

Energy Tidbits

Oct 20, 2024

Produced by: Dan Tsubouchi

Is Israel About to Attack Iran in the Coming Days or Did Biden Embellish He Knows When and How Israel will Retaliate?

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 1998 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. My priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is the review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector. My target is to write on 50 weekends per year and to post by noon MT on Sunday. The Sunday noon timing was because PMs said they didn't have research to read on Sundays and Sundays are a day when they start to think about the investing week ahead.

This week's memo highlights:

1. Biden said he knows when and how Israel will retaliate vs Iran. If so, it would seem to signal an attack is soon. [\[click here\]](#)
2. No surprise Chinese consumers are cautious and keep adding to savings as their most important asset is their home and home values have seen MoM declines for over 16 consecutive months. [\[click here\]](#)
3. Forecasts continue for a warm start to winter and we remind its tough for HH gas prices catch up if Nov/Dec is warm. [\[click here\]](#)
4. IEA doesn't hide that its WEO 2024 STEPS "scenario provides a sense of the prevailing direction of travel for the energy sector based on a detailed reading of the latest policy settings in countries around the world" ie. a scenario to reflect aspirations of govt climate policies. [\[click here\]](#)
5. Good news for Cdn oil producers as WCS less WTI differentials remain narrow post TMX startup. [\[click here\]](#)
6. Please follow us on Twitter at [\[LINK\]](#) for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [\[LINK\]](#)

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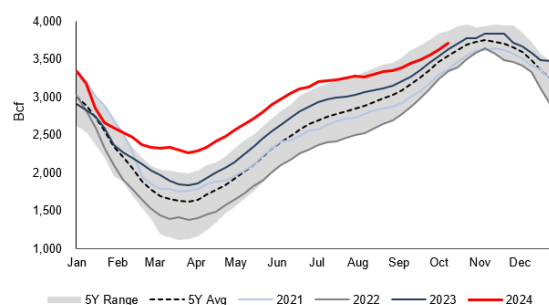
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Natural Gas: Expect higher YoY but not full US gas storage to start the winter

There are only three storage weeks to go to Nov 1 storage. So the hot summer and some hurricane supply interruptions meant that the real risk for storage to be full early isn't going to happen. Rather it's just points to storage being higher YoY going into the winter. The concern coming into the summer was that storage was +444 bcf YoY storage on May 3 with a real fear that storage would be full well before winter and that would cause producers to shut-in production. But that big early YoY surplus is now down to +107 bcf YoY so it's just the reality of higher YoY gas storage to start the winter. And, as noted below, storage could be a lot worse.

Higher YoY but not full gas storage

Figure 1: US Natural Gas Storage



Source: EIA

Natural Gas: Storage would be way worse if EQT, Coterra etc. didn't curtail production

The big holdback to Henry Hub prices over the past four months is much like oil in that there has been 1-2 bcf/d of voluntary shut-ins due to low price ie. higher YoY storage would be way worse if producers didn't shut-in production or hold back on planned completions. On Aug 20, 2024, we tweeted [\[LINK\]](#) "Risk continues HH #NatGas is stuck in show-me state until Nov & theoretical start to winter withdraw from gas storage season. Hold back remains 🙄 @NOAA Nov/Dec still looking warmer than normal. Especially with EQT ~0.5 bcf/d and Coterra 0.275 bcf/d shut-in production. #OOTT." We reminded that gas storage would be a lot worse than it is if key producers hadn't shut-in natural gas production due to low prices. We highlighted US natural gas production leader, EQT, and their Q2 report disclosure of continuing to shut-in production due to prices, which is about 90 bcf for H2/24. Note for our tweet, we wrote ~0.5 bcf/d, which is the 90 bcf over the last six months but we would assume EQT is assuming it could restore the natural gas before Dec 31. Our tweet also noted Coterra's announced shut-in of 0.275 bcf/d for H2/24. There are others like Chesapeake and Apache who have shut-in natural gas due to low natural gas prices. Below is last an excerpt from our Sept 29, 2024 Energy Tidbits memo; we noted that EQT is to start restoring natural gas production that they previously shut-in.

Storage could be worse

EQT to start restoring its ~1 bcf/d shut-in natural gas production in Oct

EQT said they would be restoring some of their shut-in production. Here is what we wrote in our Sept 29, 2024, Energy Tidbits memo. "EQT to start restoring its ~1 bcf/d shut-in natural gas production in Oct. Last Thursday, we tweeted [\[LINK\]](#) "EQT to start to add back shut-in #NatGas production. Gas storage +159 bcf YoY would have been worse if EQT, Coterra, etc hadn't shut-in production due to low prices. EQT

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curtailed ~1 bcf/d in spring. "We're watching to see that come back in October and November ... We will ease curtailments in October" EQT CEO Rice. Thx @scottdisavino #OOTT [\[LINK\]](#)." As we have been highlighting, natural gas storage would be way worse if EQT, Coterra, Chesapeake, etc hadn't shut in natural gas due to low prices. Don't forget HH was around \$2 up until the last couple weeks. EQT had indicated they were shutting in 90 bcf over H2/24 but hadn't specifically said when they would start to restore production. But, on Wednesday, EQT CEO said they would start to bring the shut-in production on in October. On Wednesday, Reuters reported [\[LINK\]](#) "U.S. energy company EQT (EQT.N), opens new tab plans to reverse some natural gas production curtailments in October and November as demand for the fuel and prices increase, CEO Toby Rice told Reuters on Wednesday. EQT, the biggest U.S. gas producer, has along with other U.S. drillers curtailed output in 2024 after prices collapsed to multi-year lows in the spring following a mild winter that left a tremendous oversupply of fuel in storage. "Production curtailments will be a normal part of our strategy when prices are low," Rice said, noting the company has already curtailed about 1 billion cubic feet per day (bcfd) of production in the spring. "We're watching to see that come back in October and November ... We will ease curtailments in October," Rice said, noting total curtailments were around 2 bcfd across the entire industry."

Natural Gas: +76 bcf build in US gas storage; now +107 bcf YoY

For the week ending October 11, the EIA reported a +76 bcf build [\[LINK\]](#). Total storage is now 3.705 tcf, representing a surplus of +107 bcf YoY compared to a surplus of +124 bcf last week. Since February, total storage had remained above the top end of the 5-yr range, until 1 month ago when storage dipped into the 5-yr range but this week's data shows that storage remains below the range at -172 bcf below the 5-yr maximum of 3.877 tcf. Total storage is now +163 bcf above the 5-year average, below last week's +176 bcf surplus. Below is the EIA's storage table from its Weekly Natural Gas Storage report and a table showing the US gas storage over the last 8 weeks.

+76 bcf build in US gas storage

Figure 2: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf)				Historical Comparisons			
	10/11/24	10/04/24	net change	implied flow	Year ago (10/11/23)		5-year average (2019-23)	
					Bcf	% change	Bcf	% change
East	893	873	20	20	890	0.3	865	3.2
Midwest	1,067	1,041	26	26	1,042	2.4	1,031	3.5
Mountain	287	286	1	1	247	16.2	219	31.1
Pacific	293	293	0	0	279	5.0	279	5.0
South Central	1,166	1,137	29	29	1,141	2.2	1,147	1.7
Salt	293	275	18	18	280	4.6	286	2.4
Nonsalt	872	861	11	11	861	1.3	861	1.3
Total	3,705	3,629	76	76	3,598	3.0	3,542	4.6

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

Source: EIA

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Figure 3: Previous US Natural Gas Storage

Previous 8 weeks (Bcf)				
Week Ended	Gas in Storage	Weekly Change	Y/Y Diff	Diff to 5 yr Avg
Aug/23	3,334	35	228	361
Aug/30	3,347	13	208	323
Sep/06	3,387	40	198	296
Sep/13	3,445	58	194	274
Sep/20	3,492	47	159	233
Sep/27	3,547	55	127	190
Oct/04	3,629	82	124	176
Oct/11	3,705	76	107	163

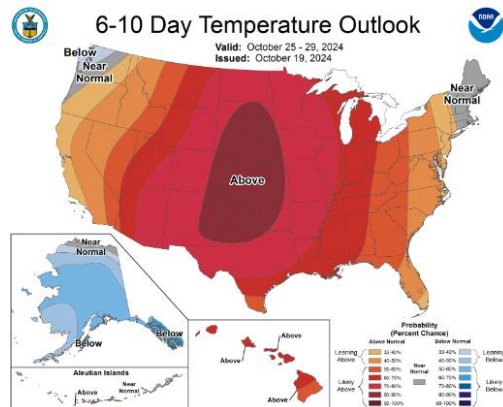
Source: EIA

Natural Gas: NOAA forecasts warmer-than normal to end Oct/start Nov

It's now the Fall and that generally means day time temperatures are perfect to leave the windows open and not too much cranking on the furnaces at night ie. no major weather driven natural gas demand. Yesterday, we tweeted [\[LINK\]](#) "It's Fall so that is mostly leave the windows open temps during daytime and turn on the furnaces a little bit at night. @NOAA updated 6-10 & 8-14 day temp outlook for Oct 25-Nov 2. #OTT #NatGas." Our reminder is that warmer than normal in late Oct/early Nov temperatures, outside of Texas and Arizona, don't drive any A/C demand although we note daily highs can still be 30C in Texas but its is now cooling off at night. Below are NOAA's updated, as of yesterday, 6-10 day and 8-14 day temperature outlook maps covering Oct 25-Nov 2.

NOAA updated 6-10 and 8-14 day temp outlook

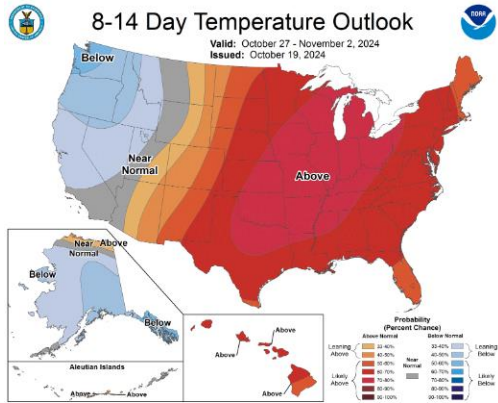
Figure 4: NOAA 6-10 day temperature outlook for Oct 25-29



Source: NOAA

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Figure 5: NOAA 8-14 day temperature outlook for Oct 27-Nov 2



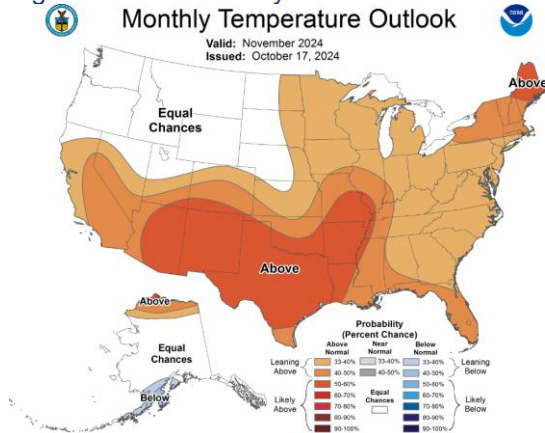
Source: NOAA

Natural Gas: NOAA expects above normal temp for most of U.S. in Nov

November 1 marks the start of what markets call “winter natural gas withdraw season”, and it is just under two weeks away. We continue to expect a key holdback to near term natural gas and LNG prices will be weather forecasts still call for a warm start to winter. And a warm start to winter is never a plus to HH gas prices and makes it essential for Jan/Feb/March to have below average temperatures; or else it points to another year of soft prices. As seen in 2024, a warm start to winter and a warm winter overall has kept natural gas and LNG prices held back all year in 2024. On Thursday, the NOAA posted its 30-day forecast for November, and the temperature probability outlook calls for above normal temperatures everywhere in the U.S. except for the Northwestern, and a portion of the Midwest, which call for equal chances of below or above average temperatures. We recognize that weather forecasts are far from 100% accurate, but near-term forecasts tend to have greater accuracy. Below is the NOAA temperature probability outlook forecast for November released on Oct 17.

Forecast for a warm Nov

Figure 6: NOAA 30-day forecast for Nov



Source: NOAA

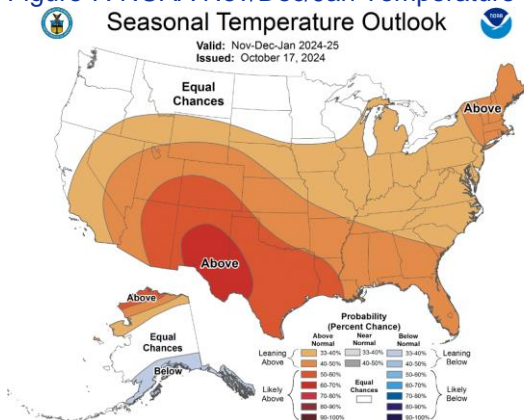
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Natural Gas: NOAA forecasts warmer than normal start to winter 2024/25

It's bad enough for if November is warm in the Lower 48, but we get very concerned when we see the probability for the Lower 48 to be warmer than normal for Nov/Dec/Jan. Because, if the temperature forecasts turn out to be right, then it will likely mean HH gas prices will be weak for several months. So, until there is an expectation that winter won't start off warm, we expect HH gas prices will be held back. On Thursday, we tweeted [\[LINK\]](#) "Warm winters and a warm start to winter are never good for #NatGas @NOAA forecasts warmer than normal (less heating demand) Nov/Dec/Jan start to winter across almost all of the Lower 48 especially the populous east and south. #OOTT #NatGas" On Thursday, NOAA posted it's updated seasonal temperature outlook for November, December, and January [\[LINK\]](#). NOAA's temperature forecast for shows above average probability for above-normal monthly average temperature for a significant portion of the USA, with a higher probability for above average temperatures in the populous East, Southern, and Central United States. Forecasts are never 100% accurate, however, we previously saw in winter 2023/24, a warm winter normally puts pressure on natural gas prices for several months. Below are NOAA's temperature forecast maps for Nov/Dec/Jan.

NOAA sees warm start to winter

Figure 7: NOAA Nov/Dec/Jan Temperature Probability Forecast



Natural Gas: NOAA sees a little warmer than normal winter Dec/Jan/Feb

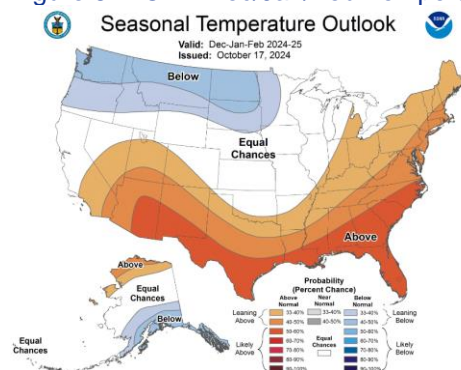
It looks like NOAA sees a warmer than normal start to winter turn a little more towards normal temperatures for Dec/Jan/Feb but still a slightly warmer than normal Lower 48. We recognize that temperature forecasts are never 100% accurate but, until they change to looking to normal temperatures, the weather forecasts will be a holdback to HH prices. On Thursday, NOAA posted the updated monthly winter 2024-25 outlook [\[LINK\]](#). NOAA continues to forecast an emerging La Nina in the Northern Hemisphere Winter 2024-25. The takeaway from the update is to expect warmer than average temperatures in the populous NE and south of the US, slightly below average temperatures favoured in the Pacific Northwest to the northern High Plains; with the remaining areas being normal temperature. NOAA wrote: "La Nina conditions are expected to develop later this fall and typically lead to a more northerly storm track during the winter months, leaving the southern tier of the country warmer and drier... Warmer-than-average temperatures are favored from the southern tier of the U.S. to

Warmer than normal winter

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the eastern Great Lakes, eastern seaboard, New England and northern Alaska. These probabilities are strongest along the Gulf Coast and for most of Texas. Below-average temperatures are most likely in southern Alaska, with below-average temperatures slightly favored from the Pacific Northwest to the northern High Plains". Below are NOAA's temperature forecast maps for Dec/Jan/Feb.

Figure 8: NOAA Dec/Jan/Feb Temperature Probability Forecast



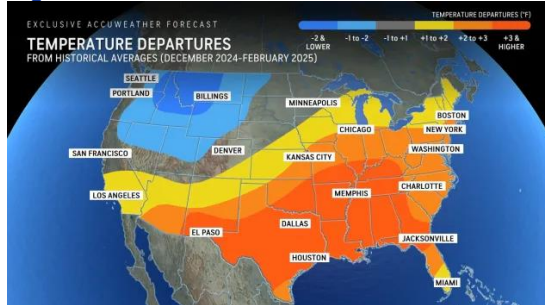
Natural Gas: Accuweather U.S. winter forecast calls for another mild winter

On Monday, Accuweather released their 2024-25 winter season forecast for the U.S. which calls for another mild winter [\[LINK\]](#). It is important to note that weather forecasts are never 100% accurate, however, we have seen continued forecasts which point to a weak La Nina and a milder winter. On Monday we tweeted [\[LINK\]](#) "Warm winters are never good for #NatGas @accuweather forecasts warmer than normal (less heating demand) winter for 2/3 of the Lower 48 including the more populous east and south. Thx @wxlada 🙌 03/08/24 tweet: Winter 2023/24 was warmest on record. #OOTT #NatGas". The milder forecasts infer lower heating demand which could lead to soft natural gas demand. The forecasters predict that although temperatures will be milder, waves of frigid air will periodically send freezing air and greater chances for snow across the country. Accuweather said: "Temperatures throughout the season could run more than 3 degrees above the historical average for most of the region, including Dallas, New Orleans, Atlanta and Nashville. This will result in a noticeable reduction in heating demand, which could translate to lower heating bills for families and businesses. If a significant surge of cold air delivers subfreezing weather to the Gulf Coast and parts of Florida, it is most likely to occur in February, although the month as a whole is still projected to be milder than normal". It is important to note that this winter's forecasted mild temperatures with periodic cold waves, will not be as warm as the 2023-24 winter, which was the warmest on record. Our Supplemental Documents Package includes the Accuweather forecast.

**Accuweather
 2024-25 winter
 forecast**

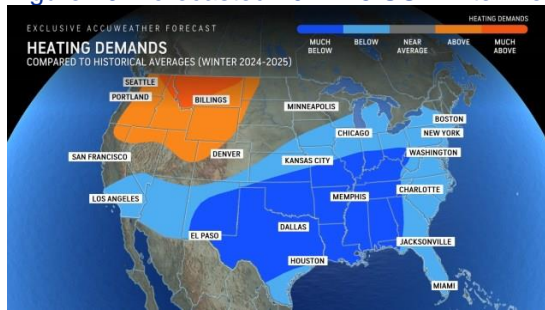
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Figure 9: Forecasted 2024-25 US Winter Temperature Departures from Historical Averages:



Source: Accuweather

Figure 10: Forecasted 2024-25 US Winter Heating Demand Compared to Historical:



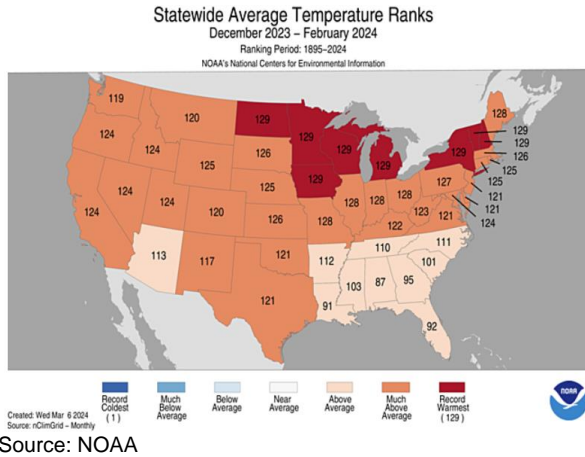
Source: Accuweather

NOAA, winter 2023/24 was the hottest on record

Here is what we wrote in our February 18, 2024, Energy Tidbits about last winter, which was the warmest on record: “On Friday, we tweeted [\[LINK\]](#) “No surprise HH #NatGas prices are \$1.80 given @NOAA reminds it was the warmest winter on record. Would be <\$1.50 if EQT, CHK & others weren't shutting in supply. Challenge for #NatGas is that shoulder season is starting ie. leave the windows open temperatures. #OOTT.” On Friday, NOAA also posted its recap of US weather for Dec/Jan/Feb ie. Winter 2023/24. NOAA wrote “The 2023–24 winter season ranked warmest on record for the contiguous U.S. with eight states across the Upper Midwest, Great Lakes and Northeast each observing their warmest winter on record.”

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Figure 11: NOAA Historical US Temperature Ranks by State – Dec/Jan/Feb 2023/24



Natural Gas: tough to catch up from a warm start to winter

For years, we have warned on the risk to HH gas prices unless it's cold to start winter ie. in Nov/Dec. Yesterday we tweeted [\[LINK\]](#) "Caution unless it gets cold in Nov? Other than 2022 where global #NatGas markets were driven up post Russia 02/24/22 invasion of Ukraine, HH prices have weakened in Nov/Dec with warm or even normal temps in Nov/Dec. #OOTT." Our tweet included the below graph showing the seasonal HH price moves. Russian invaded Ukraine on Feb 24, 2022 and that drove up global natural gas and LNG prices with Europe cutting off cheap Russia natural gas pipeline gas. So putting 2022 aside, all the other years have seen HH gas prices weaken in Nov even when temperatures were normal. And our weekly memos have been highlighting US gas storage will be up YoY and would have been full if producers hadn't shut in natural gas production due to low prices. And weather forecasts continue to call for a warmer than normal start to winter. Our concern is that the graphs reminds it is touch for HH gas prices to catch up with a weak start to winter. So there is risk going into the winter unless it starts off cold.

Risk to HH prices going into winter

Figure 12: NOAA 30-day temperature outlook for October



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Natural Gas: Mozambique election expects to see ruling Frelimo keep power

As of our 7am MT news cut off, there is still no official results from the Mozambique election that saw the polls closed on Wednesday Oct 9. There have been preliminary results that indicate the ruling party, the Front for the Liberation of Mozambique (Frelimo) was leading and should win. The official results are reportedly expected by Oct 24. Mozambique got its independence from Portugal in 1975 and Frelimo has been in power for the 49 years of Mozambique being a country. The existing President is Filipe Nyusi but he isn't running as he has served his maximum two terms. Daniel Chapo is Frelimo's candidate for President and is widely favored to win. This would be the best case scenario for TotalEnergies and ExxonMobil for their Mozambique LNG projects as the opposition candidates have been saying they want to renegotiate the LNG deals for a greater government take.

**Waiting on
Mozambique
official election
results****Natural Gas: India September natural gas production up +0.9% MoM, down -6.0% YoY**

India domestic natural gas production peaked in 2010 at 4.60 bcf/d, and then ultimately declined to average 2.80 bcf/d in 2020-2021. India returned to modest growth in 2021/2022, which was followed by several months of relatively flat production but modest production growth returned in 2023. Recently it has been back from flat to modestly down in 2024. On Monday, October 14, India's Petroleum Planning and Analysis Cell released their monthly report for September's natural gas and oil statistics [\[LINK\]](#). India's domestic natural gas production for September was 3.50 bcf/d, which was up +0.9% MoM from 3.47 bcf/d in August. On a YoY basis, natural gas production was down -6.0% from 3.73 bcf/d in September 2023. Our Supplemental Documents package includes excerpts from the PPAC monthly.

**India natural gas
production up
MoM, down YoY****Natural Gas: India LNG imports up +7.4% MoM to 3.42 bcf/d in Sept, up +27.5% YoY**

For the past several years, India has increased LNG imports whenever domestic natural gas production was flat or decreased. The overriding factor for India tends to be price; if price is high, India pulls back on LNG imports and will normally turn to coal. If prices are low, like was seen this year, then India tends to pick up spot cargoes. India is an opportunistic LNG spot buyer. On Monday, October 14, 2024, India's Petroleum Planning and Analysis Cell released their monthly report for September's natural gas and oil statistics [\[LINK\]](#). Over the past 3 years, India's LNG imports have declined from a 2020-2021 peak of 3.84 bcf/d in Oct 2020 to just 2.85 bcf/d in Jan 2021 and lower in 2022. September's 2024 LNG imports were 3.42 bcf/d, which is up +7.4% MoM from 3.18 bcf/d in August. LNG imports are now up +27.5% YoY from 2.68 bcf/d in September 2023. Our Supplemental Documents package includes excerpts from the PPAC monthly.

**India LNG imports
up MoM, up YoY****Natural Gas: It was one of the hottest Septembers ever in Japan**

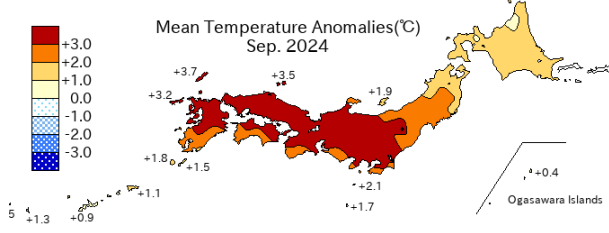
It was hot in Japan in September, but we remind that a hot September does not drive the same electricity demand as a hot July or August. Plus, we remind that Japan has ongoing electricity conservation practices that reduce electricity demand compared to what might be expected in the US. For example, Japanese office buildings will set their air conditioning at much higher temperatures to minimize A/C demand. On Wednesday, the Japan Meteorological Agency posted its climate recap for September [\[LINK\]](#). The JMA does not say September was the hottest September on record but it sounds like it must have been right up there at the top. The JMA included the below mean temperature anomalies map which

**September's
temperature
recap in Japan**

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shows that mean temperatures were the highest in eastern/western Japan. The JMA wrote “Monthly mean temperatures were significantly above normal nationwide, because warm air covered Japan. Monthly mean temperatures were the highest in eastern/western Japan and tied with 2017 as the highest in Okinawa/Amami on record for September since 1946. High-pressure systems frequently covered from northern to western Japan.”. Below is a temperature map of Japan for August.

Figure 13: JMA Mean Temperature Anomalies September 2024



Source: Japan Meteorological Agency

Natural Gas: Japan expects warmer than normal temps for 1st half of November

It was a hot summer in Japan and the warmer than normal temperatures are continuing through to October and are expected to continue with the first half of November. On Thursday, the Japan Meteorological Agency updated its forecast for the next 30 days, Oct 19 thru Nov 18, in Japan [\[LINK\]](#). There is no JMA commentary on the forecast. JMA is calling for above normal temperatures for October through to the middle of November. When looking at the first half of November, from Nov 2 to Nov 15, there is a +50% probability of above normal temperature occurrence everywhere except Hokkaido, and Tohoku, which are forecasted to have a 40% chance of above normal temperature occurrence. We checked AccuWeather for Tokyo and, for the first 15 days of November, there are forecasted daily highs in the 18-20C range and overnight lows from 11-13C. This will be pleasant daytime weather but potentially a little bit of electricity heating demand at night. Below is the JMA temperature forecast for the next 30 days.

JMA temperature forecast for the next 30 days

Figure 14: JMA Average Temperature Outlook for Nov 2 – Nov 15



Source: Japan Meteorological Agency

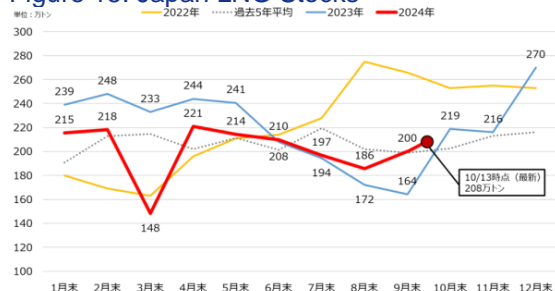
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Natural Gas: Japan LNG stocks up WoW, down YoY, and up compared to 5-yr average

Japan's LNG stocks are up WoW, are down YoY, and are up when compared to the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [\[LINK\]](#). LNG stocks on October 13 were 99.9 bcf, up +3.0% WoW from October 6 of 97.0 bcf, and down -5.0% from 105.2 bcf from a year ago. Stocks are up slightly compared to the 5-year average of 97.0 bcf. Below is the Japanese LNG stocks graph from the METI weekly report.

Japan LNG stocks up WoW

Figure 15: Japan LNG Stocks



Source: METI

Natural Gas: Russia continues to ship NatGas despite Ukraine control of Sudzha

It's now been almost three months since Ukraine invaded the Russian region of Kursk and took over control of the Sudzha natural gas intake station in Russia for transport on the last remaining open natural gas intake station in Russia for transport on the last remaining open natural gas pipeline allowed to export Russian natural gas to central European countries. Europe TTF gas prices were up 5% when Ukraine took over Sudzha on fears of supply interruption. However, since then Gazprom has confirmed almost daily, if not daily, that there has been no interruption in natural gas supplies. The latest confirmation we saw the Bloomberg Oct 18 report that Gazprom continues to ship the same volume of natural gas of 1.50 bcf/d via Sudzha. That shouldn't surprise because if Gazprom stops natural gas from entering the pipeline at Sudzha, they will be forsaking any export natural gas revenues and Russia needs every dollar it can get. And, at the same time, Ukraine continues to take the transit fees revenue. So, for now at least, it looks like a reminder from Ukraine to Russia that they can cut off Russian natural gas at any time. Below is a 2018 map from Oxford Institute for Energy Studies showing Sudzha.

Ukraine captures key Russian gas infrastructure

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Figure 16: The Ukrainian pipeline system



Source: OIES
Source: Oxford Institute for Energy Studies

Natural Gas: NW Europe LNG imports down big YoY, down ~454 bcf, 1.58 bcf/d YTD

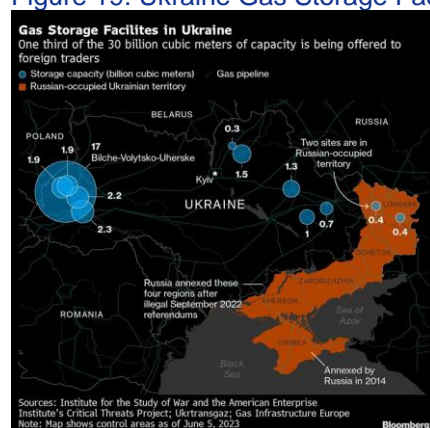
On Wednesday, we tweeted [LINK](#) "NW Europe #LNG imports -24% WoW to 4.69 bcf/d in Oct 7-13 week. Storage would be full if NW EU hadn't cut back LNG imports in Q2/Q3. YTD Oct 13, NW EU #LNG imports down ~454 bcf or ~1.58 bcf/d YoY to 5.77 bcf/d. If not for Israel/Iran risk, EU #NatGas prices would be lower in shoulder season. Thx @BloombergNEF #OOTT". The LNG market story is also the risk to LNG market if an Israel/Iran escalates impacts LNG and oil tanker traffic thru the Strait of Hormuz or Israel's Mediterranean Sea natural gas production was impacted. But, if not for this escalation risk, we have been highlighting that there is a big holdback to Europe natural gas prices; that being, Europe's gas storage would be way worse if it hadn't significantly reduced LNG imports over the past few months due to the possibility of storage being full early. LNG imports into NW Europe are down big YoY in 2024. On Tuesday, BloombergNEF posted its LNG Trade Weekly. BloombergNEF estimates NW Europe LNG imports were down -24.0% WoW to 4.7 bcf/d for the Oct 7-Oct 13 week. Following last week's increase in WoW imports, NW Europe LNG imports that are still down -454 bcf or -1.58 bcf/d YTD Oct 13. Our tweet included the below BloombergNEF chart.

Europe LNG imports down big in 2024

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of its total capacity on October 9. Last year, Ukraine storage started the winter on Nov 1, 2023, at 39.38%. Right now, Ukraine makes up ~8% of Europe's natural gas in storage and, at the beginning of winter 2023/24, it was ~10% of Europe's natural gas in storage. Below is a map of Ukraine's major gas storage facilities.

Figure 19: Ukraine Gas Storage Facilities as of June 2023



Source: Bloomberg

Oil: U.S. oil rigs up +1 WoW and down -20 rigs YoY to 482 oil rigs

On Friday, Baker Hughes released its weekly North American drilling rig data. (i) Note Baker Hughes no longer breaks out the basin changes by oil vs gas rig type. (ii) Total U.S. oil rigs were +1 rigs WoW to 482 oil rigs as of October 18. US oil rigs are now only down -20 oil rigs YoY. The smaller YoY difference is because, in 2023, US oil rigs went below 520 rigs on Aug 25, 2023 and then were lower in the 490-510 rigs for several months. But then dropped down to 477 on July 19, 2024, which was the lowest oil rig count since December 2021. (iii) Note we can see the basin changes but not by type of rig; the WoW basin changes were Cana Woodford up +1 rig WoW to 21 rigs, and Haynesville down -1 rig WoW to 33 rigs. (iv) The overlooked U.S. rig theme is the YoY declines, which have begun to taper as Q4 2023 saw activity leveling off. Total U.S. gas and oil rigs are down -39 rigs YoY to 581 rigs including US oil rigs -20 oil rigs YoY to 482 oil rigs. And for the key basins, the Permian is -8 rigs YoY, Haynesville is -7 rigs YoY, DJ Niobrara is -6 rigs YoY, Marcellus -6 rigs YoY, Utica -1 rig YoY, Williston up +1 rig YoY, Arkoma Woodford up +2 YoY, and Cana Woodford +6 rigs YoY. (v) US gas rigs were down -2 rig this week to 99 gas rigs. It is important to note that U.S. gas rigs must increase over the next several months as more U.S. LNG capacity comes onstream in 2025. Lastly, U.S. miscellaneous rigs are flat WoW, and flat YoY.

**US oil rigs up
+1 YoY**

Figure 20: Baker Hughes Total US Oil Rigs



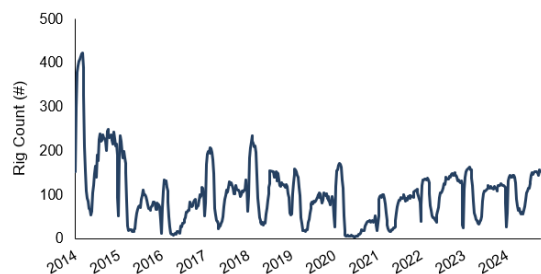
Source: Baker Hughes

Oil: Total Cdn oil rigs down -1 WoW on Friday, with gas rigs -1 WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. This week's total oil and gas rig count was down -1 rig WoW at 219 rigs on October 11. Every year, Canadian rigs typically increase until mid-October, where they remain relatively flat until late November when they begin ramping up until the end of December. This week is on par with that theme, as we have seen ups and downs prior to kicking off the December ramp up. Cdn oil rigs were down -1 rigs WoW this week to 153 rigs and are up +32 rigs YoY. Gas rigs are up -1 rigs WoW to 64 rigs and are down -13 rigs YoY, and miscellaneous rigs are flat WoW and YoY at 0 rigs total. As a reminder Baker Hughes changed their reporting format which does not allow us to see the provincial breakouts.

**Cdn rigs -2
WoW**

Figure 21: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes

Oil: US weekly oil production up +0.100 mmb/d WoW to 13.500 mmb/d

We don't place as much emphasis on the EIA weekly oil supply estimates as others do because we recognize the near impossibility for anyone to post an accurate estimate on a Wednesday for the totality of US oil production for the week ended the prior Friday [\[LINK\]](#). We have to give the EIA credit for putting out weekly oil supply estimates for the prior week. That can't be easy so no one should be surprised that the EIA weekly oil supply estimates, based on the Form 914 actuals, will regularly require re-benchmarking. And sometimes the re-benchmarking can be significant and other times, it is relatively small. The EIA's weekly oil supply estimates had been essentially unchanged for the last nine months ranging from 13.100 to 13.300 mmb/d with the weekly estimates in July all at 13.300 mmb/d. This week's estimate came in above the previous range, at +0.100 mmb/d WoW to 13.500 mmb/d for the week ending October 11. On Tuesday October 8, the EIA released its October STEO and the EIA provides the backup monthly estimates for US oil production, and they are more or less

**US weekly oil
production**

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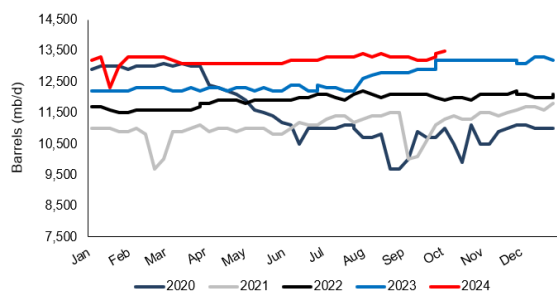
in line with July at 13.200 mmb/d, August at 13.360 mmb/d, and September at 13.250 mmb/d. This week, the EIA’s production estimates were up +0.100 mmb/d to 13.500 mmb/d for the week ended October 11. Alaska was down -0.001 WoW to 0.431 mmb/d, compared to 0.432 mmb/d last week. Below is a table of the EIA’s weekly oil production estimates.

Figure 22: EIA’s Estimated Weekly US Field Oil Production (mb/d)

Year-Month	Week 1		Week 2		Week 3		Week 4		Week 5	
	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
2023-Jan	01/06	12,200	01/13	12,200	01/20	12,200	01/27	12,200		
2023-Feb	02/03	12,300	02/10	12,300	02/17	12,300	02/24	12,300		
2023-Mar	03/03	12,200	03/10	12,200	03/17	12,300	03/24	12,200	03/31	12,200
2023-Apr	04/07	12,300	04/14	12,300	04/21	12,200	04/28	12,300		
2023-May	05/05	12,300	05/12	12,200	05/19	12,300	05/26	12,200		
2023-Jun	06/02	12,400	06/09	12,400	06/16	12,200	06/23	12,200	06/30	12,400
2023-Jul	07/07	12,300	07/14	12,300	07/21	12,200	07/28	12,200		
2023-Aug	08/04	12,600	08/11	12,700	08/18	12,800	08/25	12,800		
2023-Sep	09/01	12,800	09/08	12,900	09/15	12,900	09/22	12,900	09/29	12,900
2023-Oct	10/06	13,200	10/13	13,200	10/20	13,200	10/27	13,200		
2023-Nov	11/03	13,200	11/10	13,200	11/17	13,200	11/24	13,200		
2023-Dec	12/01	13,100	12/08	13,100	12/15	13,300	12/22	13,300	12/29	13,200
2024-Jan	01/05	13,200	01/12	13,300	01/19	12,300	01/26	13,000		
2024-Feb	02/02	13,300	02/09	13,300	02/16	13,300	02/23	13,300		
2024-Mar	03/01	13,200	03/08	13,100	03/15	13,100	03/22	13,100	03/29	13,100
2024-Apr	04/05	13,100	04/12	13,100	04/19	13,100	04/26	13,100		
2024-May	05/03	13,100	05/10	13,100	05/17	13,100	05/24	13,100	05/31	13,100
2024-Jun	06/07	13,200	06/14	13,200	06/21	13,200	06/28	13,200		
2024-Jul	07/05	13,300	07/12	13,300	07/19	13,300	07/26	13,300		
2024-Aug	08/02	13,400	08/09	13,300	08/16	13,400	08/23	13,300	08/30	13,300
2024-Sep	09/06	13,300	09/13	13,200	09/20	13,200	09/27	13,300		
2024-Oct	10/04	13,400	10/11	13,500						

Source: EIA

Figure 23: EIA’s Estimated Weekly US Oil Production



Source: EIA

Oil: North Dakota August oil production up MoM to 1.179 mmb/d

On Thursday, the North Dakota Industrial Commission posted its monthly Director’s Cut, which includes August’s oil and natural gas production data as well as other data such as well completions, DUCs, number of producing wells, etc. [\[LINK\]](#). North Dakota’s oil production in August was up MoM +0.010 mmb/d to 1.179 mmb/d from 1.170 mmb/d in July and is down -3.6% YoY against 1.224 mmb/d in August 2023. In the press conference the NDIC said: “We have been expecting production uptick for some time now, based on the completions we saw in August... Wells permitted were at about one hundred permits per month; we have been at that number for about 3 months and that is the number we feel we need to be at to allow production to grow at 1-2%... Completions in September were at 58, that is a disappointing number, we were hoping it wouldn’t be that low, but it could be a delay

**North Dakota
August oil
production up
MoM**

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in reporting". August well completions were up to 97 compared to July's 79 wells completed. Note that North Dakota had expected August production to be higher MoM vs July. Our Supplemental Documents package includes excerpts from the NDIC Director's Cut.

Figure 24: North Dakota Oil Production by Month

(b/d)	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	1,179,564	1,403,808	1,430,511	1,147,377	1,088,613	1,060,708	1,102,976	4.0%
Feb	1,175,316	1,335,591	1,451,681	1,083,554	1,089,091	1,158,837	1,252,102	8.0%
Mar	1,162,134	1,391,760	1,430,107	1,108,906	1,122,640	1,122,693	1,229,536	9.5%
Apr	1,225,391	1,392,485	1,221,019	1,123,166	900,597	1,133,435	1,243,678	9.7%
May	1,246,355	1,394,648	859,362	1,128,042	1,059,060	1,135,009	1,198,086	5.6%
June	1,227,320	1,425,230	893,591	1,133,498	1,096,783	1,166,604	1,186,394	1.7%
July	1,269,290	1,445,934	1,042,081	1,076,594	1,072,632	1,180,611	1,169,499	-0.9%
Aug	1,292,505	1,480,475	1,165,371	1,107,359	1,075,307	1,223,617	1,179,131	-3.6%
Sept	1,359,282	1,443,980	1,223,107	1,114,020	1,121,063	1,280,052		
Oct	1,392,369	1,517,936	1,231,048	1,111,910	1,121,754	1,254,475		
Nov	1,375,803	1,519,037	1,227,138	1,158,622	1,098,389	1,278,909		
Dec	1,402,741	1,476,777	1,191,429	1,144,999	957,864	1,274,869		

Source: NDIC, NDPA

Oil: North Dakota crude by rail up MoM to 136,263 b/d in August

On Thursday, the North Dakota Pipeline Authority posted its Monthly Update "*October 2024 Production & Transportation*" [\[LINK\]](#) containing August's data. Please note that we always go to the backup excel sheets from the North Dakota Pipeline Authority that provide low and high estimates for Williston crude by rail exports. While the NDPA's chart shows a high and low estimate by month, we always take the midpoint when summarizing the update. In the backup excel, the NDPA estimates crude by rail in August from a low of 121,263 b/d and a high of 151,263 b/d for an average of 136,263 b/d. There was a small downward revision to July figures which previously had an average of 106,243 b/d, but is now 104,139 b/d. The NDPA did not comment on the MoM changes. Below is a chart showing the crude by rail volumes since 2014. Our Supplemental Documents package includes excerpts from the NDPA Monthly Update.

**North Dakota
CBR up MoM in
August**

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Figure 25: Estimated North Dakota Rail Export Volumes



Source: NDPA

Oil: Wildfires expected to have a very small impact on North Dakota Oct production

On Thursday, NDIC held its monthly webcast conference call on the NDIC Director's Cut, which covers the August production data. But the reason why we listen to the webcasts is that we always get some insight into oil production for the next one or two Director's Cut. In this case, there was added colour on the October oil production that will be in the December Director's Cut. On the call, North Dakota was asked if they had any estimate of the impact on production from the October wildfires. North Dakota's update was that there was a 100,000 b/d impact at the peak, but it was down to 50,000 to 80,000 b/d in about a week for an estimated total impact of approx. 500,000 b/d, which would work out to 16,000 b/d over the month of October ie. a very small impact.

**Very small impact
from wildfires on
North Dakota oil**

Oil: SLB "do not see US activity rebounding in the near term"

SLB is a great example of always getting better colour from the conference call than from the Q3 release. SLB reported its Q3 early on Thursday morning and held its q3 call a few hours later. (i) When the release came out, we tweeted [\[LINK\]](#) ""Cautious macro environment" for oil & gas activity. \$SLB also seeing decline in Latin America oil & gas spending in addition to Lower 48 oil & gas spending remaining "subdued". Q3 just posted, conference call at 7:30am MT. #OOTT." (ii) The real headlines came out from mgmt call on the Q3 call that SLB "do not see US activity rebounding in the near term" and "North America's spending will be flat to slightly down". (iii) Later in the Q&A, mgmt said that short cycle will "most likely come back" with better price. CEO Le Peuch replied "Yeah, I think you have seen the realization that when commodity price is under pressure, there is some pressure on short cycle that is suppressed, and that may come back and will come back as soon because it impacts infill drilling, it impacts intervention activity, it impacts short cycle and commercial in some regions. But it will most likely come back as soon as the commodity price regains traction."

**SLB don't see US
activity
rebounding in
near term**

Oil: Liberty Energy "now expect a low double-digit % reduction in Q4 activity"

On Wednesday night, Liberty Energy released its Q3 results and held its Q3 call on Thursday morning. In the Q3 release, Liberty warned about a larger than expected reduction in Q4/24 frac activity. Liberty wrote "We now expect a low double-digit percentage reduction in Q4 activity, a bit more than the typical Q4 softening. Completions activity likely increases in early 2025 to support flattish E&P oil & gas production targets". A key reason for the decrease is the commodity price uncertainty. On the Q3 call, mgmt said "Elevated uncertainty in energy markets has further left operators reluctant to accelerate completions activity in advance of the new year." Liberta thinks customers likely increasing activity in Q1/25, saying

**Double-digit %
reduction in Q4
frac activity**

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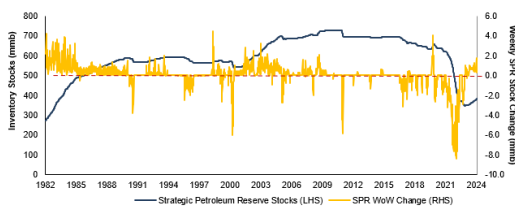
“Completions activity likely increases in early 2025 to support flattish E&P oil and gas production targets.”

Oil: US SPR less commercial reserve deficit narrows, now -36.668 mmb

The US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sep 16, 2022 week. This week, we saw a build on the SPR side as well as a draw on the commercial side. The EIA’s weekly oil data for October 11, [LINK](#) saw the SPR reserves increase +0.952 mmb WoW to 383.882 mmb, while commercial crude oil reserves decreased -2.191 mmb to 420.550 mmb. There is now a -36.668 mmb difference between SPR reserves and commercial crude oil reserves. The below graphs highlight the difference between commercial and SPR stockpiles, along with the weekly changes to SPR stockpiles.

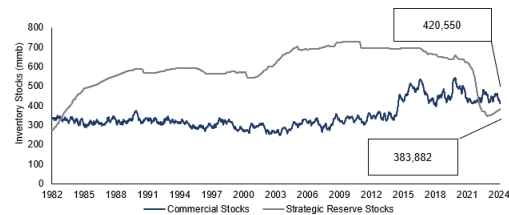
US SPR reserves

Figure 26: Strategic Petroleum Reserve Stocks and SPR WoW Change



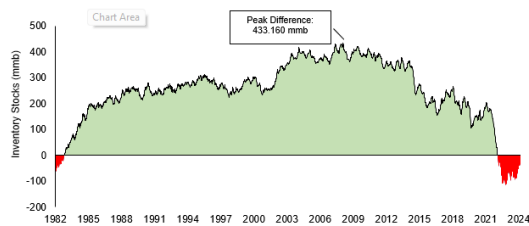
Source: EIA

Figure 27: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 28: US Oil Inventories: SPR Less Commercial



Source: EIA

Oil: AAA reports US national average gasoline price -\$0.02 WoW to \$3.18 on Oct 19

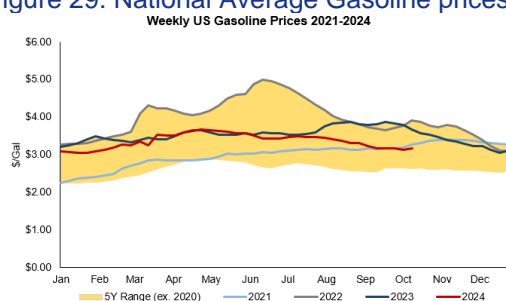
Yesterday, we tweeted [LINK](#) “Good to see Florida average gasoline prices -\$0.01 WoW & -\$0.07 MoM. MoM comp is vs Sept 19 and Helene hit Sept 26. AAA National average prices

US gasoline prices

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+\$0.02 WoW to \$3.18 on Oct 19, -\$0.04 MoM & -\$0.39 YoY. US election is Nov 5. National average prices were ~\$3.80 at time of 2022 mid-terms. Thx @AAAnews #OOTT.” Yesterday, AAA reported that US national average prices were \$3.18 on Oct 10, which was -\$0.02 WoW, -\$0.04 MoM and -\$0.39 YoY. Yesterday, AAA also reported California average gasoline prices were \$4.65 on Oct 19, which was -\$0.02 WoW, -\$0.12 MoM and -\$0.87 YoY. Given the back-to-back Hurricanes Helene and Milton that hit Florida 2 and 3 weeks ago, it was good see there doesn't look to have been any big increase to Florida gasoline prices that are down MoM. Yesterday, AAA reported Florida average gasoline prices were \$3.09 on Oct 19, which was -\$0.01 WoW, -\$0.07 MoM and -\$0.18 YoY Note Helene hit on Sept 26 and the MoM comparisons are to Sept 19. Below is our graph of Bloomberg's National Average weekly gasoline prices.

Figure 29: National Average Gasoline prices



Source: Bloomberg

Oil: Crack spreads -\$0.50 WoW to \$16.92, WTI -\$6.34 WoW to \$69.22

On Friday, we tweeted On Friday, we tweeted [\[LINK\]](#) “321 crack spreads -\$0.50 WoW to \$16.92. WTI -\$6.34 WoW to \$69.22. This wk's big WTI WoW drop reinforces WTI is impacted more by global markets than by crack spreads. Seems China & Israel/Iran premium has mostly come & gone with big WTI drop this week. Since 09/27, 321 cracks +\$0.90 whereas WTI +\$1.04. Thx @business #OOTT”. Cracks spreads were -\$0.50 WoW to \$16.92 and WTI was -\$6.34 WoW to \$69.22. Our tweet highlighted how WTI is more impacted by global events than crack spreads, whether it be WTI outperforming or, in this week's case, significantly underperforming. Over the past few weeks, the China stimulus and Israel/Iran risk which has led to WTI outperformance and this week, WTI seemed to give it all back. Our tweet noted that since Sept 27, 321 cracks are +\$0.50 and WTI is +\$1.04. So if you hadn't seen the last few weeks up and downs, you would think crack spreads and WTI have moved together. Crack spreads at \$16.92 are in line with the middle of the pre-Covid \$15-\$20 range, and generally not high enough to incentivize refineries to take any more crude than necessary. Crack spreads of \$16.92 on Oct 18, followed \$17.42 on Oct 11, \$16.65 on Oct 4, \$15.82 on Sept 27, \$15.57 on Sept 20, \$14.30 on Sept 13, \$14.79 on Sept 6, \$17.06 on Aug 30, \$17.10 on Aug 23, \$20.75 on Aug 16, \$22.92 on Aug 9, \$23.77 on Aug 2, \$24.91 on July 26, and \$22.43 on July 19.

Crack spreads closed at \$16.92

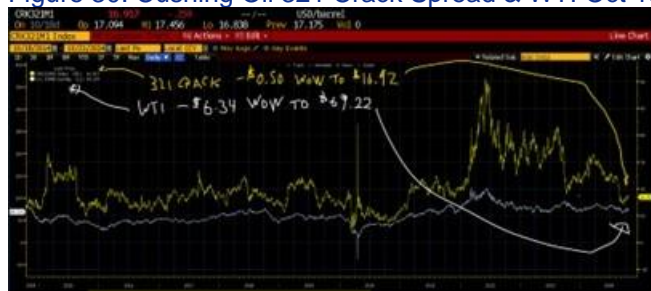
Crack spreads normally point to near term oil moves, explaining 321 cracks

This last three weeks are a good example that global oil and market items impact WTI more than crack spreads. As noted above, WTI outperformed for a couple weeks before underperforming this week. But, broad market factors aside, we have

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focused on crack spreads for since the 90s as they are an unchanged fundamental of refineries – wide/high crack spreads provide incentives for refineries to buy more crude because there are big profit margins to be made. We track US crack spreads but there is also an influence on global refining capacity on US crack spreads as the increasing global refining capacity has also tended to have downward pressure on US crack spreads especially with demand being less than most expect. Plus, this year, as noted below, we have less US refinery turnarounds to there is less refinery capacity offline this fall than prior years. So if crack spreads are wide/high, it is normally a positive for the very near term look ahead to WTI. Conversely, if crack spreads are narrow/low, it doesn't give refineries any real incentive to take more crude, which is normally softness for the very near term look ahead to WTI. People often just say "cracks", which refers to the 321 crack spread. This is the spread or margin that refiners make from buying crude at a certain price and then selling the finished petroleum products at their respective prices. The 321 crack spread is meant to represent what a typical US refinery produces. It assumes that for every three barrels of crude oil, the refinery will produce two barrels of gasoline and one barrel of distillates. So the crack spread is based on that formula and worked back to a crack spread per barrel. Below is the current 321 crack spread vs WTI that we put in our tweet where we marked the gaps where the crack spread normally drags up oil prices. 321 Crack spread closed at \$16.92 on Friday Oct 18.

Figure 30: Cushing Oil 321 Crack Spread & WTI Oct 18, 2014 to Oct 18, 2024



Source: Bloomberg

Oil: Cdn heavy oil differential widens +\$1.50 WoW to close at \$12.75 on October 18

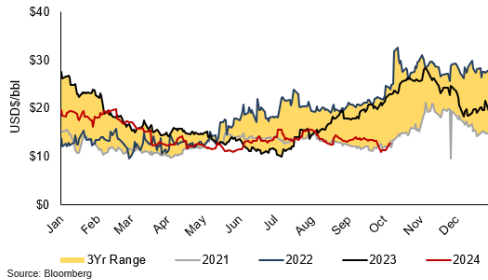
WCS less WTI differentials widened this week, following previous decreases this fall; The differential increased +\$1.50 WoW to close at \$12.75 on October 18. But \$12.75 WCS less WTI differentials at this time of the year are very narrow. As noted in the following item, we have been saying that the real test for WCS less WTI differentials will be in Sept/Oct as to how much the startup of the 590,000 b/d TMX expansion will impact WCS less WTI differentials. Overall, with the previous declines, TMX is working as hoped, if not better, in keeping WCS less WTI differentials way lower than would be expected so far. The end of August/beginning of September is when we normally see a widening of the WCS less WTI differentials. And WCS less WTI differentials has remained much lower and has not widened this fall until this week. But even with the TMX startup, there will always be the unexpected impact on WCS less WTI differentials from other items like refineries up and downs, wildfires, etc. Below is graph showing WCS-WTI differentials that shows this normal seasonal trend of

**WCS differential
widens**

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narrowing WCS-WTI differentials that normally widens into or through October. The WCS less WTI differential closed on October 18 at \$12.75 which was a widening of +\$1.50 WoW vs \$11.25 on October 11.

Figure 31: WCS less WTI oil differentials to October 18 close

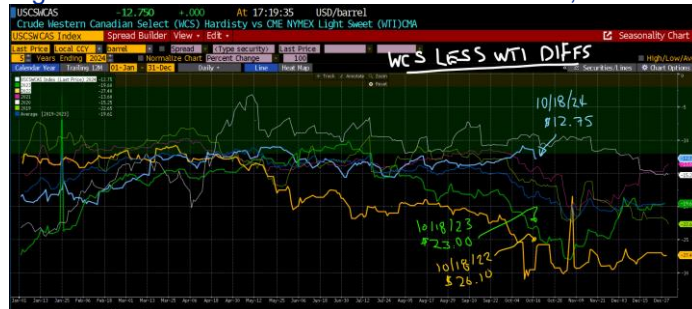


Source: Bloomberg

TMX impact: WCS less WTI diffs not seasonally widening as in 2022 & 2023

It looks like TMX is having, at least so far, the expected big impact of keeping WCS less WTI differentials a lot narrower than what is normally seen in the normal seasonal widening in Sept/Oct. WCS less WTI differentials are approx. \$10 narrower vs a year ago and approx. \$13 narrower than two years ago. That is a big win for Cdn oil producers. For the past few months, we have been saying that the big test for the impact of the start of the 590,000 b/d TMX expansion on WCS less WTI differentials will be in late Aug, Sept and Oct when differentials normally start to widen with seasonal refinery turnarounds. On Friday, we tweeted [LINK](#) "Continued positive to Cdn #Oil in H2/24. Looks like ramp up of volumes on new 590,000 b/d TMX has, at least so far, kept WCS less WTI differentials from the normal Sept/Oct widening. WCS less WTI diffs: 10/18/24: \$12.75. 10/18/23: \$23.00. 10/18/22: \$26.10. Thx @garquake #OOTT." Our tweet included the below chart that shows how WCS less WTI differential have been stronger this summer, been fairly flat in Aug/Sept/Oct and how differentials were widening at this time of year in 2022 and 2023.

Figure 32: WCS less WTI differentials to Oct 18, 2024 close



Source: Bloomberg

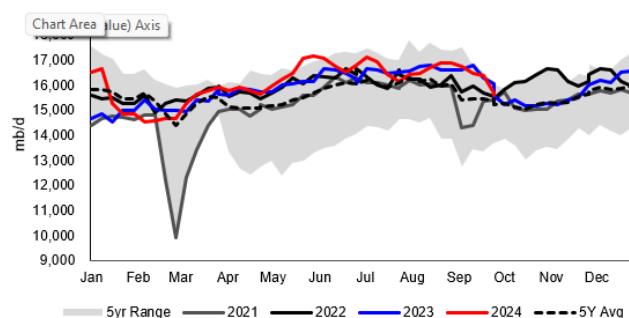
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Oil: Refinery Inputs up +0.165 mmb/d WoW to 15.755 mmb/d

There are always unplanned refinery items that impact crude oil inputs into refineries. And there is always different timing for refinery turnarounds; generally late October is when refineries have come out of fall turnarounds and are ramping up crude oil inputs as they change from summer to winter fuel blends. However, as noted in our Sept 22, 2024 Energy Tidbits memo, US refinery maintenance is expected to be less this year, which means that, on average, turnarounds will be shorter than normal i.e. less extra maintenance. Although there are more refineries available to receive crude, we may see refineries reduce runs given the low crack spreads. On Thursday, the EIA released its estimated crude oil input to refinery data for the week ended October 11 [\[LINK\]](#). The EIA reported crude inputs to refineries were up +0.165 mmb/d this week to 15.755 mmb/d and are up +0.359 mmb/d YoY. Refinery utilization was up +1.0% WoW to 87.7% and was up +1.6% YoY.

**Refinery inputs
+0.165 mmb/d
WoW**

Figure 33: US Refinery Crude Oil Inputs

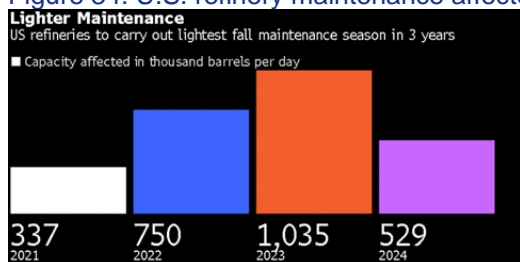


Source: EIA, SAF

US refinery preventative maintenance to be much less this fall than last

Here is what we wrote in September 22, 2024, Energy Tidbits memo. “On Thursday, Bloomberg posted a good reminder that US refineries are expected to have a light preventative maintenance season this fall according to IIR Energy data. Note they focused on “preventative maintenance” and didn’t use the word turnarounds. Refineries have turnarounds to allow the refinery to switch from summer blend to winter blend fuel mix. Normally refineries schedule preventative maintenance at the same time as a turnaround. If preventative maintenance is less than normal, it means that the downtime for refineries will be less. They forecast that only 0.529 mmb/d of crude-processing capability is estimated to go offline during the fall, which is -0.506 mmb/d less than the fall of 2023, which saw 1.035 mmb/d go offline during the same period. However, this fall’s capacity reduction of 0.529 mmb/d, is still +0.192 mmb/d when compared to the fall 2021 capacity that went offline of 0.337 mmb/d. If 321 crack spreads were high, we would expect to see the refineries run at high utilization rates to make the big profits. But with 321 crack spreads low, we would expect refineries to not run at high utilizations rates. Below is the Bloomberg chart.”

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Figure 34: U.S. refinery maintenance affected capacity


Source: Bloomberg, IIR Energy

Oil: Phillips66 to cease operations at 139,000 b/d LA refinery

On Wednesday, we tweeted [\[LINK\]](#) "OOPS. 10/15. 📌 @CAGovernor signs law. 10/16. @Phillips66Co to cease operations at Wilmington (Los Angeles) 139,000 b/d refinery. "With the long-term sustainability of our Los Angeles Refinery uncertain and affected by market dynamics" Wonder how much this will add to CA gasoline prices? #OOTT." (i) On Wednesday, Phillips66 announced they would cease operations in 2025 at their 139,000 b/d Wilmington (Los Angeles area) oil refinery. Phillips66 did not specifically say the reason for the decision was the new law signed by Gov Newsom on Tuesday, but said "With the long-term sustainability of our Los Angeles Refinery uncertain and affected by market dynamics, we are working with leading land development firms to evaluate the future use of our unique and strategically located properties near the Port of Los Angeles." Phillips66 may not have said it was due to the new law, but everyone reads the press release as pointing to the new law. (ii) Our tweet included Gov Newsom Press Office tweet [\[LINK\]](#) "KMJ: Governor Newsom Signs Oil Storage Legislation Aimed At Curbing Gas Price Spikes. "the fuels storage proposal for oil refinery is meant to prevent a spike in gas prices, and it's intended to stop oil companies from taking advantage of consumers". California first announced this on Aug 15 "Governor Newsom announces plan to prevent Big Oil "profit spikes" & save Californians money at the pump." [\[LINK\]](#). California wrote "Obligate California's petroleum refiners to demonstrate resupply plans and arrangements to the CEC that are adequate to address the loss in production from refinery maintenance. Authorize the CEC to require petroleum refiners to maintain enough fuel inventory to stabilize fuel supply. Impose penalties on refiners who fail to follow these requirements." (iii) In theory, Newsom's new plan was to help lower the price of gasoline in California. But closing refineries in California will inevitably increase the cost of gasoline that will have to be imported into California. We don't know the options but sellside oil analysts were pointing to the likelihood the gasoline would have to be imported from overseas, like Asia. We didn't see any energy commentators thinking California gasoline prices would be the same or lower. Our Supplemental Documents includes the Phillips66 press release and the California Aug 15 release explaining Gov Newsom's plan to prevent Big Oil price spikes.

**Phillips66 to cease
at LA refinery**

Oil: US net oil imports down -1.039 mmb/d WoW as oil exports up +0.329 mmb/d

The EIA reported US "NET" imports were down -1.039 mmb/d to 1.406 mmb/d for the week of October 11. US imports were down -0.710 mmb/d to 5.529 mmb/d, while exports were up +0.329 mmb/d to 4.123 mmb/d. Top 10 were down -0.298 mmb/d. (i) Previously we have noted that the EIA did not report weekly Venezuela imports, however, this month the EIA resumed reporting imports from Venezuela. Give the EIA credit for putting out weekly oil

**US net imports
down -1.039
mmb/d WoW**

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import estimates, but it's a reminder that we must 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) Canada was up +0.038 mmb/d to 3.537 mmb/d, which is likely due to seasonal US Midwest refinery turnarounds ending. Weekly imports have been higher of late with the increased Cdn crude coming off TMX and hitting west coast US refineries. (iii) Saudi Arabia was up +0.029 mmb/d to 0.314 mmb/d. (iv) Mexico was up +0.024 mmb/d to 0.406 mmb/d. Oil imports from Mexico lately have been significantly lower than prior year's levels with the new Olmeca (Dos Bocas) refinery ramping up and Pemex's other refineries increasing crude oil processing. (v) Colombia was up +0.074 mmb/d to 0.223 mmb/d. (vi) Iraq was down -0.171 mmb/d to 0.070 mmb/d. (vii) Ecuador was down -0.193 mmb/d to 0.035 mmb/d. (viii) Nigeria was up +0.090 mmb/d to 0.134 mmb/d. (ix) Venezuela was down -0.181 mmb/d to 0.134 mmb/d.

Figure 35: US Weekly Preliminary Imports by Major Country

	Aug 23/24	Aug 30/24	Sep 6/24	Sep 13/24	Sep 20/24	Sep 27/24	Oct 4/24	Oct 11/24	WoW
Canada	3,874	3,510	4,026	4,155	3,912	3,799	3,499	3,537	38
Saudi Arabia	311	204	326	210	291	145	285	314	29
Venezuela	0	0	0	0	0	297	315	134	-181
Mexico	619	374	510	420	499	448	382	406	24
Colombia	212	179	229	121	295	347	149	223	74
Iraq	153	201	222	155	265	152	241	70	-171
Ecuador	103	104	103	54	4	253	228	35	-193
Nigeria	33	32	175	264	135	84	44	134	90
Brazil	302	180	113	306	0	186	134	154	20
Libya	1	86	83	0	0	77	28	0	-28
Top 10	5,608	4,876	5,787	5,685	5,401	5,788	5,305	5,007	-298
Others	952	916	1,080	637	1,055	840	934	522	-412
Total US	6,560	5,792	6,867	6,322	6,456	6,628	6,239	5,529	-710

Source: EIA, SAF

Oil: Look for Pemex Mexico oil production to decline in H1/25

On Thursday, we tweeted [\[LINK\]](#) "Look for Pemex Mexico #Oil production to decline in H1/25. Must read 📌 @edgarsigler thread. New E&P head to cut 20% or \$1.38b from Q4 capex incl some level of well maintenance capex. Pemex reportedly thinks only hit production by ~6,000 b/d on 1.73 mmb/d in Aug. Any level of cut to capex to maintain well production on a 1.73 mmb/d has to hit by way more than 6,000 b/d. Thx @edgarsigler @ArgusMedia." The Edgar Sigler (Argus media) thread was based on an internal Pemex document that outlined the new E&P head was making a 20% or \$1.38b cut to Pemex Q4/24 capex. Argus did not have the split by category but highlighted the cuts included item such as "major well repairs". If this is right and there is any cut to Pemex's well maintenance capex, then we think we should expect Pemex oil production to decline in H1/25. Well maintenance capex is the first priority for any E&P company. It is the capex to maintain existing production base. So if you cut capex that is to maintain production, then it is inevitable that production will decline. The Pemex document reportedly says impact on production is only 6,000 b/d on its current production of 1.73 mmb/d. We have trouble believing cutting any well maintenance capex wouldn't have a much larger impact on production given Pemex has been working hard to try to get production flat or growing small. We don't know the capex so it's hard to estimate the near term impact but our guess would be ~100,000 b/d. Our Supplemental Documents package includes the Argus report. [\[LINK\]](#)

Look for Mexico oil production to decline

Fits new Mexico President Sheinbaum plan to limit oil production to 1.8 mmb/d

The new Pemex President Victor Rodriguez Padilla's bio says he is a 40-yr oil and gas engineer so he must understand the basics of decline rates and that cutting well maintenance capex has to impact production. It's not like he doesn't know. Rather,

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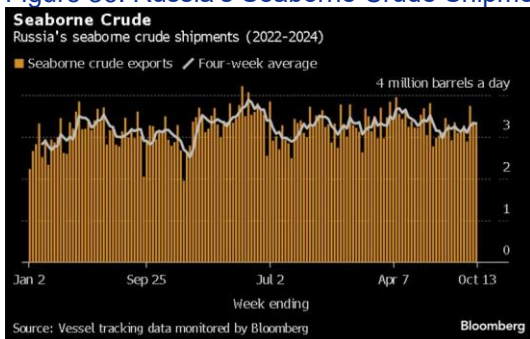
he is executing a program that is consistent with his boss, the new Mexico President Sheinbaum. We are waiting on details for her new energy plan but in her Oct 1 inaugural address to congress. But she made it clear that Mexico will limit its oil production to 1.8 mmb/d to minimize the impact on the environment. Previously, Mexico had a 3 mmb/d limit. Sheinbaum said *“The fundamental objective of oil production with Pemex will continue to be national consumption and this will be limited to a production of 1.8 million barrels per day. We will promote energy efficiency and the transition to renewable energy sources to absorb the growth in energy demand through these sources. Remember that the energy reform proposed a production of three million barrels per day that is environmentally impossible. It is better to promote efficiency and renewable sources.”* Our Supplemental Documents package includes the Sheinbaum Oct 1 address.

Oil: Russia’s seaborne crude oil exports rise to highest since early July

This week, the four-week average for Russia’s seaborne crude exports rose to the highest figures since early July, continuing last week’s rise. It’s hard to know exactly how much Russian refining capacity is on or off and how much extra oil is freed up for export, however, as seasonal turnarounds and maintenance were up, there has been more oil available for export; in line with the seasonal trend, the beginning of the month saw Russian refining fall to the lowest since mid-March which has allowed for more exports. Generally, when Russian refining capacity gets hit, it allows for more oil for export. The four-week average reached 3.33 mmb/d for the week to October 13. Bloomberg reported *“Four-week average cargoes crept up by 7,000 barrels a day in the week to Oct. 13. Refining fell to the lowest since mid-March in the first nine days of the month, averaging 5.07 million barrels a day. That left more crude available for export”*. Russia made significant output cuts in May, June, and July; however they were still slightly above their promised targets. Notably, in last OPEC JMMC, the committee confirmed the cooperation of Russia in complying with these cuts going forward. Our Supplemental Documents package includes the Bloomberg report.

Russia’s seaborne crude exports

Figure 36: Russia’s Seaborne Crude Shipments



Source: Bloomberg

Russia oil exports to China below average April levels

It’s been about five months where Russia’s oil exports to China have been down. Russia oil shipments to China averaged 1.36 mmb/d for the first half of April. But they were down thereafter with the reports that Russia had cut its discounts to China,

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meaning China was taking less Russian oil. Bloomberg's above report this week highlighted the four-week average of Russia oil shipments to China were down - 0.100 mmb/d to 1.210 mmb/d for the week ending October 13, 2024, down from last week's 1.310 mmb/d for the week of October 6, 2024. The week up to September 15 was the first figure to come in above 1.300 mmb/d in months. We have not seen any reports of pricing discount, but we have to believe Russia has given some sort of discount to China. We have been highlighting that the warning that China oil imports from Russia were being hit on April 22 by one of our favorite commentators on the Gulf Intelligence Daily Energy Podcasts is Victor Yang, Senior Analyst JLC Network Technology. He is based in China, so we like to hear his on-the-ground views on oil, natural gas and markets in China. Here is what we wrote in our April 28, 2024 Energy Tidbits memo referencing Yang's comments from our April 22, 2024 tweet [\[LINK\]](#) that included a transcript we made of Yang's comments. "And for the second quarter, we see a lot of refinery maintenance, is imports will actually come down. And for now, the premium for Russian cargoes have strengthened this year, from -0.5 barrels to -0.3 barrels. And now it's flat to Brent, meaning 0 now. So, this has dampened refiners, particularly independents, interest in Russian crude. Their margins for imported crude, including Russian crude, actually turned negative late last month and the beginning of this month. So, it's now kind of [inaudible] slightly above the breakeven point. So, the interest in this has been dampened too. So, we are not expecting imports to grow much in the second quarter, yes." Below is the table from Bloomberg's Russia oil exports report this week.

Figure 37: Russian Crude Exports to Asia

Crude Shipments to Asia						
Shipments of Russian crude to Asian buyers in million barrels a day						
4 weeks ending	China	India	Other	Unknown Asia	Other Unknown	Total
September 8, 2024	1.27	1.67	0.00	0.00	0.00	2.94
September 15, 2024	1.39	1.67	0.00	0.00	0.00	3.06
September 22, 2024	1.27	1.65	0.00	0.03	0.00	2.94
September 29, 2024	1.37	1.60	0.00	0.13	0.00	3.11
October 6, 2024	1.31	1.65	0.00	0.15	0.03	3.13
October 13, 2024	1.21	1.70	0.00	0.15	0.03	3.09

Source: Vessel tracking data compiled by Bloomberg Bloomberg

Source: Bloomberg

Oil: OPEC MOMR lowers oil demand growth forecasts for 2024 and 2025 slightly

On Monday, OPEC released its October Monthly Oil Market Report. (i) First, on the numbers, they look slightly negative as OPEC reduced their global oil demand forecast by -0.11 mmb/d for 2024 and -0.11 mmb/d in 2025. A reduction was expected but this was less than expected. OPEC made no changes to non-DOC supply growth in 2024 and 2025 had an immaterial increase at +1.11 mmb/d to 54.27 mmb/d (compared to +1.10 mmb/d to 54.27 mmb/d in the September MOMR). And the global oil + products stocks show a widening of the deficit to the 2015-2019 average. (ii) Brent oil price was unchanged in the first couple hours post the release as most had assumed OPEC was going to reduce oil demand. (iii) OPEC reduced their global oil demand forecast for 2024 by -0.11 mmb/d to +1.93 mmb/d

**OPEC Monthly
Oil Market
Report**

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YoY and a further -0.11 mmb/d to +1.64 mmb/d in 2025. (iv) OPEC now reports on a non-Declaration of Cooperation (“non-DoC”) country/region basis (the countries not participating in OPEC+). For example, there is no split out of Russia in the forecasts. (v) Non-DOC supply, the forecast for 2024 is unchanged from the previous report and 2025 saw an immaterial increase. For 2024, the October MOMR has non-DOC at +1.23 mmb/d YoY to 53.07 mmb/d. For 2025, October MOMR has non-DOC at +1.11 mmb/d YoY to 54.17 mmb/d. (vi) Key non-DOC growth areas: 2024 are: US +0.55 mmb/d YoY, Canada +0.22 mmb/d YoY and Brazil which was not provided a number but was forecasted at +0.11 mmb/d YoY in the September MOMR. For 2025, US +0.50 mmb/d YoY, Brazil +0.18 mmb/d YoY, Canada +0.16 mmb/d YoY, and Norway +0.10 mmb/d YoY. (vii) Call on OPEC is now called Call on DoC Oil and is revised down by -0.1 mmb/d to 42.8 mmb/d for 2024 and by -0.2 to 43.2 mmb/d in 2025. (viii) OPEC only production, based on secondary sources, October MOMR is -0.604 mmb/d MoM to 26.044 mmb/d in September. The largest MoM change was Libya -0.410 mmb/d MoM to 0.540 mmb/d which was expected with the recent shut-down caused by change in domestic central bank leadership and the countries Force Majeure which was lifted on October 3, 2024. The other big change was Iraq, which appears to be complying to production, -0.155 mmb/d to 4.112 mmb/d. Non-OPEC DOC countries were down -0.047 mmb/d MoM to 14.060 mmb/d in October; the largest MoM change was Kazakhstan +0.075 mmb/d MoM to 1.545 mmb/d, which will be scrutinized due to Kazakhstan’s overproduction in recent periods. Russia saw production fall by -0.028 mmb/d to 9.001 mmb/d. (ix) One overlooked positive in looking at global oil stocks is the comparison for oil stocks to the 2015-2019 average, oil demand is higher than that period. OPEC’s forecast for 2024 oil demand is probably 6 mmb/d higher than the 2015-2019 average oil demand. (x) Reminder “commercial oil stocks” refers to total crude oil + products stocks. Crude oil + products stocks at August 31. October MOMR has total crude oil + products stocks down by -8.4 mmb MoM to 2,828 mmb, which is -157 mmb below the 2015-2019 average. Crude oil only stocks at August 31. October MOMR has crude oil only stocks at down -6.5 mmb MoM to 1,319 mmb, which is -128.0 mmb below the 2015-2019 average. (xi) Products only stocks at August 31. October MOMR has products only stocks -1.9 mmb MoM to 1,509 mmb, which is 29.0 mmb below the 2015-2019 average. (xi) Our Supplemental Documents package includes excerpts from the OPEC October MOMR.

OPEC’s still optimistic oil demand YoY growth in 2024 and 2025d

Our comment on OPEC’s forecast oil demand YoY growth remains the same as prior months – it is far more optimistic than other forecasts and we continue to expect OPEC to tweak down the oil demand YoY growth forecasts for 2024 and 2025. Here is a comparison of OPEC MOMR vs other forecasts.

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Figure 38: Comparison oil demand YoY growth forecasts

million b/d	YoY Oil Demand Growth Forecast	
	2024 YoY	2025 YoY
OPEC Oct MOMR	1.93	1.64
OPEC Sept MOMR	2.03	1.74
OPEC Aug MOMR	2.11	1.78
Saudi Aramco Q2	1.60	1.40
IEA Oct OMR	0.86	1.00
IEA Sept OMR	0.90	0.95
IEA Aug OMR	0.97	0.95
EIA Oct STEO	0.92	1.29
EIA Sept STEO	0.94	1.52
EIA Aug STEO	1.14	1.61

Source: OPEC, Saudi Aramco, IEA, EIA

Source: EIA, IEA, OPEC, Saudi Aramco

Oil: NY Times “A Mideast Shift Is Underway, Without Israel”

Good food for thought NY Times report this morning “A Mideast Shift Is Underway, Without Israel”. (i) They recap why Saudi has had to back away from restoring relations with Israel and has moved back to insisting on a 2-state solution. And Netanyahu continues to reject a 2-state solution. The NY Times recap is “A year ago, Saudi Arabia was preparing to recognize Israel in a normalization deal that would have fundamentally reshaped the Middle East and further isolated Iran and its allies while barely lifting a finger to advance Palestinian statehood. Now, that deal is further away than ever, even after the killing of the Hamas leader, Yahya Sinwar, which has been widely seized upon as a potential opening for a peace deal. Instead, Saudi Arabia is warming relations with its traditional archenemy, Iran, while insisting that any diplomatic pact now hinges on Israel’s acceptance of a Palestinian state, a remarkable turnaround for the kingdom.” And “What changed? Images started streaming out of Gaza of children buried alive under rubble, mothers grieving over their dead babies and Palestinians starving because Israel had blocked aid from entering the territory — all of which made it impossible for the Saudi leadership to ignore the issue of Palestinian statehood.” (ii) No question Saudi and Iran are working somewhat together. But we believe there is no way Saudi can go all-in on a relationship with Iran ie. we find it hard to see how there can be some sort of new pact/coalition. Rather Saudi is in the position of having to back away from the Israel normalization plan but be seen as being part of the negative view on death toll in Gaza without being all-in with Iran. (iii) This isn’t like 1973 and MBS ascension to becoming the Crown Prince was based on his Vision 2030 and move to modernize Saudi Arabia. And we keep reminding, that means he needs high oil prices and increasing Other People’s Money. If the money dries up and Vision 2030 gets abandoned, then MBS vision for Saudi gets wrecked. It’s why he can’t go all-in with Iran as long as Iran is the shunned and sanctioned by the world. Our Supplemental Documents package includes the NY Times report.

Is a Mideast
shift
underway?

09/18/24: Saudi Arabia MBS on Palestine, need for high oil prices & the Houthis

Here is what we wrote in our Sept 22, 2024 Energy Tidbits on MBS. “On

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Wednesday, we tweeted [\[LINK\]](#) "Lots in MBS Address. Headline: no diplomatic relations with Israel w/o establishment of an independent Palestine state w/ East Jerusalem as its capital. Reminds why KSA wants continued solid #Oil prices. Their journey to achieve Vision 2030 targets ..."based on a careful review and prioritization" ie. watching the spending. Wants political solution to Houthis. #OOTT."

(i) It looks like Saudi Arabia has, for now, given up on the hope of establishing full diplomatic relations with Israel in light of the increasing Israel attacks and death toll within Hezbollah and Hamas. The headline from the MBS address is "reaffirmed that Saudi Arabia will not establish diplomatic relations with Israel without the establishment of an independent Palestinian state with East Jerusalem as its capital."

(ii) Saudi needs high oil prices and can't afford to crash oil prices. MBS didn't say this at all, but his comments reminds us that Saudi is in a tough spot that they can't resort to their historical way of slapping the rest of the oil world to put everyone in line. In the old days, if the market was today with so so demand and non OPEC or even other OPEC players producing high and spending capex, the Saudis would produce a lot and crash the oil price to get everyone in line. They can't do that now because of the themes we have highlighted for years. Saudi's Vision 2030 and declining net foreign assets means the #1 financial theme for Saudi is increasing use of OPM. And they have done that and need to keep doing that. So that means they can't crash oil prices for six month and risk ruining their financial stability reputation that is needed for more OPM. And now they are behind in Vision 2030, even moreso, So that means they need as high and stable oil price as possible. They don't say they need money but say they are going slow on Vision 2030 so any less financial strength means going even slower on Vision 2030. (iii) Under the radar is he is confirming the obvious, on what we call a go slow Vision 2030. He doesn't say that but says "We are moving forward with optimism and confidence in continuing the journey to achieve our targets, according to a comprehensive and integrated approach based on careful review and prioritization," he said." Careful review and prioritization is a go slow approach. (iv) And he wants a deal with the Houthis. MBS ""The Kingdom also seeks to enhance regional and international security and peace by making efforts to reach political solutions to crises in Yemen, Sudan, Libya and other countries as well as supporting solutions to international crises such as the Russian-Ukrainian crisis," he added." Our Supplemental Documents package includes the Saudi Gazette reporting on the MBS address. "

Oil: Arab Oil Embargo Oct 19, 1973 was the defining oil event

Yesterday was the anniversary of the Oct 19, 1973 Arab Oil Embargo, which was the defining event for oil. But the world is very different than in 1973. And something well appreciated by Israel. The Arab countries have different priorities than in 1973 and their approach has been to try for diplomatic solutions to get Israel to stop bombing Hamas and Hezbollah and also insist on a 2-state solution. And Israel sees that the Arab countries haven't tried to do anything against the US and western allies supporting Israel. And even though the US is a net oil importer of oil, any spike of oil prices globally would come back to hit the US and other economies. The Arab oil embargo was because the US and others supported Israel in the Yom Kippur war. Here is what we have written for years on the Arab Oil Embargo. "Anyone in the US who was old enough to drive in 1973 will remember the Arab Oil Embargo that started on Oct 19, 1973 in response to the US and others supporting Israel in the Yom Kippur war..

**Arab Oil
Embargo was Oct
19, 1973**

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We have highlighted the Arab Oil Embargo since we first started our Energy Tidbits memos. It was the most significant game changer to oil market. Here is what we have included in prior Energy Tidbits going back over the years/decades. “We normally include a reminder of the 1973-1974 Arab Oil Embargo because it was “THE” game changer to oil markets. Most weren’t born or too young or not in the US to remember the 1973/1974 Arab oil embargo that hammered the US economy and moved oil prices from ~\$3 to ~\$12. It forced the US and other western countries to have their first real look at oil security. There is no question that having an immediate cut off of oil forced change. Change always happens when something is cut off rather than just becomes more expensive. It was “THE” game changer to the oil and gas industry that led to lasting trends such as the 1976 election of Jimmy Carter (who introduced the first tax credits to kickstart the US shale gas/oil revolution), the creation of Strategic Petroleum Reserves, the International Energy Agency, the push to find oil outside the Middle East in regions, the US govt push to begin to import LNG, etc . It was also a game changer for consumers and led to the move to fuel efficient cars like the Honda Civic (don’t forget made in Japan wasn’t a good brand in the 60’s). The big reason for this was that the Arab Oil Embargo led to an immediate rationing of gasoline in many parts of the US – it was immediate. And to the famous multi block long lineups to buy gasoline. I was in college in St. Louis (Missouri) at the time and the pictures, like the one below, were reality of line ups for gasoline. In St. Louis, it immediately had restrictions on how many gallons of gasoline on day 1, and by day 2 they had switched to only allow restricted volumes of gasoline to be purchased on odd days if your license plate ended in odd number and vice versa for even days. Don’t forget there was no self service gas stations so you couldn’t fill up in violation of the restrictions. In areas like St. Louis that had poor access to gasoline, it was common to line up for an hour for gasoline with your car in neutral and turned off, and taking turns with your friends to push your car to the gas station. The end of the oil embargo was on March 17, 1974.”

Figure 39: Gas Station Line Up During Arab Oil Embargo 1973-74



Source: Time

Oil: Saudi use of oil for electricity up MoM for record breaking August

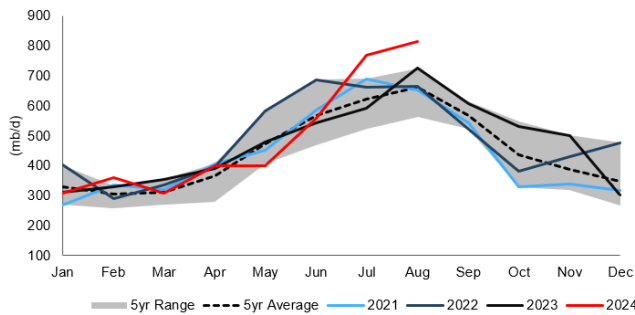
It was really hot in the Middle East this summer and that has been in sync with the normal seasonal ramp up in Saudi Arabia’s use of oil for electricity for air conditioning, which led to record use of oil for electricity in August, which broke the previous record set in July 2024. The JODI data for Saudi Arabia oil supply and demand for August was updated this week [\[LINK\]](#). In the summer, Saudi Arabia moved into its normal season where we see an

Saudi record oil use for electricity in August

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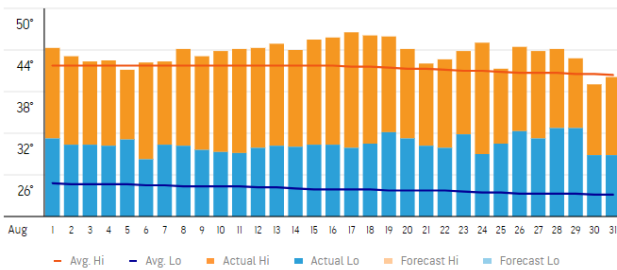
increased use of oil for electricity for air conditioning. We are not surprised to see a significant increase in Saudi's use of oil for electricity in August as it has been really hot in the Middle East. Oil used for electricity generation (direct use) in August was 0.814 mmb/d (vs August 2023 of 0.726 mmb/d) and July was 0.769 mmb/d (vs July 2023 of 0.592 mmb/d). The AccuWeather temperature recap was that it was hot in August; where there were daytime highs mostly in the 42C-45C degree range, reaching a maximum high of 46C degrees, while the nighttime lows were warm as well in the low thirties. Another factor impacting the use of oil for electricity is that Saudi Arabia is increasing its use of natural gas for electricity. The normal trough-to-peak swing is approx. 0.400 mmb/d. Saudi peak oil used for electricity in 2023 was 0.726 mmb/d in Aug 2023. Below are the AccuWeather Temp maps for Riyadh for August.

Figure 40: Saudi Arabia Direct Use of Crude Oil for Electricity Generation



Source: JODI, SAF

Figure 41: Riyadh Temperature Recaps for August



Source: AccuWeather

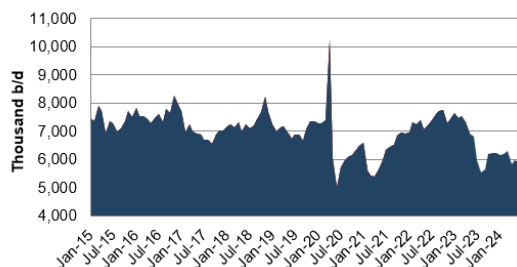
Oil: Saudi net oil exports down -0.046 mmb/d to 5.556 mmb/d in August

Until recently, JODI did not have access to Saudi import data. But the oil import data is available so we calculate net oil exports. Net oil exports are normally down in the summer as Saudi uses more oil for electricity in the summer. In August, the JODI data showed Saudi net oil exports were down -0.046 mmb/d MoM to 5.556 mmb/d. This comes as imports were down -0.024 mmb/d and exports were down -0.070 mmb/d. Below is our graph of Saudi Arabia monthly net oil exports.

Saudi net oil exports down -0.046 mmb/d MoM

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Figure 42: Saudi Arabia Net Oil Exports (mb/d)



Source: JODI, SAF

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

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

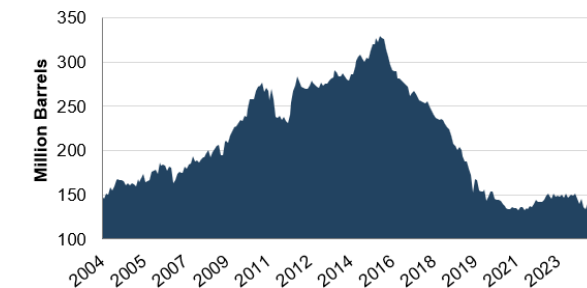
Oil: Saudi oil inventories fall -3.035 mmb MoM in August

The JODI data for Saudi oil stocks is 136.518 mmb on August 31, which is down -3.035 mmb MoM from 139.553 mmb on July 31. When we look at the components of the MoM changes for production, oil used for electricity, oil intakes into refineries and net oil exports, we would have expected to see a draw in oil stocks of -3.069 mmb in August which is a difference of 0.034 mmb. For the math components. Saudi production in August was 8.992 mmb/d, up +0.051 mmb/d MoM vs 8.941 mmb/d in July i.e. this would have led to a +8.992 mmb/d, build in inventories MoM. Saudi direct use of oil for electricity was 0.814 mmb/d in August, up +0.045 mmb/d MoM vs 0.769 mmb/d in July, this would lead to a -0.814 mmb/d MoM draw in oil inventories. Refinery intake of oil was 2.721 mmb/d in August and was up +0.324 mmb/d MoM vs 2.397 mmb/d in July, this would have led to a -2.721 mmb/d MoM draw in oil inventories. Net oil exports were 5.556 mmb/d in August, down -0.046 mmb/d MoM vs 5.602 mmb/d in July i.e. would lead to a +5.556 mmb/d MoM build in oil inventories. The net impact of the key components would have been a MoM draw of -3.069 mmb in oil inventories in August vs the reported MoM draw of -3.035 mmb.

Saudi oil
inventory data

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Figure 43: Saudi Arabia Oil Inventories (million barrels)



Source: JODI, SAF

Oil: Why would Biden say he knows how and when Israel will hit Iran?

Assuming Biden isn't making something up, we have to believe Israel's retaliation on Iran is near or else why would they tell him when and how they plan to retaliate against Iran. They wouldn't risk telling him weeks in advance. We never get it when political and business leaders have to make sure no one thinks they aren't in the inside on knowledge. Earlier this morning, we tweeted [\[LINK\]](#) "Is Israel about to attack Iran or did Biden embellish? Q ... do you have a good understanding right now what Israel is going to do in response to Iran's October 1st attacks and when they will actually respond to Iran? THE PRESIDENT: Yes and yes. Would Israel risk telling Biden too far in advance? #OOTT [\[LINK\]](#)." Our tweet included the White House transcript of Biden's comments on Friday. Biden was clear in answering that he knows when and how Israel will hit Iran. That was almost two days ago and nothing as of yet. Assuming Biden isn't embellishing, we find it hard to believe Israel would tell Biden how and when too far in advance that will just keep expanding the circle of who knows. So if Biden isn't embellishing, we would have to think an Israel attack is coming in the coming days.

Waiting on
Israel attack on
Iran

Netanyahu "historic opportunity that should not be missed" on Iran nuclear/oil

We recognize the reports that the US was told that Israel wouldn't target Iran's nuclear or energy facilities. But we remind how Israel looks at this retaliation. Here is what we wrote in last week's (Oct 13, 2024) Energy Tidbits memo. "On Thursday, we tweeted [\[LINK\]](#) "WOW! "According to our political correspondent Moti Castel, the outgoing president demanded that Netanyahu not attack Iran's nuclear or oil facilities, while the latter replied that it was "a historic opportunity that should not be missed" and refused to commit to meeting his demands." @Now14Israel [\[LINK\]](#)." Brent was +\$2.84 on Thursday on the Channel 14 (Israel news) report on what Netanyahu reportedly said to Biden on his call with Biden and Harris on Thursday. Channel 14 reported that Biden asked or demanded that Israel not target Iran's nuclear or oil facilities as "The US administration is concerned about the possibility that they will have to involve American soldiers in the war, but more so about the increase in oil and gas prices and Trump's use of the issue in the final stretch of the campaign." Then the comment that drove up oil, Channel 14 wrote "According to our political correspondent Moti Castel, the outgoing president demanded that Netanyahu not attack Iran's nuclear or oil facilities, while the latter replied that it was "a historic

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opportunity that should not be missed" and refused to commit to meeting his demands." Our Supplemental Documents package includes the Channel 14 report.

US officials tell NBC Israel focus is on Iran military & energy infrastructure

Here is another item from last week's (Oct 13, 2024) Energy Tidbits memo. "No one outside Netanyahu and his inner circle knows where and how Israel will hit Iran. Biden has reportedly been trying to push Netanyahu to not hit Iran's nuclear and oil facilities. As noted above, Netanyahu's reply to Biden was the this was an historic opportunity to hit Iran's nuclear and oil facilities. And the question for any anonymous officials or sources is if the information is accurate or if the information is being given to message something. That is always a risk so we try to using reputable news sources. Yesterday, we tweeted [\[LINK\]](#) "Israel strike on Iran "could happen at any time, U.S. and Israeli officials told NBC News, and could come during this weekend's Yom Kippur holiday. U.S. officials believe Israel has narrowed down what they will target in their response to Iran's attack, which these officials describe as Iranian military and energy infrastructure" @ckubeNBC #OOTT." If the unnamed US officials aren't trying to message something to Israel, the NBC report would suggest that Israel isn't going after Iran's nuclear facilities but Iran's oil facilities are on Israel's target list."

07/24/24 Netanyahu told Congress it's not if but when Israel hits Iran nuclear

No one knows if Netanyahu would attack Iran's nuclear and/or oil facilities but it makes sense that he would consider to do so. And, in fact, Netanyahu told the US Congress in July that it was a matter of when, not if, Iran would hit Iran's nuclear facilities. On Oct 10, 2024, we tweeted [\[LINK\]](#) "Reminder. Netanyahu told congress it's not if but WHEN Israel takes action vs Iran nuclear program. See 📌 July 24 tweet. [\[LINK\]](#) #OOTT." Our July 28, 2024 Energy Tidbits memo was titled "Netanyahu tells Congress it's not if but when Israel takes action to prevent Iran from developing nuclear weapons." Here is what we wrote in our July 28, 2024 Energy Tidbits memo. "Netanyahu tells Congress it's not if but when Israel acts on Iran nuclear program. of our 7am MT news cut off, there hasn't been any direct retaliation on Iran for Iran's missile attacks on Israel this week. (i) On Wednesday, Biden was clear and said he wouldn't support an Israel attack on Iran's nuclear facilities. The White House posted the transcript of Biden's comments. The question was "Would you support an attack on the — would you support an attack on Iran's nuclear sites by Israel?" Biden replied "The answer is no. And I think there's things — we'll be discussing with the Israelis what they're going to do, but they — every- — all seven of us agree that they have a right to respond, but they should respond in proportion." (ii) But we remind Netanyahu told Congress on July 24 that it was question of when not if Israel would attack Iran's nuclear facilities. And we have been regularly writing that we don't if Netanyahu will use any subsequent counter attack as an opportunity to go after Iran's nuclear program. Here is what we wrote in our July 28, 2024 Energy Tidbits memo on Netanyahu's warning to congress. "We understand the focus was on Israel vs Hamas, but we are still surprised that Netanyahu's clear warning to Congress on Iran's nuclear program didn't get much attention. On Wednesday, we tweeted [\[LINK\]](#) "Netanyahu tells congress. it's not if but when Israel takes action vs Iran nuclear program! Overlooked geopolitical & #Oil wildcard/risk! 'And one more

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thing. When Israel acts to prevent Iran from developing nuclear weapons, nuclear weapons that could destroy Israel and threaten every American city, every city that you come from, we're not only protecting ourselves. We're protecting you." Netanyahu to congress. See 📌 07/21 tweet. Blinken: Iran now 1 or 2 weeks from breakout capacity to produce nuclear material for a weapon. Thx @TimesofIsrael #OOTT." Netanyahu seemed clear it was a question of when they take action against Iran's nuclear program, not if. We don't think anyone knows how this would play out but it doesn't seem to be an issue on geopolitical risk or oil risk screens. As a reminder, the Biden Admin has been consistent that they won't let Iran develop a nuclear weapon. Israel's bar is lower as they won't let Iran have the potential to develop a nuclear weapon and reaching break out capability would appear to do so."

Oil: Four times delayed Kurdistan election is today

It's taken a couple years but the Kurdistan region is finally voting for the 100-seat regional legislature. The election was originally supposed to be held in Oct 2022 and was postponed four times. There used to be 111 seats but that was reduced by 11 seats to 100 seats after an Iraq court removed 11 seats that had been reserved for ethnic and religious minorities. That was later revised to include a quota of 5 seats but within the reduced 100 seats. We have not seen anyone expecting to see the election result in any immediate resumption of Kurdistan oil exports via Turkey. We are still in the camp that doesn't see how a Iraq/Kurdistan oil deal will be reached unless there is a really big give from either Iraq or the international oil companies operating in Kurdistan. And, at least for now, Iraq has still made no movement from its position that the international oil companies operating in Kurdistan must switch from production sharing contracts to technical service contracts and have increased Iraq govt take in line with Iraq's deals with other oil companies.

Kurdistan election today

08/31/24: No sign of for resumption of Kurdistan oil exports via Turkey

Here is what we wrote in our Sept 1, 2024 Energy Tidbits memo on why we didn't see a resumption of Kurdistan oil exports via Turkey. "Yesterday, we tweeted [\[LINK\]](#) "No visibility to resumption of ~400,000 b/d Kurdistan #Oil exports via Turkey. @RudawEnglish [\[LINK\]](#). See 📌 SAF transcript: @apikur_oil @MylesCaggins noted selling >200,000 b/d to local markets BUT only getting ~\$30 vs \$80 export price. Not just deal structure, Baghdad still not willing to honor the financial aspects/returns of IOC's Kurdistan investment. #OOTT." (i) Rudaw (Kurdistan news) had just posted comments by APIKUR's Myles Caggins saying still no resolve to resume Kurdistan oil exports via Turkey. Caggins said "There is not currently an agreement for the restoration of oil flow through the Iraq pipeline, but this remains a priority for the APIKUR member companies." (ii) Caggins also reminded what the IOCs want – they just want the same financial aspects/returns. Rudaw reported Caggins said ""want to have discussions about modifications of contracts, and any modification to those contracts must include a guarantee for past due payments, and also a guarantee for how future payments would happen." (iii) Caggins wasn't as clear as he was in late July but there have held firm to their view that they still want the financial aspects/returns to their Kurdistan investment. It's why we included our transcript of Caggins comments in late July, when he said "": "We are willing to make changes to our contracts only if the following conditions are met: Any change to the contract must have agreement from the international oil companies, and KRG, and Iraqi

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Ministry of Oil. Any changes to our contracts must keep the same fiscal terms. We want the same financial arrangements, so we can understand how much, we want the same amount of revenue and money that is coming in to our companies. And most importantly we need to have surety, we need certainty, we need guarantees of how and when our companies will get paid for past money that is owed to us and also future sales. We need guarantees of payment.” (iii) So far, Baghdad has been insisting on a changed contract structure but the big point is that Baghdad aren’t prepared to give the IOCs in Kurdistan a deal that has the same financial aspects/returns as the IOCs got when they invested the oil and gas capital in Kurdistan. It’s why we continue to see no near term solution to this unless someone backs off their demand. Our Supplemental Documents package includes the Rudaw report from yesterday and the transcript we made of Caggins comments in July.”

Oil: Libya oil + condensate production of 1.279 mmb/d is almost back to Aug 1 levels

We have not seen any production updates from the Libya National Oil Corporation this week or any reports that suggest there have been any issues on production. So the latest is as of last week. Here is what we wrote in last week’s (Oct 13, 2024) Energy Tidbits memo. “As expected, it’s been a pretty quick restoration of Libya oil production following the agreement from all sides on the new mgmt at the central bank. And that means the Libya National Oil Corporation ha been posting production updates. And production is almost back to Aug 1 levels. One item to keep in mind is that the NOC is not splitting out oil vs condensate volumes. But a decent rule of thumb is that condensate is probably about 50,000 b/d of the combined oil + condensate. Yesterday, we tweeted [\[LINK\]](#) “Libya #Oil has been quickly restored and almost back to Aug 1 levels. Note Libya NOC isn’t splitting out oil vs condensate. Today: oil + condensate is back to 1.279 mmb/d. Aug 1: oil + condensate was 1.324 mmb/d (1.271 oil, 0.053 condensate). #OOTT.” Our tweet included the below Libya NOC production updates from Oct 12 and Aug 1.”

Libya oil + condensate production 1.279 mmb/d

Figure 44: Libya oil, condensate & natural gas production, Oct 12 and Aug 1



Source: Libya National Oil Corporation

Oil: Chinese household savings hit record MoM +\$531b increase in September

On Tuesday, we tweeted [\[LINK\]](#) “Negative China indicator Will stimulus finally get Chinese consumer out spending? Chinese normally add to savings in Sept, but Sept 2024 is new

Chinese household savings

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record. +\$531b to \$21.34T. MoM: Sep 24: +531b Sep 23: +\$247b Sep 22: -\$186b Sep; 21: +\$359b Sep 20: +\$398b Sep 19: +\$228b Sep 18: +\$147b Sep 17: +99b Sep 16: +\$165b Thx @business #OOTT". This was a record by far for largest MoM increase in any September with savings increase at +\$531b MoM. One of the key reasons for the weak China recovery is that consumers have been cautious in their spending and adding more money than usual to their savings ie. weak consumer sentiment. The increasing savings fits with the commentary that Chinese consumers are not yet confident in economic recovery and therefore not prepared to spend more. One of the key factors is that the primary asset for Chinese is their home and home values keep going down MoM every month for well over a year. No wonder the Chinese consumer wants to save money. In the coming month it will be important to see the response in household savings, following the recent economic stimulus that was rolled out in China. Chinese household savings were +\$531b MoM to end September at \$21.34t. The MoM change is a huge number that works out to ~\$373 added to saving for each Chinese citizen, assuming a population of 1.425b. Below is the Bloomberg household saving graph that was attached to our tweet.

Figure 45: China Household Savings to Sep 30, 2024



Source: Bloomberg

Figure 46: China Household Savings



Source: Bloomberg

Oil: China home prices continue to lose value, 16 mths for new & 17 mths for old

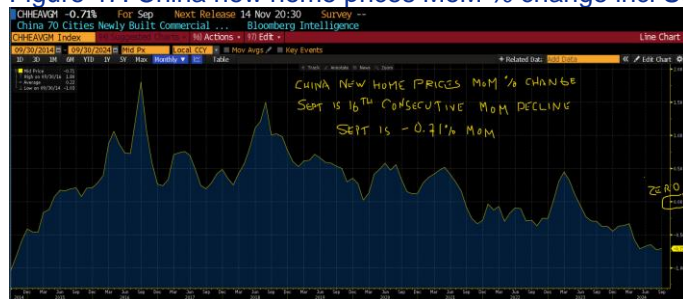
One of the most important priorities for China in their stimulus is to stop home values from declining. On Thursday we tweeted [LINK](#) "Chinese consumer's most important asset, their

China home prices fall

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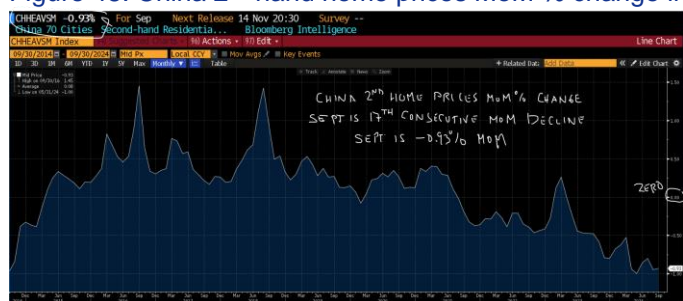
home values keep going lower. New home prices: 16th straight MoM % drop. Sept -0.71%. Aug -0.73%. July -0.65%. 2nd hand home prices: 17th straight MoM % drop. Sept -0.93%. Aug -0.95%. July -0.80%. Can China stimulus change this? Thx @business #OOTT". China home prices continue to lose value – new home prices fell for the 16th straight month, and second-hand home prices fell for the 17th straight month. One of the most significant drivers of negative sentiment among Chinese consumers, is that they keep losing value in their homes, which means their biggest asset value keeps decreasing month after month. Just like in North America, the home is the most important asset for most Chinese people, and they have seen the value of their homes decline month after month with no end in sight. In September, Chinese new home and 2nd home prices were down MoM vs August. China new home prices were down -0.71% MoM and that is the 16th consecutive month of MoM declines. China second hand home -0.93% MoM and that is the 17th consecutive MoM decline in prices. The November release, which will be data for the month of October, will be much anticipated to see if the recent stimulus has supported home values through boosting consumer sentiment. Below are the Bloomberg graphs with the August data.

Figure 47: China new home prices MoM % change incl Sept 2024



Source: Bloomberg, National Bureau of Statistics

Figure 48: China 2nd hand home prices MoM % change incl Sept 2024



Source: Bloomberg, National Bureau of Statistics

Oil: Baidu China city-level congestion rebounds following Golden Week holiday

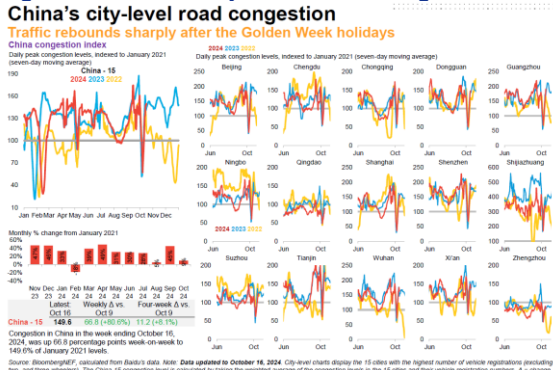
On Friday, BloombergNEF posted its China Road Traffic Indicators Weekly Oct 17 report, which includes the Baidu city-level road congestion for the week ended Oct 16. Golden Week was Oct 1 thru Oct 7 and we saw a significant fall in congestion during the period, which was followed by a big rebound this week as people returned to work. BloombergNEF reported Baidu city-level road congestion was up by +80.6% WoW to 149.6% of Jan 2021 levels. The

China city-level road congestion increases

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WoW increase was expected as the week saw people return to the cities following the Golden Week holiday. October MTD saw average daily peak congestion down -18.8% YoY when compared to October 2023. Note that this report was formerly titled Road Traffic indicators, and is now China Road Traffic Indicators, but the content of the report is unchanged. BloombergNEF's report was titled "Congestion surges after holidays". Below are the BloombergNEF key figures.

Figure 49: China city-level road congestion for the week ended October 16, 2024



Source: Bloomberg

Figure 50: China city-level road congestion for the week ended October 16, 2024

City	Indexed to January 2021 = 100												Indexed to the same month in previous year = 100													
	Oct 23	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Oct 23	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
China-15	130	146	146	133	81	138	148	130	129	127	104	144	105	126	155	187	151	55	100	114	110	96	104	87	94	81
Beijing	159	167	161	145	73	151	169	143	141	146	123	171	115	149	214	275	135	42	92	113	103	93	106	90	95	72
Chengdu	121	123	116	120	68	134	140	125	119	126	98	135	94	117	131	124	144	51	106	107	115	91	116	85	104	78
Chongqing	112	122	116	111	80	112	138	122	129	119	75	119	107	130	395	224	136	64	101	125	125	112	113	85	94	95
Dongguan	130	141	144	121	52	129	139	138	136	125	103	141	100	109	104	155	258	41	99	127	120	108	108	101	96	77
Guangzhou	160	178	181	161	76	171	196	174	170	162	158	179	127	146	317	307	199	45	99	127	127	107	107	106	98	75
Ningbo	118	146	142	127	79	144	146	120	128	121	94	140	103	95	101	127	203	59	115	140	121	112	106	81	110	88
Qingdao	92	99	103	78	51	71	78	72	75	91	80	87	69	96	124	195	175	62	94	97	98	87	95	76	82	75
Shanghai	127	155	150	115	79	146	152	130	132	119	93	151	94	115	93	172	156	54	98	117	105	101	98	76	93	74
Shenzhen	161	199	170	149	68	160	164	172	163	162	155	194	131	109	97	156	189	41	96	120	132	99	113	105	102	87
Shijiazhuang	343	491	461	454	350	400	390	311	329	334	308	364	255	120	459	258	156	69	93	85	81	77	89	70	75	74
Suzhou	108	127	136	118	79	134	137	113	112	105	96	115	92	91	88	157	171	60	111	130	117	97	99	88	86	85
Tianjin	150	169	190	135	85	160	165	145	132	106	98	186	126	109	137	244	136	60	114	121	119	100	96	86	107	84
Wuhan	143	159	159	167	105	174	171	145	144	141	117	168	124	136	192	187	151	55	94	100	97	95	95	86	88	87
Xi'an	135	156	155	152	98	141	147	129	123	135	107	145	111	149	139	152	132	66	110	112	105	91	110	97	96	82
Zhengzhou	80	97	108	110	85	95	96	80	78	86	66	91	69	171	294	164	119	76	98	102	90	82	98	72	86	86

Source: Bloomberg

Oil: SLB seems to point to \$70 oil not being high enough to drive big new supply

Yesterday, we tweeted a reply [\[LINK\]](#) "i agree that \$70 is seeming like a price that doesn't drive big new supply in the face of in-progress long cycle projects that are adding supply for the next few years and uncertain China demand." It was in reply to our tweet on the SLB Q3 release. It seems like SLB's comments on customers are pointing to \$70 oil not being high enough to drive oil companies to any significant new capital to adding new supply with our added comment that is because they see new long cycle supply production adds over the next few years and China recovery hasn't happened. So with still so so demand increases and supply additions already in progress, \$70 oil won't drive big new capex for oil. Short cycle: As noted earlier, SLB "do not see US activity rebounding in the near term". Long cycle. They confirm the obvious that long cycle projects in progress but there have been some adjustments to the timing. It would take a massive change in oil outlook for an in progress long cycle project to be stopped. But they do note some timing adjustment. SLB "But the long cycle, apart from some decision on timing and project execution, have been untouched,

Is \$70 oil too low to drive big new supply

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and we have had a year of strong exploration activity that has unlocked new reserves that a new reserve that has appraised a new future pipeline of deepwater, as you have heard and seen across the Americas, across South Africa, across the East Mediterranean and across Asia where gas is critical.” So when we see the SLB comments about the outlook and customers, SLB may not say it specifically but I think the general takeaways are threefold: First, \$70 oil is not a price level that drives short cycle projects like US shale and some other international areas like parts of Latin America up to new levels. Second, there is probably a good pipeline of long cycle projects adding production over the next three to five years from existing projects in place. And that there will be some decent level of new international FIDS because of the recent exploration successes. Third, international oil companies are worried about near term over supply from long cycle projects being completed and China not recovering. Our Supplemental Documents package includes excerpts from the SLB Q3 call transcript.

Oil: Do VLCC rates point to weaker than expected Q4/24 oil demand

On Thursday, we tweeted [\[LINK\]](#) “Do VLCC rates point to normal seasonal lower Q1 demand moving into Q4? “the fact that there has been no seasonal uplift [in tanker rates] for Very Large Crude Carriers as yet, it’s a sign the [oil] demand is not really as strong as it should be for this time of the year.” @Michellewb_ #OOTT @gulf_intel @DyalaSabbagh_GI.” We were listening to the Gulf Intelligence replay of their Oct 17 Daily Energy Market [\[LINK\]](#) and heard the comments from Michelle Wiese Bockmann (Principal Analysts, Lloyd’s List Intelligence), a specialist in tanker and shipping data & intelligence. Bockmann noted how Q4 tanker rates had just been set. Suezmax and Aframax day rates had almost doubled but VLCC rates were hadn’t received the same seasonal uplift. Bockmann said not being able to see the upward lift in VLCC as being indicator for weaker than expected demand. And she reminds that VLCCs are primarily used from Middle East to Asia. Our tweet reminded that oil demand always seasonally declines QoQ from Q4 of one year to Q1 of the next year. But we thought Bockmann was pointing to a weaker Q4/24 oil demand picture. And as noted below, OPEC only forecasts Q4/24 oil demand to be +0.88 mmb/d QoQ. Here is the transcript we made of Bockmann’s comments. At 12:10 min mark Wiese Bockmann “At this time of the year, the tanker rates will have been, what we call their 4th quarter seasonal increase. And we’ve seen that, for two of the three main vessel types that ship crude. For example, Suezmax tankers, they’re the ones that take one million barrels of crude. They have gone up, I’ve got it here, they have gone up from \$22,000 per day at the beginning of the month, they have jumped up to \$42,000 per day. Aframax’s, which are slightly smaller. They’ve gone up also to \$38,000 per day from the same level again. But Very Large Crude Carriers, they’re the big ones with two million barrels per day, they haven’t really changed. And that’s because they essentially serve the Middle East Gulf market to Asia. And I think Suezmax’s and Aframax’s are more in the Atlantic basin and more affected by the Red Sea, which as we know has been more or less shut to a lot of the maritime traffic as a result of Houthi attacks on merchant shipping. So I think that kind of reflects, the fact that there has been no seasonal uplift for Very Large Crude Carriers as yet, it’s a sign the demand is not really as strong as it should be for this time of the year. Bear in mind, we are only in mid-October, it could still happen. But I do think that’s very interesting that the rate for a Very Large Crude Carrier which carries twice as much as a Suezmax is more or less the same. So I think it’s an interesting insight into the market at the moment.”

**VLCC rates
aren’t
increasing**

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Global oil demand always seasonally declines QoQ in Q1 vs prior Q4

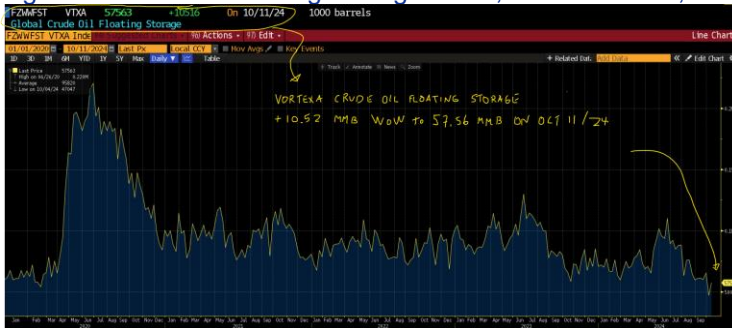
For decades, we have reminded that there is a normal seasonal pattern to global oil demand. Q1 demand is normally seasonally lower QoQ vs the prior Q4. Q2 is normally higher QoQ vs Q1. Q3 (summer) is normally the biggest QoQ increase. And then Q4 is normally higher QoQ but to a much lesser degree. Our tweet included the OPEC Monthly Oil Market Report Oct 2024 tables for quarterly oil demand for 2024 and 2025. OPEC forecasts Q4/24 oil demand to be 105.61 mmb/d, which is +0.88 mmb/d QoQ vs Q3/24 of 104.73 mmb/d. And OPEC forecasts Q1/25 oil demand to be 104.41 mmb/d, which is -1.20 mmb/d QoQ vs 105.61 mmb/d in Q4/24.

Oil: Vortexa crude oil floating storage est 55.61 mmb at Oct 18, -6.12 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 Oct 12 at 9am MT. (i) Yesterday, we tweeted [LINK](#) "Floating Oil Storage. Vortexa crude #Oil floating storage -6.12 mmb WoW to 55.61 mmb. Only been 6 wks <60 mmb since Covid incl 3 of last 7. Last 7 wks average 58.56 mmb. Oct 4 revised -0.82 mmb to 46.33 mmb, the only wk <50 mmb since 09/17/19. Thx @vortexa @business #OOTT." Floating storage has been low for the last two months. (ii) As of 9am MT Oct 12, Bloomberg posted Vortexa crude oil floating storage estimate for Oct 18 at 55.61 mmb, which was -6.12 mmb WoW vs revised up Oct 11 of 61.73 mmb. Note Oct 11 of 61.73 mmb was revised +4.17 mmb vs 57.56 mmb originally posted at 9am on Oct 12. (iii) Also note Oct 4 of 46.23 mmb was revised -0.82 mmb vs 47.05 mmb posted a week ago. This is the only week in the 40s since Covid. (iv) Revisions. Other than the +4.17 mmb revision to Oct 11, all other revisions in the last seven weeks were very small at less than +/- 1 mmb. Here are the revisions for the past seven weeks compared to the estimates originally posted on Bloomberg at 9am MT on Oct 12. Oct 11 was revised +4.17 mmb. Oct 4 revised -0.82 mmb. Sept 27 revised -0.24 mmb. Sept 20 revised -0.44 mmb. Sept 13 revised +0.34 mmb. Sept 6 revised -0.38 mmb. Aug 30 revised -0.21 mmb. (v) There is a wide range of floating storage estimates for the past seven weeks, but a simple rolling average for the last seven weeks is 58.56 mmb vs last week's then seven-week rolling average of 58.76 mmb. The last two weeks are the only times the 7-week moving average has been below 60 mmb. (vi) Also remember Vortexa revises these weekly storage estimates on a regular basis. We do not track the revisions through the week. Rather we try to compare the first posted storage estimates on a consistent week over week timing comparison. Normally we download the Vortexa data as of Saturday mornings around 9am MT. (vii) Note the below graph goes back to Jan 1, 2020 to show the run up to Covid and then how Covid started to impact Covid in March/April 2020. (viii) Oct 18 estimate of 55.61 mmb is -73.95 mmb vs the 2023 peak on June 25, 2023 of 129.56 mmb. Recall Saudi Arabia stepped in on July 1, 2023 with its voluntary cuts. (ix) Oct 18 estimate of 55.61 mmb is -2.68 mmb YoY vs Oct 20, 2023 at 58.29 mmb. Below are the last several weeks of estimates posted on Bloomberg as of 9am on Oct 19, Oct 12, and Oct 5.

Vortexa floating storage

Figure 51: Vortexa Floating Storage Jan 1, 2000 – Oct 18, 2024, posted Oct 19 at 9am MT



Source: Bloomberg, Vortexa

Figure 52: Vortexa Estimates Posted 9am MT on Oct 19, Oct 12 and Oct 5

Posted Oct 12, 9am MT							Oct 5, 9am MT							Sept 28, 9am MT						
FZWWFST VTXA Inde							FZWWFST VTXA Inde							FZWWFST VTXA Inde						
ID	3D	1M	6M	YTD	1Y	5Y	ID	3D	1M	6M	YTD	1Y	5Y	ID	3D	1M	6M	YTD	1Y	5Y
Fr	10/11/2024						Fr	10/04/2024						Fr	09/27/2024					
	Last Px							Last Px							Last Px					
	57503							44513							61486					
Fr	10/04/2024						Fr	09/27/2024						Fr	09/20/2024					
	47047							64593							60182					
Fr	09/27/2024						Fr	09/20/2024						Fr	09/13/2024					
	65143							60693							63920					
Fr	09/20/2024						Fr	09/13/2024						Fr	09/06/2024					
	59874							63611							61061					
Fr	09/13/2024						Fr	09/06/2024						Fr	08/30/2024					
	61309							61403							58513					
Fr	09/06/2024						Fr	08/30/2024						Fr	08/23/2024					
	60742							59871							65966					
Fr	08/30/2024						Fr	08/23/2024						Fr	08/16/2024					
	59621							65740							76765					
Fr	08/23/2024						Fr	08/16/2024						Fr	08/09/2024					
	64194							77272							75124					
Fr	08/16/2024						Fr	08/09/2024						Fr	08/02/2024					
	76071							76091							65290					
Fr	08/09/2024						Fr	08/02/2024						Fr	07/26/2024					
	75550							66097							90792					
Fr	08/02/2024						Fr	07/26/2024						Fr	07/19/2024					
	63168							90339							88232					
Fr	07/26/2024						Fr	07/19/2024						Fr	07/12/2024					
	88333							88421							84604					

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

Bloomberg also posts the Vortexa crude oil floating storage in key regions, but not all regions of the world. The regions covered are Asia, North Sea, Europe, Middle East, West Africa and US Gulf Coast. We then back into the “Other” for rest of world. (i) As noted above, last week’s Oct 11 was revised +4.17 mmb with the only revision to note being Asia revised +5.10 mmb. (ii) Total floating storage at Oct 18 of 55.61 mmb was -6.12 mmb vs the revised up Oct 11 of 61.73 mmb. The major WoW changes were Other +5.03 mmb WoW, West Africa -4.97 mmb WoW and Asia -2.82 mmb WoW. (iii) Oct 18 estimate of 55.61 mmb is -73.95 mmb vs the 2023 high on June 23, 2023 of 129.56 mmb. Recall Saudi Arabia started its voluntary 1 mmb/d production cuts on July 1, 2023. The major changes by region vs the last year June 23, 2023 peak are Asia -46.76 mmb and Other -17.57 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 Oct 11 that was posted on Bloomberg at 9am MT on Oct 12.

Vortexa floating storage by region

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Figure 53: Vortexa crude oil floating by region

Region	Oct 18/24		WoW	Original Posted		Recent Peak	
	Oct 18/24	Oct 11/24		Oct 11/24	Jun 23/23	Oct 18 vs Jun 23/23	
Asia	26.72	29.54	-2.82	24.44	73.48	-46.76	
North Sea	0.12	0.73	-0.61	0.73	5.30	-5.18	
Europe	3.45	4.84	-1.39	5.77	6.04	-2.59	
Middle East	8.18	7.90	0.28	6.00	6.76	1.42	
West Africa	5.24	10.21	-4.97	10.92	7.62	-2.38	
US Gulf Coast	0.13	1.77	-1.64	1.27	1.02	-0.89	
Other	11.77	6.74	5.03	8.43	29.34	-17.57	
Global Total	55.61	61.73	-6.12	57.56	129.56	-73.95	

Vortexa crude oil floating storage posted on Bloomberg 9am MT on Oct 19
Source: Vortexa, Bloomberg

Source: Bloomberg, Vortexa

Oil: Global oil & product stocks flipped to deficit of -26.800 mmb from +4.100 mmb

On Tuesday, BloombergNEF posted its “Oil Price Indicators” weekly, which provides good charts depicting near-term global oil demand and supply indicators. (i) Note BloombergNEF uses different periods to determine the surplus/deficit, sometimes using a four-year average for 2017-2019 + 2022-2023, and other times using a five-year average 2017-2019 + 2022-2023. In both cases they do not include 2020 and 2021 in the averages. (ii) The global stockpile for crude oil and products flipped to a deficit of -26.800 mmb for the week ending October 4, from a surplus of +4.100 mmb for the week ended September 27. (iii) Total crude inventories (incl. floating) saw a draw of -2.0% WoW to 594.600 mmb, while the stockpiles deficit widened, from a deficit of -8.100 mmb to a deficit of -26.500 mmb. (iv) Land crude oil inventories increased +1.1% WoW to 547.400 mmb, widening their deficit from -13.100 mmb to -14.300 mmb against the five-year average (2017-2019 + 2022-23). (v) The gas oil, and middle distillate stocks decreased -2.2% WoW to 231.000 mmb, with the surplus against the four-year average flipping to a deficit of -1.600 mmb from +1.100 mmb. Jet fuel consumption by international departures in the week starting October 15, is set to decrease by -0.020 mmb/d WoW, while consumption by domestic passenger departures is forecast to decrease by -0.054 mmb/d WoW. Below is a snapshot of aggregate global stockpiles.

Bloomberg Weekly Oil Indicators

Figure 54: Aggregate Global Oil and Product Stockpiles



Source: BloombergNEF; US Energy Information Administration (EIA), PJK, IE Singapore, FEDComPlatts, PAJ, Vortexa, Genscape. Note: As of the week ending October 4, 2024.

Source: BloombergNEF

Oil: Bloomberg Oil Demand Monitor, Market Watchers Reduce Their Growth Outlooks

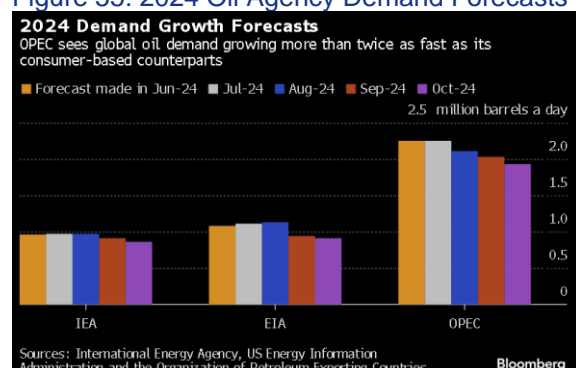
The Bloomberg Oil Demand Monitor is a good recap of key oil demand indicators around the world. This week's report discusses the leading oil agency forecasted demand figures for

Bloomberg oil demand monitor

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2024, focussing on OPEC, EIA, and IEA. The agencies have all seen cuts to their demand forecasts for 2024, and the most substantial cut was OPEC, which saw the forecast decrease by 100,000 b/d; however, OPEC has lagged in comparison to their peers to decrease forecasted demand. OPEC's cuts have been heavily weighted in the first half of the year, much of which has begun to see reported actual figures. Bloomberg reported: *"The most substantial cut was made by the Organization of Petroleum Exporting Countries, which reduced its assessment of incremental demand in 2024 by about 100,000 barrels a day. The International Energy Agency and the US Energy Information Administration made smaller reductions of 40,000 barrels and 30,000 barrels respectively. It is notable that the cuts made by OPEC - which had been slower than its peers to trim forecasts - are heavily weighted to the first half of the year, where actual data for an increasing number of countries is becoming available"*. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 55: 2024 Oil Agency Demand Forecasts



Source: Bloomberg

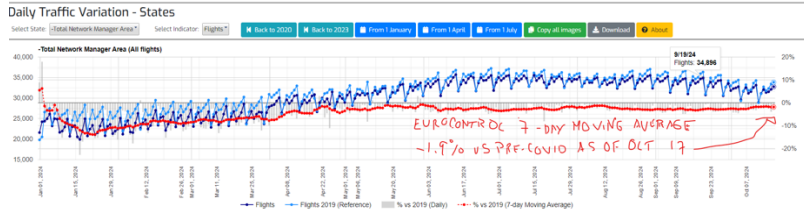
Oil: Europe airports daily traffic 7-day moving average is -1.9% below pre-Covid

Yesterday, we tweeted [\[LINK\]](#) "Daily Europe air traffic close but still stuck below pre-Covid. 7-day moving average as of: Oct 17: -1.9% below pre-Covid. Oct 10: -1.7%. Oct 3: -2.9%. Sept 26: -2.9%. Sept 19: -2.8% Sept 12: -3.0%. Sept 5: -2.8%. Aug 29: -3.1%. Aug 22: -2.8%. Aug 15: -2.2%. Thx @eurocontrol #Oil #OOTT." Other than over Christmas, European daily traffic at airports has been stuck just a little bit below pre-Covid. The 7-day moving average has got close to pre-Covid including -0.8% below pre-Covid as of May 30, but the 7-day moving average is now -1.9% below pre-Covid as of Oct 17, which followed -1.7% as of Oct 10, which followed -2.9% as of Oct 3, -2.9% as of Sept 26, -2.8% as of Sept 19, which followed -3.0% as of Sept 12, which followed -2.8% as of Sept 5, which followed -3.1% as of Aug 29, -2.8% as of Aug 22, -2.2% and as of Aug 15. Please note that we try to pull the data early Saturday mornings for a consistent weekly comparison. Eurocontrol updates this data daily and it is found at [\[LINK\]](#).

Europe airports daily traffic

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Figure 56: Europe Air Traffic: Daily Traffic Variation to end of Oct 17



Source: Eurocontrol

Oil & Natural Gas: Helene/Milton will put power equipment in short supply

The good news is that we finally saw almost all customers in Florida have their power restored in the past week. But the rush to repair should also have an impact on electricity equipment and staffing elsewhere. Here is what we wrote in last week’s (Oct 13, 2024) Energy Tidbits memo. *“We had an Electricity 101 reminder this week from a former power executive post Hurricanes Helene and Milton. He reminder that there will be a much tighter market for power equipment and people. And it will be more of an impact this year as the US electricity industry is in strong growth whereas it was in a period of basically no growth for years. So there has already been big demand for any equipment for electricity generation prior to the hurricanes. And the hurricanes have damaged some generation so that will add to an already strong demand. Plus there will be a demand on engineers and other specialists for power generation. The bottom line for the Electricity 101 reminder is that there will be added pressure on costs for equipment and services on electricity/power projects and challenge for people will inevitably add delays.”*

Power equipment will be in short supply

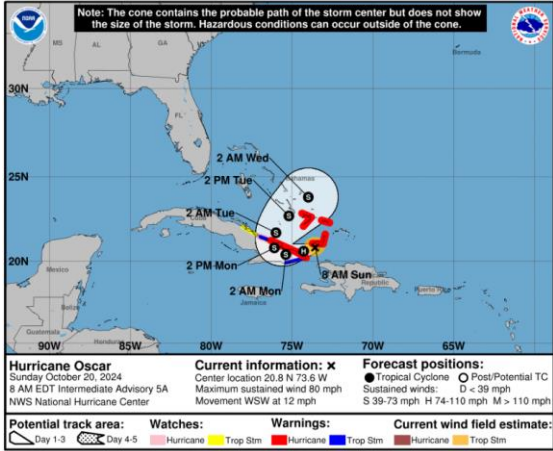
Oil & Natural Gas: Hurricane Oscar is moving NE from Cuba into Atlantic

Our prior Energy Tidbits memos remind that October is still Atlantic Hurricane season. The peak of hurricane season is mid-September, but hurricanes can happen thru October. Hurricane Oscar is a reminder that hurricanes can happen in October and even later in October. Cuba had a power grid failure this week ahead of Hurricane Oscar and is still seeing widespread power outages. Oscar is turning NE into the Atlantic and there have been some hurricane conditions impacting NE Cuba and is risking the Turks and Caicos and SE Bahamas. Our table of NOAA’s data shows there were 23 Atlantic hurricanes since Jan 1, 2010 including four Cat 4’s and one Cat 5. Below is the National Hurricane Center’s current Hurricane Oscar track map, NOAA’s distribution graph of hurricane activity over the summer, and our table of NOAA’s Atlantic hurricanes in October data.

Hurricane Oscar

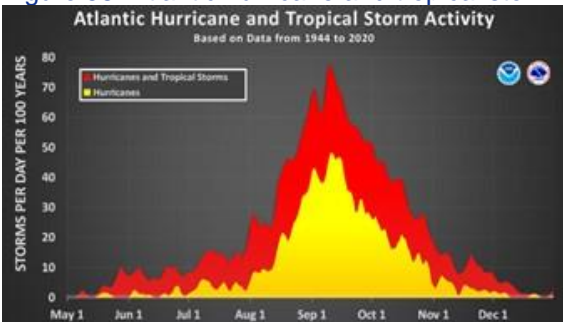
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Figure 57: Hurricane Oscar as of 6am MT today



Source: NNC

Figure 58: Atlantic hurricane and tropical storm activity by month



Source: NOAA

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Figure 59: Atlantic hurricanes in October since Jan 1, 2010

Landfall Date	States Affected and Category by States	Highest Saffir-Simpson U.S. Category	Central Pressure (mb)	Max Wind (kt)	Name
Aug 27, 2011	NC, 1	1	952	75	Irene
Aug 28, 2012	LA, 1	1	986	70	Isaac
Oct 29, 2012	NY, 1	1	942	65	Sandy
Jul 3, 2014	NC, 2	2	973	85	Arthur
Sep 2, 2016	FL, NW1	1	981	70	Hermine
Oct 8, 2016	FL, NE2; GA, 1; SC, 1; NC, 1	2	963	85	Matthew
Aug 25, 2017	TX, C4	4	937	115	Harvey
Sep 10, 2017	FL, SW4, SE 1	4	931	115	Irma
Oct 7, 2017	LA, 1, MS 1	1	983	65	Nate
Sep 14, 2018	NC, 1	1	956	80	Florence
Oct 10, 2018	FL, NW5; I-GA, 2	5	919	140	Michael
Jul 13, 2019	LA, 1	1	993	65	Barry
Sep 1, 2019	NC, 2	2	956	85	Dorian
Jul 25, 2020	TX, S1	1	973	80	Hanna
Aug 3, 2020	NC, 1, SC, 1	1	986	80	Isaias
Aug 27, 2020	LA, 4; TX, N1	4	939	130	Laura
Sep 16, 2020	AL, 2; FL, NW2	2	965	95	Sally
Oct 9, 2020	LA, 2	2	970	85	Delta
Oct 26, 2020	LA, 3; MS, 2; I-AL, 1	3	970	100	Zeta
Aug 29, 2021	LA, 4	4	931	130	Ida
Sep 14, 2021	TX, N1	1	991	65	Nicholas
Sep 28, 2022	FL, SW4; I-FL, SE1; FL, NE1; SC, 1	4	941	130	Ian
Aug 30, 2023	FL, NW3; I-GA1	3	950	100	Idalia

Source: NOAA

Oil & Natural Gas: Q3 will be worse for Cdn natural gas producers than Q2

Q3 reporting will be starting in the next week or so in Canada. And one of the known themes for Cdn oil and gas producers will be that Q3 will show lower oil and gas prices than for Q2 reporting, in particular for natural gas prices. Below is our table that shows the final prices to the end of Q3/24. The big negative vs Q2 is AECO averaged \$0.66 in Q3/24 vs \$1.12 in Q2/24 and \$2.23 in Q1/24. The issue for analysts will be twofold. Reflecting the actuals in their model and what price forecast to use in their valuations. Below is our table of oil and gas prices.

**AECO Q3/24
\$0.66**

Figure 60: Oil & natural gas prices

Period	Brent	WTI	EDPAR	WCS	HH	AECO
Q1/19	US\$ 62.90	US\$ 54.72	US\$ 50.55	US\$ 44.11	US\$ 2.92	CS 2.42
Q2/19	US\$ 69.19	US\$ 59.93	US\$ 54.39	US\$ 47.34	US\$ 2.56	CS 1.05
Q3/19	US\$ 62.23	US\$ 56.41	US\$ 52.35	US\$ 43.84	US\$ 2.38	CS 0.96
Q4/19	US\$ 64.19	US\$ 56.98	US\$ 50.75	US\$ 37.94	US\$ 2.39	CS 2.34
Q1/20	US\$ 51.63	US\$ 46.10	US\$ 39.04	US\$ 28.10	US\$ 1.92	CS 1.93
Q2/20	US\$ 29.71	US\$ 27.97	US\$ 22.25	US\$ 18.39	US\$ 1.70	CS 1.90
Q3/20	US\$ 44.38	US\$ 40.88	US\$ 36.84	US\$ 31.09	US\$ 1.96	CS 2.14
Q4/20	US\$ 45.17	US\$ 42.80	US\$ 38.03	US\$ 31.36	US\$ 2.47	CS 2.52
Q1/21	US\$ 61.15	US\$ 57.91	US\$ 54.39	US\$ 46.06	US\$ 3.39	CS 2.97
Q2/21	US\$ 68.05	US\$ 66.16	US\$ 62.17	US\$ 53.31	US\$ 2.91	CS 2.93
Q3/21	US\$ 73.24	US\$ 70.59	US\$ 66.94	US\$ 57.70	US\$ 4.31	CS 3.40
Q4/21	US\$ 79.04	US\$ 77.29	US\$ 73.79	US\$ 60.91	US\$ 4.71	CS 4.48
Q1/22	US\$ 101.80	US\$ 94.93	US\$ 93.84	US\$ 82.29	US\$ 4.63	CS 4.53
Q2/22	US\$ 113.86	US\$ 108.85	US\$ 107.12	US\$ 93.39	US\$ 7.47	CS 6.89
Q3/22	US\$ 100.62	US\$ 91.81	US\$ 89.95	US\$ 71.19	US\$ 7.96	CS 4.16
Q4/22	US\$ 88.64	US\$ 82.61	US\$ 79.71	US\$ 54.91	US\$ 5.54	CS 5.01
Q1/23	US\$ 81.17	US\$ 76.10	US\$ 73.75	US\$ 56.94	US\$ 2.66	CS 3.08
Q2/23	US\$ 78.30	US\$ 73.61	US\$ 70.56	US\$ 60.29	US\$ 2.16	CS 2.30
Q3/23	US\$ 86.70	US\$ 82.19	US\$ 79.76	US\$ 66.16	US\$ 2.59	CS 2.48
Q4/23	US\$ 84.22	US\$ 78.46	US\$ 71.01	US\$ 55.67	US\$ 2.74	CS 2.19
Q1/24	US\$ 83.04	US\$ 76.99	US\$ 68.71	US\$ 60.03	US\$ 2.31	CS 2.23
Q2/24	US\$ 84.84	US\$ 80.80	US\$ 72.80	US\$ 68.28	US\$ 2.07	CS 1.12
Q3/24	US\$ 80.32	US\$ 75.52	US\$ 68.11	US\$ 62.20	US\$ 2.11	CS 0.66

Source: Bloomberg

Source: Bloomberg, SAF Group

Energy Transition: IEA’s STEPS is not a forecast, it provides a “sense of prevailing direction of travelbased on ... latest policy settings”

On Thursday, the IEA posted its almost 400-pg World Energy Outlook 2024, which is their outlook for energy to 2050. No one can deny there is a lot of great data/information in the report. However, our biggest concern is that people look at the first 20 pages and don’t read the IEA’s explanation of their numbers and key assumptions. As readers know, we tend to

**IEA’s World
Energy Outlook
2024**

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start from the back with assumptions and explanations and read to the front. So our number one concern is that almost all readers and reporters take the IEA's numbers to 2050 as a forecast whereas the IEA clearly says it is not a forecast but scenarios. Almost everyone uses the Stated Energy Policies Scenario (STEPS) as the IEA forecast whereas the IEA explains it is scenario based on stated energy policies. And if you get to pg 78 and 79, it isn't just approved energy policies and regulations, the IEA also includes "*targets and announcements*". We don't know what targets are included but it could be targets that might be in a speech to the throne or Biden's target for carbon-free electricity by a certain date. So what the IEA scenarios represent is not a forecast but numbers to show what will happen under announced government targets. It's really numbers to support what the western governments aspire to do and not a forecast of what is happening on the ground. We have highlighted before on the IEA reports. So, when the IEA states when they will see peak oil and peak natural gas demand, it's not a forecast. The IEA is not hiding what they do, they don't call STEPS a forecast rather, on page 78, they clearly state "*Stated Policies Scenario (STEPS): This scenario provides a sense of the prevailing direction of travel for the energy sector based on a detailed reading of the latest policy settings in countries around the world. It accounts for energy, climate and related industrial policies that are in place or that have been announced.*" That seems pretty clear. We encourage people to read the assumptions and explanations. Our Supplemental Documents package includes excerpts from the IEA WEO 2024.

IEA WEO 2024 keeps peak natural gas demand by 2030

The other challenge for reading the IEA WEO 2024 is we always feel we have to go back and compare against their prior words and numbers to see what the numbers tell us. (i) The IEA is saying no change to their view of peak natural gas demand by 2030. So the timing hasn't changed. Rather, IEA just increased its forecast for natural gas demand through all periods and moreso in the longer term. On pg 178, IEA writes "*While global natural gas demand increases by about 250 bcm from 2023 to a peak of 4 400 bcm in the late-2020s in the STEPS, global gas markets remain well supplied.*" (ii) Our Oct 6, 2024 Energy Tidbits memo wrote that it "seems IEA is setting stage to back off its call for peak natural gas demand by 2030 as its "Global Gas Security Review 2024". (iii) As expected, WEO 2024 increased their natural gas consumption and increased it throughout their forecast period to 2050 with more increase the farther out you go. Below is a comparison of the IEA World Energy Outlook 2024 posted yesterday vs the World Energy Outlook 2023 posted in October 2023. (iv) We wish the IEA was consistent in their drafting when you compare WEO 2024 vs WEO 2023. WEO 2023 was clear, peak natural gas demand was BY 2030. IEA wrote "*In the STEPS, natural gas demand growth between 2022 and 2030 is much lower than the 2.2% average rate of growth seen between 2010 and 2021 (Figure 3.23). It reaches a peak by 2030, maintaining a long plateau before gradually declining by around 100 bcm by 2050*". WEO 2024 has the crafty drafting as the IEA speaks to the level of natural gas consumption in 2030 "*before demand peaks*". So we would have assumed the IEA is saying demand peaks after 2030. IEA wrote "*Natural gas demand has been revised upward in all scenarios compared with the WEO-2023, reflecting stronger anticipated demand for gas to meet growth in electricity demand in China as well as additional demand in the Middle East, where policies to shift away from oil in electricity generation have been reaffirmed. In the*

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STEPS, the level of demand in 2030 has been revised up by 130 bcm compared to the Outlook in 2023, reaching just over 4 400 bcm before demand peaks.” (v) The below natural gas consumption was based on the table on pg 144 that was in the natural gas section. There was table “world final energy consumption” on pg 297 that recaps consumption by all forms of energy. In the natural gas line item, the pg 297 table shows total final consumption of natural gas in Ejs increasing from 2030 to 2035 to 2040 to 2050. We couldn’t figure out what is the difference. It’s why we wish the IEA was clearer. (vi) Bottom line, as expected the IEA increased its natural gas consumption forecast thru 2050 with greater increases in the mid to longer term. And it appears that peak natural gas demand is around 2030. Just not clear when. (vii) The overall reminder is that this is based on stated energy policies and targets such as how governments stated policies to quickly reduce natural gas consumption. STEPS, a scenario based on current policy settings, sees clean energy poised for huge growth, while coal, oil and natural gas each reach a peak by 2030 and then start to decline.

Figure 61: IEA WEO 2024 vs WEO 2023 natural gas consumption

IEA World Energy Outlook 2024 vs 2023: Natural Gas Consumption					
STEPS Scenario: Stated Energy Policy Scenario					
bcf/d	2022	2023	2030	2035	2050
WEO 2024	-	405.0	428.6	427.8	423.5
WEO 2023	402.4	-	415.9	-	403.8
YoY Change			12.7		19.7
Source: IEA					

Source: IEA

IEA WEO 2024 peak oil demand is BEVs displace 6 mmb/d of ICE demand

Our primary concern for the IEA’s continued call for a peak in oil demand by 2030 is back to its view that STEPS is not a forecast but a scenario based on stated government policies and targets. It’s only one example of a single govt policy built into the EIA’s BEV assumptions but one that we are writing about later in the memo on the UK BEVs disappointing sales. On pg 351, WEO 2024 notes “STEPS: United Kingdom 80% of nw cars and 70% of new vans to be zero emission vehicles by 2030, increasing to 100% by 2035.” UK has BEV to be 22% of new car sales in 2024 and they are nowhere near that. It’s just one example. It is the same concern we raised in their Global Electric Vehicles Outlook (GEVO) 2024 in April that assumes BEVs displace 6 mmb/d of gasoline demand by 2030. WEO 2024 includes that same 6 mmb/d assumption and writes “EVs currently have a share of around 20% in new car sales worldwide, and this rises towards 50% by 2030 in the STEPS (a level already being achieved in China this year), by which time EVs displace around 6 mb/d of oil demand”. The IEA doesn’t specifically say it is the same 6 mmb/d from its GEVO 2024 but it just happens to be the same numbers. The BEVs displacement of 6 mmb/d of oil for ICE is the biggest problem we have with the IEA’s continued call for peak oil demand by 2030.

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Figure 62: IEA WEO 2024 peak oil demand by 2030

Table 3.1 ▶ Global liquids demand and supply by scenario (mb/d)

	STEPS				APS			NZE		
	2023	2030	2035	2050	2030	2035	2050	2030	2035	2050
Road transport	42.7	43.3	40.2	34.8	40.5	34.1	16.8	31.9	20.1	2.3
Aviation and shipping	11.6	13.0	13.5	14.5	11.0	10.1	7.5	9.3	7.0	1.8
Industry and petrochemicals	20.0	23.3	24.6	25.3	21.4	20.9	17.5	19.7	18.2	13.1
Buildings and power	11.4	9.0	7.7	6.1	8.1	6.1	3.6	6.6	3.6	0.4
Other sectors	13.3	13.1	13.1	12.5	11.8	10.9	8.4	10.8	8.9	5.3
World oil demand	99.1	101.7	99.1	93.1	92.8	82.0	53.7	78.3	57.8	23.0
Liquid biofuels	2.3	2.9	3.2	4.1	4.9	6.3	7.0	6.0	6.8	5.9
Low-emissions hydrogen-based fuels	0.0	0.0	0.1	0.6	0.3	1.4	4.6	0.7	2.0	5.6
World liquids demand	101.4	104.7	102.4	97.9	98.0	89.7	65.4	85.0	66.6	34.5

Source: IEA

IEA GEVO 2024 specifically says this is NOT a prediction ie. not a forecast.

We reiterate the IEA does not hide that its outlook are not forecasts or predictions. Rather they are scenarios based on stated government policies and objectives. Here is what we wrote in our Apr 28, 2024 Energy Tidbits memo on the IEA’s Global Electric Vehicles Outlook that had its key conclusion that EVs would displace 6 mmb/d of oil by 2030. *“This NOT a forecast or prediction and the IEA explicitly say so. Rather this is an outlook based on a SCENARIO based on stated govt policies AND objectives. And the IEA specifically says these scenarios do not make predictions about the future!. This is the same concept as GEVO 2023. But they also say these scenarios are to inform decision-making by govt. So not a forecast, but a scenario. Pg 102. They use “A scenario-based approach is used to explore the outlook for electric mobility, based on recent market trends, policy drivers and technology developments. The purpose of the scenarios is to assess plausible futures for global electric vehicle (EV) markets and their potential implications. The scenarios do not make predictions about the future. Rather, they aim to provide insights to inform decision-making by governments, companies and other stakeholders about the future of EVs.”* (i) GEVO 2024. 6 mmb/d in 2030 and 12 mmb/d by 2035. Pg 150/151 *“Globally, the projected EV fleet displaces 6 million barrels per day (mb/d) of diesel and gasoline in 2030, a sixfold increase on displacement in 2023. By 2035, even less oil is needed for road transport, with displacement reaching 11 mb/d in the STEPS”* (ii) GEVO 2024 is displacing 6 million barrels per day vs GEVO 2023 of *“nearly 6 mb/d in 2030”*. GEVO 2023 *“nearly 6 mb/d”* was actually ~5.5 mbd. Pg 131 *“Oil displacement increases from 0.7 mb/d in 2022 to nearly 6 mb/d in 2030 if pledges supporting electromobility in road transport around the world are fulfilled.”*

IEA assumes a new BEV basically displaces the miles driven by an ICE

Here is our key concern with the assumptions in the IEA’s GEVO 2024 assuming EVs displace 6 mmb/d of oil for ICE by 2030. Here is what we wrote in our Apr 28, 2024 Energy Tidbits memo on GEVO 2024. *“IEA assumes a new EV displaces the miles driven by an ICE ie. when a new EV is bought, for their scenario, it’s like an ICE is junked. This is the big assumption that we went on last year saying made no*

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sense and is the key reason why the math is for oil being displaced. If you buy this assumption, then you can buy the math. This is the same assumption but they must know it is crazy because they don't even put in the text. In the GEVO 2023, this assumption was in a shaded highlighted box as if this is important. But we have to believe others besides other criticized this assumption so GEVO 2024 put it in a long small font note at the bottom of graph. Last year, they at least wrote it out in the general text. And you gotta love the way they write. They don't raise any questions on this particular assumption and try to imply it's conservative. They specifically say "the accuracy of this assumption is uncertain" but then immediately follow "There is some evidence to suggest that EVs are driven further than their ICE counterparts, for example". Note this run-on sentence is new and was not included in GEVO 2023. It's hard to see due to the font size in the footnote, but here is what the long footnote says "Notes: STEPS = Stated Policy Scenario; APS = Announced Pledges Scenario; NZE = Net Zero Emissions by 2050 Scenario; RoW = Rest of the world; LDV = light-duty vehicle. Oil displacement is based on internal combustion engine (ICE) vehicle fuel consumption to cover the same mileage as the EV fleet. Oil displacement is calculated by assuming that the distance (total kilometres) travelled by EVs by segment each year would have been otherwise travelled by ICE vehicles or hybrid electric vehicles (HEVs). In the case of PHEVs – where the powertrain uses both oil-based fuel and electricity, only the distance covered by electricity is included. This method of estimation assumes that EVs replace ICE or hybrid vehicles of the same segment, and that these vehicles follow the same driving behaviour. The accuracy of this assumption is uncertain. There is some evidence to suggest that EVs are driven further than their ICE counterparts, for example."

Energy Transition: Stellantis EVs just get added on top of ICE in a long EV transition

There was a clear warning from Stellantis CEO Tavares that the EVs transition is taking longer than expected and on what it means that the EVs transition is taking longer than expected. It means that an EVs driving world isn't displacing an ICE driving world. Rather, the EVs driving world is being added on top of the ICE driving world. On Monday, we tweeted [\[LINK\]](#) "#EnergyTransition reality check. "Making a transition for [EVs] longer is a big trap," "When you make a longer transition, in fact, you don't replace the old world by the new one. You add up the new world to the old." @Stellantis CEO. It's exactly what happens when #EVs take way longer to displace ICE, solar/wind to displace #NatGas generation, green hydrogen to displace NatGas & #Coal for heavy industry, hydrogen to displace bunker fuel for ships, etc. The "new" system doesn't displace the existing, it adds on top and costs go higher for longer. Thx @SarahWhites @Kanalnagaki OOTT." FT wrote on comments by Stellantis CEO Tavares on the sidelines of the Paris Motor Show. Tavares comments were clear on the EVs transition isn't happening as aspired it means there has to be an EV driving world added on top of the ICE driving world. This is not what Net Zero envisioned. Rather Net Zero envisioned EVs effectively displacing ICE on seamless fast handover. Tavares said "The chief executive of Stellantis has warned that delays to the electric vehicle transition pose a "trap" that will bring higher costs, cautioning against industry calls to water down regulations to cut carbon emissions. Carlos Tavares, head of the European group behind the Peugeot, Fiat and Jeep brands, told the Financial Times that the industry would ultimately suffer from lower profitability if companies were burdened with investing in both the existing internal combustion technology and the switch to battery-powered vehicles. "Making a

EVs not
displacing ICE

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transition for [EVs] longer is a big trap,” Tavares said on the sidelines of the Paris Motor Show, which kicked off on Monday. “When you make a longer transition, in fact, you don’t replace the old world by the new one. You add up the new world to the old.” Our Supplemental Documents package includes the FT report.

Stellantis CEO said it was local mgmt team to blame for North America

It’s probably a good thing internally that Stellantis CEO Tavares is retiring next year as he is making sure to lay off blame even when he signs off on an EV strategy. Normally CEOs wait until after people leave before laying off blame on them but in this case, Tavares is making sure everyone knows it was the US team to blame for the mistakes in North America even if Tavares signed off on the EVs strategy. Surely, Tavares is losing creditability within Stellantis. FT wrote *“Tavares rejected suggestions that his decisions were the origin of the company’s current problems in the US, saying he had trusted the local US team with independently leading its pricing and inventory strategy. “This plan was built, proposed, decided by the local team,” Tavares said, acknowledging that he had seen risks with its strategy from the beginning. “I was made aware of it. I hesitated — should I let it go or should I stop it — and I let it go. And it was a mistake. It did not work.”*

Energy Transition: Energy transition delays = need to have duplicate energy systems

We believe the Stellantis CEO reality check on EVs is applicable to all forms of new energy trying to displace existing energy. (i) As noted above, Stellantis CEO warned th EVs driving system is not displacing an ICE driving system. Rather the EVs driving system is being added on top of the ICE driving system. Tavares said *“When you make a longer transition, in fact, you don’t replace the old world by the new one. You add up the new world to the old”*. (ii) We see this concept applies to all of the major new energy systems that are not displacing existing energy systems as fast as envisioned by western leaders. His has been our overriding view of the energy transition for the last several years – it is taking way longer, costing way more and is a bumpy/rocky road. (iii) It reminds of the naïve/fundamental problem with the energy transition aspirations from western leaders – they assumed new energy systems could smoothly and quickly displace the existing energy systems. Whether its EVs replacing gasoline demand or solar/wind replacing natural gas power generation or hydrogen replacing bunker fuel for shipping, etc. (iv) Consumers aren’t broadly stepping up to pay premium prices for new energy systems. So it means that the new energy systems aren’t displacing the existing energy systems and , like Stellantis CEO says, on EVs, it means the new energy systems are being added on top of the existing energy systems. And that just means higher energy costs and more volatile energy costs. (v) So the western governments have been trying to force will try to force the transition thru regulation and taxes. Even still it will take way longer. (vi) Their problem now is that they are facing the reality that energy costs are going to higher and more volatile for longer and they never said that. So it’s reality check for the western governments. The next two years are critical for them to double and triple down or be forced to go slower. I have been calling go slower for a couple years. They may not want to directly admit it but almost all of them have no choice to go slower. (vii) The only exceptions will be the big energy exporters that aren’t faced with having to go slow – US, Canada, Norway etc

**Duplicate energy
systems
required**

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Energy Transition: Vertu: UK BEVs sales down, some ICE/HEV being rationed

No one should be surprised by the negative UK BEVs update from the Vertu H1 results. Vertu is one of the large car dealership groups in the UK. On Wednesday, we tweeted [\[LINK\]](#) *“More UK BEVs reality check from Vertu @vertumotorsCEO UK BEV in retail customer market -7% YoY, concerns not just price and charging infra, but also costs. UK BEV growth due to fleet. Some car manufacturers rationing ICE & HEV to meet ZEV mandate. UK needs either more incentives or reduce % of new sales to be BEV. #OOTT.”* Vertu noted that retail customer BEV sales are -7% YoY despite big BEVs sale discounts but overall BEV sales are up a bit due to fleet sales. They warn retail customer demand continues to be weak due to price and charging infrastructure. But Vertu also added that retail customers are concerned about costs, which we believe relates to items like higher BEV insurance costs. Because weak retail BEV, as of Aug 2024, BEVs only accounted for 17.2% of new car registrations, which is below the government mandated target of 22% in 2024. BEVs at 17.2% would be lower if some car manufacturers hadn't already started to restrict ICE and HEV deliveries in 2024 to not make the 17.2% a lower percentage. Vertu says *“as manufacturers cannot sustain price cuts indefinitely, government incentives like tax breaks or subsidies will likely be needed to boost BEV private sales or changes to the Mandate will be required to take the pressure off the sector and make the transition to BEV vehicles more achievable and sustainable.”* I.e. the government has to lower the target significantly to something realistic to customer demands. Our Supplemental Documents package includes an excerpt from the Vertu H1 release.

**UK BEVs
weakness**

09/08/24: Vertu warned restricting ICE/HEV to help UK EVs sales get to 22%

Vertu was the first significant auto group to warn that car manufacturers were already restricting ICE and HEV deliveries to try not to make the BEV % of total car sales get even lower. Here is what we wrote in our Sept 9, 2024 Energy Tidbits memo. *“The UK government will be able to say UK EVs sales should be near their regulated 22% of total car sales. But it won't be because EVs demand supports 22% of total car sales. Rather it will be because car manufacturers are holding back ICE and HEVs in 2024. It's math. If EVs sales are less, then the ICE/HEV sales have to be stopped or else the denominator will get too large. On Friday, we tweeted [\[LINK\]](#) “Blunt talk! UK EVs should hit UK regulated EVs to be 22% of total car sales BUT not because of EVs demand. RATHER @vertumotorsCEO explains: “some franchises there's a restriction on supply of petrol cars and hybrid cars, which is actually where the demand is.” “It's almost as if we can't supply the cars that people want, but we've got plenty of the cars that maybe they don't want.” “They [manufacturers] are trying to avoid the fines. So they're constraining the ability for us to supply petrol cars in order to try and keep to the government targets.” “The new car market is no longer a market, unfortunately. It's a state-imposed supply chain.” #OOTT.”* This is the concern that others have had but weren't as blunt as Vertu Motors CEO Forrester – disappointing demand for EVs means car manufacturers have to restrict deliveries of ICE and HEVs. Vertu Motors posted The Daily Telegraph story that included Forrester's comments. They also wrote *“But the scheme has prompted stark warnings from bosses at major brands, such as Vauxhall owner Stellantis and Ford, which have said they cannot sacrifice profits by selling EVs at large discounts indefinitely. Instead, they have previously warned they may be forced to restrict petrol car supplies to artificially boost their ZEV mandate performance. The warning from*

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Vertu is the first confirmation that carmakers have now begun doing so.” Our Supplemental Documents package includes the Vertu posted story. [\[LINK\]](#)”

Energy Transition: Amazon/Google to add nuclear power for AI data centers

On Wednesday, we tweeted [\[LINK\]](#) “#NatGas & #Coal also win in Amazon & Google sign up for to-be regulatory approved & built n nuclear SMRs For next decade, what else but #NatGas and #Coal generation can provide 24/7 reliable electricity for #DataCenters until nuclear power is available? See 📌 10/11 tweet @BloombergNEF need more NatGas & Coal for data centers. #OOTT.” Our tweet included the recent headlines of “Amazon goes nuclear, to invest more than \$500 million to develop small modular reactors” and “Google signs deal with nuclear company as data center power demand surges”. We think it is hard for anyone to deny that nuclear power is the ideal 24/7 reliable electricity source for AI data centers and small modular reactors have the potential, if NIMBY is overcome, to be placed in close proximity to where the power is needed. However, we always remind what other new sources of 24/7 electricity are there to for AI data centers until mini-nuke power is available? It's really only natural gas and coal. Although we should warn we also see big potential for geothermal in size in the next 10 to 15 years. So we always look at announcements like Amazon and Google going nuclear as positive for natural gas and coal as there isn't any other option in size to provide 24/7 electricity until nuclear is available. Our Amazon/Google tweet also linked to the following item on BloombergNEF's Oct 8 report “How Significant Will AI Data Centers' Electricity Demand Be?” and how the BloombergNEF report highlights more natural gas and coal is needed to meet AI data center growth.

**Amazon & Google
go nuclear**

Energy Transition: Coal not being retired as is needed for AI data center electricity

We continue to believe that data centers electricity demand growth can't be run on wind and solar. Rather they will take as much wind and solar as they can to add to their ESG scorecard but need natural gas and coal as their reliable 24/7 power until SMR nuclear and long duration multi-day battery storage capability is available. Maintaining and not retiring coal generation is an increasing theme for AI data centers. We saw a real-life example of this in the Washington Post report “A utility promised to stop burning coal. Then Google and Meta came to town. An energy crunch forces continued coal burning in a low-income area as data centers strain the regional power supply.” [\[LINK\]](#). On Monday, we tweeted [\[LINK\]](#) “Coal is needed for longer. 📌 A utility promised to stop burning coal. Then Google and Meta came to town. @evanhalper. Data centers will take as much solar & wind as possible BUT need 24/7 power. So for next decade or more until mini-nukes or multi-day battery send out is available, THE only real choices are more #NatGas and keep #Coal running for longer. #OOTT. [\[LINK\]](#).” The Washington Post reviews what has happened in Nebraska where coal generation was supposed to be retired but has been extended because Meta and Google brought AI data centers to Nebraska. They wrote “But when the 2023 deadline to rid that plant of coal arrived, the power company that owns it balked. Eliminating toxic emissions conflicted with a competing priority: serving massive, power-hungry Meta and Google data centers the utility helped recruit to the region before it secured enough new energy to meet the extra demand. The fast-growing data centers — which provide computing power for artificial intelligence — are driving explosive growth in the area's energy use. Electricity demand in Omaha has increased so much overall, according to the Omaha Public Power District, that permanently switching off the two coal-burning generators at its North Omaha plant could

**Coal
generation not
being retired**

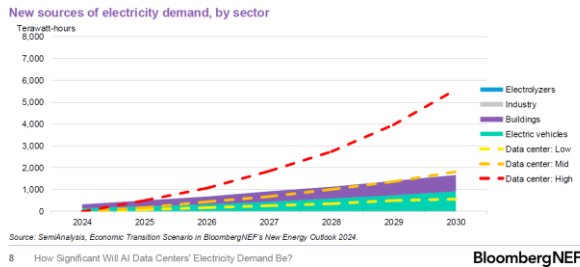
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buckle the area's electricity system. "A promise was made, and then they broke it," said Cheryl Weston, who has lived for five decades in North Omaha. "The tech companies bear responsibility for this. The coal plant is still open because they need all this energy to grow." Coal is now planned to burn in North Omaha through 2026, according to the utility, although Weston and other critics are skeptical it will stop then." Our Supplemental Documents package includes the Washington Post report.

BNEF, more NatGas Coal needed to meet data center growth

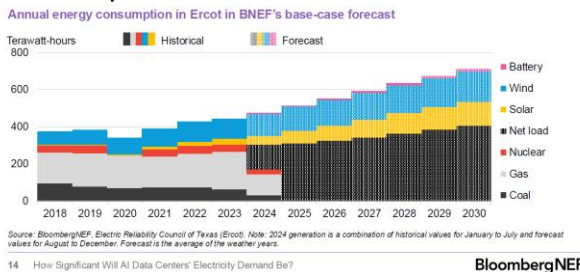
Here is what we wrote in last week's (Oct 13, 2024) Energy Tidbits memo on BloombergNEF's call that more coal is needed. It's not just not retiring coal generation, it's adding more coal generation. "BNEF, more NatGas Coal needed to meet data center growth. On Tuesday, BloombergNEF posted its "How Significant Will AI Data Centers' Electricity Demand Be?" It's another who is coming out with the same conclusion – AI data center electricity demand is quickly and strongly growing and will increase its relative share of a growing electricity demand outlook. And BNEF also reminds that this explosive growth will need all the wind and solar it can get and also all the natural gas and coal to meet this demand. (i) On Friday, we tweeted [\[LINK\]](#) "Bullish #NatGas #Coal. @BloombergNEF also sees massive relative growth of data center electricity demand. Data center demand will take all the #Wind #Solar it can. But absent long duration multi-day storage send out capacity, what NEW sources can provide near term (next 10 yrs) 24/7 baseload electricity in scale other than #NatGas and #coalecroux #OOTT." (ii) Our tweet included the below slide "Data center power demand is likely to exceed that of electric vehicles". BloombergNEF forecasts data center low, med and high electricity consumption cases and the med and high forecasts are the largest new electricity demand areas. (iii) We remind that the big growth in data center electricity requires all the wind and solar generation that can be added BUT, it also means that, until there is long duration multi day send out capacity for storage and not just multi hour, there is really no near term (next 10 yrs) NEW source of 24/7 baseload electricity in any size other than natural gas and coal. It also means that energy providers will have no choice but to try to avoid retirement of existing coal and nuclear power. Our tweet included the below BloombergNEF chart that says "coal and gas generation will grow to meet new power demand". That is more than just not retiring coal, BloombergNEF sees the need for coal generation to grow. Our Supplemental Documents package includes excerpts from the BloombergNEF report."

Figure 63: Data center power demand is likely to exceed that of EVs
Data center power demand is likely to exceed that of electric vehicles



Source: BloombergNEF

Figure 64: Coal and gas generation will grow to meet new power demand
Coal and gas generation will grow to meet new power demand



Source: BloombergNEF

Energy Transition: Uniper “are hardly any major customers who buy green hydrogen”

No one should be surprised that green energy project developers are pulling the plug or indefinite delays to projects – green hydrogen is very expensive and major buyers aren't stepping up to commit to any term buying to give the confidence for the supply project to spend the billions to get the project done. Because, without major buyers to commit to term buying at some very high price, the returns aren't there for the project developer. That was the very clear message from Uniper. On Monday, we tweeted [\[LINK\]](#) “No Green Hydrogen = Need #NatGas #Coal for longer. Uniper delays €8b in green projects. CEO “There are hardly any major customers who buy green hydrogen. That’s why we have to put the brakes on a bit.” “We cannot invest where we don’t expect a good return” reports @MonicaRaymunt. Fits 📌 10/09/24 tweet @BloombergNEF “End of the Hydrogen Hype Cycle?” #OOTT.” There wasn't a press release, but Bloomberg reported “Uniper SE said a lack of demand is forcing the German utility to postpone €8 billion-worth (\$8.7 billion) of investments into green hydrogen and other emissions-friendly technology beyond 2030. “We must not ignore developments in our business environment,” Chief Executive Officer Michael Lewis said in an interview with Germany’s Frankfurter Allgemeine Zeitung. The company had planned to invest €8 billion by the end of the decade, but Lewis said reaching that target will “probably take a few years longer,” namely until “the early 2030s.” “We cannot invest where we don’t expect a good return,” Lewis said, adding delays were necessary due in part to lacking

Lack of major buyers for green hydrogen

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demand for green hydrogen. “There are hardly any major customers who buy green hydrogen. That’s why we have to put the brakes on a bit.” Our Supplemental Documents package includes the Bloomberg report.

07/16:24: EU green hydrogen plan based on politics not robust analysis, Uniper’s “delay” of green hydrogen due to green hydrogen being uneconomic and a lack of major buyers who will buy green hydrogen at the required high price is a reality check vs the aspirations of the EU politicians who ignore even the reality comments from their auditors. Here is what we wrote in our July 21, 2024 Energy Tidbits memo. “EU renewable energy plan based on politics not robust analysis. No one should be surprised that the European Court of Auditors scathing calling-out of the EU politicians on their renewable hydrogen plans and unrealistic targets that were set based on politics and not any robust analysis. And the problem is being unrealistic means that the costs are huge and nowhere the nirvana sold by western politicians that the transition won’t lead to higher and more volatile energy prices. (i) On Tuesday, we tweeted [\[LINK\]](#) “Busted! No real analysis = EU unrealistic green hydrogen targets! “EU’s industrial policy on renewable hydrogen needs a reality check” “set overly ambitious targets for the production and import of renewable hydrogen.... These targets were not based on a robust analysis, but were driven by political will” “Building up an EU hydrogen industry requires massive public and private investment” “The EU should decide on the strategic way forward towards decarbonisation without impairing the competitive situation of key EU industries or creating new strategic dependencies.” #Oil #NatGas will be needed for longer. Thx @EUauditors #OOTT.” (ii) European Commission politicians have ignored this report. The ECA issued the report on Tuesday and EC President von der Leyen highlighted the EC’s green hydrogen plans as if the plan and targets were fine in her Thursday speech on being reappointed EC President. (iii) EC needs a reality check in their renewable hydrogen targets. The ECA posted their report on the EC’s renewable hydrogen plans and targets and titled their release “Renewable hydrogen-powered EU: auditors call for a reality check.” The ECA said “The auditors call for a reality check to ensure that the EU’s targets are realistic.” (iv) The renewable hydrogen targets were politically driven, not driven by analysis. This is the big point we have highlighted for years – energy transition targets are NOT being set on analysis and reality. They are aspirational political ambitions. So they are doomed not to be met. The ECA clearly said this “To start with, the Commission set overly ambitious targets for the production and import of renewable hydrogen, i.e. 10 million tonnes each by 2030. These targets were not based on a robust analysis, but were driven by political will.” (v) There is a massive requirement for public and private investment. This is another of our longstanding criticisms of setting energy transition targets that aren’t based on analysis – there will be much higher costs. The ECA warned “Building up an EU hydrogen industry requires massive public and private investment.” (vi) Plus a line that looks to be more of a general big slap down that the EU’s decarbonization plans are hurting Europe competitiveness. The ECA wrote “The EU’s industrial policy on renewable hydrogen needs a reality check,” said Stef Blok, the ECA Member in charge of the audit. “The EU should decide on the strategic way forward towards decarbonisation without impairing the competitive situation of

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key EU industries or creating new strategic dependencies.” Our Supplemental Documents package includes the ECA release and excerpts from their report.”

EC President immediately ignored the EC auditor warning on green hydrogen

It is clear why there is an increasing gap between EU politicians and green hydrogen projects proceeding – the EU/EC leaders are ignoring any information that isn't supportive that they are on track for green hydrogen aspirations. The best example was how EC President von der Leyen immediately ignoring the above European Court of Auditors report on green hydrogen. Here is what we wrote in our July 21, 2024 Energy Tidbits memo. *“EC President immediately ignored the EC auditor warning on green hydrogen. EC President, EU will stay the course on renewable hydrogen goals. It looks like the European Commission leaders are determined to not change their renewable hydrogen goals and plans even in the face of the above FCA clear report that they have an unrealistic target. EC President von der Leyen clearly stated there is no change to their renewable hydrogen 2030 goal. It looks like the European Commission leaders ignored this ECA report. The ECA issued its report on Tuesday and EC President von der Leyen’s acceptance speech on continuing as EC President spoke about renewable hydrogen as if the ECA never wrote its report. She or her staff had two days to acknowledge the report and amend what von der Leyen said about renewable hydrogen. Rather von der Leyen spoke as if the EC renewable hydrogen plans and targets were just fine and that “we will stay the course on our new growth strategy and goals we set for 2030 and 2050.” Here is an excerpt from her Thursday acceptance speech “Honourable Members, Let me give you some figures. To start: in the first half of this year, 50% of our electricity generation came from renewables – home-grown and clean. Investments in clean technologies in Europe have more than tripled in this mandate. We attract more investments in clean hydrogen than the US and China combined. Finally, in the last years, we have concluded with global partners 35 new agreements on clean tech, hydrogen and critical raw materials. This is the European Green Deal in action. So I want to be clear. We will stay the course on our new growth strategy and the goals we set for 2030 and 2050. Our focus now will be on implementation and investment to make it happen on the ground.”*

9/18/23: Aramco CEO, green hydrogen is expensive at \$200-\$400/boe

We have not seen any reports in the last year of any significant advancements in producing renewable/green hydrogen on a more cost-effective manner. Industry has been warning for the last couple years that renewable/green hydrogen is nowhere near being cost competitive. One of the most vocal has been Saudi Aramco. 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

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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

The best line we have seen from an EC politician on hydrogen was in Jan 2023 when a Norway minister 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. #OTT #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."

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Energy Transition: BloombergNEF charts for “End of the hydrogen hype cycle?”

Our tweet on Uniper CEO delaying €8b in green projects because “There are hardly any major customers who buy green hydrogen. That’s why we have to put the brakes on a bit.” “We cannot invest where we don’t expect a good return” fit with the key reasons why hydrogen isn’t working in the BloombergNEF Oct 9 report “End of the Hydrogen Hype Cycle?” Here is what we wrote in last week’s (Oct 13, 2024) Energy Tidbits memo.

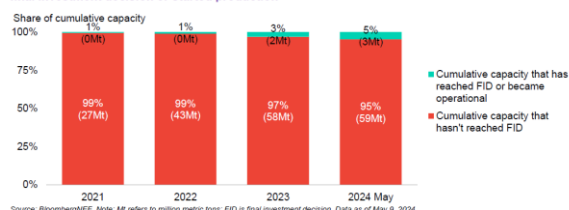
“BloombergNEF charts for “End of the hydrogen hype cycle?” We believe in hydrogen BUT our view on hydrogen scaling up has been consistent that the glowing growth forecasts from the past few years were nowhere near happening because the costs, in particular green hydrogen, were way too expensive so buyers in scale wouldn’t step up. And without buyers in scale who are prepared to pay up, any growth in hydrogen will be modest at best and nowhere near Net Zero aspirations/goals. (i) On Wednesday, we tweeted [\[LINK\]](#) “Great charts from @BloombergNEF Sami Alisawi. - Funding for hydrogen in 2024 (annualized) is 1/4 of 2023 levels. - BNEF cut its hydrogen demand in 2030 by 70% vs 2021 & by 22% vs 2022 fcast. - Electrolyzer costs proving to be ~60% higher than estimated. - Green hydrogen production costs are ~100% higher than expected. - Only 5% of announced production volumes to 2030 have actually reached FID. - Developers are cancelling projects such as 🚧 Oct tweet. Hydrogen nowhere near aspirations for Peak #Oil #NatGas by 2030. #OOTT.” (ii) “End of the Hydrogen Hype Cycle?” was the name of BloombergNEF’s hydrogen update that laid out a series of charts that were negative on all the key items that are needed to ramp up hydrogen and this has meant a way less than expected ramp up in hydrogen. It’s a good recap of all the negatives and it’s hard to see the hydrogen market going much lower but the question is when it can it start to get on any sustained bounce of the bottom. (iii) Here are a few of the negatives. Project funding for YTD Apr 30, 2024 was only \$11.3b, which compares to \$139.6b in 2023 and \$129.7b in 2022. That is a huge drop in funding and funding drives the actual moving ahead on projects. BloombergNEF’s new forecast for hydrogen demand in 2030 is 390 million metric tonnes per year, which is down 70% from its 2021 forecast of 1,318 mtpa and even down 22% from the 2021 forecast. Electrolyzer project costs were underestimated in all parts of the world and it looks like the updated project costs are ~60% higher than the prior cost estimates. There is a lack of buyers with only 12% of clean hydrogen capacity having identified offtakers. This is the problem that Saudi Aramco has raised for years – there aren’t any buyers of size to get hydrogen suppliers to commit to spend the capex. Here is the big reason why hydrogen will disappoint for its growth to 2030 – only 5% of announced production volumes until 2030 have reached a FID. So projects announced their hydrogen project will be onstream by 2030 but 95% of the volume hasn’t taken a final investment decision. There are more slides on the same theme. (iii) It’s hard to see how hydrogen quickly goes on a sustained run up. BloombergNEF ends with a slide of the steps to success. They start with the easy one – finalize policies. But then step thru the reality check problems to date – reduce costs, increase offtake and increase investment. Then they can start building. Our Supplemental Documents package includes excerpts from the BloombergNEF “End of the hydrogen hype cycle?” report. “

“End of the
hydrogen hype
cycle?”

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Figure 65: Only 5% of announced production volume until 2030 has reached a FID
Only 5% of announced production volume until 2030 has reached a final investment decision

Share of clean hydrogen production volume announced to come online by 2030 that has made a final investment decision or started production



Source: BloombergNEF. Note: Mt refers to million metric tons; FID is final investment decision. Data as of May 9, 2024.

17 End of the Hydrogen Hype Cycle?

BloombergNEF

Source: BloombergNEF

Capital Markets: BC election results not likely known for days

Yesterday, British Columbia held its provincial election, which, as expected was a very close race and, in fact, still too close to call. Earlier this morning, we tweeted [LINK](#) "BC election results won't be known for days even with 99.77% reporting. Who will win & will Greens will hold the balance of power. Seats as of 3:45am MT:NDP 46. Conservatives 45. Green 2. BUT will likely be recounts in some very close ridings. #OOTT." [LINK](#). No one looks certain to get the 47 seats for a majority and, at least at this point prior to any recounts, the Green Party is in position to once again hold the balance of power. And, if so, we would expect them to enter some sort of support agreement to keep the current NDP government in place. However, our tweet included six too close to call ridings that could see recounts. The NDP would seem to be in best position to flip some of the recount seats to their side but it could still go either way. We suspect it means that a final election results will be at least days away. The NDP will be hoping it can flip at least one of the recount seats so they don't have to do a deal with the Greens.

**BC election
yesterday**

Capital Markets: 56% of Americans haven't shared in the real estate/market gains

We are a little surprised that politicians, in their plans to increase taxes on higher income and wealthy, haven't really hammered home how most people haven't shared in the huge increase in financial assets because most don't own homes or stocks. On Wednesday, we tweeted [LINK](#) "Need to find a way for broader prosperity. 44% of Americans with financial assets (housing, stocks, bonds, etc.) net worth is +45% or +\$50T since beginning of Covid. But those that don't own financial assets are struggling. @AliciaLevinePhD to @andrewsorkin yesterday. #OOTT." It's not just lower income, but anyone who didn't own financial assets out of Covid. Here is the transcript we made of the comments by Alicia Levine (BNY Wealth, Head, Investment Strategy & Equities) on with CNBC's Andrew Ross Sorkin on Squawk Box on Oct 15. Levine: "for part of the population it is horrific - For those without financial assets. Consumer net worth is up \$50 trillion in 4 years since the beginning of Covid." Ross Sorkin "say that again". Levine "\$50 trillion, with a T. Which represents a 45% growth with where we were before Covid. That's financial assets, right." Ross Sorkin "so that's only 44% of Americans?" Levine "that's what I'm saying. So if you own financial assets whether it's housing, stocks, bonds, other financial assets, you're doing great. You've increased your net worth. And your net interest costs are actually, as a % of your income, the same as they were despite the rate hiking cycle. So the spreads higher. So you feel richer and the % of what you're paying to service your debt is the same. Unlike the government by

**56% of Americans
don't own financial
assets**

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the way. But if you don't own financial assets, it is not the same economy and you're struggling".

Twitter: Thank you for getting me to 11,000 followers

Last month, I went over 11,000 followers on Twitter/X. I really appreciate the support and, more importantly, some excellent insights and items to look at from Twitter followers. It helps me do a better job. For new followers to our Twitter, we are trying to tweet on breaking news or early views on energy items, most of which are followed up in detail in the Energy Tidbits memo or in separate blogs. Our Twitter handle is @Energy_Tidbits and can be followed at [\[LINK\]](#). We wanted to use Energy Tidbits in our name since I have been writing Energy Tidbits memos for over 20 consecutive years. Please take a look thru our tweets and you can see we aren't just retweeting other tweets. Rather we are trying to use Twitter for early views on energy items. Our Supplemental Documents package includes our tweets this week.

**@Energy_Tidbits
on Twitter**

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 food.

Winners focus on winning. Losers focus on the Winners

Great comment from former NFL player, Manti Te'o, on Good Morning Football on Friday when speaking on today's 49ers/Chiefs game and how the Chiefs are viewed as underdogs. But Te'o reminds the Chiefs don't worry about stuff like that as they are winners. Te'o said *"They really don't care. All they care about is winning. Winners focus on winning. Losers focus on the Winners. That's all they do. You don't play in four out of the past five Super Bowls and win three of them if you are worried about all the noise outside of the football game"*. Everyone has seen this whether it is in sports, business or life as to differentiate those that are winners and those that may only be a flash in the pan. Can't always think of Bill Belichick's famous Do Your Job, and obviously, do it well is the way to win. You didn't see Belichick trying to be the coach with the most quote or why he was a better coach than others or the shortfalls in others, he just focused on winning and doing his job.

Wine of the week: 2004 Artadi "Pagos Viejos" Rioja

In August, I started the wine of the week when I realized I had to get to opening up some wines bought 20 to 30 years ago that included some that, unfortunately, were getting past their prime. One of the negatives of the change in life from Covid was a huge absence of entertaining at home, which means there has been a big shortfall in wine drinking at our home. So am now making sure what, when I bought them 15-25 years ago, were some good wines and make sure bottles get opened especially as many are 20 to 40 years old. On Friday, I tweeted out the wine of the week, which was the 2004 Artadi "Pagos Viejos" Rioja. It was a bottle in the cellar during the great Alberta flood of 2013 so the label was a little beaten up and the expert review was gone. I decanted it for a couple hours and it was excellent. In fact, it was so good, I had to figure out what the experts said and Wine Advocate loved it and said it should drink well thru 2047. So, 2024 looks to right in the good drinking period and I still have a few more bottles.

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Figure 66: 2004 Artadi "Pagos Viejos" Rioja



Source: SAF Group

2004 Artadi "Pagos Viejos" Rioja

97 RP 95 WE 94 ST 94 WS

97 Wine Advocate

Review Date: 02/2007

“ The 2004 Pagos Viejos is inky purple with a sublime nose of pain grille, spice box, cherries, raspberries, and wild blue fruits. This is followed by a dense, plush, full-flavored, sexy wine with perfect balance and remarkable elegance for a wine so powerful. Although it can be enjoyed now, it deserves a minimum of a decade of cellaring after which it should drink well through 2047. Kudos to Bodegas Artadi for this tour de force! (JM)

Something for Cdn golf fans, Taylor Pendrith in the hunt at Shriner's

We will be flipping from time to time from NFL to see how Canada's Taylor Pendrith is doing at the Shriner's Children Open. The leaders didn't finish the 3rd round yesterday due to darkness. So that plus the final round will be today. There is a big group of 12 golfers within two shot of the lead including Pendrith. Pendrith is only thru 13 of this 3rd round but is 2 shots off the lead. And, as proven by his opening round 61, Pendrith can go really low on this course.

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