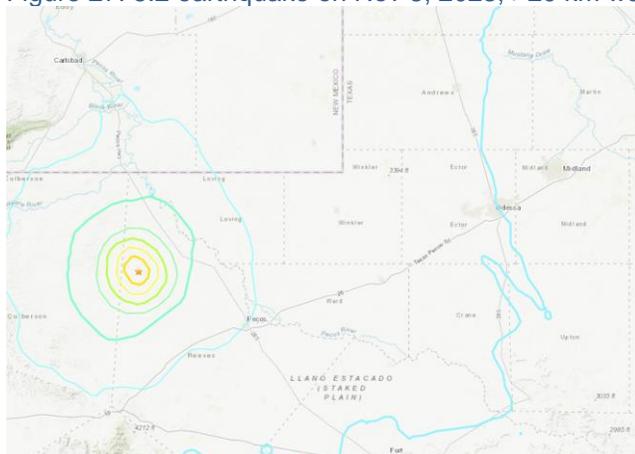
Oil – Another 5.3 earthquake to add more costs/time for Permian water disposal

On Tuesday, we tweeted [\[LINK\]](#) “#Permian. 5.3 earthquake just now in Delaware Basin. Too early to know if is linked to the normal reason of waste water disposal. Permian earthquakes not normally linked to fracking. #OOTT.” Early Tuesday morning, there was a big 5.3 earthquake in the Texas portion of the Delaware Basin. It was part of a cluster of 10 earthquake over 2.5 on Nov 8. Note we tweeted it was a 5.3 and it was subsequently revised by the USGS as a 5.2. The USGS called the earthquake area Coalson Draw, but the earthquake was just over 20 km west-southwest of Mentone, Texas and over 40 km west-northwest of Pecos, Texas. As noted below, the area around Mentone has now seen three of the strongest six earthquakes in Texas history. The expectation is that the Texas RRC will implement additional waste water disposal restrictions around the earthquake areas. As of our 7am MT new scut off, the RRC has not posted any notice on their seismicity response page. We suspect this is due to the RRC being closed on Friday for Veterans Day.

Another Permian 5.4 earthquake

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 27: 5.2 earthquake on Nov 8, 2023, >20 km west-southwest of Mentone, Texas



Source: USGS

Nov 8th 5.2 earthquake is tied for the 4th strongest in Texas history

As noted above, the Nov 8 earthquake was revised to a 5.2, which ties to the 4th strongest in Texas history. Three of the six strongest earthquakes in Texas history are around Mentone. . The USGS all time rankings are: (i) Aug 16, 1931, 5.8 earthquake near Fort Davis. (ii) Apr 14, 1995, 5.7 earthquake near Alpine. (iii) Nov 16, 2022, a 5.4 earthquake west-southwest of Mentone. (iv) Dec 16, 2022, a 5.2 earthquake north-northwest of Midland. And Nov 8, 2023, a 5.2 earthquake west-southwest of Mentone and (vi) March 26, 202, a 5.0 earthquake west of Mentone.

Oil: EOG saves 15-25% by drilling 3-mile wells in Permian, Eagle Ford and Utica

EOG held its Q3 call on Nov 3 and highlighted its 3-mile wells in the Permian, Eagle Ford and Utica. This fits the concept we highlighted in our Oct 15, 2023 Energy Tidbits memo that was titled “Exxon’s Shale Advancement on 4-mile Permian Wells with Heel-to-Toe Completion Success = Increased Value in Contiguous Land”. Contiguous land blocks in shale/tight plays have increasing value given the move to 3 and 4-mile horizontal wells. And in EOG’s case, they see a cost saving of 15% to 25% by drilling 3-mile wells. And as we have been saying drilling longer wells will be happening in more than the Permian. On Monday, we tweeted [\[LINK\]](#) “Contiguous land is value add in all shale/tight plays incl Cdn plays like Montney. 📌 10/11 tweet \$XOM 4-mile in Permian. 10/13 tweet 3 mile in Bakken. [\[LINK\]](#) 11/13 \$EOG 3-mile success in Utica & also doing in Eagle Ford & Delaware Basin. #OOTT.” One of their 3-mile comments was in the Q&A, when mgmt. replied “Yeah, just a little bit to add in. You know, in the Delaware, in the Eagle Ford, and in Utica, we’ve had great operational efficiency with our three-mile laterals. And that’s one of the things as you start, stretching out the length of these laterals, you want to make sure that operationally you don’t have any issues on the drilling side and you’re able to optimally complete that. And we’ve seen really, really good results with that. The other thing we’re also seeing is by drilling these longer laterals, we’re able to supplement, one vertical, with a three-mile lateral versus two verticals and a two-mile-and-a-half lateral. So we’re able to see substantial cost savings there anywhere from kind of 15 to 25%. So, we’re definitely excited about where we’re seeing it. Obviously, it ties in with our leasehold, and we have to see where we can actually drill three-

More 3-mile wells

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

mile laterals, but we are looking to expand that across our plays moving into next year and beyond.” Our Supplemental Documents package includes excerpts from the EOG Q3 call and QA3 call slide.

Exxon highlighted the bog value uplift from contiguous land blocks

Here is what we wrote in our Oct 15, 2023 Energy Tidbits on Exxon highlighting the big value lift from Pioneer’s contiguous land blocks. *“Big value in contiguous land blocs given shale drilling/fracking advancements. The big sector theme from the deal was the need for contiguous land blocks to take advantage of technology advancements in drilling longer horizontal legs and being able to get good production from the heel to the toe of the well. And long horizontal wells require contiguous land blocks. Once we saw the deal and flipped thru the materials, early Wednesday morning, we tweeted [LINK](#) “Contiguous land blocks! “Improved resource recovery” drive 2/3 of synergies. XOM 4 mile wells means less wells = improved recovery, less overall emissions, less water use, smaller footprint, Relevant to other shale players! #OOTT.” And then when the conference call started a few hour later, we immediately tweeted [LINK](#) “Contiguous land has big value! Exxon call just started, CEO opens with “Pioneer, arguably the best Permian pure play co. with the largest undeveloped Tier 1 inventory in the Midland Basin. Their acreage is also highly contiguous which is critical to realizing the full benefits of our development approach & technologies” See 📌 earlier tweet. #OOTT.” “Improved resource recovery” will drive 2/3 of synergies of \$1b beginning 2nd year post closing growing to average \$2b over next decade. Exxon opens the call with a clear statement that it’s all about contiguous lands so they can drill long horizontals and realize the full benefits of their development approach and technologies. That was clear. “*

The value lift is all about drilling longer wells with improved completions

Here is another item on the Exxon/Pioneer deal from our Oct 15, 2023 Energy Tidbits memo. *“The value lift is all about drilling longer wells with improved completions. This looks to be the key theme to this deal – contiguous land blocks and better completions on long horizontal wells up to 4 miles long. And the reminder that drilling advancements get passed along to other shale/tight plays. Exxon may says this is ha they are doing but the actual drilling and completions are executed by the big service services companies. That experience gets passed on to others. Exxon says ““we have strengthened our investments in technology, focusing our efforts to accelerate bottom-line improvements - with a significant program in the Permian. This is paying off; our industry-leading technology allows us to successfully drill and complete long laterals, up to 4 miles, which result in fewer wells and a smaller surface footprint. We see our technology as a perfect complement to the entrepreneurial culture of Pioneer, a company with a well-deserved reputation for operational effectiveness. Together, we expect to significantly improve resource recovery which will drive the majority of the synergies from this transaction. Longer-term, our ambition is to double resource recovery”. Note that this is a concept that we see being applied to other shale/tight plays. Being able to drill long horizontals and get good completion results from heel to toe is going to be applied to other plays and not just in the US.*

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Long horizontals also have big ESG value uplift

Here is another item on the Exxon/Pioneer deal from our Oct 15, 2023 Energy Tidbits memo. *“Long horizontals also have big ESG value uplift. The other big advantage of long horizontals is that Exxon can have the same or better recovery of oil with less wells, which helps reduce the carbon intensity, the water usage and footprint ie. helps reach their ESG goals. We were watching the CNBC interview with Exxon CEO Woods and Pioneer CEO Sheffield and tweeted [\[LINK\]](#) “#Exxon CEO highlights earlier tweet on big value accretion & ESG win by producing more #Oil from less wells. “technologies that we’ve developed to basically more efficiently recover resources at a lower cost in a better environmental footprint so we are actually advancing the ambitions of a lower emissions future by driving down, using our combined capabilities to drive down emissions. Produce lower carbon intensity oil and gas.” #OOTT.”*

Oil: Helmerich & Payne drilling efficiencies mean each rig can drill more wells

On Thursday, Helmerich & Payne held its Q3 call. One of their key sector insights was that they continue to see drilling and completion efficiencies in US shale and that means fewer wells are needed to grow. Please note that HP isn’t saying the wells are producing more, but that the drilling efficiencies and intensities mean that each rig produces more because it drills more. Mgmt said *“In the last 10 years, average lateral length has doubled to over 10,000 feet, and at the same time, the well cycle times have improved by 22%. This means that each FlexRig today drills about 4.5 more wells on average per year and those rigs have doubled the exposure to the resource. In 2023, the fleet actually drilled 15 million more feet of wellbore working 33 fewer rigs than a decade ago. This is an example of service intensity and a significant cause of increasing costs related to higher operational costs required to deliver consistency, efficiency and the increased volume of work each rig is now expected to produce.”*

Continued drilling efficiencies

Oil: Patterson-UTI sees stable outlook for US oil, needs to pick up drilling in 2024

Patterson-UTI held its Q3 call on Wednesday. (i) They, like other big service companies, see the evolving US oil sector as one that points to a stable US oil outlook with less dips down, but also one with modest growth ahead ie. less downside to a cycle but less also less upside to a cycle. (ii) Need to pick up US activity in 2024 to catch up. Mgmt said *“we believe that global balance will need U.S. shale production to grow modestly over the next several years. And U.S. shale activity likely need to stabilize just to keep production flat. The delayed activity response so far should mean activity will have to catch up with deferred activity, which should be a tailwind in 2024. On the natural gas side, we believe the shape of the forward strip is telling us that there needs to be more activity in the gas basins just to meet current natural gas demand. And as we get closer to completion of new LNG export capacity later next year and into 2025, we will likely need to see natural gas activity rise again.”* (iii) They also remind that US oil growth is needed to meet the demand forecasts including from the IEA. Mgmt said *“we are operating in a more stable U.S. shale industry. Our customers are obviously still sensitive to commodity prices, but they are looking through volatility more than they have in the past. This allows us to better prepare and relative to prior cycle to creates a far more predictable outlook for our operations and we think a more investable sector.”* And *“Looking at the overall market, the macro setup is strong and the outlook is improving. We’ve already seen our rig activity inflect higher and we expect this positive momentum will continue in 2024. Customers are optimistic at recent commodity prices but are proceeding cautiously*

Stable outlook for modest US growth

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

which we think of the sign of a more stable U.S. shale industry and our belief is cycles will be shallower in the future. Nonetheless as these events play out, we think convention in the cycle will improve and over the long-term activity and production will need to increase to meet demand based on various long-term forecasts including the IEA.”

Oil: US gasoline prices $-\$0.05$ this week to $\$3.38$

Biden may not be getting much love in the polls for his handling of the economy but one key item not hurting him right now is gasoline prices. As expected, US gasoline prices were down this week, in great part driven by continuing lower California gasoline prices. Yesterday, AAA reported that US national average prices were down $\$0.05$ this week to $\$3.38$ on Nov 11, which is also down $\$0.28$ MoM vs month ago of $\$3.66$, and also down $\$0.42$ YoY vs year ago of $\$3.79$. Remember US gasoline prices started to ease below $\$4$ in August 2022 and were helped in Q4/22 by the SPR releases.

US gasoline prices

California gasoline prices down big after Newsom allowed move to winter gas

The big reason for the drop in US gasoline prices over the past six weeks was the expected big drop in California gasoline prices following the five weeks ago Gov Newsom move to immediately switch to cheaper winter blend gasoline. Yesterday, AAA reported California average gasoline prices were down $\$0.09$ WoW to $\$5.08$, and now down $\$0.68$ MoM from month ago California prices of $\$5.74$. Here is what we wrote in our Oct 1, 2023 Energy Tidbits memo. *“California gasoline prices to drop as Newsom allows move to winter gas. We expect California gasoline prices to be down this week given Gov Newsom, on Thursday night, has moved an immediate switch to cheaper winter blend fuels. The San Diego Tribune reported [LINK](#) “In an attempt to curb a recent spike in gasoline prices, Gov. Gavin Newsom late Thursday instructed California regulators to speed the delivery of less expensive winter-blended gas to stations across the state. Winter-blended gas is about 20 to 25 cents per gallon cheaper than summer-blended gas and fuel analysts expect the waiver put in place by the California Air Resources Board at Newsom’s behest will lead to a dip in prices within a few days. “This waiver will affect wholesale gas prices probably on Friday,” said Patrick De Haan, head of petroleum analysis at GasBuddy, a tech company that helps drivers across the country find the cheapest places to buy gas. “But there’s only one day left in the trading week. That may segue into another drop on Monday and theoretically retailers could be passing that along in lower prices this weekend, but it’s not going to be much at first.”*

Oil: Crack spreads increased $\$0.74$ WoW to $\$22.39$

We don’t have the weekly data on how the WoW changes in crude oil input into refineries. The last EIA data was for the Oct 27 week and that $+0.062$ mmb/d WoW, which followed the prior week’s down 0.207 mmb/d WoW, and the prior week’s $+0.193$ mmb/d WoW. We remind that oil demand is driven by refiners and their ability to make money by processing oil and selling petroleum products. So crack spreads are a good indicator if refiners will be looking to buy more or less oil. This week, crack spreads were $+\$0.74$ WoW to $\$22.39$ on Nov 10, which followed $\$21.65$ on Nov 3, $\$20.47$ on Oct 27, $\$21.81$ at Oct 20, $\$20.73$ on Oct 13, $\$19.28$ on Oct 6, $\$22.35$ on Sept 29, $\$26.07$ on Sept 22, and $\$32.48$ on Sept 15. Crack spreads at $\$22.39$ are a little above the high end of the more normal pre-Covid that was more like $\$15-\20 , but not high enough to drive any real change in refiner plans.

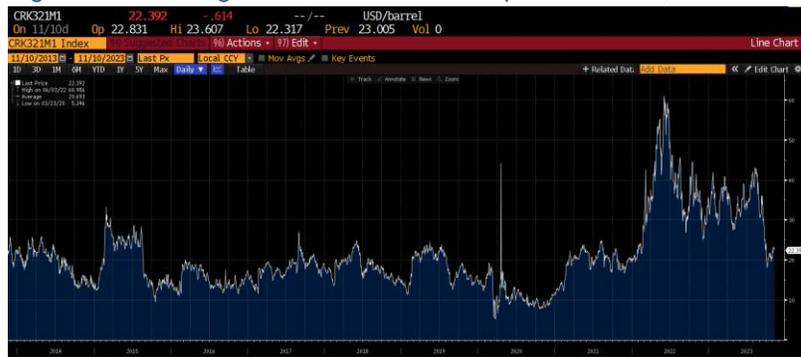
Crack spreads up this week

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

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 \$22.39 as of the Friday Nov 10, 2023 close.

Figure 28: Cushing Crude Oil 321 Crack Spread Nov 10, 2013 to Nov 10, 2023



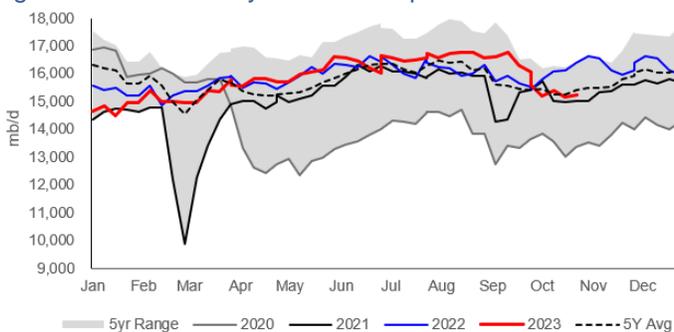
Source: Bloomberg

Oil: No EIA Nov 3 US refinery crude inputs data, last data was as of Oct 27

Note the EIA did not publish its normally scheduled data on Nov 8-10 to complete a system upgrade and will resume its regular publishing on Nov 13. There is no weekly US refinery inputs data for the week ended Nov 3, rather the last posted production data is as of Oct 27. Last week’s (Nov 5, 2023) Energy Tidbits wrote “On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended October 27 [\[LINK\]](#). The EIA reported crude inputs to refineries were up +0.062 mmb/d this week to 15.251 mmb/d and are down -0.591 mmb/d YoY. Refinery utilization was down -0.2% WoW to 85.4%, which is -5.2% YoY. We likely hit the seasonal peak in refining last month.”

No updated EIA refinery inputs data

Figure 29: US Refinery Crude Oil Inputs – Oct 27 data



Source: EIA, SAF

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Oil: No EIA Nov 3 US net imports data, last data was as of Oct 27

Note the EIA did not publish its normally scheduled data on Nov 8-10 to complete a system upgrade and will resume its regular publishing on Nov 13. There is no weekly US net imports data for the week ended Nov 3, rather the last posted production data is as of Oct 27. Last week's (Nov 5, 2023) Energy Tidbits wrote "The EIA reported US "NET" imports were up +0.348 mmb/d to 1.528 mmb/d for the October 27 week. US imports were up +0.412 mmb/d to 6.425 mmb/d, which is among the low points for the last few months. (i) Venezuela weekly imports. We know why the EIA doesn't have any data in the row for Venezuela weekly oil imports but we still don't know if the weekly oil imports are off or if Venezuela is included in the weekly oil imports in the Others number. But we do know that Chevron continues to import >100,000 b/d from Venezuela into the Gulf Coast. Give the EIA credit for putting out weekly oil import estimates, but it's a reminder that we have to be careful about using the weekly oil import estimates. Rather we need to make sure we go to the monthly data for oil imports. ii) The WoW increase in US imports was driven mostly by "Top 10". Top 10 was up +0.392 mmb/d. Some items to note on the country data: (i) Canada was up +0.098 mmb/d to 3.485 mmb/d. (ii) Saudi Arabia was down -0.142 mmb/d to 0.294 mmb/d. (iii) Mexico was up +0.390 mmb/d to 1.004 mmb/d. (iv) Colombia was down -0.072 mmb/d to 0.074 mmb/d. (v) Iraq was up +0.169 mmb/d to 0.351 mmb/d. (vi) Ecuador was up +0.041 mmb/d to 0.133 mmb/d. (vii) Nigeria was down -0.059 mmb/d to 0.030 mmb/d."

No updated EIA US net oil imports data

Figure 30: US Weekly Preliminary Imports by Major Country – Oct 27 data

| (thousand b/d) | Jul 7/23 | Jul 14/23 | Jul 21/23 | Jul 28/23 | Aug 4/23 | Aug 11/23 | Aug 18/23 | Aug 25/23 | Sep 1/23 | Sep 8/23 | Sep 15/23 | Sep 22/23 | Sep 29/23 | Oct 6/23 | Oct 13/23 | Oct 20/23 | Oct 27/23 | WoW |
|----------------|----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|------|
| Canada | 3,385 | 3,698 | 3,203 | 3,691 | 3,466 | 3,505 | 3,832 | 3,405 | 3,679 | 3,645 | 3,287 | 3,880 | 3,291 | 3,544 | 3,723 | 3,387 | 3,485 | 98 |
| Saudi Arabia | 444 | 426 | 242 | 427 | 330 | 285 | 221 | 462 | 567 | 383 | 383 | 383 | 291 | 67 | 208 | 436 | 294 | -142 |
| Venezuela | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mexico | 526 | 1,004 | 830 | 760 | 667 | 901 | 780 | 437 | 699 | 1,095 | 603 | 844 | 524 | 656 | 609 | 614 | 1,004 | 390 |
| Colombia | 153 | 215 | 287 | 290 | 296 | 75 | 290 | 295 | 300 | 211 | 287 | 286 | 143 | 289 | 150 | 146 | 74 | -72 |
| Iraq | 134 | 259 | 273 | 235 | 305 | 304 | 283 | 232 | 100 | 248 | 233 | 280 | 306 | 247 | 127 | 182 | 351 | 169 |
| Ecuador | 144 | 207 | 216 | 175 | 142 | 363 | 192 | 328 | 99 | 0 | 134 | 167 | 125 | 0 | 0 | 92 | 133 | 41 |
| Nigeria | 189 | 91 | 229 | 94 | 237 | 307 | 89 | 144 | 220 | 219 | 0 | 3 | 0 | 46 | 48 | 89 | 30 | -59 |
| Brazil | 43 | 357 | 216 | 103 | 280 | 130 | 198 | 245 | 68 | 545 | 209 | 240 | 209 | 362 | 63 | 221 | 168 | 0 |
| Libya | 0 | 0 | 0 | 0 | 87 | 83 | 85 | 0 | 90 | 0 | 0 | 0 | 89 | 88 | 47 | 86 | 106 | 0 |
| Top 10 | 5,018 | 6,257 | 5,496 | 5,775 | 5,810 | 5,953 | 5,970 | 5,548 | 5,822 | 6,346 | 5,136 | 6,083 | 4,978 | 5,299 | 4,975 | 5,253 | 5,645 | 392 |
| Others | 862 | 917 | 871 | 893 | 872 | 1,205 | 963 | 1,069 | 948 | 1,236 | 1,381 | 1,146 | 1,237 | 1,030 | 967 | 760 | 780 | 20 |
| Total US | 5,880 | 7,174 | 6,367 | 6,668 | 6,682 | 7,158 | 6,933 | 6,617 | 6,770 | 7,582 | 6,517 | 7,229 | 6,215 | 6,329 | 5,942 | 6,013 | 6,425 | 412 |

Source: EIA, SAF

Oil: Colombia oil production still below pre-Covid, August was 0.775 mmb/d

It's hard to see how Colombia oil production ever sustainably rallies anywhere back to the 1 mmb/d or even 900,000 b/d given Colombia's goal to reduce oil and natural gas. Despite stronger oil prices post Covid, Colombia oil production has been stuck below 800,000 b/d. The National Hydrocarbons Agency (ANH) reported [\[LINK\]](#) August's oil production was down -0.9% MoM to 0.775 mmb/d. This puts August's production up +3.5% YoY to 0.775 mmb/d vs 0.749 mmb/d in August 2022. August's data brings the average YTD production to 0.774 mmb/d, up +2.72% YoY from 2022's 0.754 mmb/d but production remains -12.6% below pre-Covid levels of 0.886 mmb/d in 2019.

Colombia oil production down in August

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 31: Colombia Oil Production

| mmb/d | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 21/20 | 2022 | 22/21 | 2023 | 23/22 |
|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Jan | 0.986 | 0.860 | 0.860 | 0.899 | 0.884 | 0.745 | -15.7% | 0.740 | -0.7% | 0.774 | 4.6% |
| Feb | 0.955 | 0.864 | 0.823 | 0.893 | 0.878 | 0.748 | -15.1% | 0.740 | -0.8% | 0.757 | 2.4% |
| Mar | 0.917 | 0.804 | 0.856 | 0.885 | 0.857 | 0.745 | -13.0% | 0.751 | 0.8% | 0.771 | 2.6% |
| Apr | 0.915 | 0.857 | 0.865 | 0.891 | 0.796 | 0.745 | -6.4% | 0.751 | 0.8% | 0.782 | 4.1% |
| May | 0.904 | 0.851 | 0.866 | 0.895 | 0.732 | 0.703 | -3.9% | 0.746 | 6.1% | 0.774 | 3.8% |
| June | 0.888 | 0.857 | 0.864 | 0.892 | 0.730 | 0.694 | -4.9% | 0.752 | 8.4% | 0.778 | 3.4% |
| July | 0.843 | 0.856 | 0.860 | 0.869 | 0.735 | 0.731 | -0.5% | 0.748 | 2.3% | 0.782 | 4.5% |
| Aug | 0.827 | 0.858 | 0.866 | 0.883 | 0.742 | 0.748 | 0.8% | 0.749 | 0.1% | 0.775 | 3.5% |
| Sept | 0.859 | 0.851 | 0.869 | 0.879 | 0.749 | 0.744 | -0.7% | 0.754 | 1.3% | | |
| Oct | 0.846 | 0.864 | 0.879 | 0.883 | 0.751 | 0.740 | -1.5% | 0.757 | 2.3% | | |
| Nov | 0.855 | 0.851 | 0.883 | 0.880 | 0.761 | 0.747 | -1.9% | 0.771 | 3.2% | | |
| Dec | 0.837 | 0.870 | 0.889 | 0.882 | 0.759 | 0.745 | -1.8% | 0.784 | 5.2% | | |

Source: ANH, SAF, Bloomberg

Oil: Argus, Venezuela oil exports will also hurt Cdn heavy oil to China and Colombia

We have been highlighting how increasing Venezuela oil exports to the US Gulf Coast but Argus reminded this week, they will also hurt Cdn heavy oil exports to China and Colombia. On Thursday, Argus wrote [\[LINK\]](#) “Venezuela could displace Canadian crude re-exports. Two key buyers of Canadian heavy crude exports from the US Gulf coast are poised to increase receipts of Venezuelan crude following a temporary lifting of sanctions, which could displace Canadian supplies. PetroChina’s 400,000 b/d Jieyang refinery in south China’s Guangdong province accounted for 23.1pc of Cold Lake, Access Western Blend, and Christina Dilbit exports from the US Gulf coast in January-August this year, according to analytics firm Vortexa. Repsol’s 220,000 b/d Cartagena refinery in Spain accounted for 17.5pc. Both refineries have been in discussions to increase loadings of similar-quality heavy Venezuelan crude after the US temporarily lifted some sanctions targeting the oil and gas industry for six months ending on 18 April. PetroChina is likely to buy around 260,000-300,000 b/d of crude from Venezuela’s state-owned PdV, according to traders, which could displace nearly all of the 319,000 b/d of Canadian heavy crude purchases that the Jieyang refinery averaged in the first eight months of this year.” Our Supplemental Documents package includes the Argus report.

Colombia oil
production
down in August

No indications yet Biden will rescind Venezuela oil and gas reopening

We suspect that with the major global issues of Ukraine and Israel/Hamas, the US press hasn’t been asking the Biden Administration if Biden will rescind his reopening of Venezuela oil and gas following Venezuela’s recent backtracking of its commitment to free and open elections. There is a good test happening now for Biden on what does he do with his reopening of Venezuela oil and gas from three weeks ago. It looks like Maduro has already violated his commitments that led to Biden reopening Venezuela oil and gas sector. And we still have not seen any statement of if the US plans to review and reverse its reopening following what appears to be a direct Maduro violation of the Venezuela commitment to open elections that led to Biden’s relaxation of oil and gas sanctions. Maduro’s violation. It only took eight days for Venezuela to move to against the opposition and against what Maduro promised to the US that led to Biden opening up access to Venezuela oil and gas. Two weeks ago, Bloomberg reported that Venezuela Supreme Justice Tribunal announced it had suspended the results of the opposition primary vote on Oct 22 that elected primary’s winner Maria Corina Machado. Venezuela voiding the election of the opposition winner looks like a pretty clear violation.

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Oil: Russia and Saudi Arabia extended their cuts thru Dec

Last Sunday morning, after our 7am MT news cut off, we tweeted [\[LINK\]](#) “No surprise, Saudi & Russia announced continuing voluntary cuts thru Dec 31, 2023. Hard to see them add #Oil back into physical market in Q1/24 as Q1 every year is normally seasonally lower than the preceding Q4. [\[LINK\]](#) [\[LINK\]](#) #OOTT.” There were separate Saudi Press Agency and TASS releases that they will continue their cuts thru Dec. Saudi Arabia’s is a voluntary 1 mmb/d cut in production and Russia’s is a voluntary 300,000 b/d cut to exports. This should not have surprised anyone. The Saudi Press Agency wrote “An official source from the Ministry of Energy announced that the Kingdom of Saudi Arabia will continue the voluntary cut of one million barrels per day, which went into implementation in July 2023 and was later extended until the end of December 2023. Thus, the Kingdom’s production in the month of December 2023 will be approximately 9 million barrels per day. The source stated that this voluntary cut decision will be reviewed next month to consider extending the cut, deepening the cut, or increasing production. The source also noted that this cut is in addition to the voluntary cut previously announced by the Kingdom in April 2023, which extends until the end of December 2024. The source confirmed that this additional voluntary cut comes to reinforce the precautionary efforts made by OPEC Plus countries with the aim of supporting the stability and balance of oil markets.” TASS wrote “Russia will continue additional voluntary oil export cuts by 300,000 barrels a day until the end of the current year, Russian Deputy Prime Minister Alexander Novak said on Sunday. “Russia will continue additional voluntary decrease of supplies of its oil and oil products to global markets by 300,000 barrels a day, which came into effect in September and October 2023, until late December 2023,” he said, adding that a market analysis will be done next month to make a decision on either continue oil production cuts or increase oil production. This measure supplements the voluntary oil production cuts by 500,000 barrels a day that was announced by Russia in April 2023 and will stay in place until late December 2024.”

Russia & Saudi Arabia extend cuts

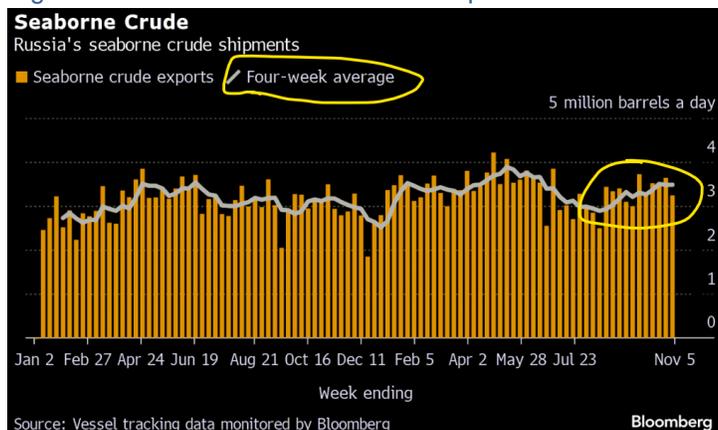
Oil: Russia oil shipments still +200,000 vs commit to cut shipments by 300,000 b/d

As expected, Russia’s crude oil shipments were down ~400,000 b/d WoW for the week ended Nov 5 as we have been highlighting Russia’s refinery were coming off maintenance. But the 4-week average to Nov 5 was still ~200,000 b/d above Russia’s commitment to reduce exports by 300,000 b/d. On Tuesday, we tweeted [\[LINK\]](#) “Russia keeps shipping more #Oil than committed. See @JLeeEnergy... great weekly recap 11/05 wk: down ~400 kbd WoW. But 4-wk average still 3.48 mmb/d, flat WoW and still ~200 kbd over over committed. #OOTT.” Bloomberg reported on Russia crude oil shipments for the week ended Nov 5. Bloomberg reported “Russia is shipping crude through its ports at a rate close to the highest seen in more than four months. About 3.48 million barrels a day of crude was shipped from Russian ports in the four weeks to Nov. 5, tracking data monitored by Bloomberg show, edging up from the period to Oct. 29.” And “This reduction, though, includes both crude and refined products, Deputy Prime Minister Alexander Novak told Interfax last month. Crude flows have been cut by just one-third of that amount, leaving the rest to be achieved by lower exports of refined products. Shipments remain elevated just weeks before the OPEC+ group of oil producers, jointly led by Russia and Saudi Arabia, meet in Vienna on Nov. 26 to set output targets for the first half of next year.” Bloomberg has previously noted their estimate that Novak’s commitment should translate into shipments at 3.28 mmb/d. Our Supplemental Documents package includes the Bloomberg report.

Russia oil shipments above commitment

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 32: Russia's seaborne crude shipments thru Nov 5 week



Source: Bloomberg

Russia oil refineries coming off maintenance, should reduce exports

Above, we said it was expected to see some decline in Russia crude oil shipments with refineries coming out of fall maintenance. Here is what we wrote in last week's (Nov 5, 2023) Energy Tidbits memo. "Assuming Russia doesn't increase oil production, there should be some natural reduction of its oil shipments to export markets as Russian oil refineries are coming off fall maintenance. Last Sunday afternoon, Bloomberg reported "Russian oil processing climbed to a seven-week high as the country's refineries return from seasonal maintenance. The nation processed 5.48 million barrels a day in the seven days through Oct. 25, according to a person with knowledge of the matter. That's almost 210,000 barrels a day more than in the previous week, Bloomberg calculations based on historic data show. Refinery runs have improved as routine maintenance that's set to run through next month draws to an end. That has boosted Russia's average daily processing during the Oct. 1-25 period to 5.31 million barrels a day, though that's still below the 5.38 million barrels a day for most of September, the calculations show." And "Russian refineries will keep raising processing rates, according to Viktor Katona, head crude analyst at market intelligence firm Kpler. An extra 250,000 barrels a day of primary capacity will come back online in the second week of November as maintenance ends, he said."

Oil: US drone shot down by Houthi yet no real worries re Red Sea/Bab el Mandeb

We continue to be surprised that there doesn't appear to be risk concerns on shipping in the Red Sea and Bab el Mandeb. This week, there were less missiles and drones, but one new escalation was the US launching a drone towards Yemen that was reportedly shot down by the Houthis just offshore Yemen. On Thursday, we tweeted [\[LINK\]](#) "Suez Canal 101. US confirms MQ-9 drone shot down off coast of Yemen (getting closer to Bab el Mandeb) by Houthi. @JenGriffinFNC All tankers/cargo ships via Suez go thru Red Sea & Bab el Mandeb. Yet drone/missiles being shot down in Red Sea doesn't seem to bring risk? #OOTT." We believe that if the level of military action that has happened in the Red Sea had been happening in the Persian Gulf, oil prices would be way higher. Imagine if the US shot down 4 cruise missiles and 30 drones in the Persian Gulf and more cruise missiles and drones were shot down at the north end of the Red Sea and now a US drone shot down off the coast of

US drone shot down by Houthis

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Yeme. We recognize that others don't share this concern. But we just have to think there is added risk to ships in the Red sea when there are more missiles being launched and shot down. We certainly don't dispute that the Strait of Hormuz is the most important potential shipping chokepoint for oil and LNG transit and that continues to be the primary worry/focus for most wondering if the Israel/Hamas war expands to a regional war involving Iran. But the reality so far is that there is increasing military action in the Red Sea thanks to the Houthis. We start our tweet Suez Canal 101 because people overlook that every tanker or cargo ship that goes thru the Suez Canal has to also go thru the Red Sea and Bab el Mandeb.

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

Here is what we wrote in our Aug 1, 2021 Energy Tidbits memo. *"The Bab el-Mandeb is one of the world's most significant chokepoints for moving oil and petroleum products. The EIA Aug 27, 2019 brief "The Bab el-Mandeb Strait is a strategic route for oil and natural gas shipments" reminds "The Bab el-Mandeb Strait is a sea route chokepoint between the Horn of Africa and the Middle East, connecting the Red Sea to the Gulf of Aden and Arabian Sea. Most exports of petroleum and natural gas from the Persian Gulf that transit the Suez Canal or the SUMED Pipeline pass through both the Bab el-Mandeb and the Strait of Hormuz." And the EIA estimates "In 2018, an estimated 6.2 million barrels per day (b/d) of crude oil, condensate, and refined petroleum products flowed through the Bab el-Mandeb Strait toward Europe, the United States, and Asia, an increase from 5.1 million b/d in 2014. Total petroleum flows through the Bab el-Mandeb Strait accounted for about 9% of total seaborne-traded petroleum (crude oil and refined petroleum products) in 2017. About 3.6 million b/d moved north toward Europe; another 2.6 million b/d flowed in the opposite direction mainly to Asian markets such as Singapore, China, and India". Our Supplemental Documents package includes the EIA brief [\[LINK\]](#).*

Figure 33: Bab el-Mandeb Strait, a world oil chokepoint



Source: EIA

Oil: Iran still warning, but not yet getting drawn directly into the Israel/Hamas war

No one knows what Iran will do and if they will actually feel the need to be more involved given their many warnings to date. This week is much like last week with Iran trying to rally Islamic support against Israel and warning about the risk for the Israel/Hamas war escalation to a broader regional risk. But, as of our 7am MT news cut off, we still have not see any reports that expecting Iran's warnings is about to lead to Iran joining the war. It seems like

Will Iran be drawn in?

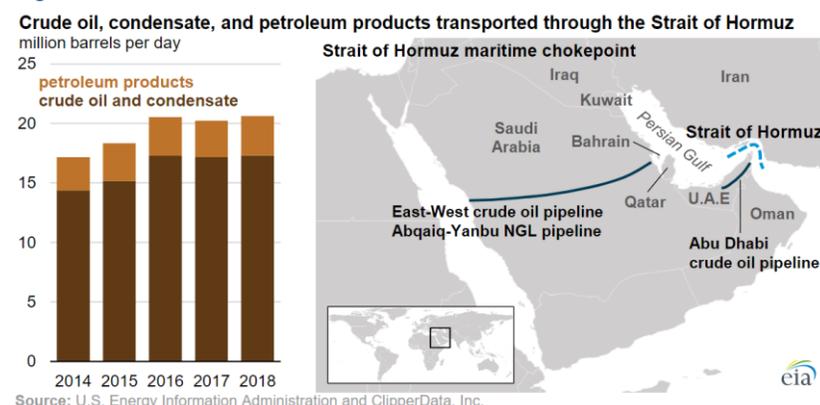
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Netanyahu thinks he can keep pushing and only get back more warnings from Iran. However, Iran's potential involvement is still viewed as the major risk for Israel and its allies. We still don't think markets are reflecting any probability for Iran to directly enter the war otherwise there would be a big risk premium in oil prices. We agree that no one knows what would play out and for how long. And who would be involved if somehow Iran gets directly involved. But the potential risk to oil supply is huge if oil, petroleum products and LNG shipments get interrupted/stopped in the Strait of Hormuz, or if there are missile/attacks on Iran and other Persian Gulf oil wells, production facilities or export terminals. This would be brutal. The risk is there that Iran gets drawn in or decides it is obligated to join in.

The Strait of Hormuz is the most important oil/LNG chokepoint

On Oct 15, we tweeted [LINK](#) "Reminder any military conflict that interrupts tankers via Strait of Hormuz will have a huge impact. It is the most important tanker transit chokepoint for #Oil #PetroleumProducts #LNG tankers. See 📌 @EIAgov Strait of Hormuz, it's 4-yrs old but still makes the point. #OOTT." The Strait of Hormuz is the most important chokepoint for global oil and LNG shipping. This EIA blog is four years old, but still provides an excellent recap of the significance of the Strait of Hormuz. We recommend adding the June 20, 2019 EIA brief "*The Strait of Hormuz is the world's most important oil transit chokepoint*" to reference libraries. The brief reminds that 17.3 mmb/d of crude oil and condensate flows thru the Strait of Hormuz, but also highlights there is 3.3 mmb/d of petroleum products and over 11 bcf/d of LNG flows thru the Strait. The significance is that the EIA the liquids flows are "equivalent of about 21% of global petroleum liquids consumption". This is of total global consumption, not of global oil import/export volumes. The brief also notes "There are limited options to bypass the Strait of Hormuz. Only Saudi Arabia and the United Arab Emirates have pipelines that can ship crude oil outside the Persian Gulf and have the additional pipeline capacity to circumvent the Strait of Hormuz. At the end of 2018, the total available crude oil pipeline capacity from the two countries combined was estimated at 6.5 million b/d. In that year, 2.7 million b/d of crude oil moved through the pipelines, leaving about 3.8 million b/d of unused capacity that could have bypassed the strait". Our Supplemental Documents package includes the EIA brief.

Figure 34: Crude oil, Condensate & Petroleum Products Flows Thru Strait of Hormuz



Source: EIA

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Saudi voluntary oil cuts**Oil: We still don't expect Saudi to add back oil to physical markets until Q2/24**

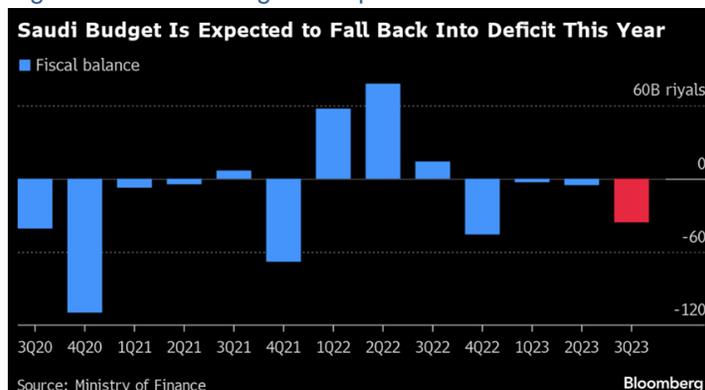
It was interesting to see more oil market commentators start to move to the potential for Saudi Arabia and Russia to extend their voluntary cuts past Dec 31, 2023. We certainly don't have their global contacts. Rather, our position has been and continues to be that we don't see why Saudi would want to add the voluntary oil barrels back into physical markets in Q1/23 when Q1 oil demand is normally seasonally lower than the preceding Q4. I.e. why would they add barrels into a lower demand period. Here is what we wrote in last week's (Nov 5, 2023) Energy Tidbits before the Saudi and Russia announcements of extending the cuts. *"We heard a number of oil watchers comment this week on when will Saudi add back its voluntary 1 mmb/d cuts that, as of now, are only in place until the end of Dec. It seemed like more are moving to the cuts continuing past Dec 31. No one knows, but our view is unchanged – absent a major oil supply interruption, we don't see Saudi Arabia adding back oil to physical markets until Q2/24. Saudi Arabia knows that oil demand is seasonally lower in Q1 each year vs the preceding Q4. And Saudi Arabia knows China oil stocks are high and refinery margins are low. Our latest tweet on this was on Oct 6 [LINK](#) "Beyond headlines, see paragraph 3 "Still, Saudi negotiators emphasized that market conditions would guide any action on production". Hard to see Saudi adding #Oil in early Q1, the seasonally low demand period. But a Q1 decision to add Oil into physical markets in Q2 for seasonal increasing demand could make sense. #OOTT."*

No question it gets tougher financially for Saudi to hold

Here is another item from last week's (Nov 5, 2023) Energy Tidbits memo. *"There is no question it is tougher for Saudi to keep the voluntary 1 mmb/d off the market as it is hurting their financial position. On Thursday, Bloomberg reported "Saudi Budget Deficit Blows Out to \$9.5 Billion as Revenues Slip. Saudi Arabia posted a budget deficit in the third quarter that was almost seven times larger than in the previous three months, as the world's biggest crude exporter endured a decline in both energy and non-oil income. The government's shortfall came in at 35.8 billion riyals (\$9.5 billion) in the three months ended in September, according to a budget report from the Ministry of Finance published late Wednesday. An 8% decline in expenditure to about \$78 billion was outpaced by an almost 18% decrease in revenues that were \$69 billion, largely due to lower receipts from oil and taxes. The quarterly deficit was more than twice as large as in the same period of 2022."*

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 35: Saudi Budget is Expected to Fall Back into Deficit This Year



Oil: Saudi reminds oil exports are seasonal i.e. less in summer/more in winter

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

Saudi oil use for electricity up big in August

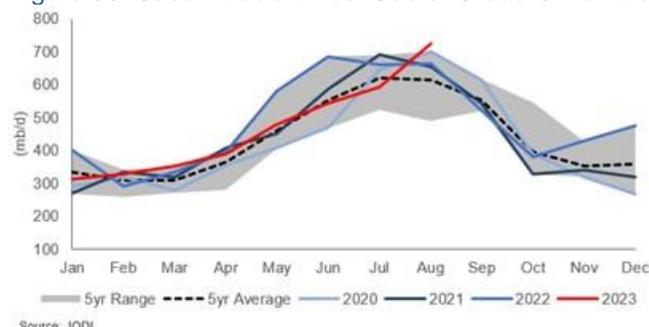
Saudi use of oil for electricity up big in August i.e., less oil available for export

Here is what we wrote in our Oct 22, 2023 Energy Tidbits memo on Saudi use of oil for electricity. "Saudi use of oil for electricity up big in August i.e., less oil available for export. The key seasonal theme for Saudi oil exports is that, all things being equal, Saudi can export more oil in winter months as it uses less oil for electricity and, conversely, it would have less oil for export in summer months as it uses more oil for electricity i.e. air conditioning. Note that a normal peak to trough decline is ~400,000 b/d. If there is less oil used for electricity, then there is more oil for export and vice versa. The JODI data for Saudi Arabia oil supply and demand for August [\[LINK\]](#) was updated on Monday. Saudi used more oil for electricity in August vs July. Both July and Aug were hot, but we expect the increased oil for electricity demand in Aug was due to it being hot even in the night time lows that were over in the low 30C every night i.e. more air conditioning/electricity demand to sleep. Oil used for electricity generation in August was 726,000 b/d (vs August 2022 of 664,000 b/d) and July was 592,000 b/d (vs July 2022 of 661,000 b/d). Also note that this year fits the normal trough-to-peak swing of 400,000 b/d. The low was 312,000 b/d in Jan and we just

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

saw 726,000 b/d in Aug. Below are the AccuWeather Temp maps for Riyadh for August and July.”

Figure 36: Saudi Arabia Direct Use of Crude Oil for Electricity Generation



Source: JODI, SAF

Oil: Will Iraq's "keenness" actually lead to a deal to resume Kurdistan oil exports

There was some excitement this morning with reports that Iraq had confirmed a deal to resume Kurdistan oil exports, but those reports look to be wrong. At least as of our 7am MT news cut off because the reports were based on a lost in translation headline. But Iraq's oil minister is in Erbil today for the latest round of discussions to reach a deal. So who knows, maybe there will be a breakthrough deal. Our concerns to date has been that Iraq will have to cut back its own production to make room for Kurdistan oil volumes to stay within its OPEC quota. Earlier this morning, we tweeted [\[LINK\]](#) "Lost in translation. English headline is wrong.. Iraq "keenness" to get a deal, but no deal yet. Will this round of Iraq/Kurdistan discussions lead to a deal to let Kurd #Oil flow thru Turkey? ie. will Baghdad cut back non-Kurd oil to stay within quota. #OOTT." (i) There were reports that picked up the headline from the Iraqi News Agency (state news) English website that "Abdul Ghani confirms resuming production and export from Kurdistan's fields". But the body of the English website story didn't say there was deal confirmed rather that the oil minister was in Erbil for meetings and he pointed to "the government's keenness to find appropriate mechanisms to resume production and export of oil from the region's fields, stressing that he will meet with a number of officials in the region." i.e. these are still in the negotiations to see if a deal can get done. (ii) Our tweet noted the Google translation of the Iraqi News Agency headline was "Oil Minister from Erbil: We are keen to resume production and export from the region's fields". (iii) Last night, Rudaw (Kurdistan news) reported that these were discussions and also reminded there are major issues still to be resolved such as the existing Kurdistan agreements with oil companies. Our Supplemental Documents package includes the Iraqi News Agency English and Arabic reports, and the Rudaw report.

Kurdistan oil via Turkey

Still seems this Kurdistan shut-in oil could last for way longer than expected

It's been over seven months since Kurdistan oil exports via Turkey have been shut-in. That's way longer than many expected. Our view is unchanged from before Israel/Hamas war that it seems like this could last for longer than expected. And that there are two deals, not one deal to be made. We have highlighted for weeks that Turkey has an ask on what they want, and we have seen no indication that Iraq and Turkey have reached a deal. And then there is still a Iraq/Kurdistan deal that still is unresolved and being highlighted by Kurdistan President Barazani. It seems like it's

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

in Baghdad's hands and our concern remains that the OPEC+ quotas are to run thru Dec 2024 so Iraq can't crank up production. Iraq's oil exports are flat and it's Kurdistan oil that is being shut-in so, under the continued OPEC+ quota, Baghdad isn't being disadvantaged.

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

As of our 7am MT news cut off, the latest NOC production update was posted on Wednesday on the Libya National Oil Corporation Twitter [\[LINK\]](#) and Facebook. The Google Translate was "Crude oil production reached 1,222,000 barrels per day, and condensate production reached 47,000 barrels per day during the past 24 hours." This is unchanged from the ~1.2 mmb/d levels over the past several months.

Libya oil stable at 1.2 mmb/d

Oil: Vitol, China oil stocks unseasonably high + low crack spreads = less oil imports

One of the negative oil stories this week was on weaker near term outlook for China oil driven by high oil stocks, weak economy and reducing oil imports. Last week's (Nov 5, 2023) Energy Tidbits included comments that morning from Vitol on this very concern. Here is what we wrote in our Nov 5, 2023 memo. "There was a great reminder this morning from Mike Muller (Head, Vitol Asia) on a key reason they market sees indicators of softness coming out of China despite solid fuel sales data and China moving into its seasonally high consumption period. Earlier this morning, we tweeted [\[LINK\]](#) "#Oil 101. China fuel sale data not showing signs of weakness. BUT 📌 @michaelwmuller reminds if stock are "unseasonably high", it pushes down prices, refining margins & force runs cuts. Drop in refinery runs = lower appetite for oil imports. @sean_evers @CristolEnergy #OOTT." Muller reminded of what we called Oil 101 basics and why we track crack spreads although we have trouble finding current data on China crack spreads. As we write each week, we look at crack spreads as good indicators if refineries will want more or less crude oil. This morning, Muller reminded of this indicator. He started that weekly fuel sales data in China wasn't showing signs of economic weakness. But then he highlighted the forward looking indicators that oil stocks were "unseasonably high" and that refinery margins were to lowest levels that they haven't seen in a long time. Muller concluded his comments "China will either need to continue running its refineries and building stock at low margins or that there will be a drop in runs and that will manifest itself into lower appetite for crude. And that's highly visible since China is such a significant global importer of crude oil. I think those are the signs of softness that the market's been detecting." Our Supplemental Documents package includes the transcript we made of his comments.

China oil softness

Oil: 1st net outflow of net foreign direct investment in China

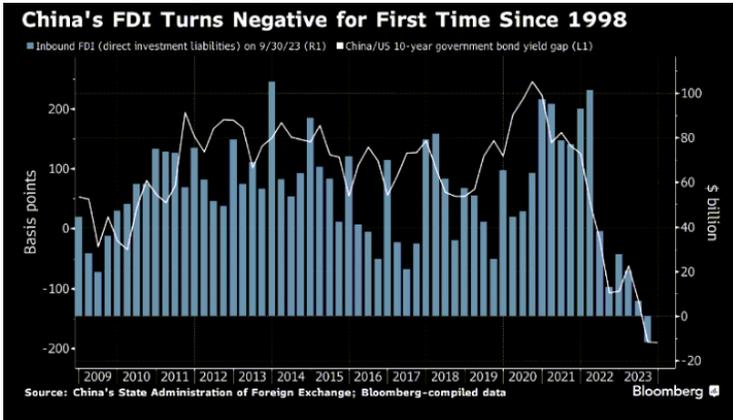
There is a big negative to the China recovery that we haven't been tracking – the net inflow or outflow of foreign direct investment in China. And likely because it never got much attention because there has always been a net inflow. FDI is significant as foreign companies disproportionately contribute to trade, generated more tax revenue and urban employment. But this week, we saw the first ever net outflow of FDI since records have been kept in 1998. On Wednesday, we tweeted [\[LINK\]](#) "Here's why China recovery is slow. Huge exodus in foreign direct investment in China & more FDI flowing out for 1st time. Q3/23 saw \$11.8b outflow, vs recent \$101b in Q1/22. Foreign co's drive disproportionate trade, tax revenue & urban employment. Thx @business #OOTT." Bloomberg wrote "China is struggling in its attempt to lure foreigners back as data shows more direct investment flowing

Net outflow of foreign direct investment in China

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

out of the country than coming in, suggesting companies may be diversifying their supply chains to reduce risks. Direct investment liabilities in the country's balance of payments have been slowing in the last two years. After hitting a near-peak value of more than \$101 billion in the first quarter of 2022, the gauge has weakened nearly every quarter since. It fell \$11.8 billion in the July-to-September period, marking the first contraction since records started in 1998." Our Supplemental Documents package includes the Bloomberg report.

Figure 37: Foreign Direct Investment in China



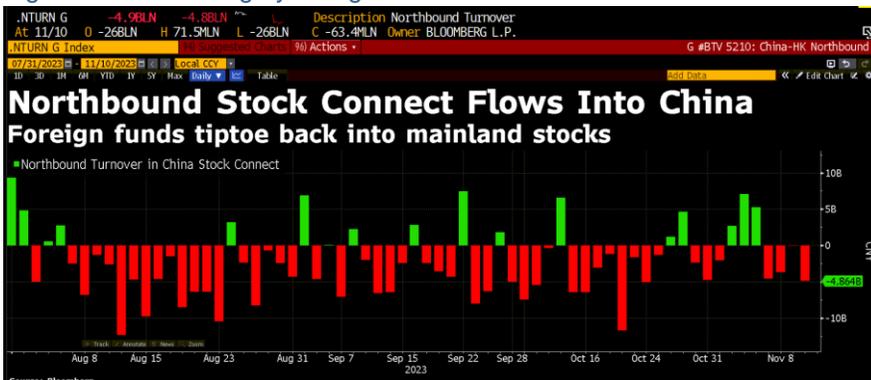
Source: Bloomberg

Oil: Foreign investors return to net selling China after a three-day rally of net buying

The three day rally of foreign investors coming back to mainland China stocks didn't last, but it was three days. On Monday, we tweeted [LINK](#) "First 3 consecutive days of foreign funds net inflows into China mainland stocks since Aug 1. See 📌 @business "foreign funds tiptoe back into mainland stocks". Maybe some foreign funds are think the bottom is near. #OOTT." The three days of net inflows into mainland China stocks didn't last and the week ended on four consecutive days of net outflows of foreign investors from mainland China stocks. It's hard to tell from the graphic but Thursday was a small net outflow. The graph includes the Friday trading.

Foreign investors back to net sellers of China stocks

Figure 38: Net selling by foreign investors



Source: Bloomberg

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Oil: China scheduled domestic flights back down to early June levels

On Monday, we tweeted [\[LINK\]](#) “Another stalled China economy indicator. 1. China scheduled domestic flights for Oct 31-Nov 6 was -0.2% WoW to 92,146, which is back to Jun 6-12 week. 2. Lookahead next 4-wks flights to 96,510 vs Oct 23 next 4-wks of 129,038. Thx @BloombergNEF Claudio Lubis #OOTT.” (i) On Monday morning, BloombergNEF posted its Aviation Indicators Weekly Nov 6. (ii) Negative. First, like the last two weeks, we think the takeaway is negative for China’s scheduled domestic flights. The message from the “actuals” for China domestic scheduled flights is that the # of flights is back to early June 6-12 week levels. We would have expected to see higher than that, given China was then calling for a peak in Covid wave at the end of June, China’s economy has been looking more like it was bottoming whereas it was very uncertain in mid-June plus China’s international flights are up since early-June which would increase the need for more domestic flights. China scheduled domestic flights for the Oct 31-Nov 6 week were -0.2% WoW to 92,146 flights, which keeps scheduled domestic flights back to June 6-12 week of 93,328 flights. Second, there has been a big drop in the lookahead for the next four-weeks.. Today’s report says the next four weeks look ahead is +4.7% to 96,510 domestic flights, which is down 25.2% vs the Oct 23 report that had had scheduled next four weeks flights of 129,038. (iii) China scheduled domestic flights were -0.2% WoW to 92,146 flights for the Oct 31-Nov 6 week, which followed 92,361 flights for the Oct 24-30 week, 92,638 flights for the Oct 17-23 week, 99,490 flights for the Oct 10-16 week, 101,120 flights for the Oct 3-9 week, 97,009 flights for Sept 26-Oct 2 week and start of Golden Week travel, 95,742 flights for the Sept 19-25 week. Domestic flights have been stuck for the past three weeks at lower levels than expected following the big 12-day holiday that combined Mid-Autumn Festival and Golden Week. Domestic flights are back to early June levels and, back in Q2, China was predicting a peak in Covid at the end of June and international flights were way lower than now. More international flights means more domestic flights. China has been putting a lot of stimulus and the economy has been still stuck but seeming to show signs of finding a bottom. So a decrease post the 12-day holiday was expected but not back to June 6-12 levels. (iv) The look ahead to the next four weeks is still hugely below what was scheduled two weeks ago. Today’s update says “the number of scheduled domestic flights is set to grow by 4.7% over the next four weeks to 96,510.” This is up small vs the Oct 30 report look ahead of 95,676 flights for the then next four weeks. But hugely below the Oct 23 report that said “the number of scheduled domestic flights is set to grow by 39.3% over the next four weeks to 129,038”. It makes sense that the look ahead is up but that is likely mostly due to the increasing international flights as more international flights means more need for domestic feeder flights. Today’s report says the combined number of international flights out of China for seven major airlines “will rise by more than 195 a week to around 3,160 by the first week of Dec. So that is adding 780 international flights with big passenger seats should add multiples of that for smaller domestic feeder flights. The international lookahead is relatively unchanged from last week that called for an increase of 205 a week to around 3,185 by the last week of November.” Below is our running WoW changes from the prior BloombergNEF reports and the BloombergNEF charts from the Nov 6 report.

China scheduled domestic flights

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

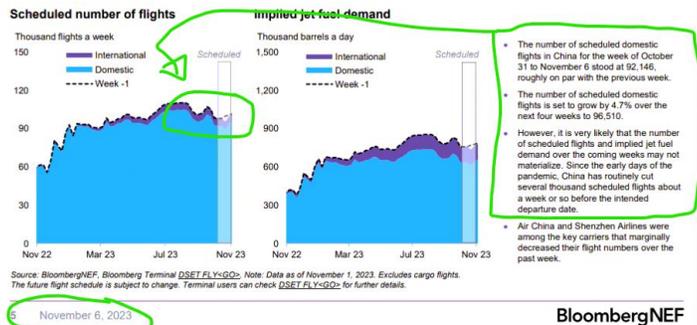
Figure 39: China scheduled domestic flights from BNEF Aviation Indicators Weekly reports

Oct 31-Nov 6: -0.2% WoW to 92,146 flights

| | |
|--|--|
| Oct 24-30: -0.3% WoW to 92,361 | May 23-29: -0.1% WoW to 94,321 |
| Oct 17-23: -6.9% WoW to 92,638 | May 16-22: -2.8% WoW to 94,417 |
| Oct 10-16: -1.6% WoW to 99,490 | May 9-15: basically flat at 97,049 |
| Oct 3-9: +4.2% WoW to 101,120 | May 2-8: +2.8% WoW to 97,087 |
| Sept 26-Oct 2: +1.3% WoW to 97,009 | Apr 25-May 1: +0.04% to 94,471 |
| Sept 19-25: essentially flat WoW to 95,742 | Apr 18-24: +2.1% WoW to 94,138 |
| Sept 12-18: -2.7% WoW to 95,853 | Apr 11-17: +0.7% WoW to 92,231 |
| Sept 5-11: -5.0% WoW to 98,469 | Apr 3-10: -4.2% WoW to 91,567 |
| Aug 29-Sep 4: -1.2% WoW to 103,637 | Mar 28-Apr 3: +6.8% WoW to 95,624 |
| Aug 22-28: +0.2% WoW to 104,932 | Mar 21-27: +1.5% WoW to 89,513 |
| Aug 15-21: -0.1% WoW to 104,716 | Mar 14-20: -0.6% WoW to 88,166 |
| Aug 8-14: +0.8% WoW to 104,823 | Mar 7-13 week: -0.8% WoW to 88,675 |
| Aug 1-7: -0.4% WoW to 104,000 | Feb 27-Mar 3 week: -2.6% WoW to 89,430 |
| July 25-31: +0.4% WoW to 104,436 | Feb 21-27 week: +0.0% WoW to 91,828 |
| July 18-24: +1.3% WoW to 104,011 | Feb 14-20 week: -0.5% WoW to 91,561 |
| July 11-17: +2.8% WoW to 102,709 | Feb 7-13 week: -0.7% WoW to 92,007 |
| Jul 4-10: +2.4% WoW to 99,904 | Jan 31- Feb 6 week: +10.9% WoW |
| Jun 27-Jul 3: +1.9% WoW to 97,572 | Jan 24-30 week: -9.2% WoW to 83,500 |
| Jun 20-26: +3.4% WoW to 95,724 | Jan 17-23 week: +7% WoW to 91,959 |
| Jun 13-19: -0.9% WoW to 92,568 | Jan 10-16 week: +20% WoW to 85,910 |
| June 6-12: -1.2% WoW to 93,328 | Jan 3-9 week: -5.3% WoW to 71,642 |
| May 30-Jun 5: +0.2% WoW to 94,486 | Dec 27-Jan 2 week: -5.6% WoW to 75,652 |

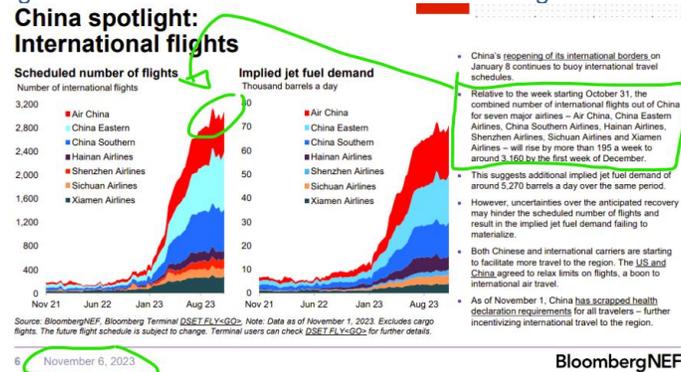
Source: BloombergNEF

Figure 40: China scheduled domestic air flights as of Nov 6



Source: BloombergNEF

Figure 41: China scheduled international air flights as of Nov 6



Source: BloombergNEF

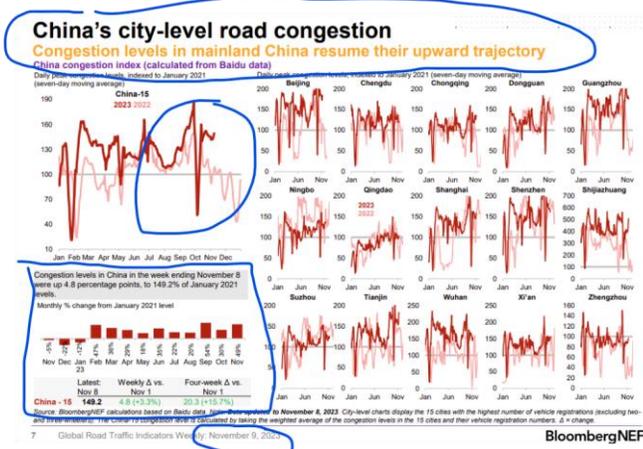
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

China city-level traffic congestion

Oil: Baidu China city-level road congestion MTD Nov 2023 is 128% of Nov 2021 levels

The headlines from the BloombergNEF Global Road Traffic Indicators Nov 9 report were “Congestion levels in mainland China resume their upward trajectory” and “Traffic levels in November show notable uptick year-on-year”. The report includes the China Baidu city-level road congestion data for week ended Nov 8. (i) On Thursday, we tweeted [LINK](#) “Positive China mobility indicator. China Baidu city-level road congestion for Nov MTD 2023 for Top 15 cities are 128% of Nov 2021 levels. Nov 2022 was 81% of Nov 2021 levels as Q4/22 still had Covid restrictions. Thx @BloombergNEF #OOTT”. (ii) For the week ended Nov 8, Baidu data for China city-level road congestion was +3.3% WoW to 149.2 of Jan 2021 levels. For Nov MTD, China city-level road congestion was up strongly YoY and also up strongly vs Nov 2021. But China was under Covid restrictions a year ago. For Nov 2023 MTD, the Top 15 cities in aggregate were 128% of Nov 2021 levels vs Nov 2022 that was 81% of Nov 2021 levels. Nov 2023 MTD looks solid at 128% of Nov 2021 levels but it’s hard to tell how strong this is relative to the same month in 2021. Feb 2023 was 240% of Feb 2021 but that was after Chinese new year and the reopening of cities after lifting Covid restrictions. (iii) As noted above, the Baidu data is only for the first 8 days of Nov, so less than 1/3 of the month. Remember China was still under Covid restrictions a year ago. For the Top 15 cities in aggregate, MTD to Nov 2023 is 128% of Nov 2021 levels vs Nov 2022 that was 81% of Nov 2021 levels. Eleven of the top 15 cities are higher YoY and four are lower. The 4 lower YoY cities are Ningbo (10 mm population, port city ~220 km south of Shanghai), Shanghai (China’s largest city), Shenzhen (18 mm population, adjacent to Hong Kong), and Suzhou ((13 mm population, right to the west of Shanghai). All of the 15 cities in Nov 2023 are higher than Nov 2021.

Figure 42: China city-level road congestion for the week ended Nov 8



Source: BloombergNEF

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 43: China city-level road congestion for the week ended Nov 8



Source: BloombergNEF

Oil: BNEF China steel industry PMI staying in contraction for 8th consecutive month

Last Sunday night, we tweeted [LINK](#) "Indicator China economy still not recovered. China steel industry PMI "staying in contraction territory for the 8th consecutive month". Exception to increasing N2O reading is Tangshan, major steel city in Hebei province that produces ~1/4 of China steel. Thx @BloombergNEF #OOTT." BloombergNEF had just posted its Industrial Metals Monthly, which we review each month for the key China indicator in its steel industry. The Nov report confirms what we have been seeing over the past few months – the steel industry is far from recovered and that it will continue to be tough for the steel industry in H2/23. The BNEF key steel slide was "China's steel industry PMI inched lower to 45.6 in October from 45.8 in September, staying in contraction territory for the eighth consecutive month. • The indicator for domestic demand, the new orders subindex, recovered slightly from 44.5 in September to 45 in October. Despite the traditional peak demand season in September and October, the indicator continued to show contraction. Meanwhile for overseas demand, the new export orders subindex dived deeper into sub-50 level in October." BNEF also includes "BNEF also includes "Air quality index for China: Activity readings show seasonal uptrend in October". Increasing nitrous oxide readings were seasonally increasing in the major cities BUT the exception being Tangshan, which is a major China steel city in Hebei province. Hebei produces roughly 1/4 of China steel ie. more support for lower than normal steel industry activity.

China steel industry

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 44: China steel industry activity

China's steel industry activity

Finished goods inventories fell to lowest level in a year



Source: BloombergNEF, National Bureau of Statistics (NBS), China Federation of Logistics and Purchasing, Xibei New Line, Bloomberg News. Note: China's steel industry PMI is based on the diffusion indexes for components (with corresponding percentage weight) including new orders (30%), output (25%), employment (20%), supplier delivery times (15%) and inventories (10%).

- China's steel industry PMI inched lower to 45.6 in October from 45.8 in September, staying in contraction territory for the eighth consecutive month.
- The indicator for domestic demand, the new orders subindex, recovered slightly from 44.5 in September to 45 in October. Despite the traditional peak demand season in September and October, the indicator continued to show contraction. Meanwhile for overseas demand, the new export orders subindex dived deeper into sub-50 level in October.
- As both domestic and overseas demand were underperforming, the output subindex also contracted further in October to 43.4 from 45 in September. Meanwhile, the indicator for inventory for finished goods fell to the lowest level in a year at 37.1 in October.

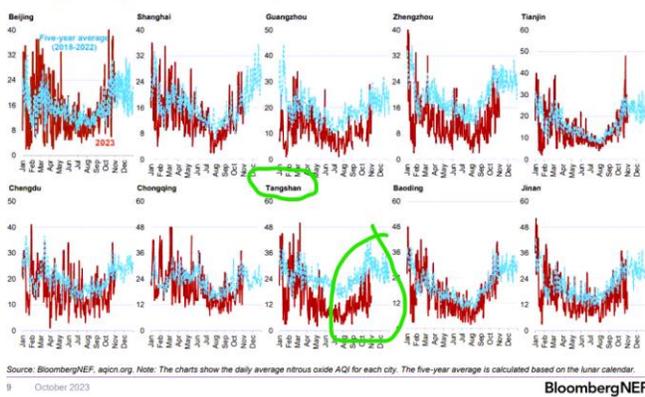
8 October 2023 BloombergNEF

Source: BloombergNEF

Figure 45: Air quality index for Chinas

Air quality index for China

Activity readings show seasonal uptrend in October



Source: BloombergNEF, aqion.org. Note: The charts show the daily average nitrogen oxide AQI for each city. The five-year average is calculated based on the lunar calendar. 9 October 2023 BloombergNEF

Source: BloombergNEF

Oil: China imports less Iran oil should mean more Iran oil in floating storage

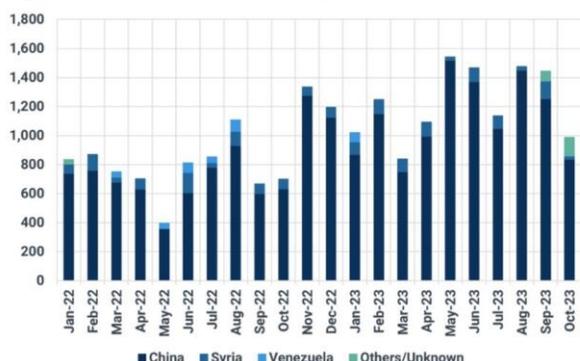
China has been the savior for Iran's oil exports but, with the Kpler data showing China's oil imports of Iran oil in Oct was down 370,000 b/d , we have to believe this is likely why floating oil storage is increasing. If China isn't taking Iran oil, there limited number of other countries that will take Iran oil and that means these untaken Iran volumes are likely to go into floating storage. On Tuesday, we tweeted [LINK](#) "Floating oil in storage. Less China #Oil imports from Iran = More Iran oil scrambling for a home and/or more Iran oil moving into floating storage. If China is taking less Iran oil, Iran doesn't have many other options to move their oil. Thx @Kpler. #OOTT." Kpler posted its graph of Iran oil exports by destination thru Oct with the commentary "Iran's oil exports drop to 1 Mbd amid Shandong buyers' risk aversion. #Iran's Oct. oil exports fell to 1 Mbd from an average of 1.37 Mbd (previous six months). Middle East tensions/threat of stricter enforcement of US #sanctions may have turned

China imports less Iran oil

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Shandong refiners more risk-averse.” Note it may well be that the volume isn’t down 370,000 b/d, but a little less depending on what countries are in “Others/Unknown”. Perhaps there are some of these volumes are exported into Malaysia and get rebranded as Malaysia before going to China. But that portion of the graph is small and Iran’s oil exports to China are still down strong even if some are to Malaysia and then onto China.

Figure 46: Iran oil exports by destination country, kbd



Source: Kpler

Vortexa’s team specializes in tracking the “so-called dark fleet” ie Iran

We do not have access to Kpler floating oil storage data but report weekly on Vortexa floating oil storage data posted on the Bloomberg terminal. The question is always does Vortexa pick up dark tankers from Iran and Russia in their floating storage estimates. The answer is Yes, they say they specialize in tracking the “so-called dark fleet”. Here is what we wrote in our March 12, 2023 Energy Tidbits memo. “There was a great commentary on Friday from Vortexa’s Senior Market Analyst Pamela Munger on how Vortexa has focused on tracking the growing dark fleet of tankers who turn off transponders. The dark fleet has had a huge growth with Russian sanctions adding to Iran dark fleet and others. And Vortexa has focused on tracking this dark fleet. We tweeted [\[LINK\]](#) “Why we like & follow @Vortexa weekly crude oil floating storage! “we do a lot of tracking for the so-called dark fleet” “we have a great team that specializes in analyzing signals & gaps in the signals & where vessels appear” @Vortexa Pamela Munger on @gulf_intel podcast. #OOTT.” Our tweet included the transcript we made of Munger’s comments on the Gulf Intelligence PODCAST: Daily Energy Markets – March 10th. [\[LINK\]](#). At 24:30 min mark, Munger “... we do a lot of tracking for the so-called dark fleet, if you want to call it. There is a certain set of vessels that we have noticed patterns where they turn off their transponders. And we do have special sets of technology on the back end where we analyze. We have a great team that specializes in analyzing signals and gaps in the signals and where vessels reappear.”

Vortexa tracks dark fleet

Oil: Vortexa crude oil floating storage est 53.77 mmb at Nov 10, -22.27 mmb WoW

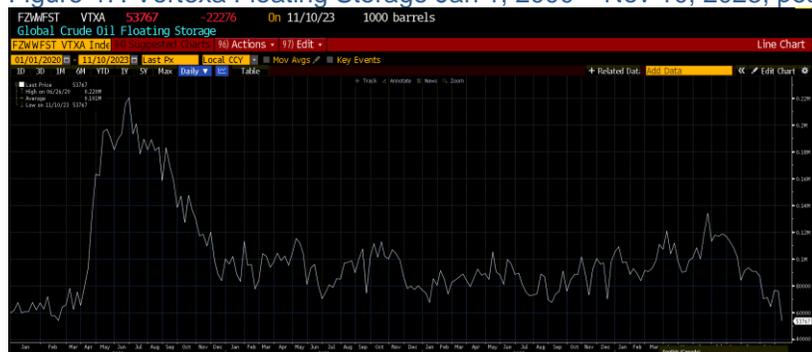
We are referencing the Vortexa crude oil floating storage data posted on the Bloomberg terminal as of 9am MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments on the new estimates are compared to the prior week’s Vortexa estimates posted on Bloomberg on Nov 4 at 9am MT. (i) Our tweet yesterday [\[LINK\]](#) said “#Oil bulls should like this. Floating oil storage 53.77 mmb at 11/10, only <60 mmb since Covid. Some upward revisions to Oct wks but only to low 70’s mmb, which is low as only been 5 wks (incl

Vortexa floating storage

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

11/10, 10/20) below 70 mmb since Covid. Thx @Vortexa @business #OOTT.” (ii) The headline will be lowest floating oil storage since Covid and the only week below 60 mmb since Covid. Plus there were some upward revisions to Oct, but the revisions were only up to the low 70s and that is low as there have only been five weeks (incl Nov 10 and Oct 20) below 70 mmb since Covid. (iii) As of 9am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Nov 10 at 53.77 mmb, which is -22.27 mmb WoW vs revised up Nov 3 of 76.04 mmb. Note Nov 3 was revised +7.90 mmb vs 68.14 mmb originally posted at 9am on Nov 4. (iii) Revisions. There were a mix of +/- revisions. The revisions from the estimates posted yesterday at 9am MT vs the estimates posted on Bloomberg at 9am MT on Nov 4 are as follows: Nov 3 revised +7.90 mmb. Oct 27 revised +1.24 mmb. Oct 20 revised -3.36 mmb. Oct 13 revised +2.48 mmb. Oct 6 revised +1.93 mmb. Sept 29 revised +2.29 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 71.36 mmb vs 74.88 mmb vs last week’s then seven-week average of 74.88. The decrease is due to the dropping of a higher 91.11 mmb in the average being replaced by the post-Covid low of 53.77 mmb for Nov 10. (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) Nov 10 estimate of 53.77 mmb is -19.40 mmb YoY vs Nov 11, 2022 of 73.17 mmb. (viii) Nov 10 estimate of 53.77 mmb is -166.54 mmb vs the Covid peak of 220.31 mmb on June 26, 2020. (ix) Nov 3 estimate of 76.04 mmb is +11.84 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 Nov 11, 9am MT Nov 4, and 9am MT Oct 28.

Figure 47: Vortexa Floating Storage Jan 1, 2000 – Nov 10, 2023, posted Nov 11 at 9am MT



Source: Bloomberg, Vortexa

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 48: Vortexa Estimates Posted 9am MT on Nov 11, Nov 4, and Oct 28

| Posted Nov 11, 9am MT | | | | | Nov 4, 9am MT | | | | | Oct 28, 9am MT | | | | |
|-----------------------|------------|------|----|-----|---------------|------------|------|----|-----|----------------|------------|------|----|-----|
| FZWWFST | VTXA | Inde | 94 | Sug | FZWWFST | VTXA | Inde | 94 | Sug | FZWWFST | VTXA | Inde | 94 | Sug |
| 01/01/2020 | 11/10/2023 | | | | 01/01/2020 | 11/03/2023 | | | | 01/01/2020 | 10/27/2023 | | | |
| 1D | 3D | 1M | 6M | YTD | 1Y | 5 | 1D | 3D | 1M | 6M | YTD | 1Y | 5 | 1D |
| Date | | | | | Date | | | | | Date | | | | |
| Last Px | | | | | Last Px | | | | | Last Px | | | | |
| Fr 11/10/2023 | | | | | Fr 11/03/2023 | | | | | Fr 10/27/2023 | | | | |
| 53767 | | | | | 68141 | | | | | 75267 | | | | |
| Fr 11/03/2023 | | | | | Fr 10/27/2023 | | | | | Fr 10/20/2023 | | | | |
| 76043 | | | | | 75439 | | | | | 71176 | | | | |
| Fr 10/27/2023 | | | | | Fr 10/20/2023 | | | | | Fr 10/13/2023 | | | | |
| 76680 | | | | | 67737 | | | | | 68984 | | | | |
| Fr 10/20/2023 | | | | | Fr 10/13/2023 | | | | | Fr 10/06/2023 | | | | |
| 64379 | | | | | 68664 | | | | | 66231 | | | | |
| Fr 10/13/2023 | | | | | Fr 10/06/2023 | | | | | Fr 09/29/2023 | | | | |
| 71140 | | | | | 68333 | | | | | 85578 | | | | |
| Fr 10/06/2023 | | | | | Fr 09/29/2023 | | | | | Fr 09/22/2023 | | | | |
| 70262 | | | | | 84961 | | | | | 90415 | | | | |
| Fr 09/29/2023 | | | | | Fr 09/22/2023 | | | | | Fr 09/15/2023 | | | | |
| 87254 | | | | | 90856 | | | | | 90585 | | | | |
| Fr 09/22/2023 | | | | | Fr 09/15/2023 | | | | | Fr 09/08/2023 | | | | |
| 91102 | | | | | 90070 | | | | | 92785 | | | | |
| Fr 09/15/2023 | | | | | Fr 09/08/2023 | | | | | Fr 09/01/2023 | | | | |
| 91086 | | | | | 92060 | | | | | 91444 | | | | |
| Fr 09/08/2023 | | | | | Fr 09/01/2023 | | | | | Fr 08/25/2023 | | | | |
| 93361 | | | | | 90638 | | | | | 86333 | | | | |
| Fr 09/01/2023 | | | | | Fr 08/25/2023 | | | | | Fr 08/18/2023 | | | | |
| 91137 | | | | | 85753 | | | | | 102.97k | | | | |

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

Bloomberg also posts the Vortexa crude oil floating storage in the key regions, but not all regions of the world. The regions covered are Asia, Europe, Middle East, West Africa and US Gulf Coast. We then back into the “Other” or rest of world. (i) As noted above, Nov 3, in total, was basically unchanged, revised +7.90 mmb. The main revision in a region vs the originally posted (as of 9am Nov 4) floating oil storage for Nov 3 were Asia revised +7.64 mmb. (ii) Total floating storage was -22.27 mmb WoW. The major WoW changes by region were Asia -11.88 mmb WoW, Other -5.23 mmb WoW, and West Africa -2.60 mmb WoW. (iii) Nov 10 of 53.77 mmb is down a huge 80.40 mmb vs the recent June 23, 2023 peak of 134.17 mmb. The major changes by region vs the recent June 23 peak are Asia -44.08 mmb and Other -27.86 mmb. (iv) Below is the table we created of the WoW changes by region posted on Bloomberg at of 9am MT yesterday. Our table also includes the “Original Posted” regional data for Nov 3 that was posted on Bloomberg at 9am MT on Nov 4.

Vortexa floating storage by region

Figure 49: Vortexa crude oil floating by region

| Vortexa Crude Oil Floating Storage by Region (mmb) | | | | Original Posted | Recent Peak | |
|--|-----------|----------|--------|-----------------|-------------|------------------|
| Region | Nov 10/23 | Nov 3/23 | WoW | Nov 3/23 | Jun 23/23 | Nov 10 vs Jun 23 |
| Asia | 29.77 | 41.65 | -11.88 | 34.01 | 73.85 | -44.08 |
| Europe | 3.07 | 3.89 | -0.82 | 3.99 | 6.47 | -3.40 |
| Middle East | 4.01 | 5.70 | -1.69 | 5.30 | 7.17 | -3.16 |
| West Africa | 4.92 | 7.52 | -2.60 | 6.63 | 7.87 | -2.95 |
| US Gulf Coast | 2.02 | 2.07 | -0.05 | 1.82 | 0.97 | 1.05 |
| Other | 9.98 | 15.21 | -5.23 | 16.39 | 37.84 | -27.86 |
| Global Total | 53.77 | 76.04 | -22.27 | 68.14 | 134.17 | -80.40 |

Vortexa crude oil floating storage posted on Bloomberg 9am MT on Nov 11
 Source: Vortexa, Bloomberg

Source: Bloomberg, Vortexa

Oil: BNEF – global oil and product stocks deficit flipped to surplus WoW to 9.9 mmb

Please note that the BloombergNEF global oil and products stocks estimate are for the week ending Oct 27, which is a week earlier than the normal EIA US oil inventory data that is for the week ending Nov 3. However, this week, the EIA is delaying their usual weekly releases to update their systems so we don’t have the Nov 3 data yet. On Monday, BloombergNEF

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

posted its “Oil Price Indicators” weekly, which provides good charts depicting near-term global oil demand and supply indicators. (i) Note BloombergNEF uses different periods to determine the surplus/deficit, sometimes using a four-year average for 2017-2019 + 2022, and other times using a five-year average 2016-2019 + 2022. In both cases they do not include 2020 and 2021 in the averages. (ii) The global stockpile for crude oil and products deficit flipped from -2.3 mmb to a surplus of +9.9 mmb for the week ending Oct 27. (iii) Total crude inventories (incl. floating) increased by +2.0% WoW to 617.8 mmb, while the stockpile surplus narrowed from 28.6 mmb to 18.8 mmb. (iv) Land crude oil inventories fell by -0.2% WoW to 538.4 mmb, widening the deficit to -49.7 mmb against the five-year average (2016-2019 + 2022). (v) The gas, oil, and middle distillate stocks decreased by -0.2% WoW to 143.4 mmb, with the deficit against the four-year average narrowing to -14.3 mmb. Jet fuel consumption by international departures for the week of November 13 is set to decrease by -194,000 b/d WoW, while consumption by domestic passenger departures is forecast to decrease by -48,000 b/d WoW. Below is a snapshot of aggregate global stockpiles.

Figure 50: Aggregate Global Oil and Product Stockpiles



Source: BloombergNEF, US EIA, PJIK, IE Singapore, FEDComPlatts, PAJ, Vortexa, Genscape. Note: As of the week ending October 27, 2023.

Source: BloombergNEF

Oil: Gunvor forecasts oil demand +1.4 mmb/d YoY in 2024

On Tuesday, Bloomberg reported “Oil demand growth is expected to be “quite decent” next year at about 1.6-1.7m b/d against the backdrop of slower economic growth, Frederic Lasserre, global head of research and analysis at Gunvor, says at Argus European Crude Conference in London. * Road fuel demand holding up better than expected this year; expect 2.5m b/d demand growth in 2023: Lasserre.” Gunvor is a major commodities trader. For comparison, the IEA’s Oil Market Report Oct forecasts oil demand to be +0.9 mmb/d YoY in 2024, the EIA’s Short Term Energy Outlook Nov forecasts oil demand to be +1.4 mmb/d YoY in 2024, and OPEC’s Monthly Oil Market Report Oct forecasts oil demand to be +2.2 mmb/d YoY in 2024. The IEA and OPEC will be posting their Nov reports this week.

Gunvor’s oil demand outlook

Oil: TomTom mobility indicators: EU, North America, Asia-Pacific all decrease WoW

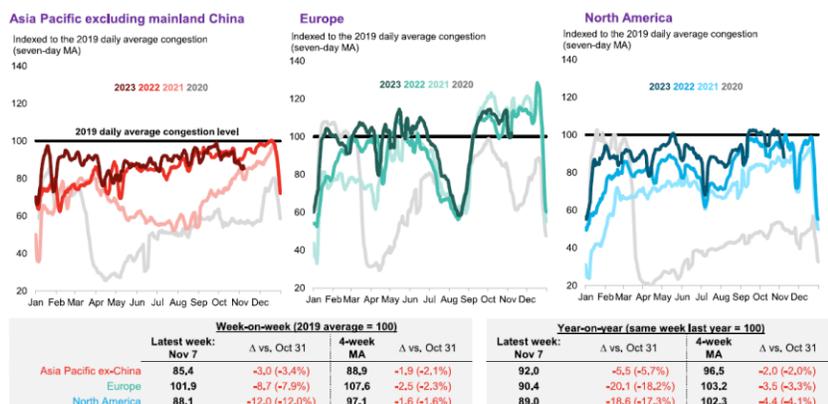
On Thursday, BloombergNEF posted its Global Road Traffic Indicators Weekly report, which recaps traffic indicators in all the major economic regions of the world i.e. mobility indicators like TomTom. For the week ending Nov 7, Asia Pacific (ex-China), Europe and North American traffic levels decreased by -3.4%, -7.9% and -12.0% WoW, respectively. Traffic levels in Asia Pacific (ex-China), Europe and North America are -14.6%, +1.9% and -11.9%

Global road traffic indicators

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

compared to the 2019 average and are -8.0%, -9.6% and -11.0% YoY, respectively. Traffic in Europe has recovered to pre-summer levels while Asia Pacific (excluding mainland China) is still below pre-Covid levels. It is worth noting that TomTom data on congestion levels now reflects daily average congestion compared to peak congestion previously. The change in methodology took effect from January 19.

Figure 51: Mobility Indicators



Source: BloombergNEF calculations based on TomTom data. Note: Data updated to November 7, 2023. Δ = change. MA = moving average.

Source: BloombergNEF

Oil: IATA, air passenger data, travel now 97.3% of pre-Covid levels

Last Wednesday, the International Air Transport Association (IATA) released air passenger data for September 2023 [LINK](#) and the August data showed the continued recovery from Covid-19 in air passenger trends. Domestic air travel around the world was above pre-Covid levels for the 6th consecutive month, 5.0% above September 2019 levels. International air travel keeps recovering but is still below pre-Covid levels at 97.3% of August 2019 levels. (i) Total traffic in September, measured in revenue passenger kilometers (RPK), rose +30.1% YoY. Please note the IATA splits out total market air travel into International travel vs Domestic travel. (ii) For September 2023, total global RPKs were -2.7% vs September 2019 levels, but that was split between International RPKs -6.9% vs September 2019 and Domestic RPKs +5.0% vs August 2019 levels. (iii) The IATA commented “With the end of 2023 fast approaching, we can look back on a year of strong recovery in demand as passengers took full advantage of their freedom to travel. There is every reason to believe that this momentum can be maintained in the New Year, despite economic and political uncertainties in parts of the world. But we need the whole value chain to be ready. Supply chain issues in the aircraft manufacturing sector are unacceptable. They have held back the recovery and solutions must be found. The same holds true for infrastructure providers, particularly air navigation service providers. Equipment failures, staffing shortages and labor unrest made it impossible to deliver the flying experience our customers expect. A successful 2024 needs the whole value chain to be fully prepared to handle the demand that is coming”. Our Supplemental Documents package includes the IATA release.

Air travel up in September

Oil: IATA, global air cargo Sept modest uptrend in volumes amid soft demand drivers”

We look at international air cargo as the data that affirms the level of export orders and trade. On Wednesday, the International Air Transport Association (IATA) announced cargo data for the month of September [LINK](#). The headline was “Industry cargo tonne-kilometers (CTKs)

Air cargo up YoY in September

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

were up 1.9% year-on-year (YoY) in September. Compared to the preCovid level, global CTks remained 1.3% lower.” The IATA also noted that “In September, most of the Asia-related trade lanes recorded strong annual growth in their international CTks, led by Africa – Asia (12.8%) and Europe – Asia (9.6%)... The Europe – Asia market expanded its growth from 8.8% last month, while the Africa – Asia market had a strong rebound from the annual decline of 0.8% in August to the double-digit growth this month”. On the other hand, in Europe: “European airlines saw a further decline in their international CTks in September by 1.7%, compared to the 0.8% contraction in August. However, domestic CTks by European airlines improved slightly, narrowing the overall decline in CTks by airlines in this region to -1.5%”. Overall, mostly positive news, but not across the board. Our Supplemental Documents package includes the IATA release.

Figure 52: September 2023 Air Cargo Market

| | World share ¹ | September 2023 (% year-on-year) | | | |
|---------------------|--------------------------|---------------------------------|--------------|-------------------------|--------------------------|
| | | CTK | ACTK | CLF (%-pt) ² | CLF (level) ³ |
| TOTAL MARKET | 100.0% | 1.9% | 12.1% | -4.4% | 43.8% |
| Africa | 2.0% | -0.1% | 2.7% | -1.2% | 43.6% |
| Asia Pacific | 32.4% | 7.7% | 30.5% | -9.9% | 46.6% |
| Europe | 21.8% | -1.5% | 4.7% | -3.1% | 50.0% |
| Latin America | 2.7% | 2.3% | 14.4% | -3.8% | 31.9% |
| Middle East | 13.0% | 2.5% | 16.1% | -5.6% | 42.4% |
| North America | 28.1% | -2.2% | 0.2% | -1.0% | 39.2% |

Source: IATA

Oil: Asia Pacific Airlines Sept solid passenger growth, 1st cargo increase in 18 mths

Last Tuesday, the Association of Asia Pacific Airlines released its September traffic results [\[LINK\]](#) which is comprised of aggregate data across a total of 40 Asia Pacific airline carriers. (i) Air travel. International passenger air travel on the 40 airlines is up big YoY, but still well below 2019 levels. The AAPA reports preliminary September travel figures “showed solid expansion in international passenger markets, led by a steady rebound in tourist arrivals across the region. Further revival in demand on routes connecting China, provided additional momentum to the travel recovery. Overall, Asia Pacific airlines recorded a 111.0% year-on-year increase in the number of international passengers carried to a combined total of 23.7 million in September. This brings demand to 79.0% of the corresponding month in 2019, a marked improvement compared to 52.9% in January. Demand as measured in revenue passenger kilometres (RPK) increased by 90.9% year-on-year, while available seat capacity expanded by 86.1%, leading to a 2.0 percentage point increase in the average international passenger load factor to 79.7% for the month.” (ii) Air cargo is still down 6.4% YTD. “Meanwhile, following 18 consecutive months in decline since March 2022, the region’s carriers recorded an upswing in international air cargo demand in September, with a 3.2% year-on-year growth as measured in freight tonne kilometres (FTK).” “Air cargo demand turned positive for the first time in 2023 in September, which helped to moderate the decline for the year to date, to 6.4%.” Below is a snapshot of the APAA’s traffic update.

Asian Pacific air traffic in September

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 53: APAA Preliminary International Air Traffic Data

| International | Sep-23 | Sep-22 | % Change |
|-----------------------|---------|--------|----------|
| Passengers (Thousand) | 23,710 | 11,239 | + 111.0% |
| RPK (Million) | 89,877 | 47,076 | + 90.9% |
| ASK (Million) | 112,785 | 60,597 | + 86.1% |
| Passenger Load Factor | 79.7% | 77.7% | + 2.0 pp |
| FTK (Million) | 5,580 | 5,407 | + 3.2% |
| FATK (Million) | 9,203 | 8,461 | + 8.8% |
| Freight Load Factor | 60.6% | 63.9% | - 3.3 pp |

Source: AAPA

Oil: Singapore Airlines, soft cargo demand, passenger to pre-Covid in summer 2024

On Tuesday, Singapore Airlines announced their Q2 results [\[LINK\]](#). (i) We viewed the results as mixed/neutral. On Tuesday, we tweeted [\[LINK\]](#) “Air +/- from Singapore Airlines Q2.

Negative: macroeconomic headwinds, continued soft demand for air cargo Positive: Adding China flights this winter to get close to pre-Covid. Positive: Expect international to reach or exceed pre-Covid summer 2024. #OOTT”. (ii) Passenger traffic was up +38.0% YoY in the first 6 months of fiscal 2023/2024 thanks to the reopening of Hong Kong and Taiwan over the summer. (iii) China recovering to near pre-Covid levels this winter. They highlighted the ramp up in China flights to 23 destinations just below 25 points pre-Covid. (iii) Overall international travel to reach or exceed pre-Covid across multiple points in summer 2024 “ (iv) Macro economic headwinds still hit air cargo. We look at air cargo as a good indicator for the global economy. They wrote “*The demand for air freight remained soft due to inventory overhang, as well as geopolitical and macroeconomic headwinds. The cargo load factor fell 8.4 percentage points to 52.7% year-on-year as cargo loads dipped 6.0%, while capacity grew 8.9% mainly due to increased passenger aircraft bellyhold space. Increased competition and softer demand also contributed to the downward pressure on cargo yields, which fell by 46.2% from a year before. Nevertheless, at 41.8 cents per load tonne-kilometre, cargo yields remained 37.0% above pre-pandemic levels*1.” “*The demand for air freight is expected to remain soft in the traditional peak third quarter of FY2023/24, dampened by excess inventories, geopolitical tensions, and macroeconomic headwinds.*” Our Supplemental Documents package includes excerpts from the Singapore Airlines Q2 2023 release in our supplemental documents package.

Singapore Airlines Q2 Results

Oil & Natural Gas: Alberta and BC wildfires down

We can't imagine what is like for the firefighters who have been in non-stop crisis mode for the last six months. It's now mid-Nov and there are still too many wildfires. As of 7pm MT last night, there were 69 Alberta wildfires and zero Out of Control, which compares to a week ago at 72 Alberta wildfires and zero Out of Control. In BC, it was another week of decline in wildfires including Out of Control wildfires. As of 7pm MT last night, there were 193 wildfires including 29 Out of Control, which compares to a week ago at 245 wildfires included 31 Out of control.

BC and Alberta Wildfires

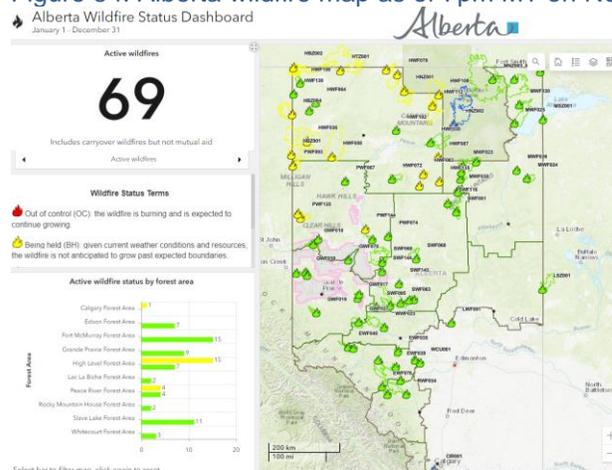
Links to Alberta and BC wildfire status maps

We recommend bookmarking the starting points for wildfire information are the Alberta Wildfire Status interactive map [\[LINK\]](#) and the BC Active Wildfires interactive map [\[LINK\]](#). Please note these links have changed over the past few years. Both

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

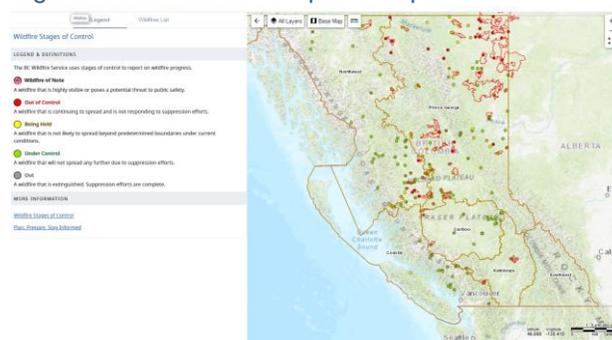
maps are interactive and open up for the information on any particular fire. Here are the wildfire maps as of 7pm MT last night.

Figure 54: Alberta wildfire map as of 7pm MT on Nov 11



Source: Alberta Wildfire Status Dashboard

Figure 55: BC wildfire map as of 7pm MT on Nov 11



Source: BC Wildfire Service

Oil & Natural Gas – sector/play/market/global insights from Q3 calls

Q3 reporting is effectively done and we didn't write up very many of the Q3 calls. There was too much huge global news that took time away from our writing up insights from Q3 earnings calls. We have only written a very small portion of the calls we reviewed. We find we get the best insights into a range of oil and gas themes/trends, sectors and plays from the conference calls. As a reminder, our Energy Tidbits memo does not get into the quarterly results, forecasts, or valuation. Rather the purpose of highlighting a company is to note themes/trends and plays that will help shape a reader's investment thesis to the energy sector. In the conference calls, we also tend to find the best insights from the Q&A portion as opposed to the prepared remarks.

Sector insights from Q3 calls

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Helmerich & Payne: Inflation decreasing but offset by equipment intensity

Haliburton held its Q1 call on Thursday. (i) Earlier we noted HP highlighting drilling efficiencies and how each rig can now drill more wells. (ii) Warmer 2022/23 winter led to lower gas prices and less gas drilling. *“Turning to the details of fiscal 2023, rig demand was negatively impacted by geopolitical and economic uncertainties that influenced the global oil market, as well as warmer than expected winter weather which suppressed pricing in the US natural gas market.”*. *“Well, I think if you look at the activity levels during the course of the year, obviously early on a lot of the activity declines were related directly to natural gas, natural gas pricing.”* (iii) Inflation cost items down in 2023 but offset by more equipment attrition. There have been comments from oil watchers highlighting HP comments that labor and consumables costs decreased somewhere in 2023, but they didn't seem to pick up HP's saying those saving are being offset by the costs to maintain equipment due to higher service intensity. *“Over the past two years, we have experienced increases in operational expenses due to rising labor costs and consumable inventory consumption and cost inflation. A less visible but growing variable is the cost acceleration in equipment related to running H&P's FlexRig fleet harder than ever before to achieve the well designs, lateral lengths and the drilling efficiencies for our customers. We've seen the inflation related to labor and consumable inventory items decrease somewhat in 2023. However, it is being offset by the service intensity required to maintain rigs and equipment at standards that will continue to drive performance and efficiency gains.”* (iv) Expect US drilling up in 2024 with refreshed budgets. *“A lot of this goes, Kurt, goes back to the capital discipline that the industry is showing, E&Ps, our customers are showing, which again I think is healthy for the industry. So in many cases, we're seeing somewhat of a reset in their capital budgets for the next year, is largely what we're seeing. I mean I think in general I think consensus has 40 to 60 rigs on average being added for 2024.”*

Patterson-UTI: Frac equipment attrition is accelerating

Patterson-UTI held its Q1 call on Wed. (i) Earlier, we noted PTEN 's comments on the need for US drilling to increase as there are *“really no DUCs out there”*. (ii) We also noted their view of a stable, but modest growth outlook for US oil, and also the need to increase drilling in 2024 to meet demand growth including for LNG. (iii) Equipment attrition is increasing as operators push them to more drilling/fracking intensity. *“Meanwhile, the recent slowdown in frac activity is likely to accelerate attrition beyond what service providers were otherwise preparing for this year across the industry. Additionally, we believe that slowdown has diverted some investments in new equipment.”*

Energy Transition: Sunak King's speech priority is the economy

On Tuesday, King Charles delivered the King's speech to the House of Commons. The King's speech is the PM Sunak's outline of government priorities but read by the King. The speech was universally reviewed as one that featured the economy as the priority and not climate change as the priority. The speech opens *“The impact of Covid and the war in Ukraine have created significant long-term challenges for the United Kingdom. That is why my Government's priority is to make the difficult but necessary long-term decisions to change this country for the better. My Ministers' focus is on increasing economic growth and safeguarding the health and security of the British people for generations to come. My*

**Sunak's King's
speech**

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Government will continue to take action to bring down inflation, to ease the cost of living for families and help businesses fund new jobs and investment. My Ministers will support the Bank of England to return inflation to target by taking responsible decisions on spending and borrowing. These decisions will help household finances, reduce public sector debt, and safeguard the financial security of the country. Legislation will be introduced to strengthen the United Kingdom's energy security and reduce reliance on volatile international energy markets and hostile foreign regimes. This Bill will support the future licensing of new oil and gas fields, helping the country to transition to net zero by 2050 without adding undue burdens on households. Alongside this, my Ministers will seek to attract record levels of investment in renewable energy sources and reform grid connections, building on the United Kingdom's track-record of decarbonising faster than other G7 economies." Our Supplemental Documents package includes the King's speech.

Energy Transition: NuScale terminates 1st US nuclear small modular reactor project

Another blow this week to the assumed pace of the energy transition and also are reinforcement of our view that costs for energy under the energy transition will be way up from what is assumed by the Net Zero side. Negative updates for the penetration of mini-nukes, nuclear small modular reactors, in the US this week with NuScale's Wed announcement that it was terminating its SMR project in Utah, which was the hoped for 1st SMR to be able to get a commercial licence in the US. This is a negative as it looks like the reason is the cost to supply electricity is why they were unable to get to 80% subscription for the power. It was also a negative to NuScale shares that were down 33% post the announcement and are now down 79.6% YTD to \$2.09. (i) Yesterday, we tweeted [LINK](#) "Hoped for 1st US nuclear SMR project terminated. NuScale  33%. Likely reason is cost as couldn't get to 80% subscription for power. 01/09/23 cost cranked up to \$89/MWh. Didn't disclose new Class 2 cost est other than was adj for inflation. #NatGas will be needed for longer #OOTT." (ii) On Wed, NuScale announced "Utah Associated Municipal Power Systems (UAMPS) and NuScale Power Corporation (NuScale) (NYSE: SMR) announced today that they have mutually agreed to terminate the Carbon Free Power Project (CFPP). Despite significant efforts by both parties to advance the CFPP, it appears unlikely that the project will have enough subscription to continue toward deployment. Therefore, UAMPS and NuScale have mutually determined that ending the project is the most prudent decision for both parties." [LINK](#). (iii) The Release didn't say that cost of power was the reason for not reaching 80% subscription, but we can't believe there is any reason why they couldn't get to 80% subscription. (iv) NuScale did not provide the updated Class 2 cost estimate. But on Jan 9, 2023, NuScale announced the costs had risen dramatically and the updated target price for the power generation was \$89/MWh, up over 50% from the mid-2021 estimate at \$58/MWh. In their Oct 6 investor day, NuScale said they were "developing level 2 cost estimate." There was no disclosure of what the level 2 cost estimate was but, in the Q3 call, mgmt. gave an explanation that suggests that the increase to Class 2 estimates was only adjusted for inflation. The only thing this implies is that the cost is more than \$89/MWh, just don't know how much more. Mgmt said "Despite elevated levels of inflation, price and financing costs and supply chain disruptions that have impacted all infrastructure projects, capital costs for CFPP have not increased between the Class 3 and the current Class 2 estimates when adjusted for inflation. I want to emphasize that point because not only have overall capital costs remain stable, the cost for NuScale's SMR technology, which is just one component of the CFPP have remained steady as well. Our ability to control costs even in challenging economic conditions is a testament to the hard work of our engineering and

**One month to
COP28**

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

supply chain teams and our EPC partners at floor.” Our Supplemental Documents package includes the NuScale Jan 9, 2023 increased cost estimate, the Nov 8, 2023 termination announcement and mgmt’s comments on the termination from the Q3 call.

Energy Transition – PLUG may not be able to produce green hydrogen at competitive \$

In reality, there really shouldn’t have been as many investors surprised by the bad news on Thursday night by Plug Power (PLUG) including their first disclosure that they may not be able to internally produce green hydrogen at a competitive price. This has been well said but it looks like it was ignored by many investors who automatically ignore warnings from companies like Saudi Aramco. It’s inevitable that some great gems come out when we compare new and prior disclosures especially when a company has to fess up to bad news. Inevitably, all the bad news isn’t always clearly stated. And that was the case when Plug Power (PLUG) warned on their future. (i) Later in the memo, we highlight how PLUG’s Q3 report didn’t have the blunt warnings that were in their 10Q. (ii) But we also saw a much bigger reveal when we read the fine print that no one normally reads – the “*cautionary note on forward-looking statements.*” We wouldn’t have read it if we hadn’t first seen the 10Q vs Q3 report differences. PLUG’s Q3 cautionary note had way more warnings. We compared the cautionary note in the Q3 on Thursday vs the Q2 on Aug 9. PLUG’s new cautionary note includes several additional warnings including a key one on their base business – producing green hydrogen. On Friday, we tweeted [\[LINK\]](#) “*Read the fine print! Math isn’t working for core #GreenHydrogen business of \$PLUG “the risk that we may not be able to produce hydrogen internally at competitive prices” \$PLUG Q3, wasn’t in Q2. #NatGas will be needed for way longer. #OOTT.*” PLUG’s Nov 9, 2023 announcement says it is “*a global leader in comprehensive hydrogen solutions for the green hydrogen economy*” [\[LINK\]](#). It’s one thing to need capital but it’s a way more significant factor to advise that they may not be able to execute their core green hydrogen business at competitive prices. The new Q3 cautionary note included “*the risk that we may not be able to produce hydrogen internally at competitive prices; that we may not be able to expand our business or manage our future growth effectively.*” This is new disclosure. (iii) There were several other new warnings in the Q3 cautionary note that were not in the Q2 cautionary note. Also there was a change in the lead-in to the warnings. The Q2 cautionary note says “*... including...*” Whereas the Q3 cautionary note says “*... including, but not limited to, ...*” Our Supplemental Documents package includes the cautionary note disclosure from PLUG’s Q3 on Nov 9 vs its Q2 on Aug 9. It’s worth a read to see all the new warnings.

PLUG warns on green hydrogen

09/18/23: Aramco CEO, green hydrogen is expensive at \$200-\$400/boe

Unfortunately, investors being surprised by Plug Power’s bad news on Friday is likely because investor ignored comments from energy players like Saudi Aramco CEO who has clearly warned green hydrogen cost is not competitive. Here is what we wrote in our Sept 24, 2023 Energy Tidbits memo. “*As noted above, our tweet on the Saudi Aramco CEO Nasser speech was [\[LINK\]](#) “Reality checks from @aramco CEO today. Headlines “many shortcomings in the current transition approach” “aggregation of unrealistic scenarios”. #GreenHydrogen costs \$200-\$400/boe. “#CCS can no longer be the bridesmaid” And more! #Oil #NatGas will be needed for longer. #OOTT.” (ii) No one should be surprised that Nasser highlighted that green hydrogen is expensive and no buyers have stepped up to commit to buy any commercial sized quantities of hydrogen. Nasser said “Then there is Green Hydrogen. Today, “production” costs are in the range of \$200 to \$400 per barrel of oil*”

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

equivalent, which is why commercial offtake agreements are hard to come by. I want to stress that alternatives like wind, solar, and hydrogen are considered to be the bedrock of transition.” (iii) Nasser also highlighted how CCS is a must have for the energy transition. Nasser said “I think it is time the world also gave greater attention to man-made carbon sinks, particularly CCS. It could be deployed in a variety of sectors, including hard-to-abate industries, power plants using coal and gas, biomass-based power stations, and even through Direct Air Capture. The potential climate gains would likewise be large. One scenario suggests that integrating CCS with cement plants might capture and store about 95% of CO2 emissions from the entire sector by 2050. But some estimates suggest that CCS capacity needs to grow 120 times by 2050 for countries to meet their net-zero commitments. CCS can no longer be the bridesmaid of transition; it is central to our industry’s future, but even more importantly global climate goals. Last but not least, steel, aluminum, and cement account for about 20% of global CO2 emissions. In fact, if the cement industry were a country, it would be the third-largest emitter of CO2!”.

01/08/23, Norway minister, hydrogen light years away from being reasonable

In January, Norway came out with very blunt comments that hydrogen is “light years away from being justifiable or reasonable”. Here is what we wrote in our Jan 15, 2023 Energy Tidbits memo. “Earlier this morning, we tweeted [\[LINK\]](#) on Norway cabinet minister Moe’s common sense approach as to why hydrogen is “light years away from being justifiable or reasonable”. Moe said “And we must have a proven relationship with simple factors such as resource efficiency and effectiveness”. He just wants to go with the economics as known. We also earlier tweeted [\[LINK\]](#) “Inmate escaping or crazyman? See 🇳🇴 Norway cabinet minister Moe 01/08 posting. Hydrogen has large energy losses at both ends of the process, “in my opinion, light years away from being justifiable or reasonable”. Energy will be \$\$\$\$ in the #EnergyTransition. #OOTT #NatGas .” Our tweet referenced a Facebook Jan 8 posting by Norway cabinet minister Moe. Moe is currently Minister of Research and Higher Learning, but was previously Minister of Petroleum and Energy from 2011 to 2013. Moe went thru his analysis of the energy losses in hydrogen and why he says “It is, in my opinion, light years away from being justifiable or reasonable.” Here is his math on why hydrogen doesn’t make sense. This is from Google Translate “Hydrogen is certainly good for many things, but the fact is that it is a highly explosive storage medium with large energy losses at both ends of the process. If you use 100 kwh of electricity to produce hydrogen, you will be left with an amount of energy in hydrogen corresponding to 50 kwh. In other words, half of the energy is lost. If you are going to use this hydrogen in a fuel cell, you lose a further 50%. If you run it in a turbine to produce electricity, you lose 70%. In other words, you get a utilization rate in a car of about 25% or 25 kwh of the original 100 kwh due to energy loss in the processes. In a simple turbine, the loss is even greater. Alternatively, this current/energy could have been used directly all the time it is taken from the grid in Norway with a utilization rate for, for example, heating, production or transport of 90-100%! If Statkraft together with NEL succeeds in establishing 2 gw electrolysis of hydrogen in Norway, this corresponds to an energy quantity of approximately 17.5 twh, or approximately 12-13% of all power production in Norway.” Our Supplemental Documents package includes Moe’s Facebook posting and the Google Translate thereof.”

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Energy Transition: Liberals defeat Conservatives exempt all home heating carbon tax

No surprise, on Monday the Bloc Quebecois joined with the Liberals to vote down the Conservatives motion to extend the pause on federal price on carbon tax to all forms of fuels/power that heat homes and not just exempting heating oil that is predominately an Atlantic provides break. It was a non-confidence motion that, last week, the NDP said they would support. But with the Bloc's support, the motion was easily defeated.

**Liberals defeat
Conservatives
motion**

Hard to see Trudeau changing carbon tax position given Guilbeault's threat

We recognize that a lot of people are not fans of Liberals Environment Minister Guilbeault. Guilbeault wasn't a fan in the first place when Trudeau did the exemption on carbon taxes for home heating oil and his absence from that announcement and any speaking that day was highlighted. But even if you aren't a fan, you got to give him credit for making sure Trudeau won't give any more exemptions even there is pressure from the caucus. Prior to the Monday vote, Canadian Press reported *"Environment Minister Steven Guilbeault said Monday he will not stand for any further adjustments to Canada's carbon-pricing system as a Conservative motion calling for more carve-outs failed in the House of Commons. "As long as I'm the environment minister, there will be no more exemptions to carbon pricing," Guilbeault told The Canadian Press in an interview. "It's certainly not ideal that we did it and in a perfect world we would not have to do that, but unfortunately we don't live in a perfect world."* We find it very difficult for Trudeau to do something to cause Guilbeault to resign for fear of losing the pro-environment side of the Liberal party.

Energy Transition: EVs are driven ~38% less miles than an ICE

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 fcasts. 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 mileage of an ICE vehicle on a one-for-one basis as if an ICE is junked every time an EV is sold.

**EVs driven less
than ICE**

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

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. Our Supplemental Documents package includes the GW release and several tweets with more detail by one of the study authors.

04/26/23 tweet: Will EVs displace ~6 mmb/d of oil as IEA forecast this week?

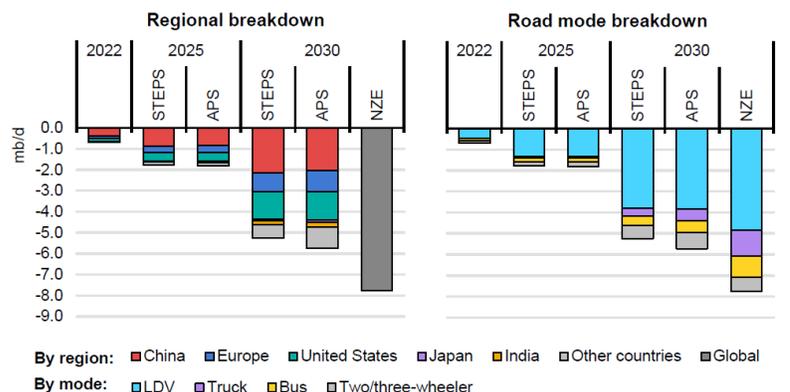
Our tweet this week linked to our April 26, 2023 tweet on the IEA's Global EV Outlook 2023. Here is what we wrote in our April 30, 2023 Energy Tidbits memo. *"The most important assumption on when peak oil demand hits is how quickly the accelerating share that EVs have of all new car sales leads to a 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 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*

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

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 2nd or 3rd 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 56: 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

Equinor chief economist says Norwegians bought EVs as 2nd or 3rd cars

Here is what we wrote in our March 26, 2023 Energy Tidbits memo. "The Equinor Chief Economist Wareness comment to the FT also supported the above item on

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

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 @EWaerness. many other reality check energy transition views in his @FT interview [\[LINK\]](#) #OOTT." Waerness says that Norwegians really have bought EVs as their 2nd or 3rd 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."

Cyber attack on major AUS ports

Capital Markets: Cyber attack shuts down 4 major DP World Australia ports

The reason we tweeted and included this in our Energy Tidbits memo is that any shut down that impacts ports around the world impacts the global economy. It may not seem like good news but the good news is that the cyber attack has been limited to DP World's Australia's major ports and not its worldwide port network. Earlier this morning, we tweeted [\[LINK\]](#) "Cyber attack shuts down @DP_World AUS port ops at Sydney, Melbourne, Brisbane & Fremantle. See 📌 thread. Haven't seen any reports that cyber attack has hit any DP outside of AUS. Reminder DP is dominant in AUS, but also big ports player around the world. #OOTT." The cyber attack reportedly hit Friday night and DP World shut down the Sydney, Melbourne, Brisbane and Fremantle ports. There were media reports that DP World has indicated the shut down is a matter of days not weeks. Our tweet reminded that DP World also a major port operator around the world and we included DP World data. Our Supplemental Documents package includes the Australia National Cyber Security Coordinator tweets and the DP World data.

Figure 57: DP World Ports & Terminals

DP WORLD – PORTS & TERMINALS
OUR GLOBAL FOOTPRINT



Source: DP World

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Capital Markets: Plug Power Q3 reminds need to go to 10Q, not rely on press release**Plug Power disclosure**

One of the big market stories on Friday was the collapse of Plug Power shares following the Q3 on Thursday night. Plug Power shares ended down 40.5% to close at \$3.53 on Friday. Plug Power's announcement described itself as "a global leader in comprehensive hydrogen solutions for the green hydrogen economy." We saw the pre-market share crashing and went to their Q3 release and it advises that they will need to access additional capital to fund its activities. But then we went to their 10Q, which gives the stark warning and why the shares crashed. We tweeted [\[LINK\]](#) *Great reminder that investors shouldn't/can't just rely on a company Q3 letter but have to go to filed 10Q to get the full reveal. Note 📌 Plug Power Q3 release vs Q3 10Q on its financial position. Shares down 37%. #OOTT.* The Plug Power Q3 release financial warning didn't use the words going concern or that they expect to generate operating losses for the foreseeable future. Rather it was a warning but a tame one "Future Funding Roadmaps: Given our forecasted capital expenditure and operating requirements under the current business plan, and the Company's existing cash and liquidity position, the Company will need to access additional capital in the market to fund its activities. The Company is pursuing a number of debt capital and project financing solutions." Whereas the 10Q opens up with this issue and a couple of their direct warnings were "The Company expects to generate operating losses for the foreseeable future", and "In light of the Company's projected capital expenditure and operating requirements under its current business plan, the Company is projecting that its existing cash and available for sale and equity securities will not be sufficient to fund its operations through the next twelve months from the date of issuance of this Quarterly Report on Form 10-Q. These conditions and events raise substantial doubt about the Company's ability to continue as a going concern." Our Supplemental Documents package includes the Q3 release and excerpts from the 10Q.

Capital Markets: Not a forecast but Bank of Canada outlines higher for longer rates**Higher for longer rates**

On Thursday, Bank of Canada Senior Deputy Governor, Caroly Rogers, spoke in Vancouver "Financial stability in a world of higher interest rates". She said she's "not making predictions about the path for monetary policy" but then outlined the logic or "why interest rates could stay higher than we're used to". Rogers reviewed that they are been some adjustments for higher for longer rates but "the adjustment still to come". She highlighted items like mortgage rates "That's the story so far. But more adjustment is coming. A key area we're watching is high levels of fixed-payment mortgage debt. In all, around 40% of mortgage holders have seen higher payments since early 2022. By the end of 2026, virtually all remaining mortgage holders will go through a renewal cycle and, depending on the path for interest rates, may face significantly higher payments." And "We see a similar dynamic in the responses to our business surveys. In our latest Business Outlook Survey, published in October, just under half of the companies we spoke to said they think the impact of higher interest rates is just beginning for them. Another 30% said they think it is half done.⁸ Even so, most businesses said they're confident they can manage their debts despite the added pressure. It's early though, and the effects of higher interest rates are still working their way through the economy." Our Supplemental Documents package includes the Rogers speech.

Capital Markets: Record inflows to money market funds,. parked on sidelines till when?

Stocks have been up lately and this is despite money still being parked in short term money market funds. No question, the increasing shift of views for higher for longer interest rates

Record inflows to money market funds

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

surprise in 2023 has led to more money going into money market funds. On Friday, Bloomberg’s Lisa Abramowicz tweeted “Cash funds remain among the most popular asset classes and are set for a record year of inflows at \$1.4 trillion in 2023: Bank of America strategists” and her tweet included a 5-year graph of ICI Money Market Funds Assets. Yesterday, we tweeted [LINK](#) “Let’s hope US 10-yr gets back to 3.5% or lower. Extended the @lisaabramowicz1 graph back to 01/01/20 and added S&P to remind of prior correlations for periods of money market inflows/outflows. #OOTT.” We don’t know the magic number for the US-10 yr, but once we see more money flow out of bonds and off the sidelines in money market funds, it should, if history holds, be a big boost to stocks.

Figure 58: ICE Money Market Funds Assets vs S&P 500



Source: Bloomberg

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

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

@Energy_Tidbits
on Twitter

LinkedIn: Look for quick energy items from me on LinkedIn

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

Look for energy
items on LinkedIn

Misc Facts and Figures

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

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Cdn Political humor both sides can laugh at

We try to avoid tweeting on items where one political side makes fun of the other to avoid the inevitable blowback from one or the other sides. It's just not worth the hassle. But this week, there was one tweet that we laughed at and thought both side sides can laugh at this. On Tuesday, we tweeted [\[LINK\]](#) "no matter what party you support, how can you not at least chuckle at this headline!". Our tweet was a retweet of the below Globe Politics tweet.

Figure 59: Globe Politics tweet on Ottawa



Source: Globe Politics

Mike Tomlin/Bill Parcells on "pebble in the shoe"

At his weekly press conference, Steelers Head Coach Mike Tomlin was asked about wide receiver George Pickens frustration on the field, locker room and in social media and Tomlin downplayed it saying "I know it's a cute story for you guys but it is, it is a pebble in my shoe to be quite honest with you in terms of the things I have to do". On Tuesday, Pro Football Talk [\[LINK\]](#) talked about how former Giants Head Coach Bill Parcells would use it as motivator. PFT wrote "A pebble in the shoe is a constant irritant. It keeps the person who is wearing the shoe from ever being comfortable. It's something Hall of Fame head coach Bill Parcells did to himself in 1984, after a disastrous first season with the Giants that resulted in the team nearly supplanting him for Howard Schnellenberger. Parcells put a pebble in his shoe during training camp because he believed that "his new, plush job had softened him." Parcells had done the same thing during his three years as defensive coordinator at Texas Tech, in the 1970s: "Parcells was so ingrained in the belief that pain is the catalyst for remembering what you're taught, he would put a pebble in his shoe before every practice session. At intervals meaningful only to him, he would move his foot hard against the stone." So, no, a pebble in the shoe is not a good thing. And, yes, Tomlin might have inadvertently hinted at the unvarnished truth when describing the Pickens situation that way."

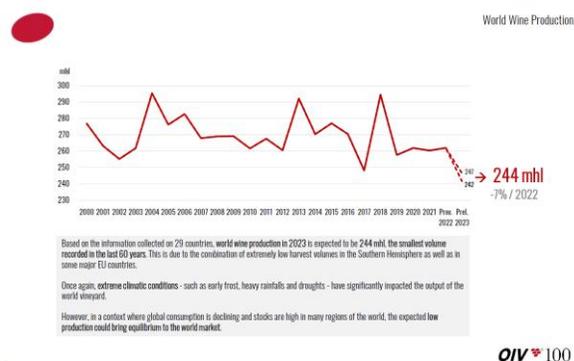
Higher wine prices ahead when 2023 vintages hit stores

On Tuesday, we tweeted [\[LINK\]](#) "Fellow 🍷 wine lovers get ready for higher prices when 2023 hit stores. Smallest world wine production in 60 yrs. Big YoY drop in Australia, Argentina & Chile production. Good year for Bordeaux & Burgundy to have good vintages & production. Thx @OIV_int [\[LINK\]](#)." The International Organisation of Vine and Wine (OIV) reported its "2023 Wine Production: First Estimates". It's all supply and demand. OIV wrote "This would be the smallest production since 1961 (214 mhl), even lower than the historically small production volume of 2017 (248 mhl). This negative scenario can be attributed to significant declines in major wine-producing countries in both Hemispheres. While in the Southern Hemisphere, Australia, Argentina, Chile, South Africa, and Brazil recorded year-over-year variations between -10% and -30%, in the Northern Hemisphere, Italy, Spain and

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Greece are the countries that suffered the most from bad climatic conditions during the growing season. Only the USA and a few EU countries like Germany, Portugal and Romania, experienced favourable climatic conditions that resulted in average or above-average volumes.”

Figure 60: World wine production 2023 estimate



Source: OIV

Chase Young on joining the 49ers “I see why they win”

I always say I have been fortunate to work with some of the very best in the investment business in Canada in my career and I always admired how these superstars went about their business and led our companies to being best in class. It's tough enough to get to the top but it's even harder to stay on top but they did it. And when people would join the team, they would say things like I heard new San Francisco 49ers Chase Young say on Monday. On Monday, new 49ers Chase Young (traded from the Commanders) press conference said “. *Culture. I see why they win. It's the details of each play. The details of my assignment, much more greater. I see why they win*”.

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**