SAF GROUP

Energy Tidbits

Sept 22, 2024

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EU Aug BEV Sales -43.9% YoY, EU Auto Industry Calls for Urgent Action as Demand for BEVs Declines

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. Europe's auto industry calls for urgent action as demand for BEVs declines, EU Aug BEV sales -43.9% YoY [click here]
2. Big negative China indicator Chinese consumers aren't out spending, rather added record +$468b MoM to savings in to $20.81t in August [click here]
3. Holdback to US natural gas prices with continued forecast for a warmer than normal start to winter [click here]
4. Looks like the ramping up of volumes on the new 590,000 b/d TMX expansion has kept WCS less WTI differentials from their normal September/October widening [click here]
5. Vortexa crude oil floating storage. Even with some upward revisions, last 7-weeks average 67.89 mmb and only been 21 weeks <70 mmb in the last 4.5 years [click here]
6. Please follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK].

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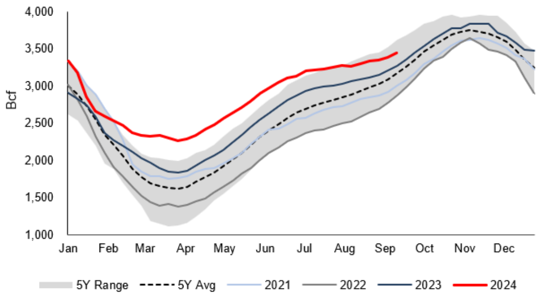
Natural Gas: Really hot summer = less risk US gas storage gets filled early
HH continues to be held back with US natural gas storage at or near the high end of the 5-yr range even with producers still shutting in natural gas due to low prices. The hot summer in the Lower 48 helped to narrow the YoY gas storage surplus from looking like a strong probability to storage being filled early to the more likely expectation for storage to be higher YoY at the end of Oct but not where natural gas storage is full up. The YoY gas storage surplus has dropped from +444 bcf YoY on May 3 to +194 bcf YoY this week. There may very well be items that can change the outlook either up or down, but the really hot summer lessened the risk to storage being filled early. As noted below, storage could be a lot worse.

Less risk for US gas storage to be filled early

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, aside from the hot June, July, and August, was that 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 who have shut-in natural gas due to low natural gas prices.

Storage could be worse

Natural Gas: +58 bcf build in US gas storage; now +194 bcf YoY
For the week ending September 13, the EIA reported a +58 bcf build [LINK]. Total storage is now 3.445 tcf, representing a surplus of +194 bcf YoY compared to a surplus of +198 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 is now back over the range at +25 bcf above the 5-yr maximum of 3.420 tcf. Total storage is now +274 bcf above the 5-year average, below last week's +296 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.

+58 bcf build in US gas storage

Figure 2: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf) 09/13/24	09/06/24	net change	implied flow	Historical Comparisons: Year ago (09/13/23) Bcf	% change	5-year average (2019-23) Bcf	% change
East	802	780	22	22	788	1.8	760	5.5
Midwest	973	950	23	23	923	5.4	906	7.4
Mountain	275	273	2	2	227	21.1	199	38.2
Pacific	283	285	-2	-2	262	8.0	266	6.4
South Central	1,111	1,098	13	13	1,050	5.8	1,040	6.8
Salt	271	266	5	5	242	12.0	241	12.4
Nonsalt	840	832	8	8	808	4.0	799	5.1
Total	**3,445**	**3,387**	**58**	**58**	**3,251**	**6.0**	**3,171**	**8.6**

Source: EIA

Figure 3: Previous US Natural Gas Storage

Previous 8 weeks (Bcf)	Gas in Storage	Weekly Change	Y/Y Diff	Diff to 5 yr Avg
Jul/26	3,249	18	252	441
Aug/02	3,270	21	248	424
Aug/09	3,264	-6	209	375
Aug/16	3,299	35	221	369
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

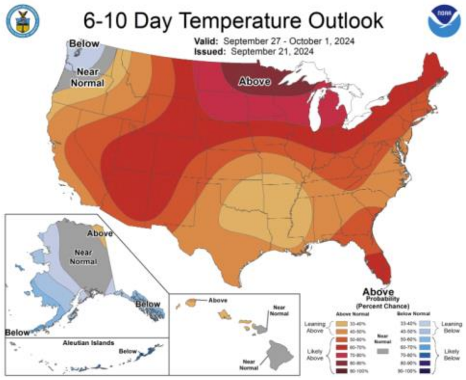
Source: EIA

Warmer than normal Lower 48

Natural Gas: NOAA forecasts warmer than normal Lower 48, but it's now Fall

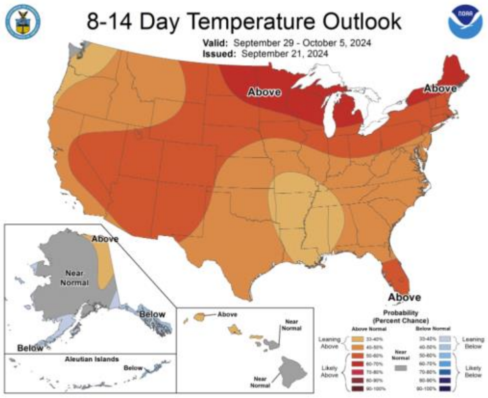
It's now the Fall and that generally means temperatures that are not hot enough to drive air conditioning demand or cold enough to drive heating demand. Yesterday, we tweeted [LINK] "*It's Fall so above normal temps mean it's leave the windows open weather. @NOAA updated 6-10 & 8-14 day temp outlook for Sept 27- Oct 5 calls for warmer than normal temps across Lower 48. Daily highs for NYC & Chicago in low 20'sC in this period. #OOTT.*" Our reminder is that warmer than normal late Sept temperatures don't drive much A/C demand. We checked AccuWeather and it shows daily highs for NYC and Chicago both in the low 20'sC for this period. This is what we describe as the windows open temperatures. Below are NOAA's updated, as of yesterday, 6-10 day and 8-14 day temperature outlook maps covering Sept 27-Oct 5.

Figure 4: NOAA 6-10 day temperature outlook for Sept 27-Oct 1



Source: NOAA

Figure 5: NOAA 8-14 day temperature outlook for Sept 29-Oct 5



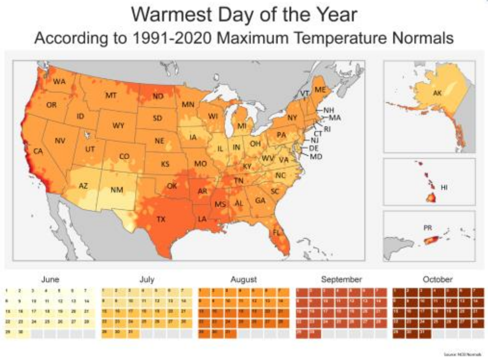
Source: NOAA

Natural Gas: Past NOAA's normal warmest day of the year for the Lower 48

Normal warmest day of the year across the US

It's nearing the end of September, which means it is past the warmest day of the year for the Lower 48 and so hot weather relative to normal isn't as hot for temperatures as during July and August. So when NOAA posts its temperature outlook map and it shows above normal temperatures for late September/early October, it doesn't have any substantial air conditioning demand impact as it tends to be what we call leave the windows open temperatures. Our July 2, 2023 Energy Tidbits included the below map from NOAA's post "*When to expect the Warmest Day o the Year*" [LINK].

Figure 6: NOAA Warmest Day of the Year



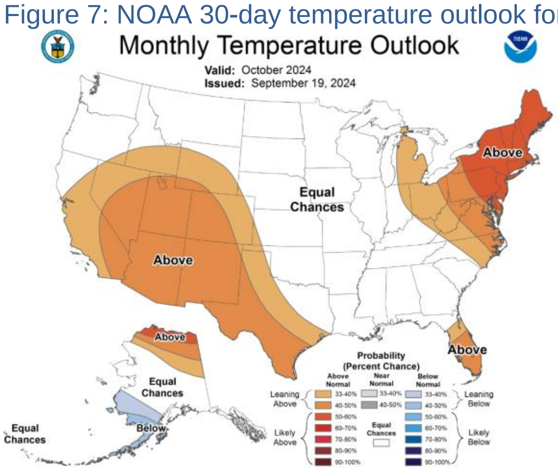
Source: NOAA

Natural Gas: NOAA forecasts normal to warmer than normal temps for US in Oct

NOAA October Temperature Forecast

On Thursday, the NOAA released their updated US temperature forecast for the next 30 days*.* The takeaway from Thursday's Official 30-Day Forecast is that the North East, and Mid-Atlantic, have a higher probability of having above average temperature in October; the South Western regions of the US is slightly favoured to have higher temperatures in October. Our reminder is that warmer than normal October temperatures do not drive significant A/C or heating demand compared to warmer than normal summer temperatures. Below are the NOAA's updated 30-day forecast temperature outlook map covering October.

Figure 7: NOAA 30-day temperature outlook for October



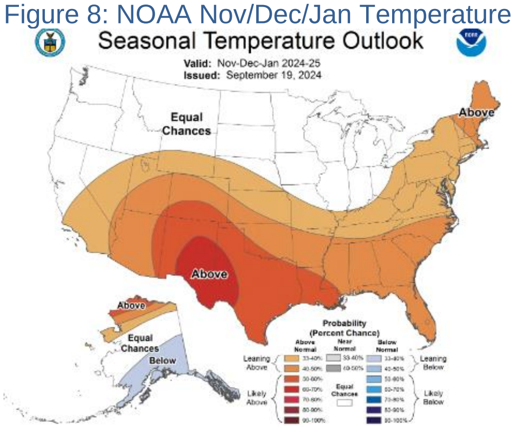
Source: NOAA

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

NOAA sees warm start to winter

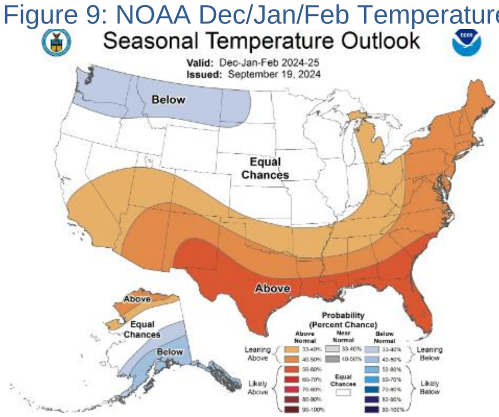
Our concern is that the continued forecasts for a warm start to winter will restrict HH prices until the forecasts revert to an average winter. On Thursday, we tweeted [LINK] "*Holdback to near-term HH #NatGas prices. @NOAA updated seasonal temperature outlook forecasts warmer than normal start to winter and winter overall. Forecasts are never 100% but a warm winter is a big negative to NatGas prices. #OOTT*" On Thursday, NOAA posted it's seasonal temperature outlook for November, December, and January as well as December, January, and February [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 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, and Dec/Jan/Feb that were attached to our tweet.

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



Source: NOAA

Figure 9: NOAA Dec/Jan/Feb Temperature Probability Forecast

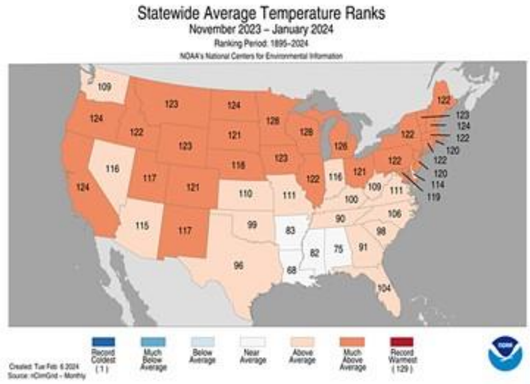


Source: NOAA

Nov/Dec/Jan 2023/24 was the 5th warmest in last 129 years

If NOAA's 2024/25 Nov/Dec/Jan forecast is right, it will be warmer than normal temperatures to start winter, but not close to being as hot as NDJ 2023/24. Here is what we wrote in our Feb 18, 2024, Energy Tidbits memo. "*The winter up until this point has been very warm overall, and now with the January data the NOAA says that the period from Nov/Dec/Jan was the 5th warmest the US has seen in 129 years. We have highlighted how higher YoY US natural gas production has been a negative* *to HH prices, but the more significant factor is the hot winter. Below is a map of statewide average temperature ranks for Nov/Dec/Jan since 1895.*"

Figure 10: US Statewide Average Temperature Ranks Nov 1, 2023 – Jan 31, 2024



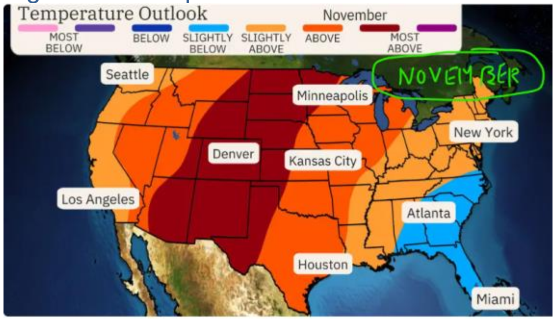
Source: NOAA

Natural Gas: The Weather Channel forecasts a warmer than normal start to winter

A warmer than Oct/Nov/Dec

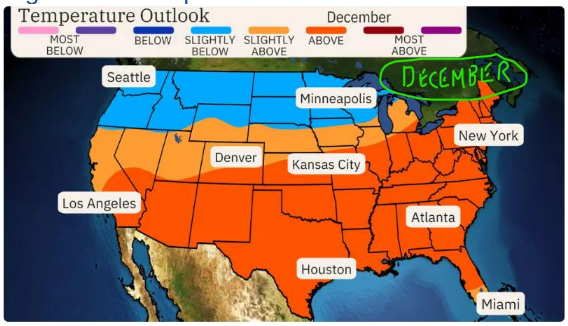
On Friday, we tweeted [LINK] "*Holdback to near-term HH #NatGas prices. @weatherchannel forecasts warmer than normal temperatures across most of the Lower 48 for Oct/Nov/Dec. Forecasts are never 100% but a warm start to winter is a negative to NatGas prices. #OOTT [LINK].*" On Wednesday, The Weather Channel posted its "*Fall-Early Winter Outlook: Widespread Warmth Through November, Then A Colder December For Some*", which is their temperature forecast for Oct, Nov & Dec. Their forecast is similar to NOAA but it looks like The Weather Channel's forecast is a little warmer than NOAA. The Weather Channel forecasts warmer than normal temperatures throughout Oct/Nov/Dec although they see some colder weather coming in parts of the country in Dec. Weather forecasts are not 100% but, until it is changed, a forecast for a warm start to is likely to keep a lid on HH prices. Our Supplemental Documents package includes The Weather Channel forecast.

Figure 11: Temperature Outlook for November



Source: The Weather Channel

Figure 12: Temperature Outlook for December



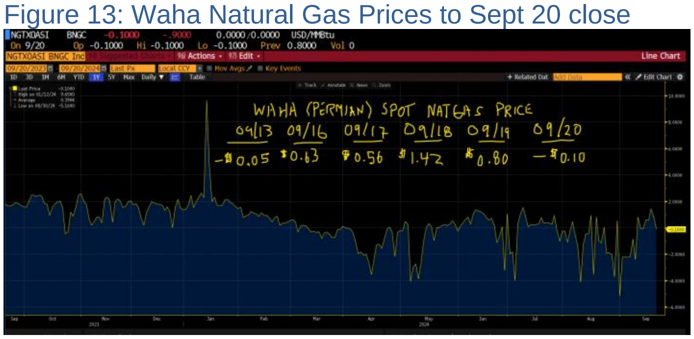
Source: The Weather Channel

Natural Gas: Waha spot prices were positives MTWT before closing -$0.10 on Friday

Waha spot prices were mostly positive

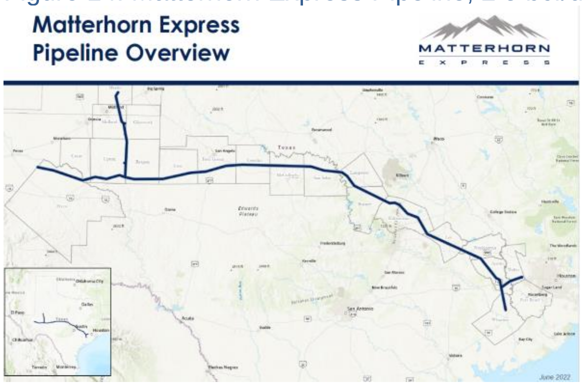
We have been highlighting how Waha (Permian) spot natural gas prices have been negative and that is impacting Permian oil rig levels given all Permian "oil" wells produce natural gas and NGLs. It looks like the negative Waha prices may be getting some relief. On Friday, we tweeted [LINK] "*Waha spot #NatGas was positive MTWT until closing Fri at -$0.10. Infers increasing volumes on new 2.5 bcfd Matterhorn Express, which was expected to take Waha positive. Last week of positive Waha was late July. Waha was positive on Mon before 5.1 earthquake on Tues. #OOTT.*" Waha spot natural gas prices were positive on Mon/Tues/Wed/Thurs before closing negative at -$0.10 on Friday. We have been unable to find any disclosure on Matterhorn Express 2.5 bcf/d pipeline volumes. But Matterhorn is an interstate pipeline (all within Texas) so is not required to post volume flow rates. The last time Waha was positive for a week was late July. So we think the positive Waha prices point to increasing volumes on Matterhorn Express. Our tweet noted that Waha was positive on Monday and the big 5.1 earthquake was Tuesday. If Waha hadn't been positive before the earthquake, we might have worried that the earthquake might have caused some shut-in production. Below is the Waha spot natural gas price as of Friday close and the Whitewater Midstream (operator) Matterhorn Express pipeline map. Our Supplemental Documents package includes the Matterhorn Express pipeline project sheet.

Figure 13: Waha Natural Gas Prices to Sept 20 close



Source: Bloomberg

Figure 14: Matterhorn Express Pipeline, 2.5 bcf/d



Source: Matterhorn Express

09/03/24: Permian Resource "*Matterhorn is online, moving a little bit of gas*"

Our tweet included the transcript excerpt of Permian Resource co-CEO William Hickey update on the 2.5 bcf/d Matterhorn Express pipeline in the Q&A of his sellside presentation on Sept 3. His comments that Matterhorn is not moving a little bit of gas and is ramping up is consistent with the timing we have been highlighting for mid-Sept. Hickey said "*Having said that, I think the specific one that you're probably referencing is WAHA pricing today. It's been about as bad as it's ever been over the last few weeks. But Matterhorn is online, moving a little bit of gas and coming online in a real way over the next month or 2. And so I think although it continues to get delayed more than we would hope, I feel like I've said it will be on line a month from today, two or three times over the last two or three months. that is going to be on line and moving a real amount of gas over the next couple of months. And so hopefully, that we'll see at least WAHA turn positive. I don't think this is going to be the big game changer for gas. Like ultimately, we have a lot more work to do, I think, with logistics of how we move gas around the nation and really the other countries to solve the supply/demand side of the gas part of the equation. But generally speaking, that would be a nice relief.*"

Natural Gas: Big 6.4 earthquake ~300 km from LNG Canada

6.4 earthquake offshore BC

There was a good reminder last Sunday afternoon that off the coast of British Columbia is in high earthquake risk corridor. Last Sunday, we tweeted [LINK] "*British Columbia earthquake. Big 6.4 earthquake 291 km south of Prince Rupert. Also nearby 4.2 and 4.5 quakes. Also circled Kitimat for LNG Canada location. Thx Earthquakes Canada [LINK] #OOTT #LNG.*" Our twee included the below map showing the location of the 6.4 earthquake that was approximately 300 km south of Prince Rupert and Kitimat. There was also a 4.2 and 4.5 nearby. Kitimat is where LNG Canada is located. The earthquake was felt but no reported damages that far away. But the reminder this is a high earthquake risk region.

Figure 15: 6.4 earthquake offshore BC on Sept 15, 2024

Source: EIA

Natural Gas: Woodside signs 0.05 bcf/d 10-year LT LNG deal with JERA

Woodside / JERA 10-yr LNG supply deal

On Tuesday, Bloomberg reported that Woodside signed a 0.05 bcf/d 10-year LNG supply deal with JERA for the delivery of LNG beginning in April 2026. The news outlet reported: *"Woodside agreed to supply about 0.4 million tons a year of LNG to Jera, a Japanese utility, for 10 years from April 2026, according to a statement from the Australian producer".* The LNG deal follows an agreement by JERA to purchase a 15.1% non-operating interest in Woodside's Scarborough Joint Venture. According to reporters at Upstream [LINK], Woodside's Chief Commercial Officer, Mark Abbotsford, said: *"This LNG offtake agreement is Woodside's first long-term sale to JERA from our global portfolio and delivers on one of the core elements of our strategic relationship outlined earlier this year… We understand the demand from our customers in the Asian region for reliable energy. LNG continues to be an important energy source for Japan, one which can support the country's efforts to decarbonise".* Our Supplemental Documents Package includes the Woodside release. [LINK]

Natural Gas: BOTAŞ signs 0.15 bcf/d 10-year LT LNG deal with TotalEnergies

BOTAŞ / TotalEnergies 10-yr LNG supply deal

On Wednesday, BOTAŞ announced that the company a signed a 0.15 bcf/d 10-year LNG supply deal with TotalEnergies for the delivery of LNG beginning in 2027. The BOTAŞ press release reported: *"The LNG supply agreement signed with TotalEnergies will increase portfolio diversity and flexibility, and BOTAŞ will gain new competencies in the field of LNG transportation as it will receive LNG from the loading port by ships".* The LNG deal follows the September 2, 2024, agreement between BOTAŞ and Shell for the delivery of 0.39 bcf/d beginning in 2027. Our Supplemental Documents Package includes the BOTAŞ press release. [LINK]

Natural Gas: ConocoPhillips signs 0.10 bcf/d 10-year LT LNG deal with Uniper

ConocoPhillips / Uniper sign 10-yr LNG supply deal

On Thursday, Uniper announced that the company a signed long term LNG deal with ConocoPhillips for the "*Supply of up to 10 billion cubic meters of natural gas over the next 10 years in key Northwest European markets*". For the purposes of our writeup we have assumed the 10 bcm over the next 10 years is allowed 1 bcm per year for 10 years. This wouid represent 0.097 bcf/d or a rounded 0.10 bcf/d. [LINK]. Uniper's CCO, Carsten Poppinga said "*We are excited to announce this significant deal, which is not only a great success for Uniper but also of central importance to energy security. This deal aims to enable us to sustainably strengthen the supply of gas in Germany and Europe on a long-term basis. This partnership is also a testament to our trustful cooperation. We are looking forward to further strengthen it and thereby create new opportunities*". While ConocoPhillips CCO, Khoa Dao said "*Our strong partnership with Uniper dates back many years, and we are pleased to extend our relationship for the next decade. This agreement will further advance our growing LNG portfolio marketing efforts and help to ensure placement of vital gas supply into Europe"*. Our Supplemental Documents Package includes the Uniper press release.

There have been 26.05 bcf/d of long-term LNG supply deals since July 1, 2021
The abrupt big wave of LNG deals started in July 2021, and we highlighted this in our July 14, 2021, 8-pg "Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support for Brownfield LNG FIDs". We continue to update that table, which now shows 26.92 bcf/d of long-term LNG deals since July 1, 2021. 62% of the deals have been by Asian LNG buyers, but we are now seeing rest of world locking up long term supply deals post Russia/Ukraine. Note in our non-Asian LNG deals will major LNG players (i.e. Chevron, Shell, etc.) buying for their LNG portfolio supply. China has been particularly active in this space, accounting for 42% of all Asian LNG buyers in long term contracts since July 1, 2021. Below is our updated table of Asian and European LNG buyers new long-term supply deals since July 1, 2021.

Figure 16: Long-Term LNG Buyer Deals Since July 1, 2021

Long-Term LNG Buyer Deals Since July 1, 2021							
Date	Buyer	Seller	Country Buyer / Seller	Volume (bcf/d)	Duration Years	Start	End
Asian LNG Deals							
Jul 7, 2021	CNOOC	Petronas	China / Canada	0.30	10.0	2022	2032
Jul 9, 2021	CPC	QatarEnergy	Taiwan / Qatar	0.16	15.0	2022	2037
Jul 9, 2021	Guangzhou Gas	BP	China / US	0.13	12.0	2022	2034
Jul 12, 2021	Korea Gas	QatarEnergy	Korea / Qatar	0.25	20.0	2025	2045
Sep 29, 2021	CNOOC	QatarEnergy	China / Qatar	0.50	15.0	2022	2037
Oct 7, 2021	Shenzhen	BP	China / US	0.04	10.0	2023	2032
Oct 11, 2021	ENN	Cheniere	China / US	0.12	13.0	2022	2035
Nov 4, 2021	Unipec	Venture Global LNG	China / US	0.46	20.0	2023	2043
Nov 4, 2021	Sinopec	Venture Global LNG	China / US	0.53	20.0	2023	2043
Nov 5, 2021	Sinochem	Cheniere	China / US	0.12	17.5	2022	2040
Nov 22, 2021	Foran	Cheniere	China / US	0.04	20.0	2023	2043
Dec 6, 2021	Guangdong Energy	QatarEnergy	China / Qatar	0.13	10.0	2024	2034
Dec 8, 2021	S&T International	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 10, 2021	Suntien Green Energy	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 15, 2021	SPIC Guangdong	BP	China / US	0.03	10.0	2023	2033
Dec 20, 2021	CNOOC Gas & Power	Venture Global LNG	China / US	0.26	20.0	2023	2043
Dec 29, 2021	Foran	BP	China / US	0.01	10.0	2023	2032
Jan 11, 2022	ENN	Novatek	China / Russia	0.08	11.0	2024	2035
Jan 11, 2022	Zhejiang Energy	Novatek	China / Russia	0.13	15.0	2024	2039
Feb 4, 2022	CNPC	Gazprom	China / Russia	0.98	30.0	2023	2053
Mar 24, 2022	Guangdong Energy	NextDecade	China / US	0.20	20.0	2026	2046
Mar 29, 2022	ENN	Energy Transfer	China / US	0.36	20.0	2026	2046
Apr 1, 2022	Guangzhou Gas	Mexico Pacific Ltd	China / Mexico	0.26	20.0	n.a.	n.a.
Apr 6, 2022	ENN	NextDecade	China / US	0.26	20.0	2026	2026
Apr 22, 2022	Kogas	BP	Korea / US	0.20	18.0	2025	2043
May 2, 2022	Gunvor Singapore Pte	Energy Transfer LNG	Singapore / US	0.26	20.0	2026	2046
May 3, 2022	SK Gas Trading LLC	Energy Transfer LNG	Korea / US	0.05	18.0	2026	2042
May 10, 2022	Exxon Asia Pacific	Venture Global LNG	Singapore / US	0.26	n.a.	n.a.	n.a.
May 11, 2022	Petronas LNG	Venture Global LNG	Malaysia / US	0.13	20.0	n.a.	n.a.
May 24, 2022	Hanwha Energy	TotalEnergies	Korea / France	0.08	15.0	2024	2039
May 25, 2022	POSCO International	Cheniere	Korea / US	0.05	20.0	2026	2036
June 5, 2022	China Gas Holdings	Energy Transfer	China / US	0.09	25.0	2026	2051
Jul 5, 2022	China Gas Holdings	NextDecade	China / US	0.13	20.0	2027	2047
Jul 20, 2022	PetroChina	Cheniere	China / US	0.24	24.0	2026	2050
Jul 26, 2022	PTT Global	Cheniere	Thailand / US	0.13	20.0	2026	2046
Jul 27, 2022	Exxon Asia Pacific	NextDecade	Singapore / US	0.13	20.0	2026	2046
Sep 2, 2022	Woodside Singapore	Commonwealth	Singapore / US	0.33	20.0	2026	2046
Nov 21, 2022	Sinopec	QatarEnergy	China / Qatar	0.53	27.0	2026	2053
Dec 26, 2022	INPEX	Venture Global LNG	Japan / US	0.13	20.0	n.a.	n.a.
Dec 27, 2022	JERA	Oman LNG	Japan / Oman	0.11	10.0	2025	2035
Jan 19, 2023	ITOCHU	NextDecade	Japan / US	0.13	15.0	n.a.	n.a.
Feb 7, 2023	Exxon Asia Pacific	Mexico Pacific Ltd	Singapore / Mexico	0.26	20.0	n.a.	n.a.
Feb 23, 2023	China Gas Holdings	Venture Global LNG	China / US	0.26	20.0	n.a.	n.a.
Mar 6, 2023	Gunvor Singapore Pte	Chesapeake Energy	Singapore / US	0.26	15.0	2027	2042
Apr 28, 2023	JERA	Venture Global LNG	Japan / US	0.13	20.0	n.a.	n.a.
May 16, 2023	KOSPO	Cheniere	Korea / US	0.05	19.0	2027	2046
Jun 1, 2023	Bangladesh Oil	QatarEnergy	Bangladesh / Qatar	0.24	15.0	2026	2031
Jun 21, 2023	Petro Bangle	Oman	Bangledesh / Oman	0.20	10.0	2026	2036
Jun 21, 2023	CNPC	QatarEnergy	China / Qatar	0.53	27.0	2027	2054
Jun 26, 2023	ENN LNG	Cheniere	Singapore / US	0.24	20.0	2026	2046
Jul 5, 2023	Zhejiang Energy	Mexico Pacific Ltd	China / Mexico	0.13	20.0	2027	2047
Aug 8, 2023	LNG Japan	Woodside	Japan / Australia	0.12	10.0	2026	2036
Sep 7, 2023	Petrochina	ADNOC	China / UAE	n.a.	n.a.	n.a.	n.a.
Nov 2, 2023	Foran	Cheniere	China / US	0.12	20.0	n.a.	n.a.
Nov 4, 2023	Sinopec	QatarEnergy	China / Qatar	0.39	27.0	2026	2053
Nov 27, 2023	Gunvor Singapore Pte	Delfin Midstream	Singapore / US	0.10	15.0	n.a.	n.a.
Dec 20, 2023	ENN	ADNOC	Singapore / UAE	0.13	15.0	2028	2043
Jan 5, 2024	GAIL	Vitol	India / Singapore	0.13	10.0	2026	2036
Jan 8, 2024	Shell	Ksi Lisims LNG	Singapore / Canada	0.26	20.0	2027	2047
Jan 16, 2024	ExxonMobil	Mexico Pacific Ltd	Singapore / Mexico	0.16	20.0	2024	2044
Jan 29, 2024	Excelerate	QatarEnergy	Bangladesh / Qatar	0.13	15.0	2026	2041
Jan 30, 2024	ADNOC	GAIL India	UAE / India	0.07	10.0	2024	2034
Feb 6, 2024	Petronet LNG	QatarEnergy	India / Qatar	0.99	20.0	2028	2048
Feb 19,2024	Deepak Fertilisers	Equinor	India / Norway	0.09	15.0	2026	2041
Feb 28, 2024	Kogas	Woodside	Korea / Australia	0.07	10.5	2026	2037
Feb 29, 2024	Sembcorp	TotalEnergies	Singapore / France	0.11	16.0	2027	2043
Apr 29, 2024	Kogas	BP	Korea / Singapore	0.12	11.0	2026	2037
May 26, 2024	AMNS	Shell	India / Canada	0.05	10.0	2027	2037
May 28, 2024	Hokkaido	Santos	Japan / Australia	0.05	10.0	2027	2037
Jun 4, 2024	IOCL	TotalEnergies	India / France	0.11	10.0	2026	2036
Jun 5, 2024	CPC	QatarEnergy	Taiwan / Qatar	0.53	27.0	2025	2052
Jul 11, 2024	CPC	Woodside	Taiwan / Australia	0.79	10.0	2024	2034
Aug 6, 2024	Osaka Gas	ADNOC	Japan / UAE	0.11	10.0	2028	2038
Aug 26, 2024	KPC	QatarEnergy	Kuwait / Qatar	0.39	15.0	2025	2040
Aug 26, 2024	POSCO International	Mexico Pacific Ltd	Korea / Mexico	0.09	20.0	2027	2047
Sep 2, 2024	BOTAS	Shell	Turkey / UAE	0.39	10.0	2027	2037
Sep 2, 2024	Indian Oil	ADNOC	India / UAE	0.13	15.0	2028	2043
Sep 17, 2024	JERA	Woodside Energy	JERA / Woodside	0.05	10.0	2026	2036
Sep 18, 2024	BOTAS	TotalEnergies	Turkey / France	0.15	10.0	2027	2037
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				**16.71**			

Long-Term LNG Buyer Deals Since July 1, 2021							
Date	Buyer	Seller	Country Buyer / Seller	Volume (bcf/d)	Duration Years	Start	End
Non-Asian LNG Deals							
Jul 28, 2021	PGNiG	Venture Global LNG	Poland / US	0.26	20.0	2023	2043
Nov 12, 2021	Engie	Cheniere	France / US	0.11	20.0	2021	2041
Mar 7, 2022	Shell	Venture Global LNG	US / US	0.26	20.0	2024	2044
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
May 2, 2022	Engie	NextDecade	France / US	0.23	15.0	2026	2041
May 17, 2022	PGNiG	Sempra Infrastructure	Poland / US	0.40	20.0	n.a.	n.a.
May 25, 2022	RWE Supply & Trading	Sempra Infrastructure	Germany / US	0.30	15.0	n.a.	n.a.
Jun 9, 2022	Equinor	Cheniere	Norway / US	0.23	15.0	2026	2041
Jun 21, 2022	EnBW	Venture Global LNG	Germany / US	0.20	20.0	2026	2046
Jun 22, 2022	INEOS Energy	Sempra Infrastructure	UK / US	0.21	20.0	2027	2047
Jun 22, 2022	Chevron	Venture Global LNG	US / US	0.26	20.0	n.a.	n.a.
Jun 22, 2022	Chevron	Cheniere	US / US	0.26	15.0	2027	2042
Jul 12, 2022	Shell	Mexico Pacific Ltd	US / Mexico	0.34	20.0	2026	2046
Jul 13, 2022	Vitol	Delfin Midstream	US / US	0.07	15.0	n.a.	n.a.
Aug 9, 2022	Centrica	Delfin Midstream	UK / US	0.13	15.0	2026	2041
Aug 24, 2022	Shell	Energy Transfer	US / US	0.28	20.0	2026	2046
Oct 6, 2022	EnBW	Venture Global LNG	Germany / US	0.26	20.0	2022	2042
Dec 6, 2022	ENGIE	Sempra Infrastructure	France / US	0.12	15.0	n.a.	n.a.
Dec 20, 2022	Galp	NextDecade	Portugal / US	0.13	20.0	n.a.	n.a.
Dec 20, 2022	Shell	Oman LNG	UK/Oman	0.11	10.0	2025	2035
Jan 25, 2023	PKN ORLEN	Sempra Infrastructure	EU//US	0.13	20.0	2027	2047
Jan 30, 2023	BOTAS	Oman	Turkey / Oman	0.13	10.0	2025	2035
Mar 27, 2023	Shell	Mexico Pacific Ltd	UK / Mexico	0.15	20.0	2026	2046
Apr 24, 2023	Hartree Partners LP	Delfin Midstream	US / US	0.08	20.0	n.a.	n.a.
Jun 21, 2023	Equinor	Cheniere	Norway / US	0.23	15.0	2027	2042
Jun 22, 2023	SEFE	Venture Global LNG	EU//US	0.30	20.0	2026	2046
Jul 14, 2023	ONEE (Morocco)	Shell	Africa/US	0.05	12.0	2024	2036
Jul 18, 2023	IOCL	Adnoc	India/UAE	0.16	14.0	2026	2040
Jul 28, 2023	OMV	BP	Austira/UK	0.13	10.0	2026	2036
Aug 4, 2023	ConocoPhillips	Mexico Pacific Ltd	US/Mexico	0.29	20.0	2025	2045
Aug 22, 2023	BASF	Cheniere	Germany / US	0.10	17.0	2026	2043
Aug 30, 2023	Shell	Oman LNG	US / Oman	0.11	10.0	2025	2035
Oct 11, 2023	TotalEnergies	QatarEnergy	France / Qatar	0.46	27.0	2026	2053
Oct 18, 2023	Shell	QatarEnergy	Netherlands / Qatar	0.46	27.0	2026	2053
Oct 23, 2023	ENI	QatarEnergy	Italy / Qatar	0.13	27.0	2026	2053
Oct 31, 2023	Vitol	Chesapeake Energy	Sweden / US	0.13	15.0	2028	2043
Nov 29, 2023	OMV	Cheniere	Netherlands / US	0.11	15.0	2029	2044
Dec 5, 2023	Woodside Energy	Mexico Pacific Ltd	Australia / Mexico	0.17	20.0	2024	2044
Mar 18, 2024	SEFE	ADNOC	Germany / UAE	0.13	20.0	2024	2044
Apr 17, 2024	Shell	Oman LNG	US / Oman	0.21	10.0	2025	2035
Apr 22, 2024	TotalEnergies	Oman LNG	France / Oman	0.11	10.0	2025	2035
May 8, 2024	EnBW	ADNOC	Germany / UAE	0.08	15.0	2028	2043
June 13, 2024	Saudi Aramco	NextDecade	Saudi Arabia / US	0.16	20.0	2028	2048
June 26, 2024	Saudi Aramco	Sempra Infrastructure	Saudi Arabia / US	0.66	20.0	2029	2049
July 23, 2024	Fluxys	ConocoPhillips	Belgium / US	0.10	18.0	2027	2045
Aug 5 2024	Galp	Cheniere	Portugal / US	0.07	20.0	2030	2050
Sep 19 2024	Uniper	ConocoPhillips	Germany / US	0.10	10.0	2026	2036
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				**9.34**			

Total New Long Term LNG Contracts since Jul/21	**26.05**

*Excludes Asian short term/spot deals
*on Dec 20, 2021 CNOOC agreed to buy an additional 0.13 bcf/d from Venture Global for an undisclosed shorter period
Source: Bloomberg, Company Reports
Prepared by SAF Group https://safgroup.ca/news-insights/

Source: SAF

Natural Gas: India August natural gas production down -1.0% MoM, down -3.7% YoY

India natural gas production down MoM, down 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 to flat to modestly down in 2024. On Monday, September 16, India's Petroleum Planning and Analysis Cell released their monthly report for August's natural gas and oil statistics [LINK]. India's domestic natural gas production for August was 3.47 bcf/d, which was down -1.0% MoM from 3.51 bcf/d in July. On a YoY basis, natural gas production was down -3.7% from 3.61 bcf/d in August 2023. Our Supplemental Documents package includes excerpts from the PPAC monthly.

Natural Gas: India LNG imports up +3.3% MoM to 3.18 bcf/d in August, up +25.1% YoY

India LNG imports up MoM, up YoY

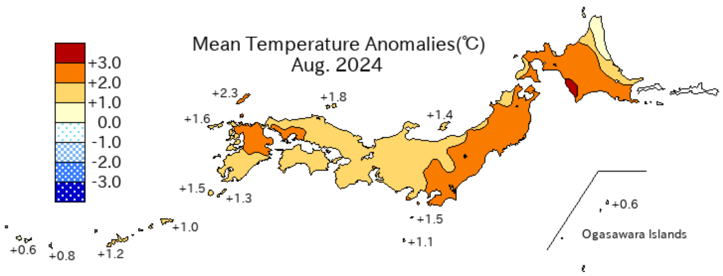
For the past several years, India has increased LNG imports whenever domestic natural gas production was flat or decreased. The overriding factor for India tends to be price; if price is high, India pulls back on LNG imports and will normally turn to coal. If prices are low, like was seen this year, then India tends to pick up spot cargoes. India is an opportunistic LNG spot buyer. On Monday, September 16, India's Petroleum Planning and Analysis Cell released their monthly report for August'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. August's 2024 LNG imports were 3.18 bcf/d, which is up +3.3% MoM from 3.08 bcf/d in July. LNG imports are now up +25.1% YoY from 2.54 bcf/d in August 2023. Our Supplemental Documents package includes excerpts from the PPAC monthly.

Natural Gas: Well above average temperatures for August in Japan

August's temperature recap in Japan

It was warmer than normal in Japan in August and that has helped drive electricity demand. Although with Japan's ongoing electricity conservation practices, it did not drive as much electricity demand as it would in the US. On Thursday, September 19, the Japan Meteorological Agency posted its climate recap for August [LINK]. It included the below mean temperature anomalies map. The JMA wrote "*Monthly mean temperatures were significantly above normal nationwide, because warm air frequently flowed into northern Japan and covered eastern/western Japan and Okinawa/Amami. Monthly mean temperatures in western Japan were the highest on record for August since 1946. In western Japan, monthly sunshine durations were significantly above normal on the Sea of Japan side and were above normal on the Pacific side, because the North Pacific Subtropical High frequently covered these regions. On the other hand, monthly sunshine durations were below normal on the Sea of Japan side and the Pacific side of northern Japan, because the regions were well affected by low-pressure systems, fronts and Typhoon MARIA (T2405). Monthly precipitation amounts on the Pacific side of eastern Japan were significantly above normal and were the highest on record for August since 1946, because the region was well affected by moist air inflow and Typhoon SHANSHAN (T2410). Monthly precipitation amounts were above normal on the Pacific side of northern/western Japan, and below normal on the Sea of Japan side of eastern Japan and in Okinawa/Amami".* Below is a temperature map of Japan for August.

Figure 17: JMA Mean Temperature Anomalies August 2024



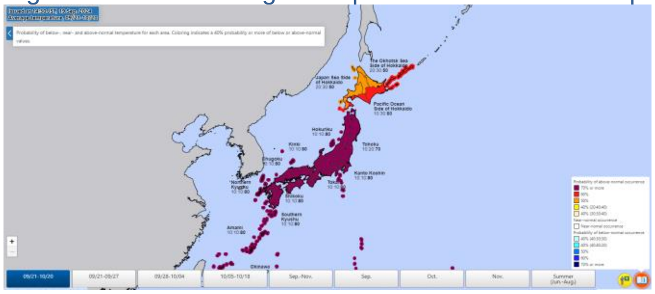
Source: Japan Meteorological Agency

Natural Gas: Japan expects warmer than normal temps to continue to mid Oct

JMA temperature forecast for the next 30 days

It was a hot summer in Japan and the hot weather is expected to continue for the next 30 days. But we remind that hot for September and October is not as hot as being hot in August. On Thursday, the Japan Meteorological Agency updated its forecast for the next 30 days, Sept 21 thru Oct 20, in Japan [LINK]. There is no JMA commentary on the forecast. JMA is calling for above normal temperatures for September through to mid-October, with a +70% probability of above normal temperature occurrence everywhere, except Hokkaido which has a 50%-60% probability of above normal temperature occurrence. We checked AccuWeather and they are forecasting daily highs in the next 30 days in the mid-20C's and the daily highs are in the 23-31C range, which won't drive any A/C demand. As a reminder Japanese offices and houses tend to have air conditioning set at much higher temperature levels than in North America. Below is the JMA temperature forecast for the next 30 days.

Figure 18: JMA Average Temperature Outlook for Sept 21 – Oct 20



Source: Japan Meteorological Agency

Fits JMA's Aug 20 forecast for a warmer than normal November for Japan

The JMA continuing to forecast a warmer than normal next 30-days seems to keep tying into the JMA's recent Aug 20 forecast for a warm start to winter. Here is what we wrote in our Aug 25, 2024, Energy Tidbits memo. "*It's been a hot summer in Japan and it looks like the warmer than normal weather will continue at least thru November. On Tuesday, the Japan Meteorological Agency updated its forecast for November in Japan [LINK]. There is no JMA commentary on the forecast. JMA is calling for above normal temperatures in the northern part of Japan with a 40% probability of above normal temperature occurrence, and near-normal temperatures for the southern part of Japan. We checked AccuWeather and they are forecasting daily highs in the 17-20C range, and nighttime lows of around 12C. This shouldn't generate much natural gas demand for air conditioning. Rather it's what we call "leave the windows open" weather. Below is the JMA temperature forecast for November."*

Figure 19: JMA Average Temperature Outlook for November

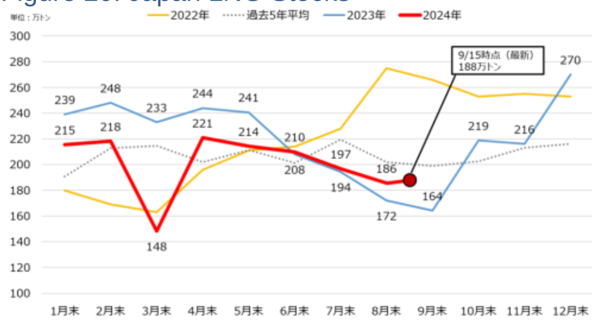
Source: Japan Meteorological Agency

Natural Gas: Japan LNG stocks down WoW, up YoY

Japan LNG stocks down WoW

Japan's LNG stocks are down WoW, are up YoY, and are down from the 5-year average. On Wednesdays, Japan's METI releases its weekly LNG stocks data [LINK]. LNG stocks on September 15 were 90.3 bcf, down -10.0% WoW from September 8 of 100.4 bcf, and up +14.6% from 78.8 bcf from a year ago. Stocks are down -5.5% from the 5-year average of 95.6 bcf. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 20: Japan LNG Stocks



Source: METI

Natural Gas: China natural gas production 22.78 bcf/d in August, up +10.5% YoY

China natural gas production

Well before Covid, our concern in 2019 was that China's LNG imports were going to change from strong YoY growth in LNG imports to a period of zero to very low growth at best in China LNG imports. The reason was primarily the startup of the big Power of Siberia natural gas pipeline from Russia but also a return in the 2020s to modest growth in China domestic natural gas production. And since LNG is the most expensive natural gas, it would be and is the marginal natural gas/LNG supply. That concern has played out over the past few years and increasing domestic natural gas production and increasing cheaper natural gas pipeline imports from Russia squeezed out LNG imports in 2022 and 2023. On Wednesday, Bloomberg's CHENNGAS Index (using data from the National Bureau of Statistics) showed that China natural gas production in August was 22.78 bcf/d, flat MoM at 22.78 bcf/d in July and +10.5% YoY from 20.62 bcf/d in August 2023. Recall the Chinese government website [LINK] also noted that over 2023, China's average natural gas production was 22.30 bcf/d, up +1.00 bcf/d from 2022, which is the 7th annual YoY increase.

Natural Gas: China August LNG imports up MoM, nat gas pipeline imports up MoM

China natural gas and LNG imports

China's import data for August reinforces it favors imports of cheaper natural gas from pipelines over more expensive LNG imports. On Thursday, China's General Administration of Customs (GACC) provided the split of natural gas imports via LNG vs pipeline for August [LINK]. i) LNG imports. GACC reported that over August, China imported 10.13 bcf/d of LNG, up +10.8% MoM from 9.14 bcf/d in July and up +3.8% YoY from 9.76 bcf/d in August 2023. ii) Natural Gas via pipeline imports. GACC reported that over August, China imported 8.09 bcf/d of natural gas via pipeline, which is up +5.2% MoM from 7.68 bcf/d in July and +14.5% YoY from 7.06 bcf/d in August 2023. China has been benefitting from cheap natural gas exports from Russia but have also been opportunistic in their buying of LNG given weak spot prices in recent months.

China prioritizes Russian pipeline gas imports as it is cheaper than LNG

Here is what we wrote in our June 9, 2024 Energy Tidbits memo. "*For years, we have warned that how Chinese natural gas pipeline imports from Russia would be prioritized over LNG imports due to the cheap cost of Russian pipeline gas. On Monday, we tweeted [LINK] "It's way cheaper! And why China prioritizes imports of RUS #NatGas via pipeline vs #LNG imports. 2019-21: China only paid $4.40/mmbtu for RUS pipeline gas vs RUS charged Europe ~$10/mmbtu. See 👇 @maxseddon @NastyaStognei @HenryJFoy @leahyjoseph report. #OOTT." The FT report "Russia-China gas pipeline deal stalls over Beijing's price demands" was focused on China wanting too low a natural gas price for the next expansion of Russian pipeline natural gas to China. But what jumped out at us was the reminder that China is currently getting cheap natural gas from Russia. FT wrote "China already pays Russia less for gas than to its other suppliers, with an average price of $4.4 per million British thermal units, compared with $10 for Myanmar and $5 for Uzbekistan, the CGEP researchers calculated from 2019-21 customs data. During the same years Russia exported gas to Europe at about $10 per million Btu, according to data published by the Russian central bank." Our Supplemental Documents package includes the FT report."*

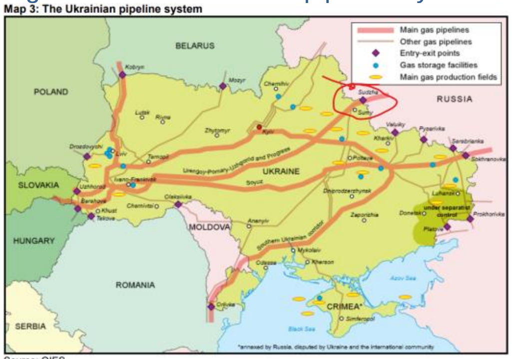
Natural Gas: Russia continues to ship NatGas despite Ukraine control of Sudzha

Ukraine captures key Russian gas infrastructure

It's now been over a month 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 Sept 20 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.

Figure 21: The Ukrainian pipeline system

Map 3: The Ukrainian pipeline system



Source: OIES

Source: Oxford Institute for Energy Studies

Natural Gas: NW Europe LNG imports flat in Sept, down big ~415 bcf, 1.6 bcfd YTD

Europe LNG imports down big in 2024

Yesterday, we tweeted [LINK] "*Hold back to EU #NatGas prices. Storage would be full if NW Europe hadn't cut back LNG imports in Q2/Q3. YTD Sept 15, NW Europe #LNG imports down ~415 bcf or ~1.6 bcf/d. Thx @BloombergNEF LNG Trade Weekly. #OOTT."* We have been highlighting that a big holdback to Europe natural gas prices is that Europe gas storage would be way worse if Europe hadn't moved back in June to significantly reduce LNG imports in July and Aug. Sept to Sept 15 has been basically flat YoY. But LNG imports into NW Europe are down big YoY in 2024.   On Tuesday, BloombergNEF reported NW Europe LNG imports YTD Sept 15 were down approx. 415 bcf of ~1.6 bcf/d this year. Our tweet included the below BloombergNEF chart.

Figure 22 Europe LNG Imports up to Sept 9-15 week

Weekly performance dashboard

Liquefied natural gas volumes into Northwest Europe and Italy over September 9-15 jumped to their highest since late May, almost 0.4 million metric tons more than the previous week. This is largely due to the UK and the Netherlands each taking in roughly the equivalent of two standard cargoes more. Japan, in contrast, saw deliveries retreat by a little over 0.3 million tons from a week earlier.

	Million metric tons	Week starting Aug 12	Week starting Aug 19	Week starting Aug 26	Week starting Sep 2	Week starting Sep 9	Latest week-on-week change		Cumulative month Sep 2023	Cumulative month Sep 2024	Monthly year-on-year change		Jan 1 to Sep 15, 2023	Jan 1 to Sep 15, 2024	Jan 1 to Sep 15 year-on-year change	
	Total exports	**7.72**	**8.16**	**7.94**	**7.47**	**7.70**	0.24	3%	**16.31**	**16.39**	0.08	0%	**288.10**	**291.77**	**3.67**	1%
Region	Pacific Basin	2.86	3.07	2.56	2.92	2.93	0.00	0%	5.85	6.10	0.25	4%	105.57	108.11	2.54	2%
	Atlantic Basin	2.82	3.02	3.14	2.58	2.96	0.38	15%	5.79	6.19	0.41	7%	101.97	106.26	4.29	4%
	Middle East	2.03	2.06	2.24	1.96	1.82	-0.15	-8%	4.68	4.10	-0.58	-12%	80.56	77.40	-3.16	-4%
Market	Qatar	1.53	1.65	1.55	1.52	1.38	-0.14	-9%	3.39	3.09	-0.29	-9%	57.33	56.36	-0.97	-2%
	Australia	1.64	1.63	1.39	1.39	1.56	0.17	12%	3.07	3.09	0.02	1%	56.69	57.16	0.47	1%
	US	1.69	1.79	1.92	1.53	1.70	0.17	11%	3.67	3.68	0.00	0%	62.86	64.46	1.60	3%
	Russia	0.76	0.64	0.55	0.62	0.63	0.01	1%	1.27	1.26	-0.02	-1%	21.45	22.76	1.31	6%
	Malaysia	0.37	0.52	0.31	0.47	0.57	0.10	21%	1.01	1.15	0.15	14%	18.26	18.60	0.33	2%
	Re-export supply	0.09	0.13	0.02	0.02	0.05	0.02	105%	0.33	0.07	-0.26	-79%	3.83	2.62	-1.20	-31%
	Total imports	**7.54**	**8.06**	**6.53**	**7.85**	**8.05**	0.20	3%	**15.50**	**17.39**	1.89	12%	**281.08**	**284.99**	3.91	1%
Region	JKCT	3.95	4.27	3.11	4.29	3.91	-0.38	-9%	7.95	8.94	0.98	12%	137.73	145.94	8.21	6%
	South Asia	0.84	0.79	0.69	0.55	0.91	0.36	66%	1.60	1.71	0.11	7%	23.95	28.58	4.63	19%
	Southeast Asia	0.50	0.73	0.54	0.68	0.56	-0.12	-17%	1.18	1.41	0.23	19%	16.61	20.55	3.95	24%
	NW Europe and Italy	0.90	0.71	1.05	0.83	1.19	0.36	43%	2.11	2.15	0.04	2%	55.06	43.19	-11.87	-22%
	Other Europe	0.59	0.69	0.55	0.68	0.60	-0.08	-12%	1.67	1.41	-0.26	-16%	32.06	25.92	-6.14	-19%
	Middle East	0.49	0.50	0.31	0.36	0.40	0.04	11%	0.48	0.81	0.33	68%	5.50	8.42	2.92	53%
	Americas	0.26	0.30	0.29	0.46	0.43	-0.03	-7%	0.43	0.89	0.45	104%	9.87	11.71	1.83	19%
	Other markets	0.00	0.07	0.00	0.00	0.06	0.06	-	0.06	0.06	0.00	0%	0.21	0.60	0.39	182%
Market	Japan	1.15	1.57	0.89	1.48	1.16	-0.32	-22%	2.89	2.90	0.01	1%	45.42	45.76	0.34	1%
	South Korea	1.02	0.62	0.64	0.69	0.70	0.01	2%	1.43	1.68	0.25	18%	30.79	31.77	0.98	3%
	Mainland China	1.38	1.63	1.14	1.66	1.60	-0.06	-3%	2.85	3.39	0.54	19%	47.56	53.49	5.93	12%
	Taiwan	0.40	0.45	0.44	0.46	0.45	-0.02	-4%	0.79	0.96	0.17	22%	13.97	14.93	0.96	7%
	India	0.65	0.52	0.43	0.43	0.60	0.17	39%	1.05	1.15	0.10	9%	14.96	19.10	4.15	28%
	Thailand	0.24	0.30	0.24	0.38	0.14	-0.23	-62%	0.57	0.70	0.12	22%	8.26	9.04	0.78	9%
	France	0.21	0.35	0.24	0.30	0.24	-0.06	-20%	0.88	0.60	-0.28	-31%	14.41	12.83	-1.59	-11%
	Netherlands	0.33	0.15	0.29	0.22	0.34	0.13	60%	0.53	0.56	0.03	6%	11.66	10.05	-1.61	-14%
	Spain	0.27	0.29	0.10	0.35	0.18	-0.17	-48%	0.68	0.60	-0.08	-12%	12.83	9.69	-3.14	-24%

Source: Bloomberg AHOY JOURNEY<GO>, BloombergNEF. Note: Imports based on arrival dates, exports on departure dates. Imports reflect net import volumes and may differ from combined contract and spot deliveries due to re-exports. JKCT is Japan, South Korea, mainland China and Taiwan. NW stands for northwest. Figures from previous publications are occasionally revised based on most recent available data.

1 September 17, 2024 BloombergNEF

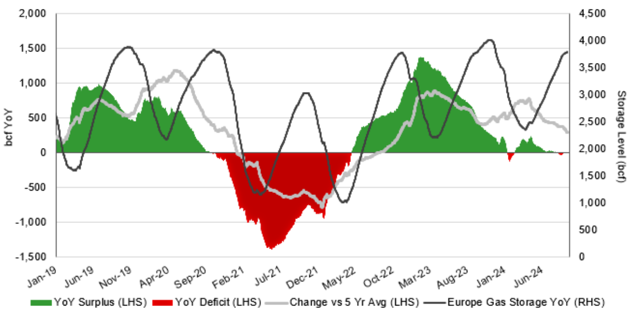
Source: BloombergNEF

Natural Gas: Europe storage up +0.3% WoW to 93.5% full, down -0.7% YoY

Europe gas storage

As expected, European natural gas storage has slowed down in filling up as LNG cargoes have been redirected for the past couple months away from NW Europe as it looked like Europe gas storage would be full early. But even still, it is now over 90% full. We remind that we don't necessarily expect Europe gas to get to 100% full. It's not like going to a gas station where you fill up your car to the limit. Rather, getting to mid 90%'s would be considered full. This week, Europe storage was up +0.3% WoW to 93.5% vs 93.2% on Sept 12. Storage is now down -0.7% from last year's levels of 94.2% on Septr 19, 2023, but up huge against the 5-year average of 88.29%. Below is our graph of European Gas Storage Level.

Figure 23: European Gas Storage Level



Source: Bloomberg, SAF

Ukraine storage is currently ~7% of total Europe gas storage volume
We have been breaking out Ukraine gas storage levels since the Mar/Apr Russian bombing of the Ukraine natural gas storage, which only impacted some above ground natural gas infrastructure. But it also reminded that of the risk to Europe gas storage from Russia attacks. We broke out the Ukraine storage data from the above Europe data we monitor weekly from the GIE AGSI website [LINK], and, on September 18, natural gas in Ukraine storage was at 24.1% of its total capacity, up from 23.5% of its total capacity on September 5. Last year, Ukraine storage started the winter on Nov 1, 2023 at 39.38%. Right now, Ukraine makes up ~7% 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 24: Ukraine Gas Storage Facilities as of July 2023

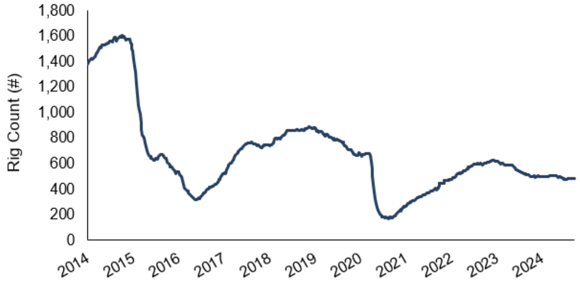
Source: Bruegel

Oil: U.S. oil rigs flat WoW and down -19 rigs YoY to 488 oil rigs

US oil rigs down -19 YoY

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 flat WoW at 488 oil rigs as of September 20. US oil rigs went below 520 rigs on Aug 25, 2023, were around 490-510 rigs for several months, but then dipped down to 477 on July 19, the lowest oil rig count since December 2021. (iii) Note we can see the basin changes but not by type of rig; the only WoW basin changes were DJ-Niobrara down -1 rig WoW to 7 rigs, and Permian +1 rig WoW to 307 rigs. (iv) The overlooked U.S. rig theme is the YoY declines. Total U.S. rigs are down -42 rigs YoY to 588 rigs including US oil rigs -19 oil rigs YoY to 488 oil rigs. And for the key basins, the Permian is -10 rigs YoY, Haynesville is -6 rigs YoY, DJ Niobrara is -7 rigs YoY, Marcellus -5 rigs YoY, and Williston +2 rigs YoY. (v) US gas rigs were down -1 rig this week to 96 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 down -1 rig WoW, and down -1 rig YoY.

Figure 25: Baker Hughes Total US Oil Rigs



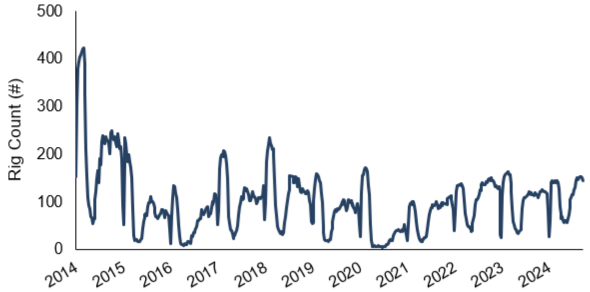
Source: Baker Hughes

Oil: Total Cdn oil rigs down -7 WoW on Friday, with gas rigs -1 WoW

Cdn rigs -7 WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. The normal seasonal ramp up in the summer sees Cdn rigs increasing their the middle of October. However, this week's rig count seems to show us that weaker oil and gas prices have led to some decreasing Cdn rigs. This week's total rig count was down -7 rigs WoW at 211 rigs. Cdn oil rigs were down -6 rigs WoW this week to 144 rigs and are up +29 rigs YoY. Gas rigs are down -1 rig WoW this week at 66 rigs and are down -9 rigs YoY, and miscellaneous rigs are up flat WoW at 1 rig total and are up +1 rig YoY. Baker Hughes did not update their old format report, so we weren't able to see the provincial breakouts.

Figure 26: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes

US weekly oil production

Oil: US weekly oil production down -0.100 WoW at 13.200 mmb/d

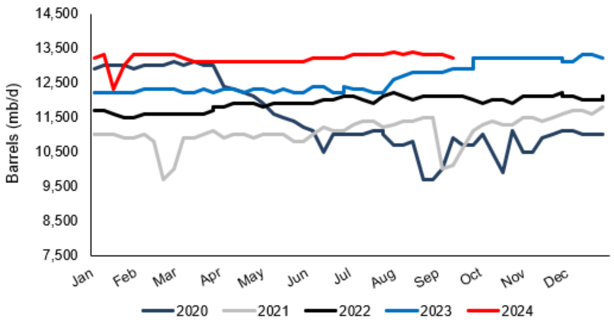
We don't place as much emphasis on the EIA weekly oil supply estimates as others do because we recognize the near impossibility for anyone to post an accurate estimate on a Wednesday for the totality of US oil production for the week ended the prior Friday. We have to give the EIA credit for putting 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 is down -0.100 WoW to 13.200 mmb/d for the week ending September 13. On Tuesday September 10, the EIA released its September STEO and the EIA provides the backup monthly estimates for US oil production, and they are more or less in line with July at 13.340 mmb/d, August at 13.390 mmb/d, and September at 13.400 mmb/d. This week, the EIA's production estimates were down -0.100 at 13.200 mmb/d for the week ended September 13. Alaska was up +0.057 WoW to 0.411 mmb/d, compared to 0.354 mmb/d last week. Below is a table of the EIA's weekly oil production estimates.

Figure 27: EIA's Estimated Weekly US Field Oil Production (mb/d)

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

Source: EIA

Figure 28: EIA's Estimated Weekly US Oil Production



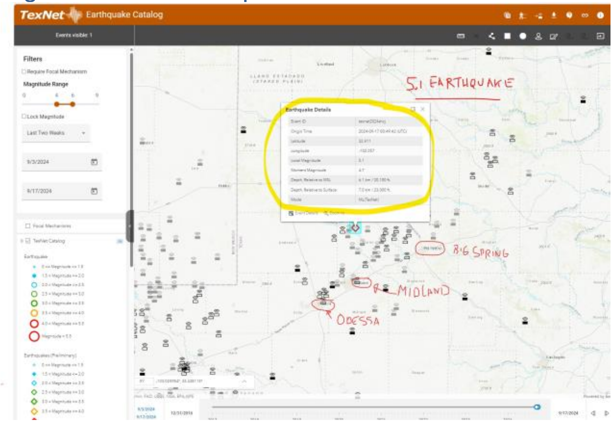
Source: EIA

More Permian earthquakes

Oil: 7th strongest earthquake ever in Texas, a 5.1 in the Permian

On Tuesday, we tweeted [LINK] "*7th strongest earthquake in history of Texas. 5.1 in Permian Basin, just north of Midland. IF like other earthquakes in Permian, would point to link to waste water injection. But still to be confirmed. Thx TexNet #OOTT #NatGas*." In the Permian, earthquakes are generally linked to waste-water disposal and not to fracking itself. And to date, the Texas RRC response has been to shut-in disposal wells linked to earthquakes, which forces producers to find other places to dispose of their waste water. We checked and there is nothing posted on the Texas RRC Seismicity Response [LINK]. However the Lubbock Avalanche Journal reported [LINK] "*The Railroad Commission of Texas, the governmental agency tasked with overseeing oil and gas production in the state, is investigating the 5.1-magnitude earthquake that rattled much of West Texas Monday night for any connection to produced water disposal wells related to petroleum extraction. The Railroad Commission said in a statement to the Avalanche-Journal Wednesday the agency is looking a magnitude 5.1 quake that originated 28 miles north of Midland and shook cities and towns across the western part of the state — one of the strongest in Texas history. The quake was one of more than 50 earthquakes that have stricken Martin and surrounding counties in the last seven days. "The RRC has been in contact with operators and sent inspectors to the area as part of our efforts to reduce seismicity possibly caused by underground injection of produced water into disposal wells," the agency wrote. "The RRC will then evaluate next steps that could potentially be taken to mitigate earthquakes to protect residents."* At least at this time, it sounds like it will be like other earthquake responses and there will be additional wastewater restrictions around the earthquakes. But we still think it's worth following to see if there ever is a change in Texas RRC response actions. Below is the earthquake map attached to our tweet.

Figure 29: 5.1 earthquake in Permian



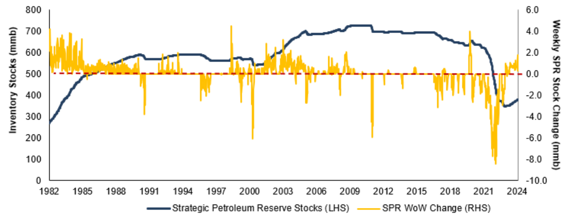
Source: TexMet

Oil: US SPR less commercial reserve deficit narrows, now -36.907 mmb

US SPR reserves

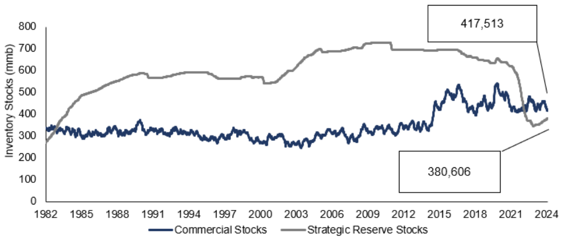
The US Strategic Petroleum Reserves (SPR) continues to be much lower than total US commercial crude oil reserves. The SPR went back below commercial for the first time since 1983 in the Sep 16, 2022 week. This week, we saw a build on the SPR side and a draw on the commercial side. The EIA's weekly oil data for September 13, [LINK] saw the SPR reserves increase +0.655 mmb WoW to 380.606 mmb, while commercial crude oil reserves decreased -1.630 mmb to 417.513 mmb. There is now a -36.907 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.

Figure 30: Strategic Petroleum Reserve Stocks and SPR WoW Change



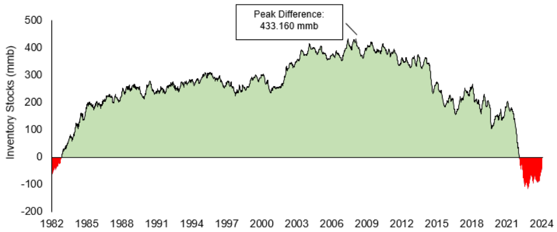
Source: EIA

Figure 31: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 32: US Oil Inventories: SPR Less Commercial



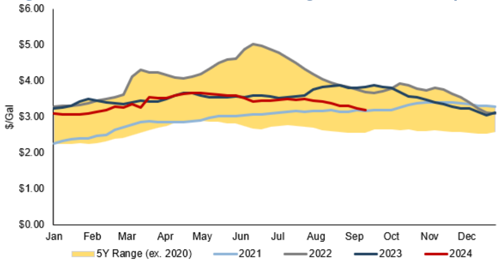
Source: EIA

Oil: AAA reports US national average gasoline price -$0.01 WoW to $3.21 on Sept 21

US gasoline prices

Yesterday, we tweeted [LINK] "*US National average #Gasoline prices keep drifting lower a little lower. AAA National average prices -$0.01 WoW to $3.21 on Sept 21, -$0.19 MoM and -$0.66 YoY. California $4.75 on Sept 21, -$0.02 WoW, +$0.15 MoM, and -$0.94 YoY. Thx @AAAnews #OOTT.*" Yesterday, AAA reported that US national average prices were $3.21 on Sept 21, which was -$0.01 WoW, -$0.19 MoM and -$0.66 YoY. Yesterday, AAA also reported California average gasoline prices were $4.75 on Sept 21, which was -$0.02 WoW, +$0.15 MoM, and -$0.94 YoY. Below is our graph of Bloomberg's National Average weekly gasoline prices.

Figure 33: National Average Gasoline prices



Source: Bloomberg

Oil: Crack spreads +$1.27 WoW to $15.57, WTI +$3.27 WoW to $71.92

Crack spreads closed at $15.57

On Friday, we tweeted [LINK] "*321 crack spreads $1.27 WoW but still relatively low at $15.57 today. WTI +$3.27 WoW to $71.92. $15.57 cracks aren't really high enough to incentivize refineries to take any more crude than necessary. Thx @business #OOTT.*" Cracks spreads were +$1.27 WoW to $15.57 and WTI was +$3.27 WoW to $71.92 Crack spreads at $15.57 was still only at the bottom end of the pre-Covid range of $15-20 and aren't high enough to incentivize refineries to take any more crude than necessary. Crack spreads of $15.57 on Sept 20 followed $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, $22.43 on July 19. $23.22 on July 12, $25.38 on July 5, $24.36 on June 28, and $24.36 on June 21

Crack spreads point to near term oil price moves, explaining 321 crack spread

There are other global oil and market items that impact WTI. But, other factors aside, we have 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. The crack spread was $15.57 as of the Friday Sept 20, 2024 close.

Figure 34: Cushing Oil 321 Crack Spread & WTI Sept 20, 2014 to Sept 20, 2024

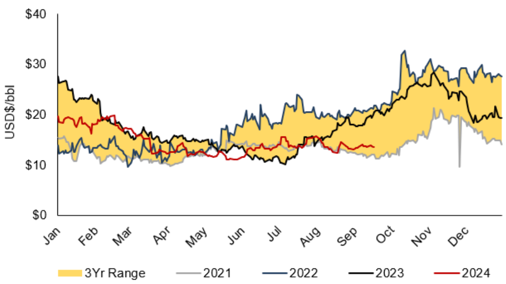
Source: Bloomberg

Oil: Cdn heavy oil differentials narrows -$0.25 WoW to close at $13.50 on September 20

WCS differential narrowed slightly

WCS less WTI differentials have been moving down this week and closed the week down -$0.25 WoW at $13.50. This week is a good preliminary indicator of how the start of the 590,000 b/d TMX will impact WCS less WTI differentials as the 435,000 b/d BP Whiting production goes into turnaround. The WCS less WTI spread narrowed -$0.25 WoW to $13.50 on September 20. We have been saying that the real test is in late Aug/Sept/Oct as to how much the startup of the 590,000 b/d TMX expansion will impact WCS less WTI differentials. Late August is normally when we normally see a widening of the WCS less WTI differentials. And it seems like, at least so far, WCS less WTI differentials are staying lower and not widening. 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 narrowing WCS-WTI differentials that normally start to widen in August. The WCS less WTI differential closed on September 20, at $13.50 which was a narrowing of -$0.25 WoW vs $13.75 on September 13.

Figure 35: WCS less WTI oil differentials to September 20 close



Source: Bloomberg

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

WCS less WTI diffs

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 and Sept when differentials normally start to widen with seasonal refinery turnarounds. Yesterday, we tweeted [LINK] "*Cdn #Oil positive. 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.09/20/24: $13.25. 09/20/23: $18.30. 09/20/22: $21.35. Thx @garquake for reminder last week. #OOTT.*" Our tweet included the below chart that shows how WCS less WTI differential have been stronger this summer and how differentials had already started to widen at this time of year in 2022 and 2023.

Figure 36: WCS less WTI differentials

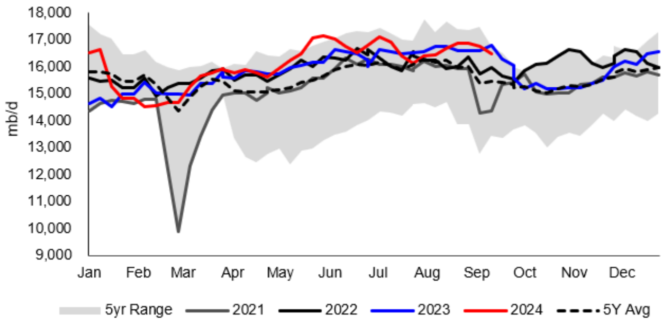
Source: Bloomberg

Oil: Refinery Inputs down -0.283 mmb/d WoW to 16.477 mmb/d

Refinery inputs -0.283 mmb/d WoW

There are always unplanned refinery items that impact crude oil inputs into refineries. And there is always different timing for refinery turnarounds; generally late August/early September is when refineries start their fall turnarounds to change from summer to winter fuel blends. However, as noted below, US refinery maintenance is expected to be less this year, which means that, on average, turnarounds will be shorter than normal ie. less extra maintenance. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended September 13 [LINK]. The EIA reported crude inputs to refineries were down -0.283 mmb/d this week to 16.477 mmb/d and are up +0.173 mmb/d YoY. Refinery utilization was down -0.7% WoW to 92.1% and was down -0.8% YoY.

Figure 37: US Refinery Crude Oil Inputs



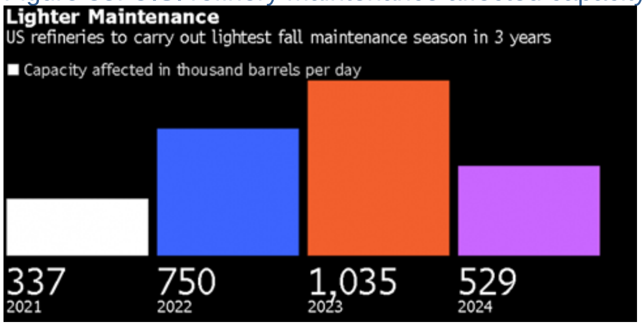
Source: EIA, SAF

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

US refinery preventative maintenance

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 are 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.

Figure 38: U.S. refinery maintenance affected capacity



Source: Bloomberg, IIR Energy

Oil: US net oil imports down -1.829 mmb/d WoW as oil exports up +1.284 mmb/d WoW

The EIA reported US "NET" imports were down -1.829 mmb/d to 1.733 mmb/d for the week of September 13. US imports were down -0.545 mmb/d to 6.322 mmb/d, while exports were up +1.284 mmb/d to 4.589 mmb/d. Top 10 was down -0.102 mmb/d. (i) We know why the EIA doesn't have any data in the row for Venezuela weekly oil imports but we still don't know if the weekly oil imports are off or if Venezuela is included in the weekly oil imports in the Others number. However, EIA monthly data shows Padd 3 imports from Venezuela were 226,100 b/d for June. Give the EIA credit for putting out weekly oil 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 +0.129 mmb/d to 4.155 mmb/d. 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 down -0.116 mmb/d to 0.210 mmb/d. (iv) Mexico was down -0.090 mmb/d to 0.420 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 down -0.108 mmb/d to 0.121 mmb/d. (vi) Iraq was down -0.067 mmb/d to 0.155 mmb/d. (vi) Ecuador was down -0.049 mmb/d to 0.054 mmb/d. (vii) Nigeria was up +0.089 mmb/d to 0.264 mmb/d.

Figure 39: US Weekly Preliminary Imports by Major Country

	Jul 26/24	Aug 2/24	Aug 9/24	Aug 16/24	Aug 23/24	Aug 30/24	Sep 6/24	Sep 13/24	WoW
Canada	4,033	3,478	3,785	4,083	3,874	3,516	4,026	4,155	129
Saudi Arabia	144	353	183	207	311	204	326	210	-116
Venezuela	0	0	0	0	0	0	0	0	0
Mexico	504	224	714	167	619	374	510	420	-90
Colombia	207	215	71	213	212	179	229	121	-108
Iraq	178	143	194	166	153	201	222	155	-67
Ecuador	160	235	137	163	103	104	103	54	-49
Nigeria	113	170	109	190	33	32	175	264	89
Brazil	71	267	428	177	302	180	113	306	193
Libya	144	115	2	86	1	86	83	0	-83
Top 10	5,554	5,200	5,623	5,452	5,608	4,876	5,787	5,685	-102
Others	1,399	1,024	662	1,200	952	916	1,080	637	-443
Total US	**6,953**	**6,224**	**6,285**	**6,652**	**6,560**	**5,792**	**6,867**	**6,322**	**-545**

Source: EIA, SAF

Oil: Norway August oil production of 1.765 mmb/d is down -3.4% MoM down -1.4% YoY

Norway August oil production

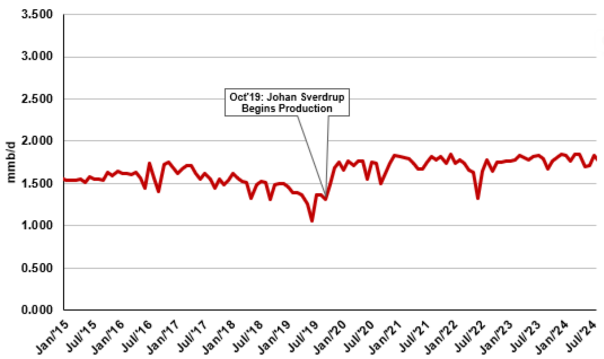
On Friday, the Norwegian Offshore Directorate released its August production figures [LINK]. It reported oil production of 1.765 mmb/d, down -3.4% from revised July figures of 1.827 mmb/d and down -1.4% YoY from 1.790 mmb/d in August 2023. August's production actuals came in +7.5% (+0.123 mmb/d) over the forecast volumes of 1.642 mmb/d. The NOD does not provide any explanation for any MoM changes so we don't know if the MoM increases are temporary. But, as we have been highlighting, there will be an increasing watch on Norway oil production will intensify as Norway expects Norway oil production to reach peak oil production in 2025, which is primarily driven by forecasted decline in their giant Johan Sverdrup oilfield. Note that, prior to 2024, the Norwegian Offshore Directorate was called the Norwegian Petroleum Directorate.

Figure 40: Norway August 2024 Production

		Oil mill bbl/day	Sum liquid mill bbl/day	Gas MSm³/day	Total MSm³ o.e/day
Production	**August 2024**	**1.765**	**1.982**	**348.7**	**0.664**
Forecast for	August 2024	1.642	1.878	314.6	0.613
Deviation from forecast		0.123	0.104	34.1	0.051
Deviation from forecaset in %		7.5 %	5.5 %	10.8 %	8.3 %
Production	July 2024	1.827	2.083	360.7	0.692
Deviation from	July 2024	-0.062	-0.101	-12	-0.028
Deviation in % from	July 2024	-3.4 %	-4.8 %	-3.3 %	-4 %
Production	August 2023	1.790	2.013	313.7	0.634
Deviation from	August 2023	-0.025	-0.031	35	0.030
Deviation in % from	August 2023	-1.4 %	-1.5 %	11.2 %	4.7 %

Source: Norwegian Offshore Directorate

Figure 41: Norway Monthly Oil Production 2015-2024

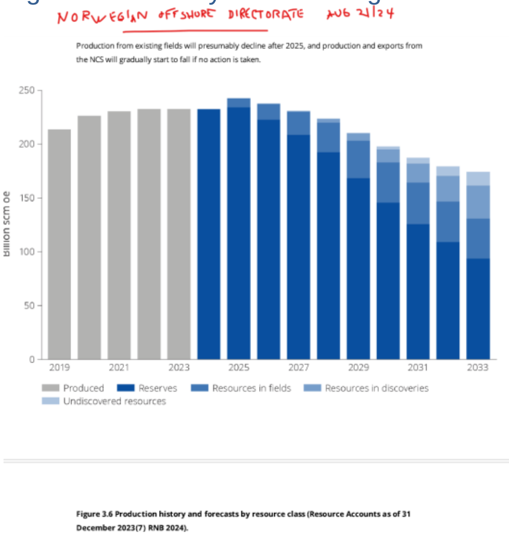


Source: Norwegian Offshore Directorate

Norway still forecasts reaching peak oil production in 2025, then declining

We remind that Norway still forecasts reaching peak oil production in 2025 and then declining. Here is what we wrote in our Aug 25, 2024 Energy Tidbits memo. "*Norway still forecasts reaching peak oil production in 2025, then declining. On Wednesday, Norway posted its "Resource report 2024", which is a report encouraging an increase in exploration. And it starts with their unchanged long-term oil production forecast from March that forecasts Norway' s peak oil production is in 2025 and then decline under current levels of exploration ie. include ongoing new field discoveries. Early Wednesday morning, we tweeted [LINK]: "Norway still forecasts peak #Oil production in 2025 & then decline. EVEN WITH "multiple discoveries are made and brought on stream, accompanied by investments aimed at increasing recovery from existing fields. Despite this, resource growth will not be sufficient to offset the overall gradual decline, due to diminishing production from the major, mature fields." See 👇 03/11/24 & 02/08/24 tweet, can't make up for giant Johan Sverdrup hitting peak oil in six mths. #OOTT" Norway is warning that, even with new discoveries and production enhancement, peak oil supply is in 2025. Norway wrote that even with ""multiple discoveries are made and brought on stream, accompanied by investments aimed at* *increasing recovery from existing fields. Despite this, resource growth will not be sufficient to offset the overall gradual decline, due to diminishing production from the major, mature fields." Despite this, resource growth will not be sufficient to offset the overall gradual decline, due to diminishing production from the major, mature fields." Norway is highlighting the reality that has been seen in other global basins that have a giant oil field – when the giant oilfield starts to decline, it normally points to decline in a country production. Andt hat is the case in Norway with the giant Joahn Sverdrup expected to start to decline in late 2024 or early 2025. Norway does says that a big increase in exploration and oil and gas spending could lead to some modest growth and push back in oil decline. Our Supplemental Documents package includes excerpts from the Norway resource report."*

Figure 42: Norway forecast long term Norway oil production



Source: Norwegian Offshore Directorate

Oil: Zelensky to push Biden this week to okay long-range missile attack on Russia

Zelensky in US this week

It's potentially the big week for Ukraine to see if a Zelensky/Biden face-to-face can unlock US approval for Ukraine to use long-range missiles against Russia. This can be a game changer and a wild card if Ukraine gets that approval. It opens up a huge attack capability for Ukraine and also an even bigger wildcard on what will Putin do? Zelensky is speaking at the UN this week but his biggest meetings are with the US including Biden and Harris on Thursday. All the major media are reporting that Zelensky will be presenting his victory plan. The details aren't out yet but a key component of the victory plan is to get US approval for long-range missile attacks on Russia. Yesterday, CNN reported [LINK] "*Ukrainian President Volodymyr Zelensky told CNN that Ukraine's request to use long-range missiles on targets inside Russia is part of his "victory plan," that he is due to present to US officials next week. Zelensky has been pushing Ukraine's allies to ease restrictions on weapons and although there have been signs of the US shifting its stance he said they are yet to be given the go-ahead. "We do have long-range weapons. But let's just say not the amount we need." Zelensky said Friday,* *adding that "neither the US nor the United Kingdom gave us permission to use these weapons on the territory of Russia."*

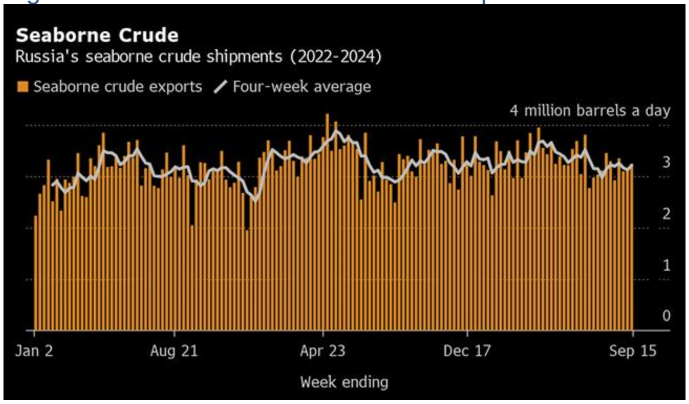
Putin, US & EU are at war with Russia if provide long-range missiles to Ukraine
Ukraine getting approval to use long-range missiles will open up the wildcard of what will Putin do? Here is what we wrote in last week's (Sept 15, 2024) Energy Tidbits memo. "*Putin, US & EU are at war with Russia if provide long-range missiles to Ukraine. No one knows what Putin will do but Putin gave a clear warning to the US, UK and NATO on Thursday if they provide and help Ukraine use long-range missiles. On Friday, we tweeted [LINK] "Will Putin follow up on this threat? "direct participation [of Western countries in the conflict in UKR] already significantly changes the very essence, the very nature of the conflict. This will mean that NATO countries, the US, European countries are at war with RUS" #OOTT #NatGas #LNG." And [LINK] "here is transcript for Putin's answer on US/UK providing/helping Ukraine use long-range missiles at Russia means "the US and European countries - are at war with Russia"... we will make appropriate decisions in response to the threats that will be posed to us". #OOTT #NatGas." Our 2nd tweet included the full Kremlin transcript of Putin's complete answer when asked about Ukraine being allowed to strike targets deep inside Russia "using Western long-range weapons". Putin explained that it wasn't just giving the long-range missiles, Ukraine would be having western radar and technical assistance to use long-range missiles. And he concluded with the headline "If this decision is made, it will mean nothing short of direct involvement – it will mean that NATO countries, the United States, and European countries are parties to the war in Ukraine. This will mean their direct involvement in the conflict, and it will clearly change the very essence, the very nature of the conflict dramatically. This will mean that NATO countries – the United States and European countries – are at war with Russia. And if this is the case, then, bearing in mind the change in the essence of the conflict, we will make appropriate decisions in response to the threats that will be posed to us."*

Oil: Russia's seaborne crude oil exports rise following previous decrease

Russia's seaborne crude exports

This week, the four-week average for Russia's seaborne crude exports rose slightly, diverging from the previous downward trend that we have seen the past month, aside from an increase three weeks ago. 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. But, as a general rule, when Russian refining capacity gets hit, it frees up more oil for export. The four-week average is up to 3.21 mmb/d for the week to September 15. The decrease was driven by a four-day gap in the loading program for Promorsk, this lack of shipments Bloomberg noted is presumably due to maintenance to the port or pipeline. Bloomberg reported "*Refinery runs began to pick up in the week to Sept. 15. The Gazprom Neft-owned Moscow Oil Refinery resumed operations on Tuesday at a crude distillation unit that had been halted following a drone attack on Sept. 1. However, nationwide processing rates during the first 11 days of the month were about 164,000 barrels a day below the average level for most of August… Russia's seaborne daily crude flows in the week to Sept. 15 rose by about 110,000 barrels to 3.25 million. The less volatile four-week average also rose, increasing by 80,000 barrels a day to 3.21 million from 3.13 million the previous week. Apart from one week when they dipped below 3 million barrels a day, shipments using this measure have ranged between 3.13 million and 3.25* *million barrels a day since the beginning of July*". Crude shipments so far this year are 50,000 b/d below 2023's average. Russia has pledged to compensate for overproduction against its April target, which was attributed to "technicalities of making significant output cuts". Russia made significant output cuts in May, June, and July, however they were slightly still above their promised targets. Our Supplemental Documents package includes the Bloomberg report.

Figure 43: Russia's Seaborne Crude Shipments



Source: Bloomberg

Russia oil exports to China finally back to early April levels

It's been over four months where Russia's oil exports to China were 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, 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 up +0.080 mmb/d to 1.330 mmb/d for the week ending September 15, up from last week's 1.250 mmb/d for the week of September 8, and very close to 1.360 for the first half of April. We have not seen any reports of pricing discount but we have to believe Russia has given some sort of discounts 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 44: 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
August 11, 2024	1.19	1.69	0.00	0.07	0.00	2.96
August 18, 2024	1.23	1.60	0.03	0.07	0.00	2.93
August 25, 2024	1.24	1.77	0.03	0.04	0.00	3.07
September 1, 2024	1.23	1.71	0.03	0.00	0.00	2.96
September 8, 2024	1.25	1.64	0.03	0.00	0.00	2.92
September 15, 2024	1.33	1.60	0.00	0.10	0.00	3.03

Source: Bloomberg

Oil: Saudi Arabia MBS on Palestine, need for high oil prices and the Houthis

MBS address

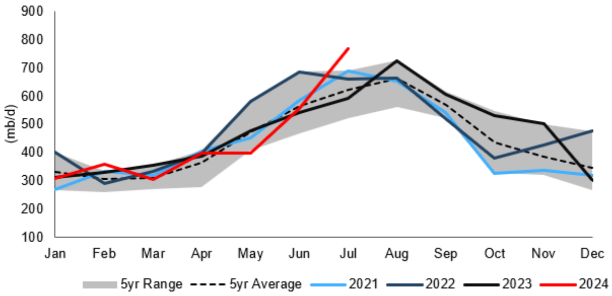
On Wednesday, we tweeted [LINK] "*Lots in MBS Address. Headline: no diplomatic relations with Israel w/o establishment of an independent Palestine state w/ East Jerusalem as its capital. Reminds why KSA wants continued solid #Oil prices. Their journey to achieve Vision 2030 targets ..."based on a careful 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: Saudi record use of oil for electricity up big MoM in July

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 July. The JODI data for Saudi Arabia oil supply and demand for July was updated this week [LINK]. In the summer, Saudi Arabia moved into its normal season where we see an increased use of oil for electricity for air conditioning. We are not surprised to see a big ramp up in Saudi's use of oil for electricity in July as it has been really hot in the Middle East. Oil used for electricity generation (direct use) in July was 0.769 mmb/d (vs July 2023 of 0.592 mmb/d) and June was 0.558 mmb/d (vs June 2023 of 0.543 mmb/d). The AccuWeather temperature recap was that it was hot in July; where there were daytime highs mostly in the 42C-46C degree range, reaching a maximum high of 47C 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 July and June.

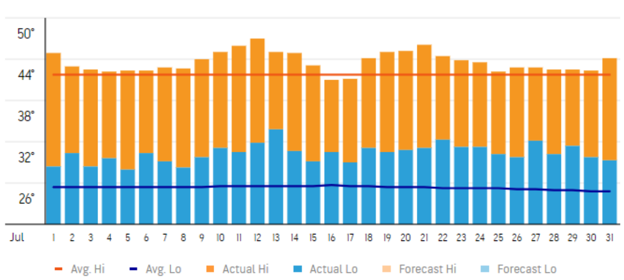
Saudi record oil use for electricity in July

Figure 45: Saudi Arabia Direct Use of Crude Oil for Electricity Generation



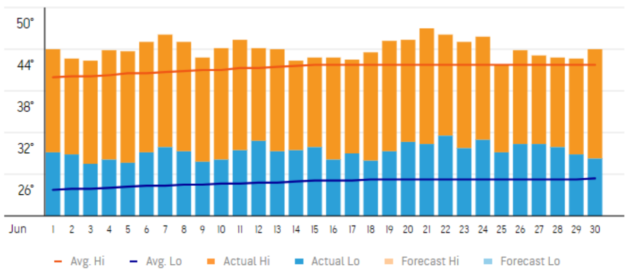
Source: JODI, SAF

Figure 46: Riyadh Temperature Recaps for July



Source: AccuWeather

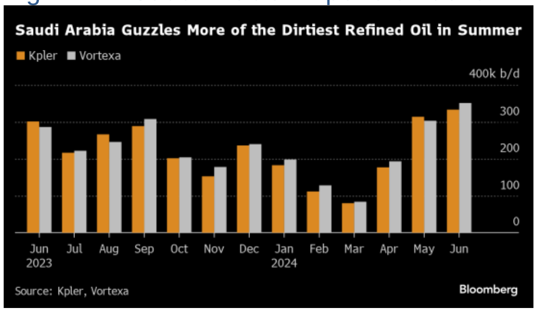
Figure 47: Riyadh Temperature Recaps for June



Source: AccuWeather

Saudi Arabia boosted fuel oil imports to 3-year high amid summer demand
The expectation for Saudi Arabia to crank up oil used for electricity was high because it was really hot but also because Saudi Arabia has been importing fuel oil for electricity. Here is what we wrote in our July 14, 2024 Energy Tidbits memo. "*It's been hot in the Middle East in June and also in early July, even hotter than normal. So, there is a big air conditioning burn. On Friday, Bloomberg reported that Saudi Arabia had increased imports of fuel oil to a 3-year high to match the demand from the hot summer and increased air conditioning. Shipments have increased to about 350,000 b/d according to Vortexa. Bloomberg reported "Saudi Arabia is the region's biggest buyer of fuel oil, a type of dirty product that's left over after refineries produce transport fuels like gasoline and diesel. It also burns crude oil directly to produce electricity, which likely contributed to the kingdom's exports dropping to a 10-month low of about 5.6 million barrels a day in June, according to data compiled by Bloomberg. Fuel oil is mostly sold at a discount to crude since it's heavier and more polluting……..In April, the kingdom resumed purchases from Russia after a five-month pause. Supplies from there have nearly doubled since then though are still below the levels of last summer." Below is a graph showing Saudi Arabia's fuel oil imports, and a graph showing Saudi Arabia's fuel oil imports from Russia alone."*

Figure 48: Saudi Arabia' imports of fuel oil



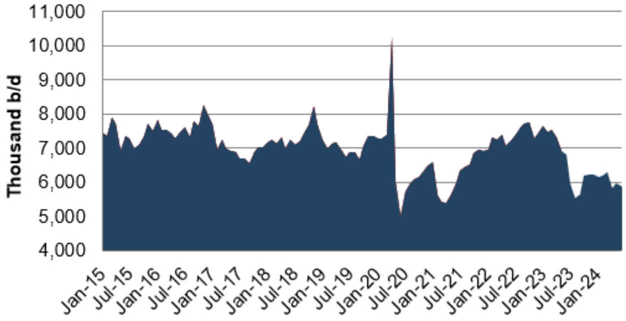
Source: Bloomberg

Oil: Saudi net oil exports down -0.305 mmb/d to 5.602 mmb/d in July
Until recently, JODI did not have access to Saudi import data. But the oil import data is available so we calculate net oil exports. In July, the JODI data showed Saudi net oil exports

Saudi net oil exports down -0.305 mmb/d MoM

were down -0.305 mmb/d MoM to 5.602 mmb/d. This comes as imports were down -0.001 mmb/d and exports are down -0.306 mmb/d. Below is our graph of Saudi Arabia monthly net oil exports.

Figure 49: Saudi Arabia Net Oil Exports (mb/d)



Source: JODI, SAF

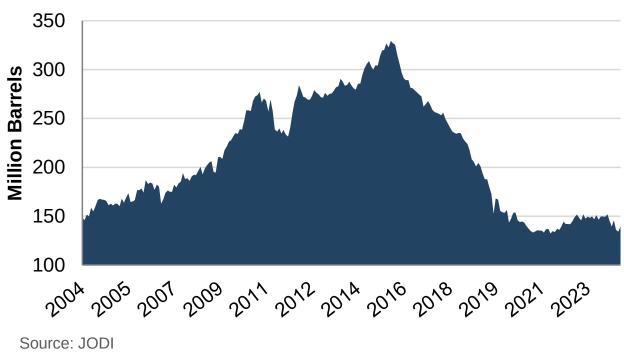
11/10/23 Saudi reminds oil exports are seasonal, less in summer/more in winter
There are always unusual events but, as a rule, there is a seasonality to Saudi oil exports. Here is what we wrote in the Nov 12, 2023 Energy Tidbits memo. "*We probably should have called it Saudi Oil 101, but we were a little 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: Once again, can't reconcile monthly Saudi oil stocks to the monthly components

Saudi oil inventory data

For the past few months, we have highlighted the Saudi monthly oil consumption/production data can't be reconciled to the MoM changes in Saudi oil stocks. We raised this concern in the Saudi oil stocks/inventory data for March, April, May, and June. It also applies to the July data. It's not just that we can't reconcile but the differences are large, at least on a daily basis. There is likely a reason for this but, at least for now, we can't reconcile the monthly changes in Saudi oil stocks/inventory. The JODI data for Saudi oil stocks is 139.553 mmb on July 31, which is up +5.360 mmb MoM from 134.193 mmb on June 30. 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 build in oil stocks of +7.161 mmb in July which is a difference of -1.801 mmb. There is always a difference between the MoM oil inventory changes and the math of the major components but historically not to a variance of -1.801 mmb. For the math components. Saudi production in July was 8.941 mmb/d, up +0.111 mmb/d MoM vs 8.830 mmb/d in June i.e. this would have led to a +0.111 mmb/d or 3.441 mmb, build in inventories MoM. Saudi direct use of oil for electricity was 0.769 mmb/d in July, up +0.211 mmb/d MoM vs 0.558 mmb/d in June, this would lead to a -0.211 mmb/d or -6.541 mmb MoM draw in oil inventories. Refinery intake of oil was 2.397 mmb/d in July and was -0.026 mmb/d MoM vs 2.423 mmb/d in June, this would have led to a +0.026 mmb/d or +0.806 mmb MoM build in oil inventories. Net oil exports were 5.602 mmb/d in July, down -0.305 mmb/d MoM vs 5.907 mmb/d in June i.e. would lead to a +0.305 mmb/d or +9.455 mmb MoM build in oil inventories. The net impact of the key components would have been a MoM build of +7.161 mmb in oil inventories in July vs the reported MoM build of +5.360 mmb.

Figure 50: Saudi Arabia Oil Inventories (million barrels)



Source: JODI, SAF

Oil: How many barrels is China importing of Iran oil that is rebranded as Malaysia oil

China oil imports from Malaysia

One of the items that jumps out at us from the monthly China oil import data continues to be the question how much Iran oil being rebranded as Malaysia oil. Official China data shows zero Iran oil imported by China in August, but record levels of oil imports from Malaysia. On Thursday, we tweeted [LINK] "*Iran #Oil keeps getting rebranded as Malaysia oil. China oil import data is zero from Iran in Aug. BUT China oil imports from Malaysia in Aug was 1.77 mmb/d vs total Malaysia production of ~0.4 mmb/d. #OOTT".* In August, China reports it imported 1.77 mmb/d of oil from Malaysia following 1.47 mmb/d in July, but OPEC Sept MOMR estimates are that Malaysia is producing 0.40 mmb/d. We expect this difference is likely Iran oil. Below is Bloomberg's data of China oil imports from Malaysia.

Figure 51: China oil imports from Malaysia

Source: Bloomberg

05/09/24: Malaysia recognizes UN, not individual country sanctions

Here is what we wrote in our May 12, 2024 Energy Tidbits memo. "*One of the oil trade themes in the past year is how we see Iran oil rebranded as Malaysia oil and then shipped to China and likely other markets. That will be continuing as Malaysia has said they don't follow individual country sanctions like US on Iran but follow all UN sanctions. The Straits Times reported [LINK] "Malaysia rebuffs US on Iran oil sales, says it recognises only UN sanctions. Malaysia will recognise sanctions imposed by the United Nations only and not by individual countries, said Home Minister Saifuddin Nasution Ismail on May 9, following claims by a top US official that Iran has relied on Malaysian service providers to sell US-sanctioned oil in the region. "I emphasised that we will only recognise sanctions if they are imposed by the United Nations Security Council. "The delegation from the US respected our stance," Datuk Seri Saifuddin told reporters following a meeting with the US Treasury Department's top sanctions official Brian Nelson, who was visiting Kuala Lumpur." We hadn't realized the trade level between Malaysia and the US. The Straits Times closed their report "Still, the "US would also not want to lose the support of Malaysia, which is one of its key Asean partners, as the country will assume the role of Asean chair next year", he said. Malaysia is among the US' top 20 trading partners, with bilateral trade between the two nations amounting to US$78.3 billion (S$106 billion) in 2022." Our Supplemental Documents package includes the Straits Times report*.'

Oil: Can Iran President Pezeshkian get a return to JCPOA talks?

Iran President at UN

It's a big week for Iran President Pezeshkian as he is in NYC for the UN General Assembly address and in yet to be announced meetings with some key European countries. The reports continue to be that Pezeshkian is hopeful of getting the west to return to discussions on the JCPOA. His recent election platform had some key priorities such as better relations with the neighbours and also to see if there can be a return to the JCPOA. We don't know when he is to address the General Assembly that is over on Sept 24 and who he will be meeting but in person meetings are always the key to getting momentum. So it will be interesting to see if he can build any momentum to consider a return to the JCPOA.

Oil: Still no indication if/when Iran will hit Israel with its announced retaliation

Waiting for Iran's response

As of our 7am MT news cut off, it's the same story week after week that Iran has yet to make its declared revenge attack on Israel that is to come at time of maximum surprise. Our Sept 1, 2024 Energy Tidbits memo noted that one timing issue might be that Iran President Pezeshkian is planning to travel to New York to the annual UN General Assembly meetings on Sept 10-24. Our initial thoughts were that Iran wouldn't hit Israel until Pezeshkian is back from the UN. However, who knows as we don't really know how much stroke Pezeshkian has with the Supreme Leader and the IRGC. After all recall what Iran said on Aug 21. Here is what we wrote in our Aug 25, 2024 Energy Tidbits memo. "*Iran says its response to Israel "occurs at a moment of maximum surprise" On Wednesday, IRNA (State media) reported [LINK] "Iran's Permanent Mission to the United Nations in New York has said that the Islamic Republic's response to Israel's assassination of Hamas chief Ismail Haniyeh will be carried out in a way to ensure that it "occurs at a moment of maximum surprise." "The timing of Iran's response will be meticulously orchestrated to ensure that it occurs at a moment of maximum surprise", the mission said on Wednesday when asked whether Tehran is withholding its response to Israel so the ongoing Gaza ceasefire talks can proceed. Ismail Haniyeh was martyred in an Israeli airstrike on his accommodation in the Iranian capital on July 31, a day after he attended the inaugural of Iran's new president Masoud Pezeshkian. Iran says Haniyeh was an official guest of the Islamic Republic, and that the Israeli attack was a violation of the country's sovereignty. "Iran's response must punish the aggressor for its act of terrorism and infringements upon Iran's national sovereignty", the mission said, adding that the response should serve as a deterrent as well. The Islamic Republic's response must "bolster Iran's deterrence capabilities to induce profound regret within the Israeli regime, thereby serving as a deterrent...Iran's response must be carefully calibrated to avoid any possible adverse impact that could potentially influence a prospective ceasefire" in Gaza."*

Oil: Reminder Netanyahu said it's not if but when Israel acts on Iran nuclear program

Netanyahu warned Congress on Iran nuclear

The reason why we have reminded on Iran's advancing nuclear capability is that we worry Israel uses any subsequent attack on Iran whenever Iran retaliates as an opportunity to hit Iran's nuclear facilities. As of our 7am MT news cut off, there is still the unknown of what will Iran do in retaliation. And then it opens up another wildcard, what will Netanyahu then do. We don't know 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 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: Many are really worried what happens next in Israel/Hezbollah escalation

Israel/Hezbollah escalation

We look at news from other countries every day and it seems like those outside North America are really worried what happens next in Israel/Hezbollah escalation. It just doesn't seem to get the same worry in North America. But following the pager sabotage, escalation in attacks, deaths of senior Hezbollah, the pot is boiling and something has to happen to either lower the temperature or something will burst. At least that seems to be the worry for many in the world. We recognize that all media has a bias but we like to hear the different perspectives from around the world.

Netanyahu reportedly considering "Generals' Plan" on northern Gaza

A big test for Biden will be if Netanyahu approves the Generals' Plan on northern Gaza. Earlier this morning, the Times of Israel. We are mentioning this report because if Netanyahu approves the plan and it happens now, then we think it will be a wildcard for the US election. We have to believe protests will significantly increase. The Times of Israel reported [LINK] "*Prime Minister Benjamin Netanyahu tells lawmakers that he is weighing the so-called Generals' Plan to lay siege to northern Gaza, promoted by a group of senior IDF reservists. Speaking to members of the Knesset Foreign Affairs and Defense Committee in a closed session, Netanyahu indicates that the plan is one of several being examined and brought to the cabinet for further discussion in the coming days. Addressing the committee last week, Maj. Gen. (ret.) Giora Eiland said that the plan, which is not backed by the United States, would "change the reality" on the ground in Gaza. Major General (ret.) Giora Eiland, former IDF planning and operations chief and ex-head of the National Security Council. (Courtesy) "We have to tell the residents of north Gaza that they have one week to evacuate the territory, which then becomes a military zone; [a zone] in which every figure is a target and, most importantly, no supplies enter this territory. A siege is not only an effective military tactic; it is also compliant with international law. What matters to Sinwar is land and dignity, and with this maneuver, you take away both land and dignity," Eiland explained at the time."*

Oil: Still waiting for Israel's response to Houthis hypersonic missile last week

Waiting on Israel hit on Houthis

It's been a week since a Houthi hypersonic missile got thru Israel missile defense but didn't cause any deaths or real damage. But we are still waiting for Israel's response. Here is what we wrote in last week's (Sept 15, 2024 Energy Tidbits memo. Netanyahu says Houthis will pay a heavy price for this missile. Earlier this morning, we tweeted [LINK] "*No one expects Houthis to shoot down Israeli jets but any major attack can have unforeseen impact. Netanyahu "Houthis launched a surface-to-surface missile from Yemen into our territory. They should have known by now that we charge a heavy price for any attempt to harm us," #OOTT."* There were videos posted of Netanyahu's warning to the Houthis following this morning's Houthis hypersonic missile attack. France24 reported ""*The Houthis launched a surface-to-surface missile from Yemen into our territory. They should have known by now that we charge a heavy price for any attempt to harm us," Netanyahu said, according to a statement from his office."* The Houthis must have considered this before they launched their hypersonic as they don't have any real air defense against Israel jets. So they launched knowing Israel will be hitting back with some sort of major jet strike. No one expects the Houthis to shoot down Israeli jets but we always say war is unpredictable as to what happens.

Oil: Iraq PM sees a Kurdistan oil deal reached yr-end

Iraq PM sees Kurdistan oil deal by yr-end

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. On Tuesday, we tweeted [LINK] "*Still hard to see an Iraq/Kurdistan oil deal. Despite Iraq PM teases "a solution will be reached by the end of this year" to resuming Kurdistan #Oil exports via Turkey. BUT PM reminds of continuing huge gap to get there. IOCs get ~$26/b in KRI vs ~$8 in IQ so need to either amend budget law or KRI deals. @business reminds KRI dispute "inadvertently helping the country get closer to its OPEC production limit." Great interview @JoumannaTV #OOTT.*" Bloomberg interviewed Iraq PM Al-Sudani, who teased he expects "*a solution will be reached by the end of this year*" But we still don't see how this happens absent a big concession from the international oil companies operating in Kurdistan unless somehow Iraq feels they are at risk to compensate the IOCs in Kurdistan in some manner. We looked at the reporting of his interview with Bloomberg as highlighting the same problems that have prevented the return of Kurdistan oil exports via Turkey and we don't see how they resume unless the oil companies operating I Kurdistan make a huge concession. Al-Sudani said ""*Iraq is committed to the voluntary reduction of oil exports to maintain prices and protect the interests of producers and consumers*." This iis the reminder we have had on this issue. Iraq has been over producing its OPEC+ target and so any return of the Kurdistan oil means that Iraq has to cut back on oil from its non-Kurdistan region where it has its deals with IOCs. So Iraq isn't losing anything right now by keeping out the Kurdistan oil. Bloomberg's report highlights that this is the dilemma for Iraq. This is not an Al-Sudani quote, but Bloomberg writes "*The restart of a key Iraqi oil pipeline that's been shut for over a year is being held up by disagreements over costs, the nation's prime minister said, a setback that's inadvertently helping the country get closer to its OPEC production limit*." Al Sudani said "*there is a legal issue related to the decisions of the Federal Court regarding oil in the Kurdistan Region and the budget law.*" "*the budget law set the average production cost at $8 per barrel, while the average production cost under the contracts with companies in the Kurdistan Region is $26 per barrel.*" "*Iraq is facing two options: either amend the contracts with the oil companies contracted with the Kurdistan Region or amend the budget law*." ""*the oil companies contracted with the Kurdistan Region refused to amend the production cost contracts*." There are actually two issues here. One is the Iraq constitution only approves an average production cost (payment) to oil companies of $8/b vs the $26/b oil companies in Kurdistan are getting. And it is not in this report but there is a contract structure issue where Iraq doesn't do production sharing contracts (PSC) with oil companies. Kurdistan deals are PSCs and the big difference in that a PSC allows the oil companies to have ownership in the oil barrels. Our Supplemental Documents package includes the Iraqi News Agency (state media) report on the interview. [LINK]

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 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."*

Kurdistan producers selling oil for $30/b and not $80b

Here is another item from our Sept 1, 2024 Energy Tidbits "*Our above tweet also included a transcript we made APIKUR's Myles Caggins speaking on Kurdistan 24 in late July 2024. Caggins noted how the IOCs in Kurdstan were getting $50 less per barrel on their oil sales Caggins said "Our member oil companies are eager to resume the oil exports. Right now, we are relying on local sales of oil, which is around 200,000 – 220,000 barrels per day. But when we had the exports through the pipeline, the Kurdistan region was producing more than 400,000 barrels of oil every day. And the price for oil on the global market is around $80 and that is much higher than the local sale price, the local sale price for a barrel of oil is around $30."*"

Oil: Libya oil + condensate exports up to 314,000 b/d this week

Libya oil production is unclear

As of our 7am MT news cut off, we have not seen any oil production updates from the Libya National Oil Corporation since their Aug 29 update. (i) Who knows how much Libya is producing. There is nothing from the NOC in almost a month and even major news/energy agencies don't seem to have a number. (ii) here is what we wrote in our Sept 1, 2024 Energy Tidbits memo on the NOC Aug 29 update "*Finally, on Thursday, the Libya NOC gave a production update and we tweeted [LINK] "Ouch! Libya #Oil production down 688,000 b/d to*

591,024 b/d yesterday. See 👇@NOC_Libya update by operating company. #OOTT." (iii) On Sept 12, Bloomberg reported *"Libyan Oil Flows Slide Further as UN Fails to Break Bank Impasse"* and "*Daily oil output in the nation that's home to Africa's largest reserves has fallen to about 450,000 barrels from more than 1 million before the crisis, although exports have continued to trickle out to global markets."* (iv) On Sept 14, the Libya Observer j(Tripoli based) reported [LINK] "*Libya's oil exports dropped by 81% last week as the National Oil Corporation (NOC) halted shipments amid a growing crisis involving the Central Bank of Libya and oil revenues, according to Reuters. Libyan ports averaged 194,000 barrels of crude oil per day during the period, a sharp decline from previous levels."* (v) We still haven't seen any Libya production updates but, on Friday, Bloomberg reported "*Libya oil exports rebound despite ban by eastern government" "The north African country's shipments of crude and condensate averaged 719,000 barrels a day between Sept 13 and Sept 19, tanker tracking data compiled by Bloomberg show. That's up from 314,000 barrels a day in the previous seven weeks.*" Note Bloomberg is reporting on oil and condensate shipments, not just the oil volumes.

US urging Libya on fiscal transparency

Oil: US says Libya not meeting minimum requirements for fiscal transparency
We follow Libya news and it's hard to see how the current domestic turmoil gets resolved and that brings the risk of how long this lasts and what happens next. The US jumped in this week urging Libya to ensure public funds are being spent in a transparent and accountable manner. On Thursday, the US Embassy in Libya tweeted [LINK] "*Today, the U.S. Department of State released its 2024 Annual Financial Transparency Report. As in past years, #ليبيا failed to meet the minimum financial transparency requirements under the standards applied in this global report mandated by the U.S. Congress. We continue to urge Libyan leaders to ensure that public funds are spent in a transparent and accountable manner, by reaching a compromise on the equitable distribution of Libya's oil revenues, establishing a unified budget, and publicly disclosing how public revenues are used. In light of the current crisis at the Central Bank of Libya, these priorities are more important than ever."*

UN envoy warned Libya headed to "greater domestic and regional instability"
The one thing that seems clear on Libya is that there is still huge risk to the domestic situation and uncertainty as to what happens and when. Here is what we wrote in our Aug 25, 2024 Energy Tidbits memo on the UN's warning on Libya. "*UN envoy warned Libya is headed to "greater domestic and regional instability. We have been surprised that Libya hasn't had more domestic crisis/battles as it's been almost four years since the last minute cancelled Dec 2021 national election that was supposed to be the unifying event for the future. And there have been times when there were rumbles that haven't emerged to a return to the east vs west conflict. So it is hard to predict if the latest signs of unrest can be put back to rest or if it accelerates. But, on Tuesday, we tweeted [LINK] "Libya watch! "the status quo is not sustainable. In the absence of renewed political talks leading to a unified government and elections – you see where this is heading - greater political financial and security instability, entrenched political and territorial divisions, and greater domestic and regional instability." @stephaniekoury1 👇warns US Security Council. #OOTT [LINK]." UN Special Envoy Stephanie Koury briefed the UN Security Council on Tuesday with a recap of recent events in Libya and a clear waning that things are breaking down and*

there needs to be a big change and some sort of unified efforts from all parties or else Libya is heading for domestic trouble. Her message is clear and worth a read. Our Supplemental Documents package includes the Koury briefing."

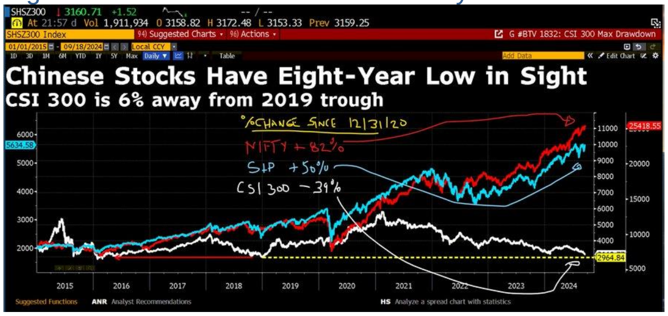
Is more trouble or domestic unrest about to come in Libya?
The domestic uncertainty hasn't gone away and is an area that has been obvious as a risk. Here is another part of the above item we wrote in last week's (Aug 25, 2024) Energy Tidbits memo. "Is more trouble or domestic unrest about to come in Libya., Koury's briefing to the UN Security Council on Tuesday recapped some of the key events that we have been tracking. Here is what we wrote in our Aug 11, 2024 Energy Tidbits memo on Libya's path ahead. *"Is more trouble or domestic unrest about to come in Libya? We go thru the Libyan news sites at least a few times a week, more this week as we were following the force majeure at Sharara oilfield in SW Libya. Our primary news outlets are Libya Herald, Libya Observer and Libya Review. And starting midweek, there were a few separate reports that make us wonder if there is the risk of domestic unrest about to come. And the reason why domestic unrest is significant is that it could easily lead to Libya going back down to zero oil production. On Tuesday, reported clashes in Aljmail (west of Tripoli) injured several. On Wednesday, there were the reports that Haftar had moved more troops down into southwest Libya, ostensibly to protect Libya's southern border. On Thursday, there were the reports that forces for the Tripoli based Libya government were mobilized in what was described as a response to Haftar moving his forces into SW Libya. On Friday, Libya Observer (and the others similarly) "Nine people were killed and 16 others injured, including a civilian, in armed clashes in Tajoura at noon on Friday, as reported by Libya's Ambulance and Emergency Service. Hostilities broke out between the Rahbat Al-Duroo Battalion and the Martyr Sabriya Battalion following an alleged assassination attempt on Rahbat Al-Duroo's commander, Bashir Khalaf Allah." Tajoura sits on the eastern edge of Tripoli. Yesterday, the Libya Herald reported "UNSMIL expressed concern in a statement yesterday over the mobilisation of forces by Hafter and anti-Hafter forces. This comes as Western Libyan forces aligned with the Tripoli based Libyan government mobilised in what they said was a response to Hafter's forces expanding out of their usual southern territory and heading northwest towards Ghadames on the Libyan Algerian border. UNSMIL's statement read: ''UNSMIL monitors with concern the recent mobilization of forces in various parts of Libya, particularly in the southern and western regions. We commend ongoing efforts to de-escalate the situation and prevent further tension. UNSMIL urges all parties to exercise maximum restraint and avoid any provocative military actions that could be perceived as offensive and might jeopardize Libya's fragile stability and the safety of its people. The Mission calls for continued communication and coordination between forces affiliated to the LNA and GNU." We don't know what will evolve but it seems like the domestic tensions are rising and so the issue for Libya will be can they put a lid on the domestic tensions?"*

Oil: China stocks haven't had a post Covid win, CSI 300 down 39% since 12/31/2000
We don't see the Chinese stock market as the #1 holdback to Chinese consumers but the declining stock market is no doubt a factor making Chinese consumers feeling poor and wanting to put more money into savings as opposed to stocks that keep going lower. On

CSI 300 -39% since 12/31/2000

Tuesday, we tweeted [LINK] "*No wonder international equity capital keeps going to US and India and out of China. Added S&P & NIFTY to the @business CSI 300 graph tonight and the post Covid returns since 12/31/2000. NIFTY + 82% S&P +50% CSI 300 -39% #OOTT.*" We were watching Bloomberg TV and took their CSI 300 graph and added the S&P 500 and Nifty to put the brutal Chinese stocks performance in perspective. And we marked in the returns since after Covid using a starting point of 12/31/2020. CSI 300 is down 39% since this recovery period vs S&P up 50% and the Nifty up 82%.

Figure 52: CSI 300 vs S&P 500 vs Nifty



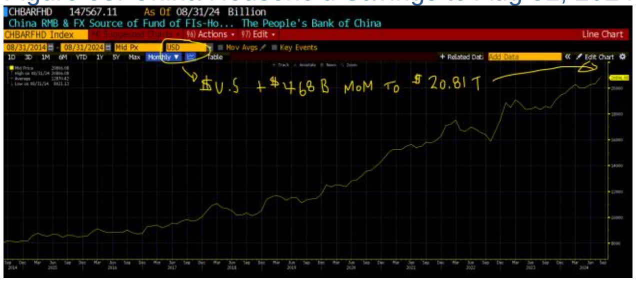
Source: Bloomberg

Oil: Chinese household savings record MoM $468b increase in Aug

Chinese household savings

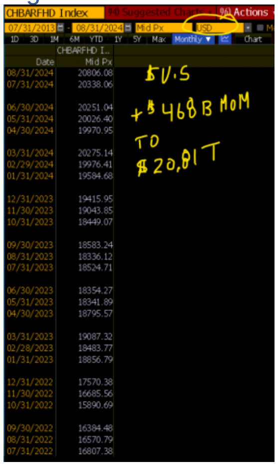
Yesterday, we tweeted [LINK] "*Big negative China indicator. Chinese consumers aren't out spending. Added record +$468b MoM to savings to $20.81t in Aug. MoM: Aug 24: +468b. Aug 23: -$188b. Aug 22: -$236b. Aug 21: +$3b. Aug 20: +$294b. Aug 19: -$398b. Aug 18: +$26b. Aug 17: +22b. Aug 16: +$4b. Thx @business #OOTT.*" This was a record by far for largest MoM increase in savings at +$468 billion MoM in Aug and it compares against the last two Aug that saw big MoM decreases in savings with Aug 23 -$188b and Aug 22 -$236b. One of the biggest reasons for the weak China recovery is that consumers have been on the sidelines and therefore keep adding to savings instead of spending. The increasing savings fits with the commentary that Chinese consumers are not yet confident in economic recovery to start to spend more. And they are also feeling poor with stock markets down (as noted above) and with their primary asset, house values down MoM every month for well over a years. No wonder the Chinese consumer wants to save money. Chinese household savings were +468b MoM to end Aug at $20.81t. This is a huge number that works out to ~$325 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 53: China Household Savings to Aug 31, 2024



Source: Bloomberg

Figure 54: China Household Savings



CHBARFHD Index | 07/31/2013 - 08/31/2024 | Mid Px | USD | Monthly

Date	CHBARFHD I... Mid Px
08/31/2024	20806.08
07/31/2024	20338.06
06/30/2024	20251.04
05/31/2024	20026.40
04/30/2024	19970.95
03/31/2024	20275.14
02/29/2024	19976.41
01/31/2024	19584.68
12/31/2023	19415.95
11/30/2023	19043.85
10/31/2023	18449.07
09/30/2023	18583.24
08/31/2023	18336.12
07/31/2023	18524.71
06/30/2023	18354.27
05/31/2023	18341.89
04/30/2023	18795.57
03/31/2023	19087.32
02/28/2023	18483.77
01/31/2023	18856.79
12/31/2022	17570.38
11/30/2022	16685.56
10/31/2022	15890.69
09/30/2022	16384.48
08/31/2022	16570.79
07/31/2022	16807.38

Source: Bloomberg

Oil: China home prices keep losing value, 15 mths for new & 16 mths for old,

China houses keep losing value

As noted above, we consider homes to be the primary asset for Chinese, much like North America, and house values have gone down every month for well over year. Here is what we wrote in last week's (Sept 15, 2024) Energy Tidbits memo. "*China home prices keep losing value, 15 mths for new & 16 mths for old. The big negative to the Chinese consumer is that they keep losing value in their homes, their biggest asset value keeps decreasing month after month. On Friday, we tweeted [LINK] "No wonder Chinese consumer is still on sidelines. Their most important asset, home values keep going lower. New home prices: 15th straight MoM % drop. Aug -0.73%. July -0.65%. June -0.67%. 2nd hand home prices: 16th straight MoM % drop. Aug -0.95%. July -0.80%. June -0.85%. Thx @business #OOTT." Just like in North American, the home is the most important asset for most Chinese is their home and all the Chinese have seen is the value of their homes decline month after month with no end in sight. In Aug, Chinese new home and 2nd home prices were down MoM vs July. China new home prices were -0.73% MoM and that is the 15th consecutive month of MoM declines. China 2nd hand home -0.95% MoM and that is the 16th consecutive MoM decline. prices Below are the Bloomberg graphs with the July data.*"

Figure 55: China new home prices MoM % change incl Aug 2024

Source: Bloomberg, National Bureau of Statistics

Figure 56: China 2nd hand home prices MoM % change incl Aug 2024

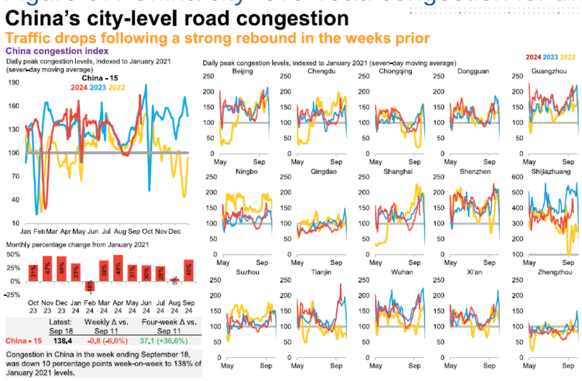
Source: Bloomberg, National Bureau of Statistics

Oil: Baidu China city-level congestion drops WoW w/ mid-Autumn Festival holiday

China city-level road congestion down

Last week's (Sept 15, 2024) Energy Tidbits memo highlighted China's Mid-Autumn Festival and how that should lead to a drop in China city-level road congestion. On Thursday, BloombergNEF posted its China Road Traffic Indicators Weekly Sept 19 report, which includes the Baidu city-level road congestion for the week ended Sept 18. And, as expected, there was a WoW drop due the national holiday, Mid-Autumn Festival or Mooncake holiday, celebrated on Sept 17. This would have led to more Chinese leaving cities to celebrate with families for a few days. And this also is why the YoY is down for this period as the Mid-Autumn Festival timing was closer to the end of Sept in 2023. The timing varies as it is based on the Chinese lunar calendar. Please note in the below graph the massive drop in China city-level road congestion at the end of Sept 2023 and beginning of Oct 2023 as last year saw the timing of the Mid-Autumn Festival and National Day holidays run together for 12-day travel rush. 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 "*Traffic eases after four straight weeks of growth"*. This week, BloombergNEF reported Baidu city-level road congestion was down by -6.6% WoW to 138.4% of Jan 2021 levels, but compared to September 2023, September's average daily peak congestion levels so far are down -9.0% YoY. Bloomberg noted that 9 of the top 15 cities are down YoY. Below are the BloombergNEF key figures.

Figure 57: China city-level road congestion for the week ended September 18



Source: Bloomberg

Figure 58: China city-level road congestion for the week ended September 18

Indexed to January 2021 = 100

	Sep 23	Oct	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
China-15	153	130	146	146	133	81	138	148	130	129	127	104	140
Beijing	180	159	167	161	145	73	151	169	143	141	146	123	165
Chengdu	130	121	123	116	120	68	134	140	125	119	126	98	131
Chongqing	127	112	122	116	111	80	112	138	122	129	119	75	96
Dongguan	147	130	141	144	121	52	129	138	138	138	126	103	148
Guangzhou	184	160	178	181	161	76	171	195	174	170	162	158	185
Ningbo	127	118	146	142	127	79	144	146	120	128	121	94	131
Qingdao	106	92	99	103	78	51	71	78	72	75	91	80	91
Shanghai	162	127	155	150	115	79	146	152	130	132	119	93	142
Shenzhen	181	151	169	170	149	68	160	164	172	163	162	155	182
Shijiazhuang	484	343	491	461	494	350	400	390	311	329	334	308	360
Suzhou	135	108	127	136	118	79	134	137	113	112	105	96	118
Tianjin	173	150	169	190	133	85	160	165	145	132	106	98	185
Wuhan	189	143	159	159	167	105	174	171	146	144	141	117	166
Xi'an	151	135	156	155	152	98	141	147	129	123	135	107	141
Zhengzhou	106	80	97	108	110	85	95	96	80	78	86	66	87

Indexed to the same month in previous year = 100

	Sep 23	Oct	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
China-15	112	126	155	187	151	55	100	114	110	96	104	87	91
Beijing	106	149	214	275	135	42	92	113	103	93	106	90	92
Chengdu	174	117	131	124	144	51	106	107	115	91	116	85	101
Chongqing	98	130	395	224	136	64	101	125	125	112	113	85	76
Dongguan	105	108	104	156	258	41	99	127	120	108	108	101	101
Guangzhou	114	146	317	307	199	45	99	127	127	107	107	106	101
Ningbo	69	95	101	127	203	59	115	140	121	112	106	81	103
Qingdao	100	96	124	195	175	62	94	97	98	87	95	76	86
Shanghai	81	115	93	172	156	54	98	117	105	101	98	76	88
Shenzhen	122	108	97	156	189	41	96	120	132	99	113	106	100
Shijiazhuang	218	120	459	258	156	69	93	85	81	77	89	70	74
Suzhou	87	91	88	157	171	60	111	130	117	97	99	88	88
Tianjin	213	109	137	244	136	60	114	121	119	100	96	86	107
Wuhan	144	199	192	187	151	55	94	100	97	85	95	86	88
Xi'an	106	149	139	152	132	66	110	112	105	91	110	97	94
Zhengzhou	112	171	294	164	119	76	98	102	90	82	98	72	82

*Source: BloombergNEF calculations based on Baidu data. Note: Data updated to **September 18, 2024. Values for the latest month are month-to-date.** The China-15 congestion level is calculated by taking the weighted average of the congestion levels in the 15 cities and their vehicle registration numbers.*

Source: Bloomberg

Oil: Big drop in China city congestion with Oct 1-7 National Day (Golden Week Holiday)

China big Golden Week holiday

As a reminder, there will be a big upcoming drop in China city-level road congestion with the upcoming National Day holiday. The National Day on Oct 1 every year is like the US 4th of July as it is on , which is on Oct 1 every year to celebrate the founding of the People's Republic of China in 1949. It is also known as Golden Week Holiday as it is a 7-day national holiday from Oct 1-7. And because it is a longer holiday, it typically leads to a big drop in city-level road congestion as people leave cities.

In 2023, Mid-Autumn Festival + Golden Week combined for 12-day travel rush

As noted above, the timing of Mid-Autumn Festival varies as it is based on the Chinese lunar calendar. Last year, the Mid-Autumn Festival was later and ran into the National Day/Golden Week holiday to form a 12-day travel period., Here is what we wrote in our Sept 17, 2023 Energy Tidbits memo. "*China's upcoming 12-day travel rush with national holidays. Earlier this morning, we tweeted [LINK] "Reminder. Major 12-day travel rush is coming, expected from Sept 27 to Oct 8 for Mid-Autumn Festival & National Day holidays. Should see big increase in China domestic flights and big decrease in China Baidu city-level road congestion. #OOTT." We have been highlighting this because it should lead to be swings in the next two weeks data for China schedule domestic flights and China Baidu city-level road congestions. Here is what we wrote in last week's (Sept 17, 2023) Energy Tidbits memo on the upcoming national holidays in China. "A reminder as we look ahead to China mobility data to end September is that there is a major 12-day travel rush coming that is expected* *from Sept 27 to Oct 8. This should lead to a big uptick in domestic air travel and a downtick in city-level road congestion. Yesterday, Xinhua (China state media) reported on the upcoming train travel rush. [LINK]. Xinhua wrote "Friday marks the presale of train tickets for the first day of the Mid-Autumn Festival and National Day holidays, which extend from Sept. 29 to Oct. 6 this year. Ticket sales volumes reflect the travel demands of the people and the trends in economic and social development, said an official of China Railway, adding that the record-breaking ticket sales on Sept. 15 are indicative of the strong demand for travel during the upcoming Mid-Autumn Festival and National Day "golden week" holiday. China is expected to see 190 million railway trips during the upcoming 12-day travel rush, which will last from Sept. 27 to Oct. 8. The Mid-Autumn Festival, falling on Sept. 29 this year, is a traditional Chinese Festival usually marked by family reunions, watching the full moon and eating mooncakes."*

Oil: China oil production up +2.1% YoY in August to 4.22 mmb/d

China Oil Production

China's increasing domestic natural gas production and increasing natural gas pipeline imports has hit higher priced LNG imports. China's oil production increased by ~0.20 mmb from 2021 to 2023 and that has helped reduce some of its oil import needs. What is often overlooked is the fact that China is the 7th largest oil producer just behind Iraq. The IEA's latest Oil Market Report September 2024 estimates China oil production at 4.40 mmb/d in 2024 and that should increase to 4.50 mmb/d in 2025. Last week, Bloomberg's CHENCOIL index (data pulled from National Bureau of Statistics) showed that China crude oil production was up +2.1% YoY in August to 4.22 mmb/d, up +0.09 mmb/d from 4.13 mmb/d in August 2023.

Oil: China oil imports 11.61 mmb/d in August, up +16.0% MoM but down -7.0% YoY

China oil imports August

On Wednesday, China's General Administration for Customs (GACC) reported on the summary data of China's oil and natural gas imports for August [LINK]. China's imports of crude oil in August were 49.10 million tons, or 11.61 mmb/d, a +16.0% increase from 10.01 mmb/d in July, but down -7.0% YoY from 12.48 mmb/d in August 2023.

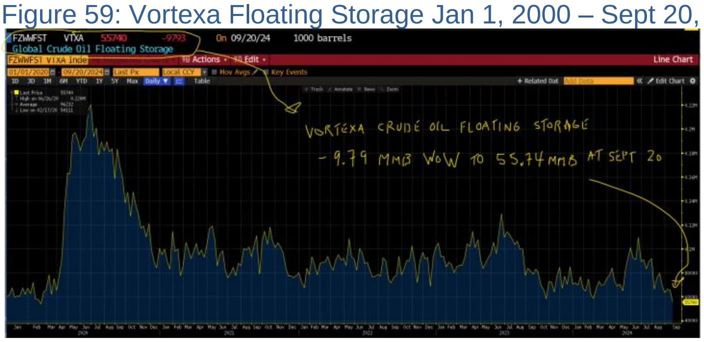
Oil: Vortexa crude oil floating storage est 55.74 mmb at Sept 13, -9.79 mmb WoW

Vortexa floating storage

We are referencing the Vortexa crude oil floating storage data posted on the Bloomberg terminal as of 9am MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments on the new estimates are compared to the prior week's Vortexa estimates posted on Bloomberg on Sept 14 at 9am MT. (i) Yesterday, we tweeted [LINK] "*Vortexa crude #Oil floating storage 55.74 mmb at Sept 20. <60 mmb is very low. But prior 4 wks were all initially in 50's & the next wk were revised into the 60's. Even with revisions, last 7 wks average 67.89 mmb, only been 21 wks <70 mmb since Covid. Thx @vortexa @business #OOTT.*" Only been 4 weeks <60 mmb since Covid so 55.74 mmb is very low. The four prior weeks were all initially estimated in the 50's but were then revised the subsequent week to into the 60s. that is still low as there have only been 21 weeks in the 60s since Covid. (ii) As of 9am MT Sept 21, Bloomberg posted Vortexa crude oil floating storage estimate for Sept 20 at 55.74 mmb, which was -9.79 mmb vs the revised up big Sept 13 of 65.53 mmb. Note Sept 20 of 65.53 mmb was revised +7.42 mmb vs 58.11 mmb originally posted at 9am MT on Sept 14. (iii) Revisions. Six of the last seven weeks were revised up and the average revision was

+2.95 mmb for the last seven weeks, but Sept 13 was revised +7.42 mmb and Aug 30 revised +5.69 mm. Rest or the weeks had smaller +/- revisions. Here are the revisions for the past seven weeks compared to the estimates originally posted on Bloomberg at 9am MT on Aug Sept 14. Sept 13 revised +7.42 mmb. Sept 6 revised +1.03 mmb. Aug 30 revised +5.69 mmb. Aug 23 revised +3.19 mmb. Aug 16 revised +0.92 mmb. Aug 9 revised -0.16 mmb. Aug 2 revised +2.56 mmb. (iv) 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 67.89 mmb vs last week's then seven-week rolling average of 66.67 mmb. The increase was due to the positive revisions in six of the last seven weeks. 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. (vi) 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. (vii) Sept 20 estimate of 55.74 mmb is -73/.40 mmb vs the 2023 peak on June 25, 2023 of 129.14 mmb. Recall Saudi Arabia stepped in on July 1, 2023 with its voluntary cuts. (viii) Sept 20 estimate of 55.74 mmb is -27.30 mmb YoY vs Sept 22, 2023 of 83.04 mmb. Below are the last several weeks of estimates posted on Bloomberg as of 9am on Sept 21, Sept 14 and Sept 7.

Figure 59: Vortexa Floating Storage Jan 1, 2000 – Sept 20, 2024, posted Sept 21 at 9am MT



Source: Bloomberg, Vortexa

Figure 60: Vortexa Estimates Posted 9am MT on Sept 21, Sept 14 and Sept 7

Posted Sept 21, 9am MT Date	Last Px	Sept 14, 9am MT Date	Last Px	Sept 7, 9am MT Date	Last Px
Fr 09/20/2024	55740	Fr 09/13/2024	58114	Fr 09/06/2024	58692
Fr 09/13/2024	65533	Fr 09/06/2024	64499	Fr 08/30/2024	59982
Fr 09/06/2024	66267	Fr 08/30/2024	59835	Fr 08/23/2024	63828
Fr 08/30/2024	63525	Fr 08/23/2024	65857	Fr 08/16/2024	75836
Fr 08/23/2024	69048	Fr 08/16/2024	78965	Fr 08/09/2024	73011
Fr 08/16/2024	79890	Fr 08/09/2024	75403	Fr 08/02/2024	62074
Fr 08/09/2024	75236	Fr 08/02/2024	64024	Fr 07/26/2024	88555
Fr 08/02/2024	66579	Fr 07/26/2024	89585	Fr 07/19/2024	84259
Fr 07/26/2024	91949	Fr 07/19/2024	86777	Fr 07/12/2024	82071
Fr 07/19/2024	89496	Fr 07/12/2024	82084	Fr 07/05/2024	88470
Fr 07/12/2024	83348	Fr 07/05/2024	89373	Fr 06/28/2024	86397
Fr 07/05/2024	90994	Fr 06/28/2024	87416	Fr 06/21/2024	107.849k

Source: Bloomberg, Vortexa

Vortexa floating storage by region

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 Sept 13 was revised +7.42 mmb with the key revisions being Asia revised +2.64 mmb, and Middle East revised +2.28 mmb. (ii) Total floating storage at Sept 20 of 55.74 mmb was -9.79 mmb WoW vs the revised up Sept 13 of 65.53 mmb. The major WoW change was Asia -7.69 mmb WoW. (iii) Sept 20 estimate of 55.74 mmb is -73.40 mmb vs the 2023 high on June 23, 2023 of 129.14 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 –51.48 mmb and Other -17.24 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 Sept 13 that was posted on Bloomberg at 9am MT on Sept 14.

Figure 61: Vortexa crude oil floating by region

				Original Posted	Recent Peak	
Region	Sept 20/24	Sept 13/24	WoW	Sept 13/24	Jun 23/23	Sept 20 vs Jun 23/23
Asia	22.00	29.69	-7.69	27.05	73.48	-51.48
North Sea	3.05	3.77	-0.72	2.19	5.23	-2.18
Europe	3.86	4.22	-0.36	3.99	5.63	-1.77
Middle East	5.96	7.84	-1.88	5.56	6.76	-0.80
West Africa	7.60	9.24	-1.64	7.82	7.62	-0.02
US Gulf Coast	1.11	0.44	0.67	0.00	1.02	0.09
Other	12.16	10.33	1.83	11.50	29.40	-17.24
Global Total	55.74	65.53	-9.79	58.11	129.14	-73.40
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Sept 21						
Source: Vortexa, Bloomberg						

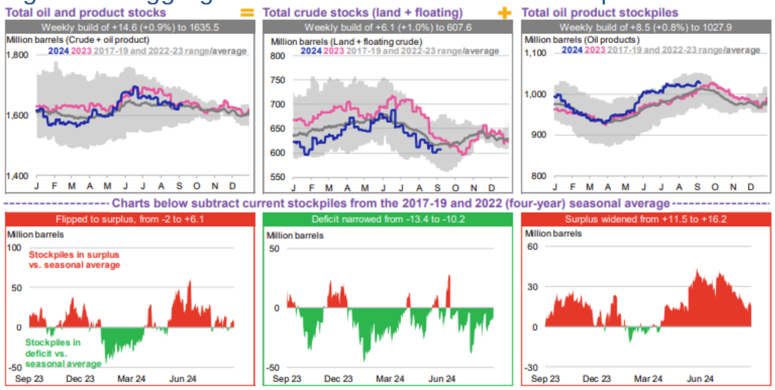
Source: Bloomberg, Vortexa

Bloomberg Weekly Oil Indicators

Oil: Global oil & product stocks flipped to a surplus of +6.100 mmb from -2.000 mmb

On Thursday, 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 surplus of +6.100 mmb for the week ending September 6, from a deficit of -2.000 mmb for the week ended August 31. (iii) Total crude inventories (incl. floating) increased +1.0% WoW to 607.600 mmb, while the stockpiles deficit narrowed from a deficit of -13.400 mmb to a deficit of -10.200 mmb. (iv) Land crude oil inventories increased +0.4% WoW to 543.100 mmb, narrowing their deficit from -13.800 mmb to -13.200 mmb against the five-year average (2017-2019 + 2022-23). (v) The gas oil, and middle distillate stocks increased +2.3% WoW to 241.200 mmb, with the surplus against the four-year average flipping from a deficit to a surplus of +1.500 mmb from -0.500 mmb. Jet fuel consumption by international departures in the week starting September 17, is set to decrease by -0.023 mmb/d WoW, while consumption by domestic passenger departures is forecast to decrease by -0.002 mmb/d WoW. Below is a snapshot of aggregate global stockpiles.

Figure 62: Aggregate Global Oil and Product Stockpiles



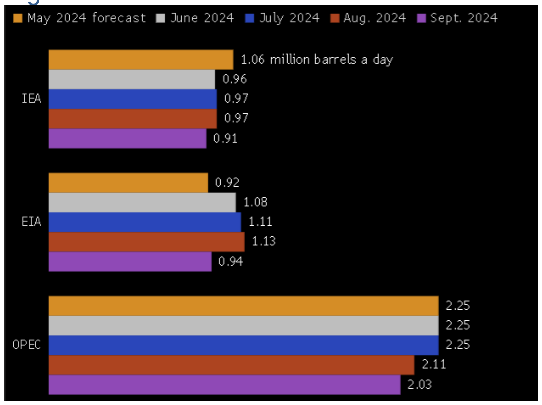
Source: BloombergNEF

Oil: Bloomberg Oil Demand Monitor, *Specter of Surplus, Run Cuts Weigh on Market*

Bloomberg oil demand monitor

The Bloomberg Oil Demand Monitor is a good recap of key oil demand indicators around the world. This week's report discusses the potential demand woes in the face of high supply even with lower rates. Although the most recent rate cut may temporarily prop up demand, currently forecasters hold largely divergent demand outlooks, with the EIA and IEA forecasting 2024 demand growth below one million barrels, whereas OPEC+ predicts over two million barrels in demand growth. Bloomberg reported: "*For 2025, [OPEC+] forecasts "robust" global demand growth of about 1.7 million barrels a day. The IEA sees growth at about 950,000, compared with output growth of 2.1 million, assuming extra curbs by OPEC+ are maintained. The EIA pegs production growth at 2.4 million next year, against demand expansion of 1.5 million. OPEC remains sanguine about the prospects for China, whereas in its latest monthly report the IEA highlighted how the Asian nation's demand growth is slumping. Forecasting just 180,000 barrels a day of new consumption this year, the IEA said that in addition to economic headwinds facing the country, surging electric vehicle sales are reducing road fuel usage while a "vast" high-speed rail network will restrict growth in air travel. The IEA saw wider weakness, noting that US gasoline use declined year-on-year in five out of the first six months of 2024, It warned that structural headwinds and "anaemic" economic growth could leave advanced economies' oil use almost two million barrels a day below pre-pandemic levels*". The U.S. total oil products supplied fell by -5.4% YoY to 19.790 mmb/d as of September 13. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 63: Oil Demand Growth Forecasts for 2024



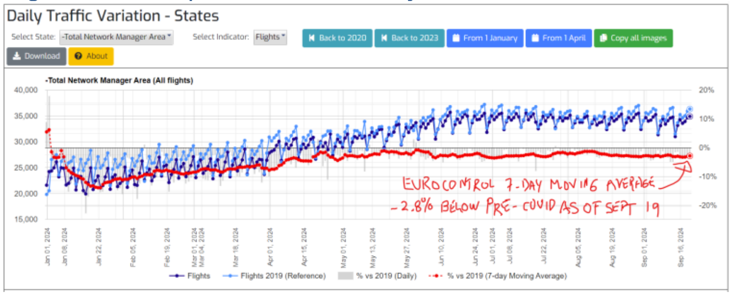
Source: Bloomberg

Oil: Europe airports daily traffic 7-day moving average is -2.8% below pre-Covid

Europe airports daily traffic

Yesterday, we tweeted [LINK] "*Daily Europe air traffic remains stuck below pre-Covid. 7-day moving average as of: Sept 19: -2.8% below pre-Covid. Sept 12: -3.0%. Sept 5: -2.8%. Aug 29: -3.1%. Aug 22: -2.8%. Aug 15: -2.2%. Aug 8: -1.3%. Aug 1: -1.9%. Jul 25: -2.2%. Jul 18: -2.6%. 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 -2.8% below pre-Covid 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% as of Aug 15, -1.3% as of Aug 8, -1.9% as of Aug 1, –2.2% below as of July 25, and -2.6% below as of July 18. Please note that we try to pull the data on Saturday mornings for a consistent weekly comparison. Eurocontrol updates this data daily and it is found at [LINK].

Figure 64: Europe Air Traffic: Daily Traffic Variation to end of Sept 19



Source: Eurocontrol

Oil: Italy petroleum products consumption keeps going higher

Italy petroleum products consumption

On Monday, we tweeted [LINK] "*Economies still run on energy and predominately petroleum products to move people and products by air, car, truck and train. Italy & Spain continue to increase petroleum products consumption but Germany economy woes mean less consumption. 👇@staunovo post & SAF Sept 8, 2024 Energy Tidbits. #OOTT.*" We forwarded a tweet by UBS analyst Giovanni Staunovo on Italy's petroleum production in July.

Our tweet include items from our Sept 8, 2024 Energy Tidbits memo on how Spain is also having strong petroleum production consumption whereas Germany is not. The Italy data reinforced how Germany continues to be the laggard in Europe as energy consumption is a great indicator for how an economy is doing. For Italy, Staunovo wrote "*#Italy: Oil demand still strong. total oil product sales rose by 2.7% y/y to 4.456 million tons in July. Gasoline +7.1% y/y to 0.814mt. Diesel/gasoil +2.2% y/y to 2.133mt. Jet fuel +4.9% to 0.512mt. LPG +2.5% y/y to 0.231mt. DGISSE #oott.*"

Germany June diesel consumption -4.5% YoY, jet fuel -26% YoY

Here is what we wrote in our Sept 8, 2024 Energy Tidbits memo on Germany petroleum products consumption. "*We haven't been tracking Germany's petroleum products consumption and still haven't found where the data is located within the BAFA website. But UBS analyst Giovanni Staunovo tweeted out the June data. Earlier this morning, we tweeted [LINK] "Germany economy isn't working. Trucks not trucking, planes not flying. @staunovo 👇oil product sales -4.5% YoY in June incl diesel -4.5%, gasoline -0.7%, jet fuel -26%. Also May -9.3% YoY. "Germany as a business location is falling behind in terms of competitiveness" VW CEO. See [LINK] #OOTT." Staunovo noted that Germany petroleum products sales (deemed consumption) was down -4.5% YoY in June, which followed -9.3% YoY in May. And what jumped out at us on the June numbers were how diesel was -4.5% YoY in June and jet fuel -26% YoY. Diesel is viewed as a key indicator for the economy as diesel big use is in trucking so a negative indicator. And jet fuel -26% YoY is a surprisingly large YoY decline. We recognize Germany isn't viewed as a hot summer holiday location in Europe vs Spain and Italy and June is only viewed as the start of holidays but the -26% YoY drop seems huge. We will be watching to see what the July data shows.*"

Spain's fuel consumption up YoY in July

Here is what we wrote in our Sept 8, 2024 Energy Tidbits memo on Spain's petroleum products consumption in July. "*Spain continues to show strong YoY growth in its fuels consumption. And from the sounds of feedback from friends who went to Spain on holidays, Spain had a very busy tourist season that helped the strong fuel demand. On Monday, Cores reported Spain's monthly oil and petroleum consumption for the month of July [LINK]. Cores wrote "This month, consumption of all product groups increased year-on-year: LPG (+1.5%), gasoline (+7.4%), kerosenes (+11.4%), diesel (+0.3%) and fuel oils (+4.8%). In the annual cumulative total, all product groups also increased: LPG (+6.0% vs. 2023), gasoline (+7.9%), kerosenes (+12.8%), diesel (+1.0%) and fuel oils (+8.3%). Below is a table showing the breakdown of demand by fuel type in July.*"

Figure 65: Spain's July Oil Demand Product Breakdown (thousand mt)

	Consumos			Tasas Variación (%) Interanuales		
Productos Petrolíferos	Julio 2024	Acumulado Anual	Año Móvil	Julio 2024	Acumulado Anual	Año Móvil
Gasolinas Automoción	627	3.707	6.336	7,4%	7,9%	6,4%
Gasóleos Automoción	1.887	12.779	21.796	-1,8%	1,2%	-0,5%
Combustibles de Automoción	**2.514**	**16.486**	**28.132**	**0,4%**	**2,6%**	**1,0%**
GLP	173	1.334	2.172	1,5%	6,0%	2,9%
Gasolinas*	628	3.710	6.340	7,4%	7,9%	6,4%
Querosenos	723	4.160	7.113	11,4%	12,8%	12,9%
Gasóleos*	2.487	17.364	29.703	0,3%	1,0%	-2,8%
Fuelóleos	694	5.024	8.422	4,8%	8,3%	7,5%

* Productos de automoción incluidos en el grupo de productos correspondiente

Source: Cores

Oil & Natural Gas: Is Energy Transfer pipeline station fire still a criminal investigation?

Energy Transfer fire

As of our 7am MT news cutoff, it isn't clear, at least to us, if the investigation into the fire at the Energy Transfer pipeline station by Houston is still a criminal investigation. (i) At ~10am local time Monday morning, a SUV crashed thru a fence at an Energy Transfer pipeline right-of-way, struck a pipeline valve causing an explosion and a fire that was allowed to burn out until Thursday night. The pipeline transports natural gas liquids. On Monday night, we tweeted [LINK] "*"Deer Park Police Dept & local FBI agents conducted the initial investigation, with preliminary reports suggesting no terrorist activity." A white SUV drove thru a fence, entered $ET pipeline right-of-way & struck an above ground pipeline valve. #OOTT Thx @DEERPARKTXGOV".* Deer Park highlighted no suggestion of terrorist activity. (ii) Then on Thursday afternoon, Deer Park announced it moved from suggesting no terrorist activity to highlighting it "*has developed into a criminal investigation*". Deer Park wrote "*Medical Examiners were able to process the vehicle. During the processing, they were able to recover and remove human remains. They will now begin working through their identification process, which will take some time. This has developed into a criminal investigation and will be actively ongoing until further information is available. This is all of the information that will be released until the full investigation has concluded."* (iii) On Thursday night (7:10pm local times) Deere Park announced [LINK] the fire was extinguished and "*The Deerk Park Police Department is investigating the vehicle that struck the pipeline valve. Energy Transfer is working closely with local authorities to manage the response and are cooperating in the investigation."* We didn't see the Thursday night release until Friday night. We are too used to comparing business disclosures so what we can't help wonder why the Thursday night release just called it an investigation and not a criminal investigation as was emphasized the Thursday afternoon release. Note that the police haven't released any information on the driver of the SUV. (iv) After seeing the updated Deer Park release, we started checking local Houston TV news, which is why we wonder if this isn't a criminal investigation. We found an ABC 13 Houston report posted on MSN that includes the ABC 13's Monday night video report. [LINK] ABC 13 wrote "*A couple told ABC13 on Monday that they witnessed when a person drove into a massive pipeline in Deer Park. Authorities believe the person in the SUV drove straight through the fence on the west side of the Spencer Highway Walmart's parking lot. "It caught our eye because the car was moving so slow as we passed it," Sherry Richard, who was headed to Walmart with her husband, Chad Richard, said. Chad Richard didn't remember much about the driver's physical description other than that they were elderly and wearing glasses. "All I can remember is seeing that she was wearing glasses, and we circled around to get a parking spot, and as soon as we got a parking spot, the car just veered off," Chad Richard said."* (v) We don't know but it will be interesting to see the ultimate cause and motivation. We are hoping the witnesses are right and this is some unfortunate accident.

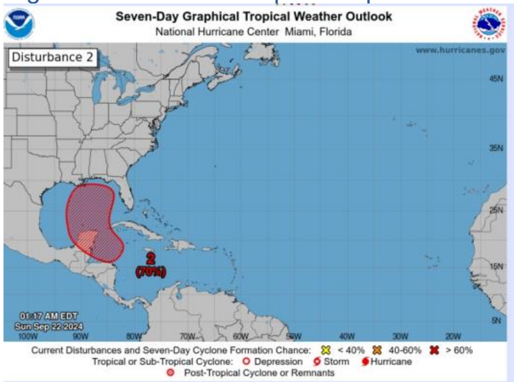
Otherwise, it opens up a much bigger issue on deliberate attacks on more infrastructure. Don't forget that all that protected this infrastructure was a chain link fence.

Oil & Natural Gas: Potential tropical depression this week

Potential tropical depression

The reason why we both mentioning potential tropical depressions is that most damage from tropical storms tends to come from flooding as opposed to wind strength. And tropical depressions can dump a lot of rain. Earlier this morning, we tweeted [LINK] "*a tropical depression is likely to form as the systems moves slowly northward across the northwestern Caribbean Sea and Gulf of Mexico thru the end of the week" @NHC_Atlantic. Tropical depression is the level before reaching Tropical Storm strength. #OOTT."* The National Hurricane Center's 7-day outlook this morning notes the 70% chance for this disturbance to reach tropical depression strength this week. Tropical Depression strength is just below Tropical Storm strength. As a general rule, tropical depression wind strength of up to 38 mph don't cause much wind damage, but the issue is how much rain gets dumped. We remind that the most damage from tropical storms and hurricanes tends to come from flooding as opposed to wind damage. Below is the National Hurricane Center map as of 1:17am ET today that was attached to our tweet.

Figure 66: Potential tropical depression this week



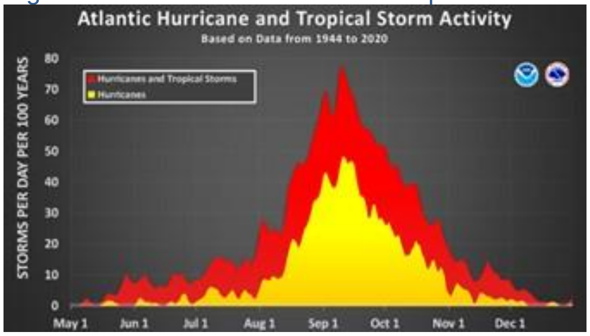
Source: NHC

Oil & Natural Gas: Sept is normally the busiest Atlantic hurricane month

Sept is normally the busiest hurricane emonth

There is going to be some major reflection from hurricane forecasters on what happened so far this year in the relatively low level of hurricanes when all the major forecasters called for more active than normal Atlantic hurricane season. Even with the recent Hurricane Francine, it has been a relatively quiet in August'/September for Atlantic hurricane season. This is not the norm as the normal peak hurricane season is mid-Aug thru mid-Oct and that 90% of the Atlantic hurricanes typically come after Aug 1. The peak of peak hurricane season is normally mid-Sept and September normally sees 45% of Atlantic hurricanes. And don't forget all the hurricane forecasters are calling for a more active than normal hurricane activity. Here is what we wrote in our Aug 6, 2023 Energy Tidbits memo. "*90% of Atlantic hurricanes come after Aug 1, peak is normally mid-Sept It may already be the hottest time of the year, but we always remind that 90% of Atlantic hurricanes typically come after Aug 1. And August normally marks the start of the ramp up of hurricane season with high hurricane activity typically from mid-Aug thru mid-Oct with a normal peak in mid-Sept. Below is NOAA's graph* *showing the distribution of Atlantic hurricanes and tropical storms based on data from 1944 to 2020. [LINK].”*

Figure 67: Atlantic hurricane and tropical storm activity by month



Source: NOAA

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

Europe airports daily traffic

We are still about five weeks away from the start of Q3 reporting. 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 QTD to Sept 20 close of prices. The big negative vs Q2 is AECO, which QTD has average $0.71, 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.

Figure 68: 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	C$ 2.42
Q2/19	US$ 69.19	US$ 59.93	US$ 54.39	US$ 47.34	US$ 2.56	C$ 1.05
Q3/19	US$ 62.23	US$ 56.41	US$ 52.35	US$ 43.84	US$ 2.38	C$ 0.96
Q4/19	US$ 64.19	US$ 56.98	US$ 50.75	US$ 37.94	US$ 2.39	C$ 2.34
Q1/20	US$ 51.63	US$ 46.10	US$ 39.04	US$ 28.10	US$ 1.92	C$ 1.93
Q2/20	US$ 29.71	US$ 27.97	US$ 22.25	US$ 18.39	US$ 1.70	C$ 1.90
Q3/20	US$ 44.38	US$ 40.88	US$ 36.84	US$ 31.09	US$ 1.96	C$ 2.14
Q4/20	US$ 45.17	US$ 42.80	US$ 38.03	US$ 31.36	US$ 2.47	C$ 2.52
Q1/21	US$ 61.15	US$ 57.91	US$ 54.39	US$ 46.06	US$ 3.39	C$ 2.97
Q2/21	US$ 68.05	US$ 66.16	US$ 62.17	US$ 53.31	US$ 2.91	C$ 2.93
Q3/21	US$ 73.24	US$ 70.59	US$ 66.94	US$ 57.70	US$ 4.31	C$ 3.40
Q4/21	US$ 79.04	US$ 77.29	US$ 73.79	US$ 60.91	US$ 4.71	C$ 4.48
Q1/22	US$ 101.80	US$ 94.93	US$ 93.84	US$ 82.29	US$ 4.63	C$ 4.53
Q2/22	US$ 113.86	US$ 108.85	US$ 107.12	US$ 93.39	US$ 7.47	C$ 6.89
Q3/22	US$ 100.62	US$ 91.81	US$ 89.95	US$ 71.19	US$ 7.96	C$ 4.16
Q4/22	US$ 88.64	US$ 82.61	US$ 79.71	US$ 54.91	US$ 5.54	C$ 5.01
Q1/23	US$ 81.17	US$ 76.10	US$ 73.75	US$ 56.94	US$ 2.66	C$ 3.08
Q2/23	US$ 78.30	US$ 73.61	US$ 70.56	US$ 60.29	US$ 2.16	C$ 2.30
Q3/23	US$ 86.70	US$ 82.19	US$ 79.76	US$ 66.16	US$ 2.59	C$ 2.48
Q4/23	US$ 84.22	US$ 78.46	US$ 71.01	US$ 55.67	US$ 2.74	C$ 2.19
Q1/24	US$ 83.04	US$ 76.99	US$ 68.71	US$ 60.03	US$ 2.31	C$ 2.23
Q2/24	US$ 84.84	US$ 80.80	US$ 72.80	US$ 68.28	US$ 2.07	C$ 1.12
QTD	US$ 80.96	US$ 76.11	US$ 68.11	US$ 62.20	US$ 2.06	C$ 0.71

Source: Bloomberg, SAF Group

Energy Transition: Germany urges EU to make big delay to green hydrogen targets

Germany wants EU delay on green hydrogen

Anyone who is surprised that green hydrogen will be another Net Zero target that needs to be pushed way back hasn’t been paying attention to the comments on costs and the reality that green hydrogen math is nowhere near cost competitive. Green hydrogen is very expensive and nowhere near the cost needed to get it into the ballpark to be cost competitive. And the only people who seem convinced to not move off their green hydrogen targets are the politicians. But now, Germany Vice Chancellor Robert Habeck is also the head of Germany's Green party. Bloomberg Habeck is asking the EU for a big delay in the green hydrogen targets as green hydrogen isn't ready and German companies are telling him that the green hydrogen target timing don't allow for economic realizing of these projects. On Friday, we tweeted [LINK] "*Germany urges EU for big delay to Green Hydrogen timing. ".. the requirements often don't allow for the economic realization of electrolysis projects in DEU." Thx @E_Krukowska. See 👇07/16 tweet. EU had no real analysis behind the Green Hydrogen targets. Busted by @EUauditors "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" Reality is low carbon (#NatGas) will have to be fill the void. #OOTT."* Bloomberg wrote "*In a letter this week to EU Energy Commissioner Kadri Simson, German Economy Minister Robert Habeck called for a seven-year delay of the temporal correlation criteria that requires evidence of a match between renewables output on the grid and hydrogen production. He also said the EU should extend phasing in its additionality norms until 2035, the letter seen by Bloomberg stated. Additionality is the requirement that hydrogen producers ensure their demand for power is matched by new low-carbon power generation or renewable power plants. While the measures earlier had German support, "reality has shown that these requirements were still too high and are slowing down the ramp-up of the projects for the production of renewable hydrogen in Germany and many other member states," Habeck wrote. "Many companies have told me that the requirements often don't allow for the economic realization of electrolysis projects in Germany."* Our Supplemental Documents package includes the Bloomberg report.

07/16/24: EU renewable hydrogen plan based on politics not robust analysis,
Our Friday tweet included our July 16, 2024 tweet on the European Court of Auditors calling out the EU for their green hydrogen plans that were based on politics and not robust analysis. In theory, one would think the EU would have listened to their auditors busting them on their green hydrogen targets but that wasn't the case. Regardless, here is what we wrote in our July 21, 2024 Energy Tidbits memo on the auditors report. "*EU renewable hydrogen 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 and 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 and 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 key EU industries or creating new strategic dependencies." Our Supplemental Documents package includes the ECA release and excerpts from their report."

07/18/24: EC President, EU will stay the course on renewable hydrogen goals
As noted above, the European Court of Auditors issued their scathing report on the EU green hydrogen targets on July 16 and it only took two days for the European Commission President von der Leyen to ignore the auditors report on green hydrogen. Here is what we wrote in our July 21, 2024 Energy Tidbits memo. "*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 thie 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."

Energy Transition: Buttigieg on track for 500,000 public EV charging stations by 2030

Buttigieg on EV charging stations

Looks like the researchers at CNBC might have got caught in the sound bite that has been used against Biden's seeming lack of progress on EV charging stations under the Inflation Reduction Act because it looks like they fed a gotcha question to the hosts. And Buttigieg gave a similar but more expanded reason that explained the 500,000 EV charging stations by 2030 was total "public" stations and there are now 190,000 "public" charging stations. And yes, there are only eight up and running federally funded charging stations and that the federally funded charging stations are to fill the gap where the private sector doesn't see the returns ie. on stretches of road. So Buttigieg says at 190,000 public stations, the US is on track to meet Biden's goal of 500,000 charging stations by 2030. Transportation Secretary Buttigieg was on CNBC Squawk Box on Thursday and was asked if he could explain why there was $7.5b under the Inflation Reduction Act, "*you're supposed to get to 500,000 of these charging stations by 2030*" but only eight have been built and "*what is really the problem."* Buttigieg replied "*that's on track. So we're at about 190,000 publicly available charging stations in the US. That's approximately double what the level was when President Biden came in. The issue though is that there are some gaps in the market for ones that are just not going to be built by the private sector that's been building the construction of those chargers to date. That's why the legislation provided for funding to do federally supported chargers that are intended to be on line before 2030. Bulk of that construction will happen in 27, 28, quite a bit actually I expect by 2026. But a handful as you are mention are actually up and running. But really what you're going to see is more in the 2nd half of this decade. It's really important to have those federally supported chargers because you have stretches of road or in the middle of our cities, apartment buildings, places in our economy where it just doesn't get [?] out to be the private sector profitably doing that*."

Energy Transition: Mercedes reminds of China and BEV hits in its guidance cut

Mercedes big cut to guidance

Mercedes shares were down 7% on Friday following their Thursday night release of a big reduction to guidance. The press release directly named China as the main negative on the macroeconomic environment and indirectly reminded of the big negative for H1/24 in the crashing BEV sales will continue in H2/24. (i) On Friday, we tweeted [LINK] " *Mercedes -7%. Headline: Big cut to #'s "triggered by a further deterioration of the macroeconomic environment, mainly in China" Overlooked "Overall, the sales mix in the second half of 2024 is expected to remain unchanged versus the first half, and therefore weaker than originally expected." Remember: biggest disappointment in H1 was crash in BEV sales. Mercedes Q2 BEV -25% YoY. Q3 likely worse as Germany BEV Aug sales -69% YoY. #OOTT."* (ii) China was the big macro reason and got all the headlines as Mercedes clearly blamed China as the main factor to the macroeconomic environment. Mercedes has previously noted the negative impact from China and that they didn't see it getting better for 12-18 months. But on Thursday night, Mercedes wrote on the "adjusted to its earning outlook" and that "*This was triggered by a further deterioration of the macroeconomic environment, mainly in China. GDP growth in China lost further momentum amid weaker consumption as well as the continued* *downturn in the real estate sector. This affected the overall sales volume in China including sales in the Top-End segment."* (iii) Our tweet noted the more general comment on Mercedes overall sales mix being the negative items that impacted H1/24 and that was driven by Mercedes big drop in BEVs that led to Mercedes big back off its all-electric by 2030 target. In the Thursday night release, Mercedes wrote "*Overall, the sales mix in the second half of 2024 is expected to remain unchanged versus the first half, and therefore weaker than originally expected.*" Our tweet included excerpt from the Q2 that noted how Mercedes BEV sales were -25% YoY in Q2/24, and also the ACEA August car sale data that noted Germany BEV sales were -69% YoY in Aug 2024 ie. pointing to a rougher Q3 for total Germany BEV sales. Mercedes didn't specifically highlight BEV in the reduced guidance but pointed to the H1/24 sales mix being unchanged and the negative in H1/24 was BEV. Below we create a table of the ACEA August sales showing Germany Aug sales split by type of fuel. Our Supplemental Documents package includes the Mercedes release and Q2/24 sales mix table.

Figure 69: UK Aug new car registrations by power source

Germany August New Car Registrations by Power Source

	Aug-24	Aug-23	% Change	YTD Aug 24	YTD Aug 23	% Change
BEV	27,024	86,649	-68.8%	241,911	355,575	-32.0%
PHEV	13,565	14,552	-6.8%	117,925	107,962	9.2%
HEV	55,779	55,844	-0.1%	484,804	433,060	11.9%
Others	973	1,106	-12.0%	10,163	10,633	-4.4%
Petrol	70,007	75,598	-7.4%	703,990	671,407	%
Diesel	29,974	39,668	-24.4%	348,433	334,927	4.0%
Total	197,322	273,417	-27.8%	1,907,226	1,913,564	-0.3%

Others incl fuel-cell electric vehicles, natural gas vehicles, LPG, E85/ethanol, and other fuels

Sources ACEA

Source: ACEA

07/26/24: Mercedes, key Chinese consumers not coming back for ~12-18 mths

On July 26, Mercedes warned that the key Chinese consumers weren't coming back for at least 12-18 months. Here is what we wrote in our July 28, 2024 Energy Tidbits memo. "*Mercedes, key Chinese consumers not coming back for at least 12-18 months. Mercedes reported Q2 on Friday and it highlighted how they don't see the Chinese consumer coming back for at least 12 to 18 months because of the big losses in home values. On Friday, we tweeted [LINK] "Key Chinese consumers not coming back for "at least 12, 18 months". Mercedes Chairman Kaellenius. Because of importance of real estate value to Chinese upper middle class. Their savings has been the additional buy-to-let apartment that was just going up and up See 👇07/14 tweet. June new homes prices 13th straight MoM drop, June 2nd hand home prices 14th straight M/M drop. #OOTT." Our tweet include the Q2 call transcript of comments by Mercedes Chair Kaellenius saying: "Number two, the current macroeconomic environment in China is subdued. I think everybody knows that since we came out of the COVID restrictions beginning of last year, consumer sentiment, it didn't come back. It just didn't come back and you feel the pinch across the board but also in the luxury segment across industries. How long will it take for the Chinese consumer to regain confidence and start buying again? One piece of it, I am sure, is related to the real estate sector. The savings for upper-middle class people has been that additional buy-to-let apartment that was just going up and up and up and up. That whole industry has been in restructure for years now. It feels a little bit like an*

American customer's 401k. You look at your 401k and if you feel flush, you buy a car. If you don't, you don't. And there you have the real estate sector in China. We don't know how long it will take, what it will take for China's consumers to regain that confidence, for China's entrepreneurs to regain that confidence. It is affect inus. It is affecting others. The cautious view that we take now is that's not going to change quickly. So we have to count on this being the marketplace here maybe in the next at least 12, 18 months, we shall see."

05/08/24: Mercede was early to back away from all-electric by 2030

The big drop in Mercedes BEV sales in Q2/24 was signaled by Mercedes AGM backing off its all-electric future targets. Mercedes was one of the first to do so. Here is what we wrote in our May 12, 2024 Energy Tidbits memo. "*Mercedes politely backs away from all-electric by 2030. No one should be surprised to see the continuing backtracking or softening of all the auto company push on EVs, it's just a question of how politely they do so. On Wednesday, Mercedes held its AGM and Chairman Kallenius speech opened up with a polite, but clear backing away from their stated goal for all electric by 2030. Kallenius didn't make any criticism of EVs or even clearly state customers aren't stepping up for EVs as was expected. Kallenius did say they "want a CO2-neutral new car fleet by 2039", which looks like a decade deferral of being all electric by 2030. And he was clear on how they will be keeping EVs and ICE models up to date and letting the customer decide. On Wednesday, we tweeted [LINK] "Mercedes public AGM backtrack from all #EV future! "transformation might take longer than expected" "makes sure all relevant drive systems are fully up to date. And then the customer decides". "we can produce combustion engine models alongside electric cars". Peak #Oil demand will take longer than aspired. #OOTT." Prior to this, the public goals were for all-electric by 2030."*

Mercedes Chairman Kallenius opening to his Ambitious Strategy comments

Here is another Mercedes item from our May 12, 2024 Energy Tidbits memo. "*Mercedes Chairman Kallenius opening to his ambitious strategy comments. Our tweet included the Mercedes posted opening remarks in Kallenius's speech on the EV transformation. Kallenius opened "Our ambitious strategy also makes Mercedes-Benz, Mercedes-Benz. We want a CO2-neutral new car fleet by 2039. Across the entire value chain. That's why the strategic aim of Mercedes-Benz is zero emissions. That is certain. However, the transformation might take longer than expected. We are therefore prepared for all market conditions. We are creating the conditions to become fully electric. But many factors influence the pace of transformation. For example, the expansion of the charging infrastructure. There will be both in the coming years: Electric cars and cars with ultra-modern, electrified combustion engines. If the demand is there, well into the 2030s. We make sure that all relevant drives systems are fully up to date. And then the customer decides. We will build the perfect Mercedes for every wish. We have set our plants up for flexibility. That way we can produce combustion engine models alongside electric cars. And react quickly to the market."*

Energy Transition: ACEA, urgent action needed as EU BEV Aug sales -43.9% YoY

Brutal EU Aug BEV sales

On Thursday, the ACEA posted Europe Aug car sales and it was a brutal month for car sales, especially in BEVs. And the brutal numbers led the AEWCA to post "*European auto industry calls for urgent action as demand for EVs declines*". [LINK]. The ACEA has a blunt warning that BEV sales are not growing at a slower rate, rather BEV sales are declining. And the EU needs urgent action to to try to stop the decline. (i) On Thursday, we tweeted [LINK] "*1/2. EU BEVs decline looks unfixable in near term. @ACEA_auto says urgent action needed. "We are missing crucial conditions to reach the necessary boost in production and adoption of zero-emission vehicles: charging and hydrogen refilling infrastructure, as well as a competitive manufacturing environment, affordable green energy, purchase and tax incentives, and a secure supply of raw materials, hydrogen and batteries. Economic growth, consumer acceptance, and trust in infrastructure have not developed sufficiently either". #OOTT.*" (ii) The ACEA lists a broad range of items they see leading a decline in BEV sales in EU. These include a number of items that are unfixable in the near term such as needing "affordable green energy". The ACEA is looking beyond the marginal cost of solar electricity when the sun is shining or the marginal cost of wind electricity when the wind is blowing. Instead they are looking at how power costs are going up, not down, under the EU's leading push for green energy. And the ACEA lists the obvious one tha they need to get consumer acceptance for BEVs. (iii) Brutal month for BEV sales. On Thursday, we also tweeted [LINK] on the ACEA Aug new car registration. "*2/2. EU EV car sales -43.9% YoY in Aug, 4th consecutive monthly decline. @ACEA_auto ACEA Aug car sales: BEV: 92,627, -43.9% YoY, 14.4% share vs 21%. PHEV: 45,590, -22.3% YoY, 7.1% share vs 7.4%. HEV: 201,552, +6.6% YoY, 31.3% share vs 23.9%.. Petrol: 213,057, -17.1% YoY, 33.1% share vs 32.6%. Diesel: 72,177, -26.4% YoY, 11.2% share vs 12.5%. Others: 18,634, -5.3% YoY, 2.9% share vs 2.5%. #OOTT.*" Below is the table we created of the ACEA data for Aug new car registrations. Our Supplemental Documents package includes the ACEA urgent action release and the ACEA Aug new car registrations.

Figure 70: EU Aug new car registrations by power source

EU August New Car Registrations by Power Source

	Aug-24	Aug-23	% Change	YTD Aug 24	YTD Aug 23	% Change
BEV	92,627	165,204	-43.9%	902,011	983,718	-8.3%
PHEV	45,590	58,660	-22.3%	501,266	527,697	-5.0%
HEV	201,552	189,114	6.6%	2,138,474	1,765,893	21.1%
Others	18,634	19,687	-5.3%	224,692	213,537	5.2%
Petrol	213,057	257,139	-17.1%	2,504,457	2,580,076	-2.9%
Diesel	72,177	98,008	-26.4%	909,592	1,007,279	-9.7%
Total	643,637	787,812	-18.3%	7,180,492	7,078,200	1.4%

Others incl fuel-cell electric vehicles, natural gas vehicles, LPG, E85/ethanol, and other fuels

Sources ACEA

Source: ACEA

Energy Transition: UK Aug BEV sales +10.8% YoY because ICE sales were held back

UK Aug BEV sales +10.8% YoY

The big outlier in the ACEA Aug new car registrations in Europe was the UK that had 19,113 BEV sales to be +10.8% YoY. And no surprise Petrol sales of 27,894 were -19.7% YoY and diesel sales of 2,706 were -25.8% YoY. We say no surprise because there has been ICE demand in the UK but car manufacturers have been holding back ICE deliveries to ensure BEV sales make the UK targeted minimum % of total car sales. So if the BEV demand hasn't and still isn't high enough, then the car manufacturers have to restrict and hold back ICE sales. On Thursday, we tweeted [LINK] "*Numbers can be deceiving. UK BEV Aug sales buck EU trend and were +10.8% YoY. @ACEA_auto. BUT see 👇 Sept 6 tweet: EVs should hit UK regulated EVs to be 22% of total car sales BUT not because of EVs demand. RATHER @vertumotorsCEO explains: "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."* Below is the table we created of the ACEA data for Aug new car registrations.

Figure 71: UK Aug new car registrations by power source

UK August New Car Registrations by Power Source						
	Aug-24	Aug-23	% Change	YTD Aug 24	YTD Aug 23	% Change
BEV	19,113	17,243	10.8%	213,544	193,221	10.5%
PHEV	5,786	6,601	-12.3%	100,457	80,458	24.9%
HEV	29,076	23,410	24.2%	434,698	368,346	18.0%
Others	0	0	n/a	0	0	n/a
Petrol	27,894	34,756	-19.7%	453,937	490,483	-7.5%
Diesel	2,706	3,647	-25.8%	36,219	46,790	-22.6%
Total	84,575	85,657	-1.3%	1,238,855	1,179,298	5.1%
Others incl fuel-cell electric vehicles, natural gas vehicles, LPG, E85/ethanol, and other fuels						
Sources ACEA						

Source: ACEA

09/06/24: Restricting ICE/HEV is how UK EVs sales at 22% of total cars

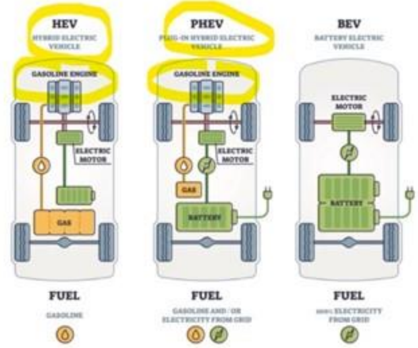
Our above Thursday UK tweet linked to our Sept 6 tweet on the car manufacturers having to hold back on ICE deliveries because UK BEV sales have been less than expected. Here is what we wrote in our Sept 8, 2024 Energy Tidbits memo. "*Restricting ICE/HEV is how UK EVs sales at 22% of total cars. Here is what we wrot in our Sept 8, 2024 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 Vertu is the first confirmation that carmakers have now begun doing so." Our Supplemental Documents package includes the Vertu posted story. [LINK]"*

Energy Transition: HEVs & PHEVs are really just more fuel efficient ICE vehicles

HEVs/PHEVs are just fuel efficient ICE vehicles

The big winner in the EU cars sales in 2024 continues to be hybrids. The ACEA data has all power sources car sales down YoY in Aug except HEVs that were +6.6% YoY. And forYTD Aug 31, all major fuel sources car sales are down YoY excerpt HEVs that are +21.1% YoY. PHEVs are down but way less than BEVs reflecting the shift of BEV buyers into PHEVs. No one can deny an HEV will burn less gasoline or diesel than its ICE counterpart. However, we still find many don't understand that HEVs and even PHEVs are really just more fuel-efficient ICE vehicles and, in particular, for PHEVs that are generally lumped in with EVs for an electrified car group. HEVs and PHEVs run on gasoline or diesel for likely at least half of the time for PHEVs and probably 90% for HEVs. (i) On Thursday, we tweeted [LINK] "*Reminder HEVs and PHEVs are really just more fuel efficient ICE vehicles. See 👇Sept 4 tweet for the numbers. #OOTT."* Our tweet included our Sept 4 tweet [LINK] "*HEV/PHEV 101 - They are really just more fuel efficient ICE. Ford: HEV F150 does 23 mpg vs ICE150 at 19 mpg. Volvo: PHEVs km driven are split 1/2 using battery, 1/2 using petrol/diesel. #OOTT."* (ii) Ford F150 Hybrid vs ICE mpg. Our tweet included the EPA rated mileage for the Ford F150 ICE vs Hybrid. The EPA rates the Hybrid fuel efficiency as being only 4 mpg more than the ICE. That increased fuel efficiency would be reduced if it was a full apples-to-apples comparison. The ICE has a much larger towing capacity. The F150 ICE 3.5L cyl F-150 does 19 MPG with a tow capacity of 13,500 lbs. The F150 HEV 3.5L 6 cyl F-150 does 23 MPG with a tow capacity of 11,200 lbs. (iii) Volvo PHEV. Most just lump PHEVs in with EVs because both are electrified. But the reality is that a lot of PHEV is driven in ICE mode. As noted earlier, Volvo backed off its fully electric plans and its press released noted "*Volvo Cars' most recent data shows that around half of the kilometres covered by the latest plug-in hybrid Volvo cars are driven on pure electric power."* So based on the "most recent data", Volvo PHEVs are driven around 50/50 between km driven in battery mode vs ICE mode. Given the press release was Volvo having to back away from its electrified goals, we have to be believe the "around half" driven by PHEV is likely below half. (iv) We also believe that Volvo has likely picked the best time period for PHEVs driving in battery mode. We would assume the most recent data is referring to some spring/early summer period and it does not include winter months where the PHEVs will be driven more in their ICE mode.

Figure 72: HV vs PHEV vs BEV



Source: Engineering Infrastructure

Capital Markets: Jerome Powell's word of the day was recalibrate

Fed is recalibrating

On Thursday morning, we were watching CNBC Squawk Box clip on Fed Chairman Powell's press conference and we tweeted [LINK] "*Word of the day - Recalibrate. Powell used it 9 times. @Dictionarycom : recalibrate "to reexamine (one's thinking, a plan, a system of values, etc.) and correct it in accord with a new understanding or purpose:" Like companies adjusting guidance when they don't want to say lowering guidance. Thx @JoeSquawk @BeckyQuick #OOTT.*" Here are a few of his quotes. "*So we know that it is time to recalibrate our -- our -- our policy to something that is more appropriate" "But, but ultimately, we think, we believe, with an appropriate recalibration of our policy that we can continue to see the economy growing and that will support the labor market" "We think that it's time to begin the process of recalibrating it to a level that's more neutral rather than restrictive.*"

Capital Markets: Microsoft, Russia wants Trump, Iran wants Harris, China undecided

Microsoft on Russia, Iran and China

On Wednesday, we tweeted [LINK] "*US election interference. Microsoft analysis sees Russia prefers Trump, Iran prefers Harris and China not showing a clear preference for either. Based on Microsoft's Threat Analysis Center (MTAC). See 👇$MSFT Vice Chair/Pres Smith today. #OOTT.*" No one was likely surprised to hear Microsoft's view on what they are finding with result to election interference from Russia, Iran and China. Microsoft said "*Today, we see Iran, Russia, and China using cyber operations to target the U.S. election in November. Iranian operations have targeted candidates of both parties but are inclined to denigrate former President Trump's campaign, which indicates a preference for a Harris victory. Russian operations, meanwhile, are inclined to denigrate Vice President Harris's campaign, indicating a preference for a Trump victory. China, for its part, has aimed to collect intelligence and to stoke discord, while to date not showing a clear preference for a specific candidate.*" Brad Smith (Vice Chair and President, Microsoft Corporation) testified at the Senate Select Committee on Intelligence on Wednesday. He spoke on what they are seeing from "*Among Microsoft's vast team of security professionals, dozens are part of Microsoft's Threat Analysis Center (MTAC), a team whose mission is to detect, assess, and disrupt cyber influence threats to Microsoft, its customers, and democracies worldwide. Part of MTAC's mission is protecting elections from nation-state adversaries who seek to use online operations to distort the information going to voters, change the outcome of an election, or interfere in electoral processes. As MTAC has observed and reported, foreign adversaries* *are using cyber influence operations to target both political parties in the 2024 U.S. presidential election. In the last two years, Microsoft has detected and analyzed cyber-attacks and cyber-enabled influence operations stemming from Russia, Iran, and China, many of which pertain to elections and elections infrastructure."* Our Supplemental Documents package includes the Microsoft written testimony. [LINK]

Capital Markets: BlackRock equity shift to energy and utilities.

BlackRock equity shift to energy and utilities

Here is what we wrote in last week's (Sept 15, 2024) Energy Tidbits on BlackRock's equity shift to energy and utilities. *"BlackRock equity shift to energy and utilities. There was an equity allocation shift in BlackRock's Weekly Investment strategy posted on Monday. BlackRock notes a shift in equity allocation "We move from a U.S. tech focus within our equity overweight, leaning further into a wider set of winners from the artificial intelligence (AI) buildout." And then they go on to highlight that the winners will be "energy and utilities." BlackRock doesn't split out where in Energy but energy is other than utilities. And given they didn't try to link to energy infrastructure to infer mid streamers, we think this has to also include some natural gas producers. But as we noted previously in their mid year global outlook, we think BlackRock goes out of its way to not use the words "natural gas". Rather they use "low carbon". Here is their new focus on "energy and utilities". "In the first phase of AI now underway, investors are questioning the magnitude of AI capital spending by major tech companies and whether AI adoption can pick up. While we eye signposts to change our view, we think patience is needed as the AI buildout still has far to go. Yet we believe the sentiment shift against these companies could weigh on valuations. So we turn to first-phase beneficiaries in energy and utilities providing key AI inputs – and real estate and resource companies tied to the buildout. Outside the U.S., we trim our overweight to Japanese equities. The drag on corporate earnings from a stronger yen and some mixed policy signals from the Bank of Japan following hotter-than-expected inflation make us less positive. But we expect corporate reforms to keep improving shareholder returns." They also continue to see one of their five mega forces is "Transition to a low-carbon economy: The transition is set to spur a massive capital reallocation as energy systems are rewired." And low carbon for really pro climate change groups means includes natural gas. Our Supplemental Documents package include excerpts from the BlackRock Sept 9 weekly commentary."*

BlackRock mid-year outlook had a bullish need for natural gas

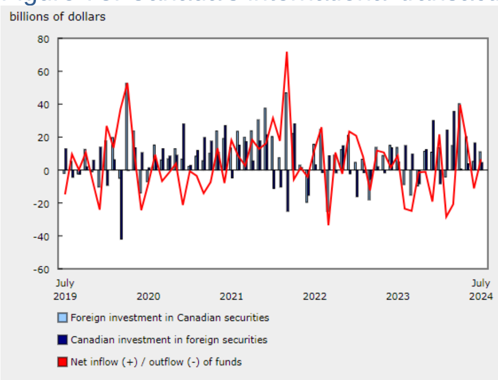
Here is another item from last week's (Sept 15, 2024) Energy Tidbits memo on BlackRock's Midyear Global Outlook. "*BlackRock mid-year outlook had a bullish need for natural gas. We realize this week that we hadn't posted our comments on BlackRock's July 9, 2024 Midyear Global Outlook. Here is what we wrote on this internally on July 12. (i) Assuming readers know the code words, BlackRock's new 2024 Midyear Global Outlook on Tuesday. [LINK] presents a bullish view for the need for natural gas. (ii) BlackRock's new outlook is all about AI. And how "potential investment in AI" is leading to a global transformation on par with the Industrial Revolution. Here is the opening "The world could be undergoing a transformation on par with the Industrial Revolution – thanks to a potential surge in investment in artificial intelligence (AI), the low-carbon transition and a rewiring of global supply chains. But the speed, size and impact of that investment is highly uncertain. And it comes against an unusual economic backdrop post-pandemic: sticky inflation, higher interest rates, weaker trend growth and high public debt. We think taking risk by* *leaning into the transformation and adapting as the outlook changes will be key." (iii) BlackRock is not saying anything different than the other electricity views we have been highlighting from AI. There is a "mega capex coming" for AI buildout and there are challenges to supply the energy needs. This is in line with other energy views. (iv) BUT what is different is that BlackRock does not mention natural gas, it's like there is an automatic word editor to not use natural gas if AI or power demand is mentioned. Rather they use the code words "low carbon transition". We think many or most should realize low carbon is code for natural gas, which is the lowest carbon fossil fuel. We recognize the politics but we don't think they are fooling people. (v) BlackRock highlights "We are seeing the AI buildout boost demand for renewable energy". And in their chart highlighting the "massive energy and investment needs", they highlight "meeting those needs could require massive investment in power grids and renewable energy". So they don't mention natural gas at all in the massive needs. But they do note that early winders could include "energy and utility firms". So an energy firm is another code word for a natural gas company that isn't a utility providing natural gas. (vi) Our Supplemental Documents package includes excerpts from the BlackRock 2024 Midyear Global Outlook."*

Capital Markets: Foreign investment in Canadian securities is +$11.0bn in July

Foreign transactions in Cdn securities

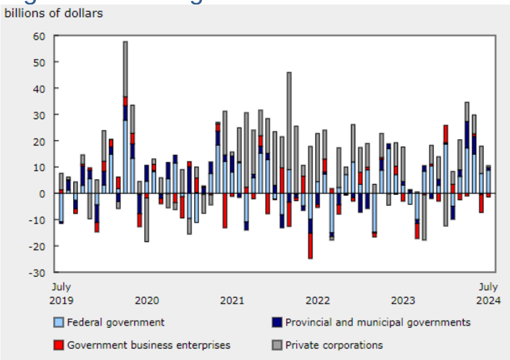
Statistics Canada released Canada's international transactions in securities for July 2024 on Wednesday, which showed a $6.5bn net inflow of investment to Canada [LINK]. There was a significant increase in foreign investment in Canada in July, which was primarily driven by debt securities. Foreign investors purchased $11.0bn of Canadian securities in July, which marks a +$5.8bn MoM increase when compared to the $5.2bn of investments made in June. The foreign investment in July was concentrated in debt securities at $9.1bn, and specifically bonds. In addition to this, Canadians slowed down their own investment in foreign securities with $4.5bn in July. This marks a large decrease when compared to June's significant $16.4bn investment. July's slowdown affected both foreign debt securities and foreign shares. Canadian investors increased U.S. government bonds holdings to $2.7bn, which was offset by a reduction in foreign money market exposure, particularly instruments denominated in Japanese Yen. Statistics Canada reported: "*Foreign investors increased their exposure to Canadian securities by $11.0 billion in July. Meanwhile, Canadian acquisitions of foreign securities slowed to $4.5 billion, down from a $16.4 billion investment in June. As a result, international transactions in securities generated a net inflow of funds of $6.5 billion in the Canadian economy in July*".

Figure 73: Canada's international transactions in securities



Source: Statistics Canada

Figure 74: Foreign investment in Canadian debt securities, by sector of issuer



Source: Statistics Canada

Demographics: Amazon CEO says back to 5 days a week in the office

Amazon CEO 5 days a week in the office

We have to believe most will, even if reluctantly, agree with the concept that people working in person in the office are more productive as teams than people working remotely. Or maybe it's just a generational thing that boomers are used to meeting people and pickup the phone to talk with people instead of text and email. Especially for 50+ who are or were executive and used to being able to walk down the hall to speak with people. One comment from an 50+ executive was his reminder that it's work and work doesn't mean everyone can pick and choose how they work. But his point it's work and it pays the bills. But Amazon CEO Andy Jassy sent a letter to employees that was publicly posted [LINK] advising employees that Amazon was going back to a 5 days a week in the office starting January 1, 2025. Here is the part of the letter on the back to the office. "*To address the second issue of being better set up to invent, collaborate, and be connected enough to each other and our culture to deliver the absolute best for customers and the business, we've decided that we're going to return to being in the office the way we were before the onset of COVID. When we look back over the last five years, we continue to believe that the advantages of being together in the office are significant. I've previously explained these benefits (February 2023 post), but in summary, we've observed that it's easier for our teammates to learn, model, practice, and*

strengthen our culture; collaborating, brainstorming, and inventing are simpler and more effective; teaching and learning from one another are more seamless; and, teams tend to be better connected to one another. If anything, the last 15 months we've been back in the office at least three days a week has strengthened our conviction about the benefits.
Before the pandemic, not everybody was in the office five days a week, every week. If you or your child were sick, if you had some sort of house emergency, if you were on the road seeing customers or partners, if you needed a day or two to finish coding in a more isolated environment, people worked remotely. This was understood, and will be moving forward as well. But, before the pandemic, it was not a given that folks could work remotely two days a week, and that will also be true moving forward—our expectation is that people will be in the office outside of extenuating circumstances (like the ones mentioned above) or if you already have a Remote Work Exception approved through your s-team leader. We are also going to bring back assigned desk arrangements in locations that were previously organized that way, including the U.S. headquarters locations (Puget Sound and Arlington). For locations that had agile desk arrangements before the pandemic, including much of Europe, we will continue to operate that way. We understand that some of our teammates may have set up their personal lives in such a way that returning to the office consistently five days per week will require some adjustments. To help ensure a smooth transition, we're going to make this new expectation active on January 2, 2025." Our Supplemental Documents package includes the Jassy letter.

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

@Energy_Tidbits on Twitter

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.

LinkedIn: Look for quick energy items from me on LinkedIn

Look for energy items on LinkedIn

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

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.

Only 11.5% of NFL teams that start 0-2 have made the playoffs

It's only week 3 of the NFL seasons but, in a relatively short 17-game season that sees 14 of 32 teams make the playoffs, every game counts. Going into week 3, there are nine 0-2 teams, some of whom have been picked jn many pools to make the playoffs such as the Baltimore Ravens, Cincinnati Bengals, Jacksonville Jaguars and

Los Angeles Rams. Others at 0-2 are Denver Broncos, Indianapolis Colts, Tennessee Titans, New York Giants and Carolina Panthers. SI wrote "*From 1990 through the 2023 season, 279 teams have opened 0-2. Only 32 of them made the postseason. That's 11.5%, an incredibly low number. The NFL expanded the playoffs to include 14 teams beginning in 2020, so the odds should be slightly better moving forward. Of those 279 teams, only 17 won their division (6.1%) and three won the Super Bowl (1.1%). In NFL history, only the 1993 Dallas Cowboys, the 2001 New England Patriots and the 2007 New York Giants have ever won a Super Bowl after starting 0-2. So teams that start 0-2 can find success, but it's rare. Over the past three seasons, 21 squads have started 0-2 and only two made the postseason. here are currently nine winless teams across the league and a few of them are downright shocking.*"

Sept 28, 1972, Paul Henderson scores Game 8 winner in Summit Series

I was speaking to a couple of former hockey players and they reminded me that the end of Sept always brings back hockey's most memorable hockey games – the Summit Series between Russia and Canada in 1972. The 8-game Summit Series between Canada and the USSR was about to end. The first four games were in Canada and after the 1st game in the USSR, the series was USSR 3 wins, Canada 1 win and 1 tie with three games remaining all in Moscow. Game 5 was on Sept 22, 1972 and the Toronto Star headline in its Sept 23, 1972 newspaper was *"Summit Series Game 5: Canadian collapse in Moscow makes clear the Soviets are 'the better team."* It looks pretty bad for Canada. But Game 6 on Sept 24, 1972 was a 3-2 Canada win with Toronto Maple Leafs Paul Henderson scoring the winning goal. Game 7 on Sept 26, 1972 was 4-3 Canada win with Paul Henderson scoring the winning goal at 17:54 of the 3rd period The series was tied. Game 8 on Sept 28, 1972 was a 6-5 Canada win with Paul Henderson scoring the winning goal at 19:26 of the 3rd period. Everyone can remember Henderson coming off the bench on a line change, flying for the front of the USSR net, taking a wild swing and falling behind the net. He gets up right away goes to the front of the net and is there to slap in the winner. And then to have the famous picture of Montreal Canadians Yvon Cournoyer bear hugging Henderson with his arms raised. For those that haven't seen it lately, there is a replay of Henderson's game 8 winning goal at [LINK].

Figure 75: Paul Henderson game 8 winner 1972 Summit Series

Source: CBC, NHL

Wine of the week: 2000 Guigal Hermitage

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 some good wine of the week bottles get opened especially as many are 20 to 40 years old. Last night, I tweeted out the wine of the week, which was the 2000 Guigal Hermitage, a northern Rhone red. I decanted the wine for a few hours and was surprised that it was still solid although it would have been better pre-Covid. It was good. Only have a couple of bottles left and don't feel any need to rush to drink them. I don't think it was an expensive wine and the Wine Spectator loved this wine and put it #30 of the wine of the year in 2003.

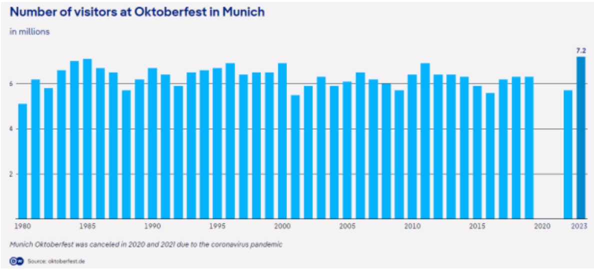
Figure 76: 2000 Guigal Hermitage

Source: SAF Group

Oktoberfest started yesterday

Anyone who has ever been to Germany at the end of Sept or beginning of Oct knows it means one thing – Munich Oktoberfest. Oktoberfest started yesterday and ends on the first Sunday of October. It is truly an amazing time. Its even bigger than Stampede in Calgary. As big as Stampede is in Calgary, it doesn't have any impact outside of Calgary, whereas Oktoberfest may be in Munich but it is celebrated throughout Germany and in parts of the world. Oktoberfest 2024 started yesterday (Sept 21) and runs to Oct 6. Last year's Oktoberfest set an all time record with 7.2 million visitors.

Figure 77: 2001 Number of visitors to Oktoberfest in Munich



Source: DW

Friends Episode 1 was run Sept 22, 1994

The first episode of Friends was 30 years ago on Sept 22, 1994. It ran for 10 seasons and, hit #`1 in Season 8, #2 in Seasons 5 and 9, and #3 in Season 2. The last episode was May 6, 2004. Wikipedia writes "*The series finale aired on May 6, 2004, and was watched by around 52.5 million American viewers, making it the fifth-most-watched series finale in television history and the most-watched television episode of the 2000s."*

Tupperware voluntarily initiates Chapter 11

Tuesday's Tupperware filing for Chapter 11 reminded of how moms of baby boomers would go to the neighbourhood Tupperware parties of the 60s. We may have been kids but they were really a big deal for our moms. Working class families in the 60s only had one car that dads drove to and from work so our stay at home moms were generally stuck at home all weekdays and normally didn't get out until Saturday morning, which was grocery shopping time. But one of the non-family social events for moms was the once a month or so Tupperware parties hosted by one of the neighbour moms. The hostess would get some free Tupperware and commissions. It was a true social networking event. Tupperware's press release said "*"Whether you are a dedicated member of our Tupperware team, sell, cook with, or simply love our Tupperware products, you are a part of our Tupperware family. We plan to continue serving our valued customers with the high-quality products they love and trust throughout this process," said Laurie Ann Goldman, President and Chief Executive Officer of Tupperware*."

Figure 78: Tupperware party in 1960s

Source: Tupperware