Energy Tidbits

Sept 29, 2024

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What if Iran Doesn't Directly Attack Now That Israel has Killed Hamas Leader in July and Hezbollah Leader on Friday?

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. The watch is on Iran now that Israel killed Hezbollah leader Nasrallah. If Iran attacks Israel, it opens up the feared broad regional war but we also wonder what if Iran doesn't retaliate now that Israel has killed Hamas and Hezbollah leaders. [click here]

2. Oil was down this week on the FT Saudi oil report, which we saw as Saudi warning Iraq/Kazakhstan to get in line but also a reminder that Saudi plans to stick to gradual add back of voluntary barrels starting Dec 1. [click here]

3. OPEC came out with their forecast of no sign of peak oil demand and that phasing out oil and gas is a fantasy. [click here]

4. Vortexa floating oil storage continues solid with last seven weeks averaging 63.99 mmb and only been 22 weeks less than 70 mmb since Covid. [click here]

5. So far so good. WCS less WTI differentials continue narrow as volumes increase on 590,000 b/d TMX pipeline. [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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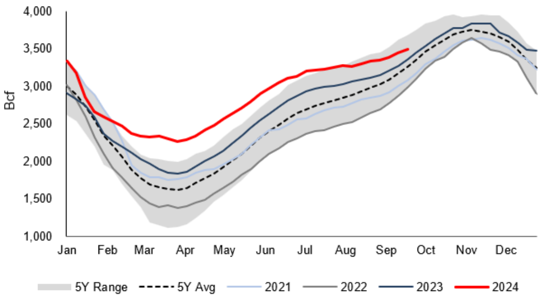
Less risk for US gas storage to be filled early

Natural Gas: Hot summer + Sept hurricanes = less risk US gas storage gets filled early
HH has strengthened to the ~$2.50, a level it hasn't seen since the 3rd week of January, when HH started the drift down to below $2 this summer as winter 2023/24 turned out to be warmer than normal. And the warm winter led to increasing YoY gas storage that was +444 bcf YoY on May 3. At that time, there was the probability that gas storage would be full well before the start of winter 2024/25. But really hot temperatures in Jun/July/Aug and some GoM production interruptions from the Sept hurricanes has led the YoY gas storage down to +159 bcf YoY this week. This means that there should be higher YoY gas storage but not likely to the extent that natural gas can't be injected thru October. So the risk of storage being full early is not as much a risk today. As noted below, storage could be a lot worse.

Figure 1: US Natural Gas Storage



Source: EIA

Storage could be worse

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.

EQT is restoring shut-in volumes in Oct

Natural Gas: EQT to start restoring is ~1 bcf/d shut-in natural gas production in Oct
On Thursday, we tweeted [LINK] "*EQT to start to add back shut-in #NatGas production. Gas storage +159 bcf YoY would have been worse if EQT, Coterra, etc hadn't shut-in production due to low prices. EQT curtailed ~1 bcfd in spring. "We're watching to see that come back in October and November ... We will ease curtailments in October" EQT CEO Rice. Thx @scottdisavino #OOTT [LINK] .*" As we have been highlighting, natural gas storage would be way worse if EQT, Coterra, Chesapeake, etc hadn't shut in natural gas due to low prices. Don't forget HH was around $2 up until the last couple weeks. EQT had indicated they were

shutting in 90 bcf over H2/24 but hadn't specifically said when they would start to restore production. But, on Wednesday, EQT CEO said they would start to bring the shut-in production on in October. On Wednesday, Reuters reported [LINK] "*U.S. energy company EQT (EQT.N), opens new tab plans to reverse some natural gas production curtailments in October and November as demand for the fuel and prices increase, CEO Toby Rice told Reuters on Wednesday. EQT, the biggest U.S. gas producer, has along with other U.S. drillers curtailed output in 2024 after prices collapsed to multi-year lows in the spring following a mild winter that left a tremendous oversupply of fuel in storage. "Production curtailments will be a normal part of our strategy when prices are low," Rice said, noting the company has already curtailed about 1 billion cubic feet per day (bcfd) of production in the spring. "We're watching to see that come back in October and November ... We will ease curtailments in October," Rice said, noting total curtailments were around 2 bcfd across the entire industry.*"

Natural Gas: +47 bcf build in US gas storage; now +159 bcf YoY

For the week ending September 20, the EIA reported a +47 bcf build [LINK]. Total storage is now 3.492 tcf, representing a surplus of +159 bcf YoY compared to a surplus of +194 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 +72 bcf above the 5-yr maximum of 3.420 tcf. Total storage is now +233 bcf above the 5-year average, below last week's +274 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.

+47 bcf build in US gas storage

Figure 2: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)						Historical Comparisons: Year ago (09/20/23)		Historical Comparisons: 5-year average (2019-23)	
Region	09/20/24		09/13/24	net change	implied flow		Bcf	% change	Bcf	% change
East	818		802	16	16		813	0.6	787	3.9
Midwest	993		973	20	20		953	4.2	937	6.0
Mountain	279		275	4	4		232	20.3	205	36.1
Pacific	289		283	6	6		269	7.4	270	7.0
South Central	1,113	C	1,111	2	10	C	1,066	4.4	1,060	5.0
Salt	265	C	271	-6	2	C	248	6.9	248	6.9
Nonsalt	848		840	8	8		818	3.7	812	4.4
Total	**3,492**	C	**3,445**	**47**	**55**	C	**3,333**	**4.8**	**3,259**	**7.1**

Note: Reclassifications from working gas to base gas decreased working gas stocks 8 Bcf in the salt South Central region for the week ending September 20, 2024. The implied flow for the week is an increase of 55 Bcf to working gas stocks. (See Notes and Definitions for more information on "implied flow.")

Totals may not equal sum of components because of independent rounding.
C=Reclassification.

Source: EIA

Figure 3: Previous US Natural Gas Storage

Previous 8 weeks (Bcf)				
Week Ended	Gas in Storage	Weekly Change	Y/Y Diff	Diff to 5 yr Avg
Aug/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
Sep/20	3,492	47	159	233

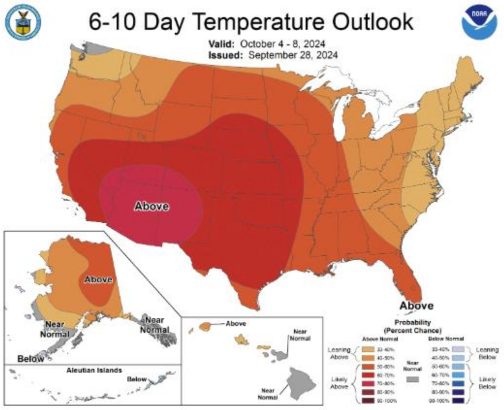
Source: EIA

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

Natural Gas: NOAA forecasts typical Fall temps so not big driver of NatGas

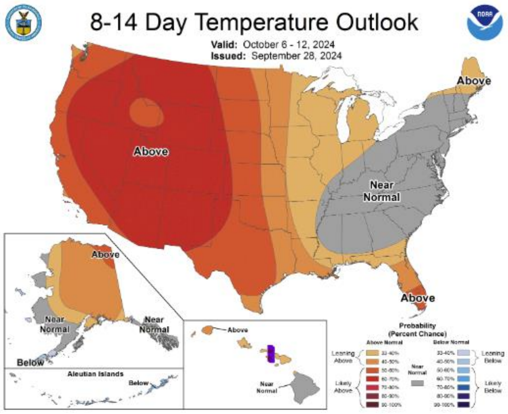
It's now the Fall and that generally means temperatures that are not hot enough to drive air conditioning demand or cold enough to drive heating demand. Yesterday, we tweeted [LINK] *"It's Fall so that is normally leave the windows temps. Not hot enough to drive A/C, not cold enough to crank up the furnace. @NOAA updated 6-10 & 8-14 day temp outlook for Oct 4-12. Daily high/lows for Chicago are 11-23C, NYC 14-25C #OOTT."* Our reminder is that warmer than normal in Oct temperatures don't drive much A/C demand. We checked AccuWeather and it shows daily high/lows for Chicago were 11-23C and for NYC were 14-25C. 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 Oct 4-12.

Figure 4: NOAA 6-10 day temperature outlook for Oct 4-8



Source: NOAA

Figure 5: NOAA 8-14 day temperature outlook for Oct 6-12



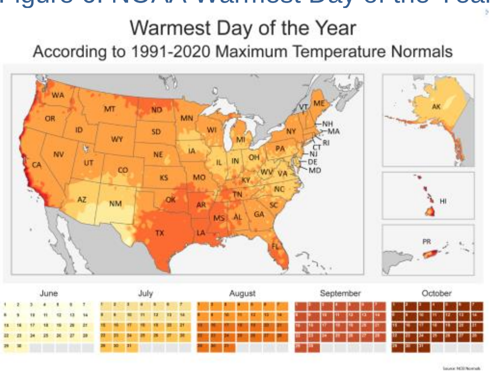
Source: NOAA

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 the end of September and summer has ended and it also 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 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: Best week for Waha spot natural gas prices in months

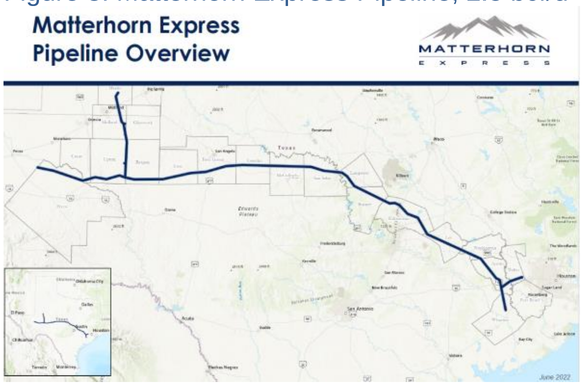
Waha spot prices were positive all week

On Friday, we tweeted [LINK] "*Best week for Waha spot #NatGas prices in months. Mon: $1.79. Tues: $0.76. Wed: $1.83. Thurs: $0.59. Fri: $0.17. Infers increasing volumes on new 2.5 bcfd Matterhorn Express, which was expected to take Waha positive. #OOTT".* We have been highlighting how Waha (Permian) spot natural gas prices have been negative and that has been impacting Permian oil rig levels given all Permian "oil" wells produce natural gas and NGLs. It looks like the negative Waha spot prices may be behind the sector with the ramp up in natural gas volumes on the 2.5 bcf/d Matterhorn Express natural gas pipeline. 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 all week and the best week for Waha spot prices since middle July. 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 7: Waha Natural Gas Prices to Sept 27 close

Source: Bloomberg

Figure 8: Matterhorn Express Pipeline, 2.5 bcf/d



Source: Matterhorn Express

Natural Gas: US natural gas pipeline exports to Mexico flat MoM, flat YoY

US to Mexico July natural gas exports

On Thursday, September 26, the Department of Energy (DOE) posted its Natural Gas Imports and Exports Monthly [LINK], which includes its estimate for July natural gas exports via pipeline to Mexico. These are the same data points that will come out in the more referenced EIA Natural Gas Monthly on Monday. Natural gas exports to Mexico were flat at 6.8 bcf/d in July from 6.8 bcf/d in June and was flat YoY at 6.8 bcf/d in July 2023. This is just below the all-time high for pipeline exports of 6.9 bcf/d in August 2023. US natural gas pipeline exports to Mexico are now in line with Q3/23 exports of ~6.8 bcf/d. The DOE doesn't provide a split but for pipeline vs LNG or CNG exports to Mexico but we believe essentially 100% of the exports are via pipeline, without any CNG/LNG in the mix. Please note that we will note if we ever believe there are any notable CNG/LNG exports to Mexico. Below is a summary of natural gas via pipeline exports to Mexico from the US. Our Supplemental Documents package includes excerpts from the DOE US Natural Gas Imports and Exports Monthly.

Figure 9: US Natural Gas Pipeline Exports to Mexico

(bcf/d)	2016	2017	2018	2019	2020	2021	2022	2023	2024
January	0.9	4.3	4.7	5.3	5.4	5.6	5.7	5.5	6.0
February	3.4	4.6	5.0	5.1	5.3	5.4	5.5	5.5	5.8
March	3.4	4.5	5.2	5.1	5.6	5.9	5.5	5.8	5.9
April	3.5	4.2	4.7	5.0	4.6	6.1	5.9	5.6	6.3
May	3.7	4.3	4.9	5.6	4.7	6.2	6.0	6.2	6.8
June	3.8	5.3	5.5	5.8	5.4	6.6	6.2	6.8	6.8
July	4.0	4.8	5.6	6.2	5.8	6.4	6.1	6.8	6.8
August	4.4	4.6	5.6	5.9	6.1	6.3	5.9	6.9	
September	4.2	4.5	5.4	5.8	6.2	6.0	5.6	6.7	
October	4.2	4.5	5.1	5.7	6.2	6.0	5.5	6.5	
November	4.4	4.8	4.9	5.4	5.6	5.5	5.4	6.0	
December	3.8	4.5	4.9	5.2	5.3	5.4	5.1	5.6	
Average	3.6	4.6	5.1	5.5	5.5	5.9	5.7	6.2	

Source: DOE, SAF

Natural Gas: US LNG exports down -1.4 bcf/d MoM to 10.4 bcf/d in July

US July LNG exports

The DOE normally posts the US LNG export data before the more commonly referenced US LNG exports from the EIA's Natural Gas Monthly. The EIA is a group within the DOE so the data for LNG exports is either identical or just a rounding issue. On Thursday, we tweeted [LINK] "*US #LNG exports: July 2024: 10.4 bcf/d Jun 2024: 11.9 July 2023: 11.3 July was hit by Freeport down ~8 days re air cooler damage from Beryl & Cheniere planned maintenance. DOE actuals are same as EIA #NatGas Monthly actuals on Mon. #OOTT #NatGas [LINK]".* US LNG exports were down -1.4 bcf/d MoM in July from 11.9 bcf/d in June, and down -0.9 bcf/d YoY from 11.3 bcf/d in July 2023. As we highlighted in our tweet, the key reason for the lower US LNG exports were due to the 2.1 bcf/d Freeport LNG being shut for ~7 days from Hurricane Beryl. The top five countries destinations for US LNG in Aug were China 1.1 bcf/d, India 0.9 bcf/d, Japan 0.9 bcf/d, Egypt 0.8 bcf/d and South Korea 0.8 bcf/d. The DOE did not comment on the MoM or YoY changes.

Figure 10: US Monthly LNG Exports

(bcf/d)	2019	2020	2021	2022	2023	2024
January	4.1	8.1	9.8	11.4	10.9	12.8
February	3.7	8.1	7.4	11.3	11.7	12.4
March	4.2	7.9	10.4	11.7	11.8	11.9
April	4.2	7.0	10.2	11.0	12.5	10.1
May	4.7	5.9	10.2	11.3	11.8	11.9
June	4.7	3.6	9.0	10.0	10.9	11.9
July	5.1	3.1	9.7	9.7	11.3	10.4
August	4.5	3.6	9.6	9.7	11.4	
September	5.3	5.0	9.5	9.8	11.6	
October	5.7	7.2	9.7	10.0	12.4	
November	6.4	9.4	10.2	10.1	12.9	
December	7.1	9.8	11.1	11.0	13.6	
Average	5.0	6.6	9.7	10.6	11.9	

Source: EIA, DOE

Natural Gas: Mexico's natural gas production stuck below 5 bcf/d

Mexico production <5 bcf/d

On Thursday afternoon, Pemex posted its natural gas production data for August [LINK]. The story for Pemex natural gas production is unchanged for the last several years – it is stuck right around 5 bcf/d. Pemex reported August 2024 natural gas production of 4.534 bcf/d, which is down is down -8.3% YoY from 4.947 bcf/d in August 2023 and down -0.7%

MoM from 4.566 bcf/d in July 2024. The big picture story for Mexico natural gas for the past six years has been that Mexico natural gas production has been stuck at or below 5 bcf/d, and that means any increased domestic natural gas consumption has been met by US natural gas imports. Below is our ongoing table of Pemex reported monthly natural gas production.

Figure 11: Mexico Natural Gas Production

Natural Gas Production bcf/d	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	5.326	4.910	4.648	5.005	4.848	4.713	4.955	4.780	-3.5%
Feb	5.299	4.853	4.869	4.942	4.854	4.646	4.979	4.777	-4.1%
Mar	5.383	4.646	4.857	4.946	4.839	4.766	5.035	4.768	-5.3%
Apr	5.334	4.869	4.816	4.827	4.671	4.740	5.095	4.500	-11.7%
May	5.299	4.827	4.841	4.460	4.730	4.702	5.034	4.488	-10.8%
June	5.253	4.840	4.843	4.754	4.727	4.744	5.035	4.606	-8.5%
July	5.216	4.856	4.892	4.902	4.725	4.815	4.936	4.566	-7.5%
Aug	5.035	4.898	4.939	4.920	4.656	4.796	4.947	4.534	-8.3%
Sept	4.302	4.913	5.017	4.926	4.746	4.798	4.969		
Oct	4.759	4.895	4.971	4.928	4.718	4.795	4.950		
Nov	4.803	4.776	5.015	4.769	4.751	4.845	4.888		
Dec	4.811	4.881	5.024	4.846	4.697	4.845	4.786		

Source: Pemex, SAF

Natural Gas: Commonwealth signs 0.26 bcf/d 20-year LT LNG deal with Glencore

Commonwealth / Glencore sign 20-yr LNG supply deal

Last Thursday, Reuters reported that Glencore and Commonwealth LNG announced that the companies have signed a long-term LNG deal for the supply of 0.26 bcf/d for 20 years to Glencore [LINK]. We expect deliveries to begin in 2028, which is in line with the start of operations at Commonwealth's Cameron, Louisiana, LNG facility. Private equity firm Kimmeridge currently holds over a 90% stake through their KTG unit; KTG CEO and President said: "*Our partnership with Glencore represents another tangible step forward for the KTG platform in becoming a fully integrated provider of reliable, secure and clean energy from wellhead to water. With Commonwealth by our side, we look forward to reaching critical international markets in partnership with Glencore, who shares our vision of responsible LNG production and usage".* In addition to this, Maxim Kolupaev, Glencore Global Head of LNG, Gas and Power, said: *"This agreement is the result of a strong relationship between Glencore and Kimmeridge, building upon our common vision of helping economies accelerate their energy transition ambitions,".* Our Supplemental Documents Package includes the Reuters news report.

There have been 26.31 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 26.31 bcf/d of long-term LNG deals since July 1, 2021. 64% 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 12: 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**			

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 / Qata	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
Sep 19 2024	Glencore	Commonwealth LNG	Switzerland / US	0.26	20.0	2026	2046
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				**9.60**			

Total New Long Term LNG Contracts since Jul/21	**26.31**

*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/

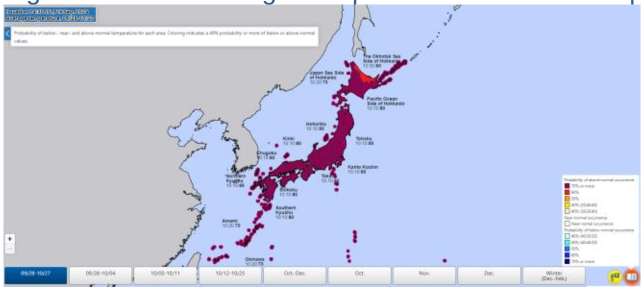
Source: SAF

Natural Gas: Japan expects warmer than normal temps to continue to end October

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 28 thru Oct 27, in Japan [LINK]. There is no JMA commentary on the forecast. JMA is calling for above normal temperatures for September through to the end of October, with a +70% probability of above normal temperature occurrence everywhere, except the Okhotsk Sea Side of Hokkaido which has a 60% probability of above normal temperature occurrence. We checked AccuWeather and they are forecasting daily highs in the low next 30 days in the lower mid-20C's other than two days in the 29C 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 13: JMA Average Temperature Outlook for Sept 28 – Oct 27



Source: Japan Meteorological Agency

Natural Gas: JMA predicts above average temperatures in Nov before colder Dec

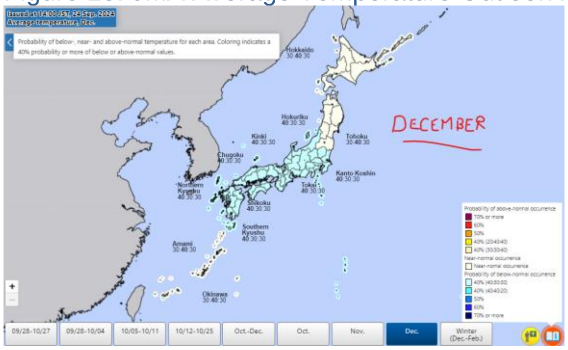
Japan winter temperature forecast

On Thursday, the Japan Meteorological Agency posted its seasonal temperature outlook for Oct/Nov/Dec for Japan. We tweeted [LINK] "*Holdback to #LNG prices. JMA forecasts warmer than normal temps continuing thru Nov before turning to colder than normal Dec. After last 2 warm winters, most will want to wait to see if cold will come in Dec. #OOTT #NatGas*". There is no JMA commentary on the forecast. JMA is calling for a 40% probability of an above normal temperature occurrence for November. The December forecast predicts a 40% probability of a below normal temperature occurrence in most of Japan, with near-normal occurrence expected for Tohoku, Hokuriku, and Hokkaido. Below is the JMA temperature forecast for the Oct/Nov/Dec period.

Figure 14: JMA Average Temperature Outlook for Nov

Source: Japan Meteorological Agency

Figure 15: JMA Average Temperature Outlook for Dec



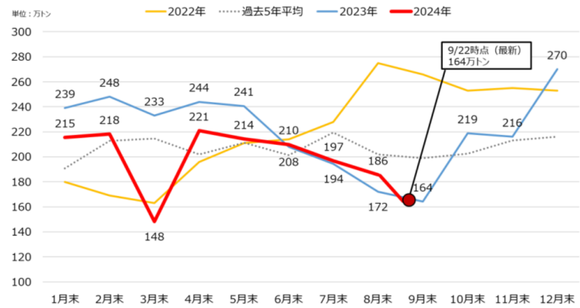
Source: Japan Meteorological Agency

Natural Gas: Japan LNG stocks down WoW, flat 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 22 were 78.8 bcf, down -12.3% WoW from September 15 of 89.8 bcf, and flat at 78.8 bcf from a year ago. Stocks are down -17.6% from the 5-year average of 95.6 bcf. Below is the Japanese LNG stocks graph from the METI weekly report.

Figure 16: Japan LNG Stocks



Source: METI

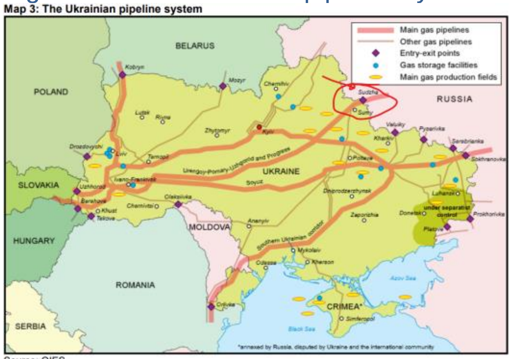
Natural Gas: Russia continues to ship NatGas despite Ukraine control of Sudzha

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 27 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 17: The Ukrainian pipeline system

Map 3: The Ukrainian pipeline system



Source: OIES

Source: Oxford Institute for Energy Studies

Natural Gas: NW Europe LNG imports continue down big ~419 bcf, 1.6 bcfd YTD

Europe LNG imports down big in 2024

On Friday, we tweeted [LINK] "*Hold back to EU #NatGas prices thru shoulder season. Storage would be full if NW Europe hadn't cut back LNG imports in Q2/Q3. YTD Sept 22, NW Europe #LNG imports down ~419 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 and Sept. LNG imports into NW Europe are down big YoY in 2024. On Tuesday, BloombergNEF reported NW Europe LNG imports YTD Sept 22 were down approx. 419 bcf of ~1.6 bcf/d this year. Our tweet included the below BloombergNEF chart.

Figure 18 Europe LNG Imports up to Sept 22

Weekly performance dashboard

Liquefied natural gas volumes into mainland China and India over September 16-22 declined by around 0.3 million and 0.2 million metric tons respectively from a week earlier. Likewise, Northwest Europe and Italy took in 0.2 million tons less, mainly due to the UK and Italy lowering their imports by more than 0.1 million tons each. Meanwhile, Brazil received no volumes, after imports spiked to 0.2 million tons in the previous week amid drought.

	Million metric tons	Week starting Aug 19	Week starting Aug 26	Week starting Sep 2	Week starting Sep 9	Week starting Sep 16	Latest week-on-week change		Cumulative month Sep 2023	Cumulative month Sep 2024	Monthly year-on-year change		Jan 1 to Sep 22, 2023	Jan 1 to Sep 22, 2024	Jan 1 to Sep 22 year-on-year change	
	Total exports	**8.16**	**7.94**	**7.47**	**7.76**	**7.90**	0.14	2%	**24.32**	**24.34**	0.02	0%	**296.11**	**299.72**	**3.61**	1%
Region	Pacific Basin	3.07	2.56	2.92	2.92	2.79	-0.13	-5%	8.78	8.88	0.10	1%	108.51	110.90	2.39	2%
Region	Atlantic Basin	3.02	3.14	2.58	3.02	3.15	0.13	4%	8.68	9.40	0.72	8%	104.85	109.46	4.61	4%
Region	Middle East	2.06	2.24	1.96	1.82	1.96	0.14	8%	6.86	6.06	-0.81	-12%	82.75	79.36	-3.39	-4%
Market	Qatar	1.65	1.55	1.52	1.38	1.30	-0.08	-6%	4.87	4.39	-0.48	-10%	58.82	57.66	-1.16	-2%
Market	Australia	1.63	1.39	1.39	1.56	1.46	-0.10	-7%	4.65	4.55	-0.10	-2%	58.27	58.62	0.35	1%
Market	US	1.79	1.92	1.53	1.70	1.93	0.22	13%	5.48	5.61	0.12	2%	64.66	66.38	1.72	3%
Market	Russia	0.64	0.55	0.62	0.69	0.56	-0.13	-19%	1.83	1.87	0.04	2%	22.00	23.38	1.37	6%
Market	Malaysia	0.52	0.31	0.47	0.50	0.53	0.03	6%	1.43	1.62	0.19	13%	18.68	19.06	0.38	2%
	Re-export supply	0.13	0.02	0.02	0.12	0.03	-0.09	-75%	0.38	0.18	-0.20	-53%	3.88	2.73	-1.15	-30%
	Total imports	**8.06**	**6.53**	**7.85**	**8.08**	**6.49**	-1.59	-20%	**23.01**	**23.90**	0.89	4%	**288.59**	**291.50**	**2.91**	1%
Region	JKCT	4.27	3.11	4.36	3.91	3.59	-0.32	-8%	11.61	12.60	1.00	9%	141.38	149.61	8.22	6%
Region	South Asia	0.79	0.69	0.55	0.91	0.50	-0.42	-46%	2.49	2.21	-0.28	-11%	24.84	29.07	4.24	17%
Region	Southeast Asia	0.73	0.54	0.61	0.56	0.41	-0.15	-27%	1.69	1.75	0.06	4%	17.11	20.89	3.78	22%
Region	NW Europe and Italy	0.71	1.05	0.83	1.18	0.94	-0.24	-21%	3.10	3.08	-0.01	0%	56.05	44.12	-11.93	-21%
Region	Other Europe	0.69	0.55	0.68	0.60	0.51	-0.09	-15%	2.54	1.92	-0.62	-25%	32.92	26.42	-6.50	-20%
Region	Middle East	0.50	0.31	0.36	0.40	0.38	-0.02	-5%	0.75	1.19	0.44	58%	5.77	8.80	3.03	52%
Region	Americas	0.30	0.29	0.46	0.46	0.17	-0.29	-63%	0.77	1.09	0.32	42%	10.21	11.91	1.70	17%
Region	Other markets	0.07	0.00	0.00	0.06	0.00	-0.06	-100%	0.06	0.06	0.00	0%	0.21	0.60	0.39	182%
Market	Japan	1.57	0.89	1.48	1.16	1.18	0.03	2%	4.04	4.08	0.05	1%	46.57	46.94	0.37	1%
Market	South Korea	0.62	0.64	0.69	0.70	0.76	0.06	8%	2.21	2.44	0.23	10%	31.57	32.53	0.96	3%
Market	Mainland China	1.63	1.14	1.73	1.60	1.32	-0.28	-18%	4.10	4.79	0.68	17%	48.81	54.88	6.07	12%
Market	Taiwan	0.45	0.44	0.46	0.45	0.33	-0.12	-26%	1.25	1.29	0.04	3%	14.43	15.25	0.82	6%
Market	India	0.52	0.43	0.43	0.60	0.38	-0.22	-37%	1.76	1.53	-0.23	-13%	15.66	19.48	3.82	24%
Market	Thailand	0.30	0.24	0.38	0.14	0.14	0.00	-2%	0.72	0.84	0.12	16%	8.41	9.18	0.78	9%
Market	France	0.35	0.24	0.30	0.24	0.30	0.06	25%	1.11	0.90	-0.22	-19%	14.65	13.12	-1.53	-10%
Market	Netherlands	0.15	0.29	0.22	0.34	0.29	-0.05	-16%	0.80	0.85	0.05	6%	11.93	10.34	-1.59	-13%
Market	Spain	0.29	0.10	0.35	0.18	0.10	-0.08	-42%	1.03	0.70	-0.33	-32%	13.18	9.79	-3.39	-26%

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 24, 2024 BloombergNEF

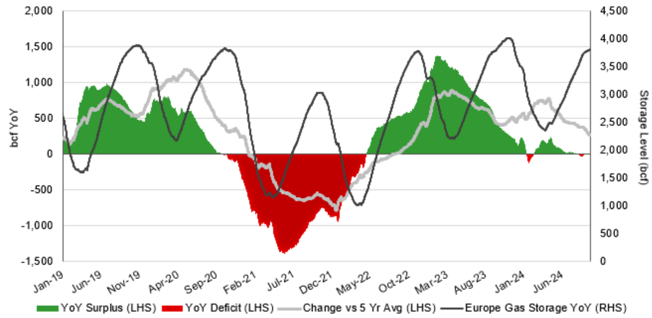
Source: BloombergNEF

Natural Gas: Europe storage up +0.5% WoW to 94.0% full, down -1.0% 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 few months away from NW Europe as it looked like Europe gas storage would be full early. But even still, it is now 94.0% 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 +0.5% WoW to 94.0% vs 93.5% on Sept 19. Storage is now down -1.0% from last year's levels of 95.0% on September 26, 2023, but up huge against the 5-year average of 89.5 %. Below is our graph of European Gas Storage Level.

Figure 19: 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 25, natural gas in Ukraine storage was at 25.2% of its total capacity, up from 24.1% of its total capacity on September 18. 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 20: Ukraine Gas Storage Facilities as of July 2023

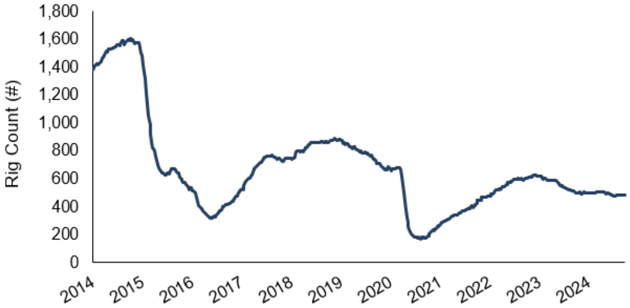
Source: Bruegel

Oil: U.S. oil rigs down -4 WoW and down -18 rigs YoY to 484 oil rigs

US oil rigs down -18 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 -4 rigs WoW to 484 oil rigs as of September 27. US oil rigs are now only down 18 oil rigs YoY. The smaller YoY difference is because, in 2023, US oil rigs went below 520 rigs on Aug 25, 2023 and then were lower in the 490-510 rigs for several months. But then dropped down to 477 on July 19, 2024, which was the lowest oil rig count since December 2021. (iii) Note we can see the basin changes but not by type of rig; the only WoW basin changes were Cana Woodford down -1 rig WoW to 18 rigs, Granite Wash -1 rig to 4 rigs, and Permian -1 rig WoW to 306 rigs. (iv) The overlooked U.S. rig theme is the YoY declines, which have begun to taper as Q4 2023 saw activity leveling off. Total U.S. gas and oil rigs are down -35 rigs YoY to 583 rigs including US oil rigs -18 oil rigs YoY to 484 oil rigs. And for the key basins, the Permian is -6 rigs YoY, Haynesville is -6 rigs YoY, DJ Niobrara is -7 rigs YoY, Marcellus -4 rigs YoY, Utica -1 rig YoY, Williston up +1 rig YoY, Arkoma Woodford +1 rig YoY, and Cana Woodford +2 rigs YoY. (v) US gas rigs were down +3 rigs this week to 99 gas rigs. It is important to note that U.S. gas rigs must increase over the next several months as more U.S. LNG capacity comes onstream in 2025. Lastly, U.S. miscellaneous rigs are flat WoW, and down -1 rig YoY.

Figure 21: Baker Hughes Total US Oil Rigs



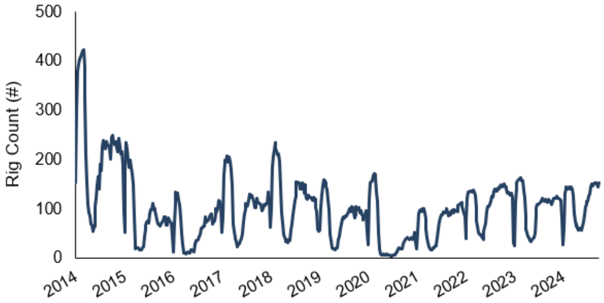
Source: Baker Hughes

Oil: Total Cdn oil rigs up +8 WoW on Friday, with gas rigs -1 WoW

Cdn rigs +7 WoW

On Friday, Baker Hughes released its weekly North American drilling rig data. This week's total oil and gas rig count was up +7 rigs WoW at 217 rigs at Sept 27. Increasing rigs in Sept is in line with the normal seasonal ramp up in the summer that normally sees Cdn rigs increasing through to the middle of October. Cdn oil rigs were up +8 rigs WoW this week to 152 rigs and are up +37 rigs YoY. Gas rigs are down -1 rig WoW this week at 65 rigs and are down -11 rigs YoY, and miscellaneous rigs are up flat WoW at 1 rig total and are up +1 rig YoY. As a reminder Baker Hughes changed their reporting format which does not allow us to see the provincial breakouts.

Figure 22: Baker Hughes Total Cdn Oil Rigs



Source: Baker Hughes

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

US weekly oil production

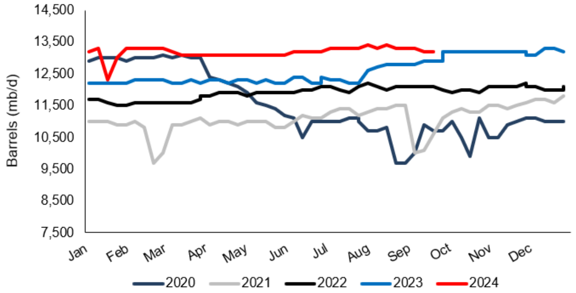
We don't place as much emphasis on the EIA weekly oil supply estimates as others do because we recognize the near impossibility for anyone to post an accurate estimate on a Wednesday for the totality of US oil production for the week ended the prior Friday. We have to give the EIA credit for putting 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 flat WoW at 13.200 mmb/d for the week ending September 20. 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 flat at 13.200 mmb/d for the week ended September 20. Alaska was up +0.009 WoW to 0.420 mmb/d, compared to 0.411 mmb/d last week. Below is a table of the EIA's weekly oil production estimates.

Figure 23: 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	09/20	13,200				

Source: EIA

Figure 24: EIA's Estimated Weekly US Oil Production



Source: EIA

Oil: North Dakota July oil production down slightly MoM to 1.168 mmb/d

North Dakota July oil production down MoM

On Wednesday, the North Dakota Industrial Commission posted its monthly Director's Cut, which includes July's oil and natural gas production data as well as other data such as well completions, DUCs, number of producing wells, etc. [LINK]. North Dakota's oil production in July was down MoM -0.019 mmb/d to 1.168 mmb/d from 1.186 mmb/d in June and is down -1.1% YoY against 1.181 mmb/d in July 2023. In the press conference the NDIC said: "*In July we had a number of inactive wells that likely contributed to some of that production decrease… in August we had 97 [preliminary completions]. Those are the numbers we want to be at to stabilize and grow our production*". July well completions were up to 79 compared to June's 55 wells completed. Note that North Dakota had expected July production to be higher MoM vs June. Here is what we wrote in out August 18, 2024, Tidbits regarding North Dakota's July expectations: "*We normally get some color on the lookahead for North Dakota from their monthly press conference webcast on the just released Director's Cut. (i) Expect higher North Dakota oil production in July. NDIC said "the good news is the July completions looks like they are going to be up so hopefully that will have a positive impact on our production numbers." NDIC's preliminary estimate is 79 wells were completed in July so up from 55 in June and 67 in May."* Our Supplemental Documents package includes excerpts from the NDIC Director's Cut.

Figure 25: North Dakota Oil Production by Month

(b/d)	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	1,179,564	1,403,808	1,430,511	1,147,377	1,088,613	1,060,708	1,102,976	*4.0%*
Feb	1,175,316	1,335,591	1,451,681	1,083,554	1,089,091	1,158,837	1,252,102	*8.0%*
Mar	1,162,134	1,391,760	1,430,107	1,108,906	1,122,640	1,122,693	1,229,536	*9.5%*
Apr	1,225,391	1,392,485	1,221,019	1,123,166	900,597	1,133,435	1,243,678	*9.7%*
May	1,246,355	1,394,648	859,362	1,128,042	1,059,060	1,135,009	1,198,086	5.6%
June	1,227,320	1,425,230	893,591	1,133,498	1,096,783	1,166,604	1,186,394	1.7%
July	1,269,290	1,445,934	1,042,081	1,076,594	1,072,632	1,180,611	1,167,906	-1.1%
Aug	1,292,505	1,480,475	1,165,371	1,107,359	1,075,307	1,223,617		
Sept	1,359,282	1,443,980	1,223,107	1,114,020	1,121,063	1,280,052		
Oct	1,392,369	1,517,936	1,231,048	1,111,910	1,121,754	1,254,475		
Nov	1,375,803	1,519,037	1,227,138	1,158,622	1,098,389	1,278,909		
Dec	1,402,741	1,476,777	1,191,429	1,144,999	957,864	1,274,869		

Source: NDIC, NDPA

Oil: North Dakota hopefully see yr end oil production over 1.2 mmb/d

North Dakota hopes to get to 1.2 mmb/d in Dec

As usual there a couple good tidbits/insights on North Dakota oil production from the NDIC monthly webcast on Thursday. Their first question was if North Dakota could still get to the

1.5 mmb/d that has been talked about. By way of background, the prior hope was to get above 1.3 mmb/d, not 1.5 mmb/d. The NDIC replied "*1.5 million this year, I don't think so, that's probably be a little too aggressive to increase production that much in that short of period of time. But we do expect, hopefully, to get it back over the 1.2 mmb/d*." This should be a surprise. Here is what we wrote in our Aug 18, 2024 Energy Tidbits memo on the last NDIC monthly call on the 1.3 mmb/d target for year end 2024. " *Think it will be tough to hit their 1.3 mmb/d exit target. In the Q&A, they were asked how they felt about their target for North Dakota to hit 1.3 mmb/d by the end of the year. NDIC replied "I think it will be a struggle. We've had a couple of months of down production. Hopefully, the July numbers will turn that around and we'll see a little bit of an uptick. We're hopeful."*

Oil: North Dakota crude by rail down MoM to 106,243 b/d in July

North Dakota CBR down MoM in July

On Wednesday, the North Dakota Pipeline Authority posted its Monthly Update "*September 2024 Production & Transportation"* [LINK] containing July's data. Please note that we always go to the backup excel sheets from the North Dakota Pipeline Authority that provide low and high estimates for Williston crude by rail exports. While the NDPA's chart shows a high and low estimate by month, we always take the midpoint when summarizing the update. In the backup excel, the NDPA estimates crude by rail in July from a low of 91,243 b/d and a high of 121,243 b/d for an average of 106,243 b/d. There was a small downward revision to June figures which previously had an average of 125,648 b/d, but is now 125,197 b/d. The NDPA did not comment on the MoM changes. Below is a chart showing the crude by rail volumes since 2014. Our Supplemental Documents package includes excerpts from the NDPA Monthly Update.

Figure 26: Estimated North Dakota Rail Export Volumes

Source: NDPA

Oil: US SPR less commercial reserve deficit narrows, now -31.149 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 20, [LINK] saw the SPR reserves increase +1.287 mmb WoW to 381.893 mmb, while commercial crude oil reserves decreased -4.471 mmb to 413.042 mmb. There is now a -31.149 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.

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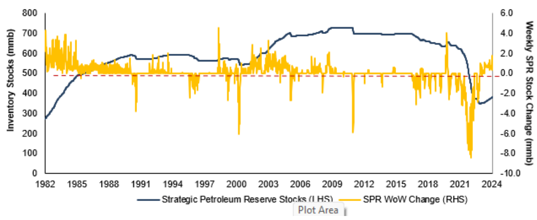
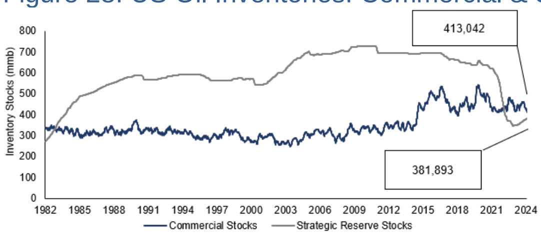
Figure 27: Strategic Petroleum Reserve Stocks and SPR WoW Change



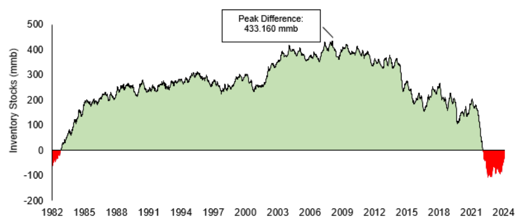
Source: EIA

Figure 28: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 29: US Oil Inventories: SPR Less Commercial



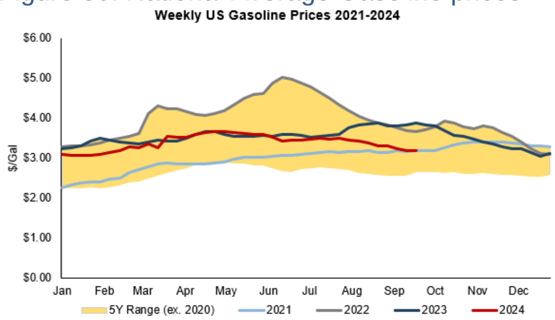
Source: EIA

Oil: AAA reports US national average gasoline price +$0.01 WoW to $3.22 on Sept 28

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 $3.22 on Sept 28, which was +$0.01 WoW, -$0.14 MoM and -$0.62 YoY. Yesterday, AAA also reported California average gasoline prices were $4.70 on Sept 28, which was -$0.05 WoW, +$0.08 MoM, and -$1.33 YoY. This was when California gasoline prices broke thru $6. Below is our graph of Bloomberg's National Average weekly gasoline prices.

Figure 30: National Average Gasoline prices



Source: Bloomberg

Oil: Crack spreads +$0.25 WoW to $15.82, WTI -$3.74 WoW to $68.18

On Friday, we tweeted [LINK] "*321 crack spreads +$0.25 WoW to still relatively low $15.82. WTI +$3.74 WoW to $68.18. Reminds WTI impacted more by global oil issues (ie. Libya oil back, Saudi maybe back) than by crack spreads. Thx @business #OOTT.*" Cracks spreads were +$0.25 WoW to $15.82 and WTI was -$3.74 WoW to $68.18 Crack spreads at $15.82 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 $15.82 on Sept 27, followed $15.57 on Sept 20, $14.30 on Sept 13, $14.79 on Sept 6, $17.06 on Aug 30, $17.10 on Aug 23, $20.75 on Aug 16, $22.92 on Aug 9, $23.77 on Aug 2, $24.91 on July 26, $22.43 on July 19. $23.22 on July 12, $25.38 on July 5, and $24.36 on June 28.

Crack spreads closed at $15.82

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

There are other global oil and market items that impact WTI more than crack spreads and that was the case this week as WTI was down with reports Libya oil was coming back and fear Saudi might increase oil production in Dec. 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 $15.82 as of the Friday Sept 27, 2024 close.

Figure 31: Cushing Oil 321 Crack Spread & WTI Sept 27, 2014 to Sept 27, 2024

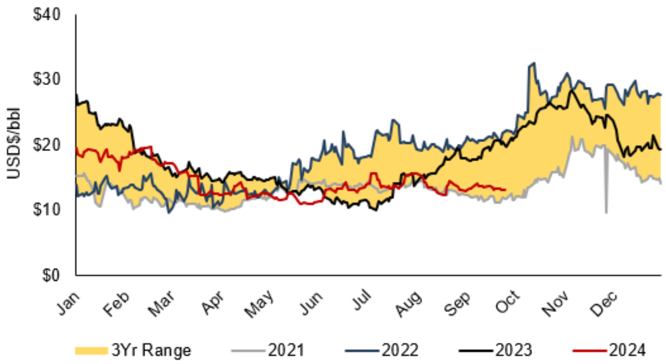
Source: Bloomberg

Oil: Cdn heavy oil differentials narrows -$0.05 WoW to close at $13.20 on September 27

WCS differential narrowed slightly

WCS less WTI differentials were basically flat this week at down -$0.05 WoW to close at $13.20 on Sept 27. As noted in the following item, we have been saying that the real test for WCS less WTI differentials will be in Sept/Oct as to how much the startup of the 590,000 b/d TMX expansion will impact WCS less WTI differentials. Late August is normally when we normally see a widening of the WCS less WTI differentials. And WCS less WTI differentials remained lower and did not widen. 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 through September. The WCS less WTI differential closed on September 27, at $13.20 which was a narrowing of -$0.05 WoW vs $13.25 on September 20.

Figure 32: WCS less WTI oil differentials to September 27 close



Source: Bloomberg

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

For the past few months, we have been saying that the big test for the impact of the start of the 590,000 b/d TMX expansion on WCS less WTI differentials will be in late Aug, Sept and Oct when differentials normally start to widen with seasonal refinery turnarounds. On Friday, we tweeted [LINK] "*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. 09/27/24: $13.05. 09/27/23: $18.20. 09/27/22: $21.30. Thx @garquake for reminder. #OOTT.*" Our tweet included the below chart that shows how WCS less WTI differential have been stronger this summer, been fairly flat in Aug/Sept and how differentials were widening at this time of year in 2022 and 2023.

WCS less WTI diffs

Figure 33: WCS less WTI differentials

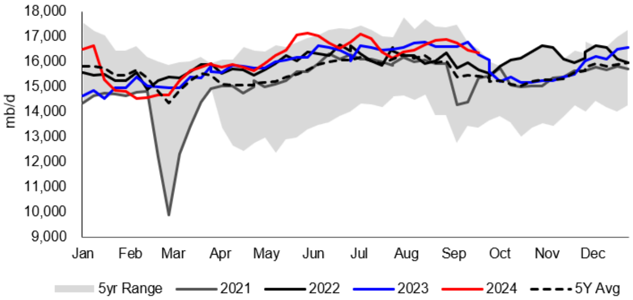
Source: Bloomberg

Oil: Refinery Inputs down -0.124 mmb/d WoW to 16.353 mmb/d

There are always unplanned refinery items that impact crude oil inputs into refineries. And there is always different timing for refinery turnarounds; generally late August/early September is when refineries start their fall turnarounds to change from summer to winter fuel blends. However, as noted in last weeks Tidbits, 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. But even though there is more refineries available to receive crude, we may see refineries reduce runs given the low crack spreads On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended September 20 [LINK]. The EIA reported crude inputs to refineries were down -0.124 mmb/d this week to 16.353 mmb/d and are up +0.288 mmb/d YoY. Refinery utilization was down -1.2% WoW to 90.9% and was up +1.4% YoY.

Refinery inputs -0.124 mmb/d WoW

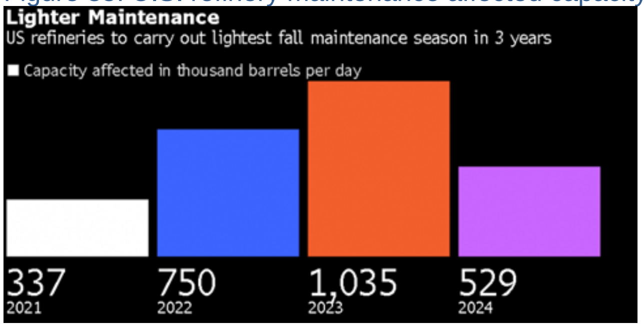
Figure 34: US Refinery Crude Oil Inputs



Source: EIA, SAF

Oil: US refinery preventative maintenance to be much less this fall than last
Here is what we wrote in last week's (Sept 22, 2024) Energy Tidbits memo. "*On Thursday, Bloomberg posted a good reminder that US refineries are expected to have a light preventative maintenance season this fall according to IIR Energy data. Note they focused on "preventative maintenance" and didn't use the word turnarounds. Refineries 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 35: U.S. refinery maintenance affected capacity



Source: Bloomberg, IIR Energy

Oil: US net oil imports up +0.827 mmb/d WoW as oil exports down -0.692 mmb/d WoW
The EIA reported US "NET" imports were up +0.827 mmb/d to 2.559 mmb/d for the week of

US net imports up +0.827 mmb/d WoW

September 20. US imports were up +0.135 mmb/d to 6.456 mmb/d, while exports were down -0.692 mmb/d to 3.897 mmb/d. Top 10 was down -0.285 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 down -0.243 mmb/d to 3.912 mmb/d, which is likely due to US Midwest refinery turnarounds. Weekly imports have been higher of late with the increased Cdn crude coming off TMX and hitting west coast US refineries. (iii) Saudi Arabia was up +0.081 mmb/d to 0.291 mmb/d. (iv) Mexico was up +0.079 mmb/d to 0.499 mmb/d. Oil imports from Mexico lately have been significantly lower than prior year's levels with the new Olmeca (Dos Bocas) refinery ramping up and Pemex's other refineries increasing crude oil processing. (v) Colombia was up +0.174 mmb/d to 0.295 mmb/d. (vi) Iraq was up +0.109 mmb/d to 0.265 mmb/d. (vii) Ecuador was down -0.050 mmb/d to 0.004 mmb/d. (iix) Nigeria was down -0.129 mmb/d to 0.135 mmb/d.

Figure 36: US Weekly Preliminary Imports by Major Country

	Aug 2/24	Aug 9/24	Aug 16/24	Aug 23/24	Aug 30/24	Sep 6/24	Sep 13/24	Sep 20/24	WoW
Canada	3,478	3,785	4,083	3,874	3,516	4,026	4,155	3,912	-243
Saudi Arabia	353	183	207	311	204	326	210	291	81
Venezuela	0	0	0	0	0	0	0	0	0
Mexico	224	714	167	619	374	510	420	499	79
Colombia	215	71	213	212	179	229	121	295	174
Iraq	143	194	166	153	201	222	155	265	109
Ecuador	235	137	163	103	104	103	54	4	-50
Nigeria	170	109	190	33	32	175	264	135	-129
Brazil	267	428	177	302	180	113	306	0	-306
Libya	115	2	86	1	86	83	0	0	0
Top 10	5,200	5,623	5,452	5,608	4,876	5,787	5,685	5,401	-285
Others	1,024	662	1,200	952	916	1,080	637	1,055	418
Total US	**6,224**	**6,285**	**6,652**	**6,560**	**5,792**	**6,867**	**6,322**	**6,456**	**134**

Source: EIA, SAF

Oil: Our reporting on Pemex Mexico monthly oil production has changed this month

Pemex monthly oil reporting

Please note that, effective this month, we are changing the way we report on the monthly Pemex oil production. For months other than the quarter-end (ie. July and Aug), we will include an estimate for the split of Pemex extra light + condensates based on the last reported quarter. Pemex does not provide that split in the monthly production data. However, in the investor quarterly package, they provide the split of light oil vs condensates average for the quarter. In the Q2/24 investor package, Pemex reported extra-light production of 140,000 b/d and condensate production of 279,000 b/d. So, for the Aug data, we will add 140,000 b/d of "extra light" oil. And when the Q3/24 investor package is released, we will go back and change the extra light for July and Aug for the actuals. We haven't been including the condensate as it would be over reporting Mexico's oil and wouldn't tie to Mexico's oil commitment to OPEC+ targets. But we should be including the extra light as we believe this will be like other international extra-light at around 40 API, which is what we would call light oil in US and Canada. However, this methodology change will not change the overriding issue for Mexico – they haven't been able to get oil production back to any sustained growth.

Oil: Mexico oil production including partner volumes up MoM to 1.664 mmb/d

Pemex August oil production

As noted below, we have changed our Mexico oil production to include an estimate for light oil by adding 140,000 b/d for August. It is also important to note that July was adjusted to include an estimate for light oil by adding 140,000 b/d. On Thursday, September 24, Pemex posted its August 2024 oil production data [LINK]. Pemex reported August oil production, including partners, was 1.664 mmb/d, which was up +7.2% YoY and up +1.5% MoM from 1.640 mmb/d in July. Mexico (Pemex) oil production has been stuck below 1.7 mmb/d for the last three years. Pemex has been unable to grow Mexico oil production, which means that any increase in Pemex Mexico refineries crude oil input will result in less Mexico oil for export including to the US Gulf Coast. And it also means that if Mexico has refinery issues in a month, there will be more Mexico oil for export in a month. Below is our table tracking Pemex oil production.

Figure 37: Pemex (Incl Partners) Mexico Oil Production

Oil Production (thousand b/d)	2016	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	2,259	2,020	1,909	1,623	1,724	1,651	1,649	1,628	1,703	4.6%
Feb	2,214	2,016	1,876	1,701	1,729	1,669	1,619	1,619	1,696	4.8%
Mar	2,217	2,018	1,846	1,691	1,745	1,697	1,620	1,636	1,690	3.3%
Apr	2,177	2,012	1,868	1,675	1,703	1,693	1,586	1,656	1,625	-1.9%
May	2,174	2,020	1,850	1,663	1,633	1,688	1,588	1,661	1,664	0.2%
June	2,178	2,008	1,828	1,671	1,605	1,698	1,570	1,610	1,658	3.0%
July	2,157	1,986	1,823	1,671	1,595	1,701	1,583	1,550	1,640	5.8%
Aug	2,144	1,930	1,798	1,683	1,632	1,657	1,604	1,552	1,664	7.2%
Sept	2,113	1,730	1,808	1,705	1,643	1,709	1,594	1,581		
Oct	2,103	1,902	1,747	1,655	1,627	1,692	1,592	1,560		
Nov	2,072	1,867	1,697	1,696	1,633	1,691	1,582	1,558		
Dec	2,035	1,873	1,710	1,706	1,650	1,694	1,561	1,545		

Source: Pemex, SAF

Oil: Pemex Dos Bocas refinery processing only at 24.7% of capacity

Pemex Dos Bocas refinery ramps up

On Wednesday, Bloomberg reported that Pemex's Dos Bocas refinery ramped up processing in August. The refinery saw a +29% MoM increase in processing in August, but that is only to 24.7% of its 340,000 b/d capacity. This higher utilization offset lower inputs at Pemex's Tula, and Minatitlan refineries. Bloomberg reported: "*Pemex operated its seven refineries in Mexico at 50.4% capacity in August, down from 51.5% in July. Olmeca refinery, also known as Dos Bocas, processed 84.1k b/d in August, up 29% from the previous month as facility ramps up operations*". Our Supplemental Documents package includes the Bloomberg report.

Figure 38: Pemex August refinery data:

Refinery	August (b/d)	m/m	y/y	Capacity use	NOTE
Cadereyta	169,834	5.1%	96%	61.8%	highest since April 2017
Madero	108,931	3.2%	15%	57.3%	
Tula	165,243	-14%	-16%	52.5%	
Salamanca	136,862	21%	76%	62.2%	still operating below levels seen in May, when refinery had a sulphuric acid leak
Minatitlan	91,662	-37%	-22%	32.2%	
Salina Cruz	233,830	1.5%	5.3%	70.9%	
Dos Bocas	84,128	29%	-	24.7%	
Total	990,490	-2.2%	24%	50.4%	

- NOTE: Pemex's seven refineries have capacity to process 1.967m b/d of crude

Source: Bloomberg

Oil: Mexico exports down -6.2% MoM to 0.731 mmb/d of oil in August

Pemex August oil exports

The big theme for Pemex (Mexico) oil exports is unchanged – oil production is stuck below 1.7 mmb/d so any improvement in crude run rates at the existing Pemex oil refineries and the startup, albeit delayed, of the new 340,000 Olmeca (Dos Bocas) refinery means there will be less oil for export. Due to Olmeca volumes increasing, we have seen declining Mexico oil exports in H2/24. But as noted above, the Olmeca refinery ramp up is still low. On Thursday, Pemex posted its oil exports for August [LINK]. Pemex does not provide any commentary on the data, but the reported August oil exports were 0.731 mmb/d, which is down -6.2% MoM and down -32.1% YoY vs 1.076 mmb/d in August 2023. Below is our table of the Pemex oil export data.

Figure 39: Pemex Mexico Oil Exports

Oil Exports (thousand b/d)	2016	2017	2018	2019	2020	2021	2022	2023	2024	24/23
Jan	1,119	1,085	1,107	1,071	1,260	979	832	980	951	-3.0%
Feb	1,241	1,217	1,451	1,475	1,093	1,006	925	949	940	-0.9%
Mar	1,062	1,001	1,176	1,150	1,144	925	905	971	687	-29.2%
Apr	1,081	1,017	1,266	1,023	1,179	923	1,024	989	681	-31.1%
May	1,204	958	1,222	1,205	1,062	1,031	965	1,087	911	-16.2%
June	1,098	1,157	1,110	995	1,114	1,106	1,029	1,203	754	-37.3%
July	1,146	1,255	1,156	1,079	1,051	1,173	1,062	1,052	779	-26.0%
Aug	1,261	1,114	1,181	1,082	1,190	1,099	915	1,076	731	-32.1%
Sept	1,425	1,159	1,206	995	1,023	983	1,022	1,119		
Oct	1,312	1,342	1,027	963	908	935	971	1,053		
Nov	1,273	1,388	1,135	1,114	1,171	1,025	893	883		
Dec	1,115	1,401	1,198	1,115	1,243	1,037	900	1,027		

Source: Pemex

Oil: Colombia President's highlights his anti-fossil fuel view in UN address

Colombia President US address

Colombia President Petro address the UN General Assembly on Tuesday. His anti-Israel view aside, Petro's address highlighted the division of the world in to a few rich nations and the rest of the world, his focus to avoid the destruction of the human species and the linked anti-fossil fuel stance/pro-climate position. Petrov lamented "*a president's communication capacity depends on the amount of dollars he has in his budget, on the number of warplanes he has and, ultimately, on his country's capacity to destroy humanity. The power of a country in the world is no longer exercised by the type of economic or political system, or ideas that it radiates, but by the power to destroy the life of humanity*." And "*If we ask for debt to be exchanged for climate action, powerful minorities do not listen to us. If we ask them to stop wars and concentrate on the rapid transformation of the world's economy in order to save life and the human species, they do not listen to us either. It is the power of destruction of life that gives volume to the voice in the United Nations compound and the voice of the nations that we ask to unite human effort in pursuit of existence is not heard. Here we speak but we are not heard.*" And "*Time is over, either we raise the flag of life or our towns will be filled with cemeteries as the epidemic showed us. It is the time of the peoples and we must act locally and agree globally. Fossil capital cannot continue. The people must stop it. The poison spewed into the atmosphere is fatal and the chimneys that emit it must stop. Every corner of the world can be a battle against those chimneys.*" Those are a few of Petro's quotes. Our Supplemental Documents package includes Petro's speech. [LINK].

Oil: Zelensky's key ask of US was to okay long-range missile attack on Russia

Zelensky #1 priority is long range missile approval

Zelensky was in New York this week to address the UN General Assembly but his key meetings were with Biden and key members of Congress to try to get support for the key part of his victory plan – for the US to okay Ukraine using long range missiles to hit key targets deep in Russia. This was the expectation for his key ask and that seems to be the case. On Friday, Bloomberg reported "*Still, about 20 senators from both parties met with Zelensky, who was escorted by Senate leaders Chuck Schumer (D., N.Y.) and Mitch McConnell (R., Ky.), both wearing ties in blue and yellow, the colors of the Ukrainian flag. Zelensky also met in the House with more than a dozen Republican and Democratic leaders. "He asked for one thing: 'Let me use the weapons to maximum benefit,' " said Sen. Lindsey Graham (R., S.C.). Graham said Zelensky believes that if he shuts down those Russian air bases and missile bases, that would give him leverage to get President Vladimir Putin to the negotiating table. Sen. Dick Durbin (D., Ill.) said Zelensky talked about striking targets in Russia and going after Russian sources of drones and other equipment. His plan, as laid out to senators "is to make sure that Ukraine has the momentum moving forward," Durbin said.*" There were no indications from Biden or White House officials that Biden is considering changing his position to allow Ukraine to use the long-range missiles deep inside Russia.

Putin, US & EU are at war with Russia if provide long-range missiles to Ukraine

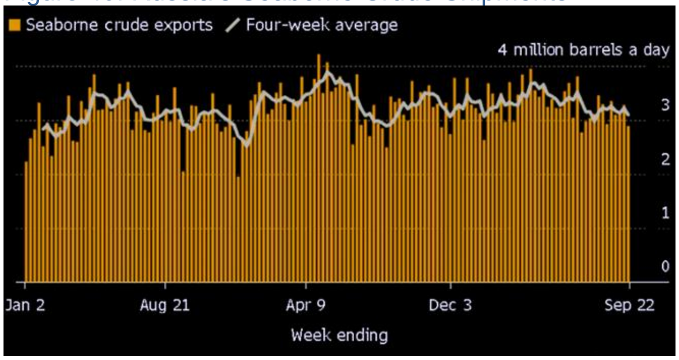
If Ukraine gets approval to use long-range missiles will open up the wildcard of what will Putin do? Here is what we wrote in our Sept 15, 2024 Energy Tidbits memo. "*Putin, US & EU are at war with Russia if provide long-range missiles to Ukraine. No one knows what Putin will do but Putin gave a clear 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 decrease following previous rise

Russia's seaborne crude exports

This week, the four-week average for Russia's seaborne crude exports fell, returning to the previous downward trend that we have seen the couple months, aside from an increase last week, and 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. As a general rule, when Russian refining capacity gets hit, it allows for more oil for export. The four-week average is up to 3.10 mmb/d for the week to September 22. The decrease was driven by a four-day gap at the Kozmino export terminal, this lack of shipments Bloomberg noted is presumably due to maintenance to the port or pipeline supplying it. Bloomberg reported "*Russia's average oil-processing levels from Sept. 12-18 dropped to 5.28 million barrels a day, the lowest weekly level since late June, as the nation's refineries are entering seasonal maintenance…Russia's seaborne daily crude flows in the week to Sept. 22 fell by about 390,000 barrels to 2.89 million. That's the lowest since the first week of July. The less volatile four-week average also fell, dropping by 115,000 barrels a day to 3.1 million from 3.21 million the previous week. It's only the third time this year that this measure of shipments has dropped so low*". Crude shipments so far this year are 60,000 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 40: Russia's Seaborne Crude Shipments



Source: Bloomberg

Russia oil exports to China back below 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 down -0.110 mmb/d to 1.200 mmb/d for the week ending September 22, down from last week's 1.310 mmb/d for the week of September 15. September 15 week was was above 1.3 mmb/d for the first time months. 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 41: Russian Crude Exports to Asia

4 weeks ending	China	India	Other	Unknown Asia	Other Unknown	Total
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	1.22	1.67	0.03	0.00	0.00	2.92
September 15, 2024	1.31	1.67	0.00	0.05	0.00	3.03
September 22, 2024	1.20	1.57	0.00	0.10	0.05	2.92

Source: Bloomberg

Oil: OPEC "*no peak oil demand on the horizon*", phasing out oil & gas is a fantasy

OPEC "*no peak oil demand on the horizon*"

What we have seen in 2024 is that the biggest wildcard for oil price is demand and, for 2024, that has been the overriding pressure on oil price that the largest oil consumption growth region, China, has disappointing demand growth. It's why we focus on demand, not just for looking at the next few months but also to anchor a long-term view of oil. On Tuesday, OPEC released its 2024 World Oil Outlook 2050 and we tweeted on their key wildcard to 2050 – oil demand. On Tuesday, we tweeted [LINK] "*Western govts better hope OPEC is wrong! "the fantasy of phasing out oil and gas bears no relation to fact" "There is no peak oil demand on the horizon" "we see oil demand reaching over 120 mmb/d by 2050, with the potential for it to be higher" #OOTT.*" OPEC was heavily criticized for its bullish view on oil demand to 2050 with many referencing their criticism because the IEA is calling for peak oil demand in the next five years. OPEC had to know they were going to be criticized so came out on the offense for their view on no peak oil demand thru 2050. They highlighted their approach is a fundamental approach and highlighting the reality of the non-OECD energy consumption future. And OPEC is blunt in that "*there is no peak oil demand on the horizon*" and that the "*fantasy of phasing out oil and gas bears no relation to fact*." OPEC says *"This means understanding the needs and ambitions of every energy consumer around the world, appreciating what each energy source can offer, and finding ways forward that can deliver energy security, energy availability, affordability and emissions reduction. It is not about fixating on one part to the detriment of the others. The world needs to deliver on them all. The need for more energy comes as economies grow, populations expand and urbanization levels increase. We should also remember the fact that billions of people are playing energy catch up, with too many lacking access to modern energy services, such as basic lighting and clean cooking options, and many more having never owned a car, been on an airplane, or travelled outside of their home country. Global energy demand in this year's WOO is set to expand by 24% in the period to 2050, driven by significant expansion in the non-OECD region. The Outlook sees the need for an expansion in all energy sources, with the exception of coal. For oil alone, we see demand reaching over 120 million barrels a day by 2050, with the potential for it to be higher. There is no peak oil demand on the horizon. What the Outlook underscores is that the fantasy of phasing out oil and gas bears no relation to fact."* Our Supplemental Documents package includes excerpts from the OPEC outlook to 2050.

Figure 42: Sectoral oil demand, 2023-2050

Table 3.3

Sectoral oil demand, 2023-2050

	2023	2030	2035	2040	2045	2050	Growth 2023-2050
Road	45.6	49.2	49.8	50.0	50.2	50.2	4.6
Aviation	6.8	8.4	9.2	9.8	10.5	10.9	4.2
Rail & Waterways	2.0	2.2	2.3	2.3	2.3	2.3	0.3
Marine bunkers	4.2	4.8	5.0	5.0	5.0	5.1	0.8
Transportation	58.5	64.7	66.3	67.2	68.0	68.5	10.0
Petrochemicals	14.8	17.3	18.0	18.7	19.3	19.7	4.9
Other industry	12.9	14.2	14.8	14.6	14.6	14.7	1.8
Industry	27.7	31.5	32.8	33.2	33.9	34.3	6.6
Res./Comm./Agric.	11.4	12.6	13.0	13.1	13.2	13.4	2.1
Electricity generation	4.6	4.6	4.4	4.3	3.9	3.8	-0.8
Other uses	16.0	17.2	17.4	17.4	17.0	17.3	1.3
World	102.2	113.3	116.4	117.8	118.9	120.1	17.9

Source: Bloomberg

Oil: Saudi reminds they plan to add back barrels starting Dec 1, 2024

Saudi plans to add back barrels on Dec 1, 2024

Markets were up big on Thursday driven by China markets up with the China stimulus, that is all markets expect oil that was driven down by the FT report "*Saudi Arabia ready to abandon $100 crude target to take back market share*". [LINK] (i) Markets were scared that he Saudis could decide to add back all their voluntary cuts at once and not a very gradual basis over 14 months. FT's closing sentence was "*But Saudi Arabia remains concerned about compliance and could decide to unwind its own cuts faster than planned if either country does not toe the line, one of the people added*." (ii) When asked about the FT report, we said the reporting was clear that Saudi is warning Iraq and Kazakhstan to get in line quickly with their overproduction. And that Saudi must believe they can them in line. But the FT reporting is that if they don't get in line, then Saudi could take more drastic action. So we took this as a reminder to others, Saudi won't put up with non-compliance, at least from Iraq and Kazakhstan. (iii) The second takeaway is a warning/market testing to let the market know they plan to stick to the schedule to gradually add back oil starting on Dec 1, 2024. The existing plan was that Saudi, UAE, etc extended the return of their voluntary cut barrels from Oct 1 to Dec 1, 2024. And that this was based on the firm commitment by Iraq and Kazakhstan to stop over producing. The schedule is there but the spin is that Saudi is doing this as part of the overall theme to abandon $100 oil target. Note this is "*according to people familiar with the country's thinking.*" (iv) We think the reality is that $100 oil short term is no longer a likely price in any event. We have noted for the past few months our concern on oil prices if Saudi et al add back the oil volumes going into Q1/25 as we remind Q1/25 oil consumption is always seasonally lower than the prior Q4. OPEC Sept MOMR forecasts Q4/24 oil demand at 105.61 mmb/d and then down -1.01 mmb/d QoQ to 104.60 mmb/d in Q1/25. So adding oil back in the face of lower QoQ consumption would add price weakness. (vi) BUT if Saudi adds back their barrels all at once, this should be a major oil price drop if the FT's closing statement on Saudi adding their oil back faster if Iraq and Kazakhstan don't comply. If FT is inferring Saudi is threatening adding 1 mmb/d back on Dec 1, that would crash oil prices. We have no idea how much but below $60 wouldn't seem out of line as no one knows what Saudi will do next. And it would be adding back oil into a declining oil demand seasonal period in Q1/25. (vii) The FT report says Saudi has alternative financing options such as issuing sovereign debt and tapping foreign exchange. That may be so but at what cost if they are hitting debt markets. Surely debt pricing has to go up given no one knows how long oil will be down and what will happen to oil which is the driver of Saudi financial strength. And their insatiable need for OPM. Our big picture theme for the challenge for Saudi Arabia to get into any price war is their continued need to access more and more Other People's Money for their budget and to move as best as possible to fund Vision 2030. And that Saudi Arabia has been raising so much OPM, how does some undetermined length of a price war impact that ability. It has to put a big pause or cost increase on raising OPM. (viii) Saudi does have its own financial health but remember the reason why we first called the increasing need for OPM years ago – their net foreign assets have decreased hugely. They were $737 billion on Aug 31, 2014 and are now $430 billion so have been reducing, on average $2.6 billion per month over the last 10 years. they aren't going broke but this is their nest egg for their future. Below is the current schedule for the return of voluntary barrels to the market on a gradual basis starting on Dec 1, 2024. Our Supplemental Documents package includes the FT report.

Figure 43: Planned adding back of voluntary cuts starting Dec 1, 2024

Production Levels with the Phase-out of November 2023 Voluntary cuts to start in December 2024 until November 2025

	2024		2025												Required Production Level as per 37th ONOMM (1)
Country	Oct-Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Algeria	908	912	917	921	925	929	934	938	942	946	951	955	959	959	**1,007**
Iraq	4,000	4,018	4,037	4,055	4,073	4,092	4,110	4,128	4,147	4,165	4,183	4,202	4,220	4,220	**4,431**
Kuwait	2,413	2,424	2,436	2,447	2,458	2,469	2,481	2,492	2,503	2,514	2,526	2,537	2,548	2,548	**2,676**
KSA	8,978	9,061	9,145	9,228	9,311	9,395	9,478	9,561	9,645	9,728	9,811	9,895	9,978	9,978	**10,478**
UAE	2,912	2,926	2,972	3,020	3,067	3,114	3,161	3,207	3,254	3,301	3,348	3,361	3,375	3,375	**3,519**
Kazakhstan	1,468	1,475	1,482	1,489	1,495	1,502	1,509	1,516	1,523	1,530	1,536	1,543	1,550	1,550	**1,628**
Oman	759	763	766	770	773	777	780	784	787	791	794	798	801	801	**841**
Russia	8,978	9,017	9,057	9,096	9,135	9,174	9,214	9,253	9,292	9,331	9,371	9,410	9,449	9,449	**9,949**

(1) Required production levels as per the 37th ONOMM before applying the additional voluntary cuts announced in April 2023 and November 2023.

Source: OPEC

Oil: What if Iran doesn't attack with Israel killing Hamas, now Hezbollah leaders?

Hezbollah leader killed

We start by saying it is still very early and Israel's killing of Hamas leader Nasrallh was less than 48 hours ago so non one knows what will happen. However, as of our 7am MT news cut off, there hasn't been any specific Iran action. And Israel followed up the Friday attacks with fresh new attacks on Lebanon. But the big question facing markets on Monday will be what will come out of Israel's Friday night killing of Hezbollah leader, Hasan Nasrallah. Hezbollah is considered the closest to Iran of its proxies so Nasrallah's killing is considered a major escalation and one that will force Iran to do something and raising the risk of a broad military escalation. We certainly agree that Iran is now in the position when it has to do something significant and this is especially as it has yet to take any promised response to Israel killing the Hamas leader in Tehran in late July. Iran is in the spotlight. What do they do? But we also ask what does it mean if Iran doesn't take any significant action for Israel killing the Hamas leader in July and now Hezbollah leader Nasrallah. We ask the question because if Iran doesn't take direct action, it would seem to point to or confirm that Iran won't go after Israel unless Israel directly attacks Iran. And if so, does that significantly reduce the impact of any broader regional war if Israel sticks to attacking Hamas, Hezbollah, Houthis with its superior air power and that Iran will only stick to a war via proxies? (i) Nasrallah was a co-founder of Hezbollah over 30 years ago and his killing is viewed as one of the biggest possible killings. Post the killing, we tweeted [LINK] "*Breaking! Israel kills Hezbollah leader Nasrallah. IDF Halevi warns "Those who threaten the citizens of the State of Israel – we will know how to reach them – in the North, in the South, and even in more distant places". Sounds warning other anti-Israel leaders ie. Iraq resistance, Houthis and even Iran. Still waiting for Iran response for Israel killing Hamas leader Haniyeh in Tehran on 07/31/24. Thx @Jerusalem_Post #OOTT [LINK].*" (ii) Earlier today, IRNA (state media) reported [LINK] on comments by Iran's Foreign Minister Araghchi in meetings with UN Secretary General. Araghchi did not say Iran would take any retaliation. Rather IRNA led off their report "*Iran's Foreign Minister in separate meetings with the UN chief and the president of the 79th session of the UN General Assembly warned about dangerous consequences of the Zionist regime's new aggressive and terrorist actions against Lebanon that led to the martyrdom of Sayyed Hassan Nasrallah, the Secretary General of the Hezbollah Resistance Movement. According to IRNA's Sunday morning report, Abbas Araghchi in the meetings with Antonio Guterres and Philemon Young emphasized the responsibility of the United Nations for urgent action to protect regional and international peace and security. Referring to the failure of the Security Council to take any effective measures and its inability to issue even a simple statement condemning Israel's genocide and aggression, Araghchi pointed to the legal and moral duty of the Secretary General and the President of the General Assembly to mobilize the international community to confront the evils of the occupying Zionist regime.*" (iii) In addition, Iran confirmed that IRGC Deputy Commander General Abbas Nilforoushan was killed in the Israel strikes on Beirut on Friday. (iv) As of our 7am MT news cut off, the Supreme Leader didn't say Iran would take any direction action, but warned the resistance front will take action. No question he said there will be revenge but he said it would be done by the resistance front. PressTV (state media) reported [LINK] "*Leader of the Islamic Revolution Ayatollah Seyyed Ali Khamenei says the resistance front will deal more crushing blows on the "dilapidated and decaying body" of the Zionist regime. Ayatollah Khamenei made the statement in a message of condolences on Saturday over the martyrdom of Sayyed Hassan Nasrallah, the longtime leader of the Lebanese Hezbollah resistance movement, who was assassinated in a massive Israeli airstrike in southern Beirut on Friday.*" (v) Instead of vowing a direct response, Iran, at this early stage, seems to silent on that possibility. (vi) Still no vowed Iran response to Israel's recent July killing of Hamas leader, Ismail Haniyeh, when he was in Tehran. Recall that Iran threatened retaliation for the Haniyeh killing at a time of maximum surprise. It's been two months and still no Iran retaliation. (vii) No surprise, reports immediately surfaced that Iran's Supreme Leader was moved to an undisclosed location. (viii) It's been less than 2 days since Nasrallah was killed so it is far too early to know what will unfold and when. It just feels like a turning point on what Iran does or does not do and what will this mean to the region.

Iran vowed direct action when Israel killed Hamas leader in Tehran in July

Here is our reminder that Iran has yet to take its vowed retaliation against Iran for Israel killing of the Hamas leader while he was in Tehran in late July. Iran has been consistent it would take direct action against Israel. As of our 7am MT news cut off, it's the same story week after week for the last two months 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: Will Iran increase its push for a JCPOA return post Israel killing of Nasrallah

Iran President at UN

As expected, Iran President Pezeshkian at the UN this week brought more talk about his interest in looking at a return to the JCPOA. And that got more interest when Trump was asked on Thursday "*would you make a deal with Iran*?" Trump responded *"Sure, I would do that, we have to make a deal, because the consequences are impossible. We have to make a deal." "The only thing is they cannot have nuclear weapons."* And on Thursday, Bloomberg reported "*UN nuclear watchdog chief Rafael Grossi, allegedly said on September 25 he has information that the United States, under a potential Kamala Harris administration, would be ready to return to an agreement on Iran's nuclear programme.* But any JCPOA ideas have been pushed to the background with Israel's killing of Nasrallah on Friday. However, we have to wonder if this will also increase Pezeshkian's desire/push for a return to the JCPOA.

Oil: Did Kurdistan agree to work jointly with Baghdad to get IOCs to agree with Iraq?

Did Iraq wear down Kurdistan on oil?

Yesterday, we tweeted [LINK] "*Hope it's just a lost in translation? Or has Kurdistan picked a side in oil dispute & will be unified with Baghdad to get IOCs to agree to lesser terms? Iraq's unchanged position is KRG /IOCs oil deals violate constitution and its profit share to IOCs is way too high. INA reports Baghdad & KRG "enter as a unified party in negotiations with international oil companies operating in the region; to amend their contracts from production partnership to profit-sharing, in addition to reviewing the economic and commercial conditions.... and push towards resolving them under the umbrella of the constitution." #OOTT."* Interesting news reports out of Baghdad and Kurdistan that seem to infer Baghdad has worn down Kurdistan in the fight to get the IOCs operating in Kurdistan to retain their production sharing agreements or at least their economics in those deals. To date there has been no give from Baghdad on their position that the Kurdistan deals are in violation of the Iraq constitution and have to be changed from production share contracts and accept a big cut to effective share. We still have not seen anything that suggests Baghdad is moving from its position that the Kurdistan deals with IOCs are against the Iraq constitution and need to be brought in line with Iraq's other oil deals. Rather, the Iraqi News Agency report reinforces no movement. If anything, the INA report seems to suggest Kurdistan recognizes there won't be movement and it infers Kurdistan has agreed with Baghdad to work on a united front to get the IOCs on deals ion line with Baghdad's other oil deals. On Thursday, the Iraqi News agency reported [LINK] "*The head of the Parliamentary Finance Committee, Atwan Al-Atwani, announced today, Thursday, an agreement with the Kurdistan Regional Government to review its oil contracts to adapt them constitutionally."* And "*Atwani confirmed that "the attendees reached an initial agreement with the regional government to conduct a comprehensive review of oil contracts to adapt them to the Iraqi constitution, in preparation for resolving the problem of the region's halt in oil exports," explaining that "the agreement stipulates that the central government and the regional government enter as a unified party in negotiations with international oil companies operating in the region; to amend their contracts from production partnership to profit-sharing, in addition to reviewing the economic and commercial conditions." He pointed out that "the parliamentary finance committee is working to establish a sound basis for negotiating a solution to the outstanding issues, to resolve the oil export file during this year and eliminate the differences with the region," stressing that "the committee will meet with the federal oil ministry upon its return to Baghdad, to discuss the controversial issues and push towards resolving them under the umbrella of the constitution."* We checked the Rudaw (Kurdistan news) reporting and it was in line with the Iraqi News agency. Our Supplemental Documents package includes the Iraqi News Agency and Rudaw news report.

09/17/24: Iraq PM sees a Kurdistan oil deal reached yr-end

After seeing the Iraqi News agency and Rudaw reports on Thursday, it makes us wonder if this is why the Iraq PM sees an oil deal reached by year end. IF we had seen the Iraqi News Agency report last week, we would have said we can see why the Iraq PM sees a deal done by year-end. Rather, here is what we wrote in last week's (Sept 22, 2024) Energy Tidbits memo. "*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]"*

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: UN says received eastern Libya promises to open oil fields and ports

UN says Libya to reopen oil fields and ports

As of our 7am MT news cut off, we still have not seen any disclosure by the Libya National Oil Corporation of the status of Libya oil production. One of the negatives to oil this week were the reports that there was agreement from all on resolving the central bank crisis and that would lead to a return of Libya oil production exports. This was reinforced by the Libya Observer report on Friday "*Koury: We received promises from authorities in eastern region to open oil fields and ports*." [LINK]. And *"The Acting Head of the United Nations Support Mission in Libya, Stephanie Koury, revealed Thursday that she had received promises from the official authorities in the eastern region to open the oil fields and ports as soon as possible, calling on all parties to protect all resources and keep them away from political* *conflicts."* It is far from clear how much Libya oil has been producing but it seems like the general working assumption is that production is down about 0.5 mmb/d.

Oil: Tripoli based Libya govt blames eastern Libya for the domestic divide at the UN

Tripoli blames eastern Libya at the UN

Notwithstanding the agreement on the central bank, there was a good reminder yesterday that there continues to be a big divide between east and west Libya. We couldn't help note the Libya Observer report yesterday "*Pointing his finger at House of Representatives, Menfi says the country is divided due to systematic obstruction*". [LINK] Mohamed Menfi is Head of the Presidential Council and addressed the UN General Assembly and reportedly made a point of telling the world its eastern Libya's fault. As the Libya Observer report title say Tripoli blames the eastern Libya House of Representatives. We did not see the transcript for Menfi's speech so rely upon the Tripoli-based Libya Observer report. Libya Observer also wrote "*Referring to the recent political crisis, Menfi said that the institutional division resulting from the systematic obstruction by some political parties, which led to the exacerbation of the political crisis, starting with the creation of parallel bodies, to freezing and canceling commitment to concluded political agreements and relevant Security Council resolutions, and reaching the use of state resources as a tool for political pressure, and most recently, the attempt to tamper with the Libyan judiciary. Menfi said that the solution is the comprehensive political path with its financial, economic and security tracks, in addition to national reconciliation to unify institutions and ensure stability leading to elections."*

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: CSI 300 +15.7% WoW driven by China stimulus

It was the best weekly gain for Chinese stocks since 2008 thanks to the range of Chinese stimulus. The CSI 300 was +15.7% WoW to close at 3704. But Chinese stocks still have a long way to go compared to how other major markets have done post Covid. We just graphed CSI 300, S&P 500 and Nifty and we marked in the returns since after Covid using a starting point of 12/31/2020. CSI 300 is down 29% since this recovery period vs S&P up 53% and the Nifty up 87%.

CSI 300 +15.7% WoW

Figure 44: CSI 300 vs S&P 500 vs Nifty

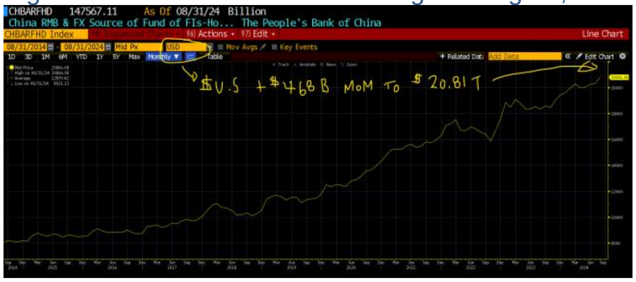
Source: Bloomberg

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

The big question will be will all the Chinese stimulus give confidence for Chinese consumers to start spending. Here is what we wrote in last week's (Sept 22, 2024) Energy Tidbits memo on the Sept 21 reporting of record MoM increase in Chinese household savings in Aug. Here is what we wrote last Sunday. "*Chinse household savings record MoM $468b increase in Aug. 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*."

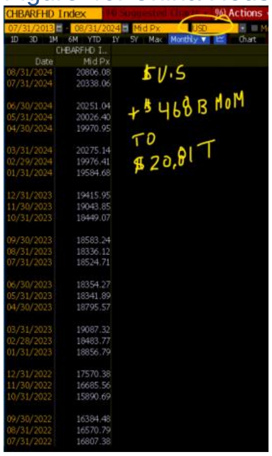
Chinese household savings

Figure 45: China Household Savings to Aug 31, 2024



Source: Bloomberg

Figure 46: China Household Savings



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

China cuts mortgage rates

Oil: China cuts mortgage rates for existing home loans

One of the many Chinese stimulus items was on Monday night, when we tweeted [LINK] *"Breaking. One of China PBOC moves tonight is lower mortgage rates on existing home loads to level similar to new home mortgages.See 👇09/13 tweet. China consumers hit on their #1 asset as China new home & 2nd hand home values down MoM for >15 mths in a row. #OOTT."* Our tweet included the then breaking Xinhua (state media) news "*China will lower mortgage rates on existing home loans to a level similar to those of newly issued housing loans, Pan Gongsheng, governor of the People's Bank of China, said on Tuesday. The average reduction in mortgage rates for existing home loans is expected to be around 0.5 percentage points, he told a press conference. The minimum down payment ratio for both first and second homes will be unified, with the nationwide minimum down payment ratio for second homes to be reduced from 25 percent to 15 percent, Pan said."* The biggest negative to Chinese consumers has been declining home values so anything China can do to help on home values is needed.

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

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 our 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 47: China new home prices MoM % change incl Aug 2024

Source: Bloomberg, National Bureau of Statistics

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

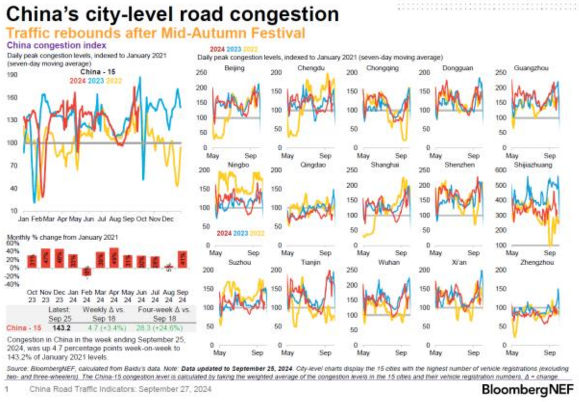
Source: Bloomberg, National Bureau of Statistics

Oil: Baidu China city-level congestion rebounds WoW after mid-Autumn Festival

China city-level road congestion rebounds

Last week's (Sept 22, 2024) Energy Tidbits memo highlighted China's Mid-Autumn Festival and how that lead to a drop in China city-level road congestion. On Friday, BloombergNEF posted its China Road Traffic Indicators Weekly Sept 27 report, which includes the Baidu city-level road congestion for the week ended Sept 25. This week, BloombergNEF reported Baidu city-level road congestion was up by +3.4% WoW to 143.2% of Jan 2021 levels, but compared to September 2023, September's average daily peak congestion levels so far are down -8.5% YoY. Bloomberg noted that 12 of the top 15 cities are down YoY. The WoW recovery was expected as the prior week was impacted by the national holiday, Mid-Autumn Festival, which sees people leave the cities for holidays. Please note that we expect next week's data to show a big drop in city-level road congestion as it will include part of the big National Day holiday. What is different vs 2023 is that last year, there was a 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 rises after the holidays*".. Below are the BloombergNEF key figures.

Figure 49: China city-level road congestion for the week ended September 25



Source: Bloomberg

Figure 50: China city-level road congestion for the week ended September 25

Indexed to the same month in previous year = 100

Sep 23	Oct	Nov	Dec	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
112	126	155	187	151	55	100	114	110	96	104	87	91
106	149	214	275	135	42	92	113	103	93	106	90	95
174	117	131	124	144	51	106	107	115	91	116	85	97
98	130	395	224	136	64	101	125	125	112	113	85	83
105	108	104	156	258	41	99	127	120	108	108	101	99
114	146	317	307	199	45	99	127	127	107	107	106	98
69	95	101	127	203	59	115	140	121	112	106	81	107
100	96	124	195	175	62	94	97	98	87	95	76	82
81	115	93	172	156	54	98	117	105	101	98	76	96
122	108	97	156	189	41	96	120	132	99	113	106	103
218	120	459	258	156	69	93	85	81	77	89	70	71
87	91	88	157	171	60	111	130	117	97	99	88	85
213	109	137	244	136	60	114	121	119	100	96	86	103
144	199	192	187	151	55	94	100	97	85	95	86	86
106	149	139	152	132	66	110	112	105	91	110	97	89
112	171	294	164	119	76	98	102	90	82	98	72	82

Source: Bloomberg

Big drop in China city congestion with Oct 1-7 National 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 imports of Iranian oil poised to reach new record of 1.79 mmb/d in Sept

China imports of Iranian oil

On Friday, Bloomberg reported that China oil imports from Iran are poised to hit record levels in September according to Kpler tanker tracking data. On Friday we tweeted [LINK] "*Record China #Oil imports from Iran. @Kpler data: China imports from Iran 1.79 mmbd in Sept, 1.75 mmbd in Aug. Thx @business See 09/19 tweet: Matches what China reported as oil imports from Malaysia in Aug of 1.77 mmbd. OPEC MOMR, Malaysia produces 0.4 mmbd. #OOTT*". Last week we pointed out that China's oil imports from Malaysia were 1.77 mmb/d in August, which we suspected to be largely rebranded Iranian oil. And it just happens that the Kpler tanker tracking data matches the official Chinese data for oil imports from Malaysia. Using Kpler data, China is expected to import 1.79 mmb/d of Iranian oil in September, which exceeds the previous record in Kpler's data of 1.75 mmb/d by +0.04 mmb/d. Our Supplemental Documents package includes the Bloomberg report.

09/19/24: How many bbls is China importing of Iran oil that is rebranded

Here is what we wrote in our September, 22, 2024 Energy Tidbits memo: "*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: No spills from single-hull US navy oiler going aground in Oman

US navy's single hull oiler

We didn't tweet on the various reports of the USNS Big Horn oiler running aground as there were no initial reports of any attack or suspicious event. Nor did we see any of the reports mention that the oiler (a ship that refuels other ships) was an old single hull tanker util we saw the @gCaptain report. We then tweeted [LINK] "*Reminder of added risk to oil spills from old tankers. Good news for US & Oman, no reported oil spill from USNS Big Horn oiler as it's an old single hull tanker. See 👇@gCaptain. Post Exxon Valdez 1989, new tankers were required to be double hull to give added protection against a spill. #OOTT Thx Tom Drolet! [LINK].*" @gCaptain reported "*Fortunately, no injuries or environmental damage have been reported for the ship. This is significant because the 33-year-old vessel is one of the single-hull versions of the Kaiser-class oilers. "USNS Big Horn sustained damage while operating at sea in the U.S. 5th Fleet area of operations overnight on Sept. 23. All crew members are* *currently safe and U.S. 5th Fleet is assessing the situation," according to a statement from a Navy official provided to Sam Lagrone at USNI News."* We were surprised to see the Big Horn is a single-hull tanker and relieved that there wasn't a spill when it ran aground. Our tweet remined the Exxon Valdez 1989 oil spill off Alaska, which led to the 1990 rules for all new tankers to be double hull to reduce the chance of oil spills when a tanker runs aground. Our Supplement Documents package includes @gCaptain report.

Reminded us of the Exxon Valdez single-hull tanker oil spill 31 years ago
Any oil industry person will remember the oil spill for the Exxon Valdez oil tanker ran aground Bligh Reef, just outside the port of Valdez in Alaska. The result was ~240,000 barrels of oil spilled. This was a huge industry event and the catalyst for changing standards for oil tankers. Exxon Valdez was a single-hull tanker and the requirements changed in 1990 for tankers to be double-hulled.

Oil: Canada Energy Minister global oil consumption is probably peaking this year

Canada sees peak oil demand this year

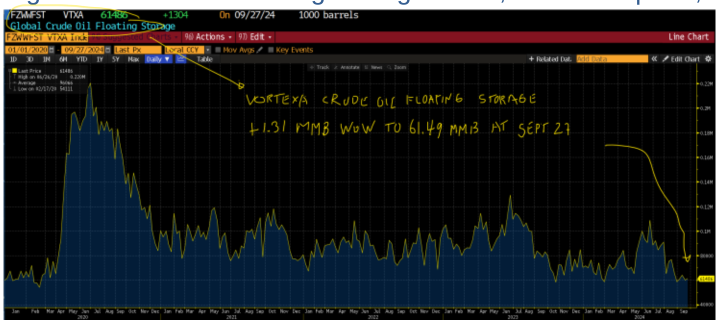
It just so happened that Canada's Minister of Energy and Natural Resources, Jonathan Wilkinson, gave his view on peak demand for oil and natural gas later on the same day OPEC released their view that there is "*no peak oil demand on the horizon.*" Yesterday, we tweeted [LINK] ""*Oil and gas [consumption] will peak this decade. In fact, oil is probably peaking this year" says Liberals Energy Minister Wilkinson. Peak oil this yr is bolder call than IEA peak oil demand by 2030. See 10:07 min mark [LINK] #OOTT #NatGas Thx @CPAC_TV."* Canada is stepping out here call for peak oil consumption this year and is way more bolder than the IEA that calls for peak oil demand for 2030 and still expects oil consumption growth for the next four years including +950,000 b/d YoY in 2025.

Oil: Vortexa crude oil floating storage est 61.49 mmb at Sept 27, +1.31 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 21 at 9am MT. (i) Yesterday, we tweeted [LINK] "*Floating storage continues solid. Vortexa crude #Oil floating storage +1.31 WoW to 61.49 mmb at Sept 27. Sept 20 revised +4.44 mmb but prior 6 wks revised down by average -3.01 mmb/wk. Last 7 wks average 63.99 mmb, only been 22 wks <70 mmb since Covid. Thx @vortexa @business #OOTT"* Six of last seven weeks were revised lower by an average of -3.01 mmb per week, which brought the last seven-week average down to 63.99 mmb. There have only been 22 weeks in the 60s since Covid hit over four years ago. (ii) As of 9am MT Sept 28, Bloomberg posted Vortexa crude oil floating storage estimate for Sept 27 at 61.49 mmb, which was +1.31 mmb WoW vs revised up Sept 20 of 60.18 mmb. Note Sept 20 of 60.18 mmb was revised +4.44 mmb vs 55.74 originally posted at 9am MT on Sept 21. (iii) Revisions. Other than the revised +4.44 mmb for Sept 20, the other prior six were revised down with an average of -3.01 mmb per week. Here are the revisions for the past seven weeks compared to the estimates originally posted on Bloomberg at 9am MT on Aug Sept 21. Sept 20 revised +4.44 mmb. Sept 13 revised -1.61 mmb. Sept 6 revised -5.11 mmb. Aug 30 revised -5.02 mmb. Aug 23 revised -3.08 mmb. Aug 16 revised -3.12 mmb. Aug 9 revised -0.10 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 63.99 mmb vs last week's then seven-week rolling average of 67.89 mmb. The decrease was primarily due to the downward revisions to 6 of the last 7 weeks. (v) 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 27 estimate of 61.49 mmb is -67.74 mmb vs the 2023 peak on June 25, 2023 of 129.23 mmb. Recall Saudi Arabia stepped in on July 1, 2023 with its voluntary cuts. (viii) Sept 27 estimate of 61.49 mmb is -18.62 mmb YoY vs Sept 29, 2023 at 80.11 mmb. Below are the last several weeks of estimates posted on Bloomberg as of 9am on Sept 29, Sept 21 and Sept 14.

Figure 52: Vortexa Floating Storage Jan 1, 2000 – Sept 27, 2024, posted Sept 28 at 9am MT



Source: Bloomberg, Vortexa

Figure 53: Vortexa Estimates Posted 9am MT on Sept 28, Sept 21 and Sept 14

Posted Sept 28, 9am MT			Sept 21, 9am MT			Sept 14, 9am MT		
	Date	Last Px		Date	Last Px		Date	Last Px
Fr	09/27/2024	61486	Fr	09/20/2024	55740	Fr	09/13/2024	58114
Fr	09/20/2024	60182	Fr	09/13/2024	65533	Fr	09/06/2024	64499
Fr	09/13/2024	63920	Fr	09/06/2024	66267	Fr	08/30/2024	59835
Fr	09/06/2024	61061	Fr	08/30/2024	63525	Fr	08/23/2024	65857
Fr	08/30/2024	58813	Fr	08/23/2024	69048	Fr	08/16/2024	78965
Fr	08/23/2024	65966	Fr	08/16/2024	79890	Fr	08/09/2024	75403
Fr	08/16/2024	76765	Fr	08/09/2024	75236	Fr	08/02/2024	64024
Fr	08/09/2024	75124	Fr	08/02/2024	66579	Fr	07/26/2024	89585
Fr	08/02/2024	65290	Fr	07/26/2024	91949	Fr	07/19/2024	86777
Fr	07/26/2024	90792	Fr	07/19/2024	89496	Fr	07/12/2024	82084
Fr	07/19/2024	88232	Fr	07/12/2024	83348	Fr	07/05/2024	89373
Fr	07/12/2024	84604	Fr	07/05/2024	90994	Fr	06/28/2024	87416

Source: Bloomberg, Vortexa

Oil: Vortexa crude oil floating storage WoW changes by regions

Vortexa floating storage by region

Bloomberg also posts the Vortexa crude oil floating storage in key regions, but not all regions of the world. The regions covered are Asia, 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 20 was revised +4.44 mmb with the key revision being Asia revised +5.57 mmb. (ii) Total floating storage at Sept 27 of 61.49 mmb was +1.31 mmb WoW vs the revised up Sept 20 of 60.18 mmb. The largest WoW change was Europe +1.98 mmb WoW. (iii) Sept 27 estimate of 61.49 mmb is -67.74 mmb vs the 2023 high on June 23, 2023 of 129.23 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 -45.10 mmb and Other -18.91 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 20 that was posted on Bloomberg at 9am MT on Sept 21.

Figure 54: Vortexa crude oil floating by region

				Original Posted	Recent Peak	
Region	Sept 27/24	Sept 20/24	WoW	Sept 20/24	Jun 23/23	Sept 27 vs Jun 23/23
Asia	28.38	27.57	0.81	22.00	73.48	-45.10
North Sea	0.80	2.14	-1.34	3.05	5.23	-4.43
Europe	4.81	2.83	1.98	3.86	5.63	-0.82
Middle East	6.30	5.86	0.44	5.96	6.76	-0.46
West Africa	9.08	7.61	1.47	7.60	7.62	1.46
US Gulf Coast	1.54	2.68	-1.14	1.11	1.02	0.52
Other	10.58	11.49	-0.91	12.16	29.49	-18.91
Global Total	61.49	60.18	1.31	55.74	129.23	-67.74
Vortexa crude oil floating storage posted on Bloomberg 9am MT on Sept 28						
Source: Vortexa, Bloomberg						

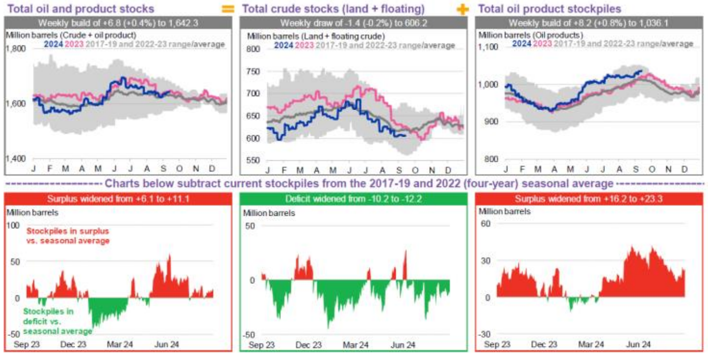
Source: Bloomberg, Vortexa

Oil: Global oil & product stocks surplus widened to 11.100 mmb from 6.100 mmb

Bloomberg Weekly Oil Indicators

On Tuesday, BloombergNEF posted its "*Oil Price Indicators*" weekly, which provides good charts depicting near-term global oil demand and supply indicators. (i) Note BloombergNEF uses different periods to determine the surplus/deficit, sometimes using a four-year average for 2017-2019 + 2022-2023, and other times using a five-year average 2017-2019 + 2022-2023. In both cases they do not include 2020 and 2021 in the averages. (ii) The global stockpile for crude oil and products surplus widened to 11.100 mmb for the week ending September 13, from a surplus of 6.100 mmb for the week ended September 6. (iii) Total crude inventories (incl. floating) saw a draw of -0.2% WoW to 606.200 mmb, while the stockpiles deficit widened, from a deficit of -10.200 mmb to a deficit of -12.200 mmb. (iv) Land crude oil inventories decreased -0.1% WoW to 542.400 mmb, widening their deficit from -13.200 mmb to -15.300 mmb against the five-year average (2017-2019 + 2022-23). (v) The gas oil, and middle distillate stocks increased +0.3% WoW to 241.900 mmb, with the surplus against the four-year average increased to +3.400 mmb from +1.500 mmb. Jet fuel consumption by international departures in the week starting September 24, is set to decrease by -0.025 mmb/d WoW, while consumption by domestic passenger departures is forecast to increase by +0.003 mmb/d WoW. Below is a snapshot of aggregate global stockpiles.

Figure 55: Aggregate Global Oil and Product Stockpiles



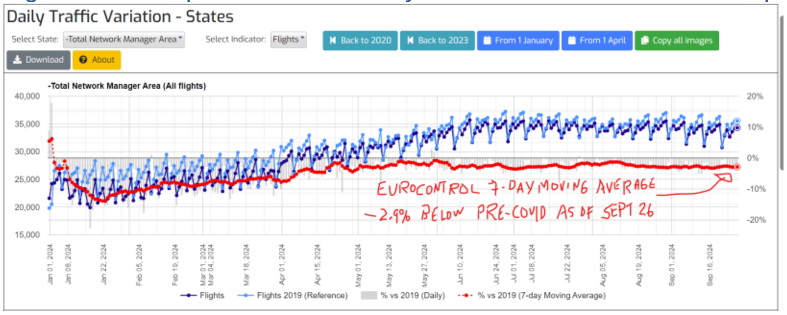
Source: BloombergNEF

Oil: Europe airports daily traffic 7-day moving average is -2.9% 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 26: -2.9% below pre-Covid. Sept 19: -2.8% 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%. 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 -2.9% below pre-Covid as of Sept 26, which followed -2.8% as of Sept 19, which followed -3.0% as of Sept 12, which followed -2.8% as of Sept 5, which followed –3.1% as of Aug 29, -2.8% as of Aug 22, -2.2% as of Aug 15, -1.3% as of Aug 8, -1.9% as of Aug 1, and –2.2% as of July 25. Please note that we try to pull the data early Saturday mornings for a consistent weekly comparison. Eurocontrol updates this data daily and it is found at [LINK].

Figure 56: Europe Air Traffic: Daily Traffic Variation to end of Sept 26



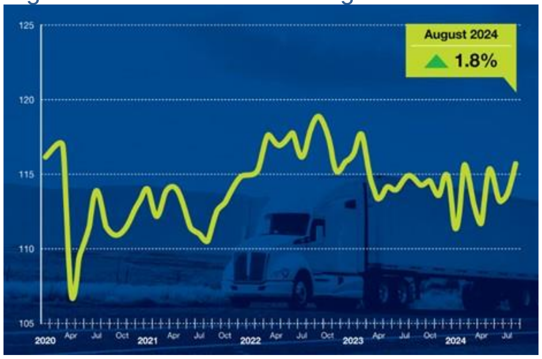
Source: Eurocontrol

Oil: ATA Truck tonnage index in August up +1.8% MoM, +0.7% YoY

August Truck Tonnage up +1.8% MoM

We look to items like truck tonnage for indicators on the US economy, and the August truck tonnage is indicative of a slowly growing US economy. The American Trucking Association released its seasonally adjusted Truck Tonnage Index for August on Tuesday [LINK]. Truck tonnage increased +1.8% MoM and increased +0.7% YoY from August 2023. Chief Economist Bob Costello noted *"Not only does the latest robust gain show freight levels are coming off the bottom, but so does the sequential pattern over the last eight months. Starting* *earlier this year, every time tonnage falls, it is higher than the previous low. For me, this month-to-month pattern is more important than looking at the year-over-year percent changes since we are at an inflection point in the freight market."* Trucking serves as an indicator of the U.S. economy, representing 72.6% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 11.46 billion tons of freight in 2022. Motor carriers collected $940.8 billion, or 80.7% of total revenue earned by all transport modes. Our Supplemental Documents package includes the ATA truck tonnage index report.

Figure 57: ATA Truck Tonnage Index



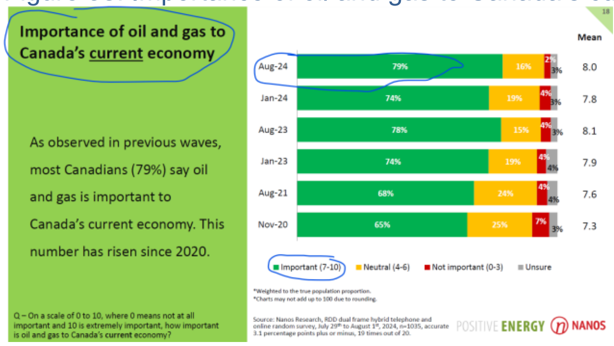
Source: ATA

Oil & Natural Gas: Nanos, 79% of Cdns know oil & gas is important to Cdn economy

Cdns know oil & gas is important to economy

We should have led off our tweet "Don't bite the hand that feeds you" as what the Positive Energy/Nanos message should be to the Liberals govt. We were surprised by the broad across Canada support for oil and gas in the Positive Energy/Nanos Sept 26 survey "*Canadians tilt toward non-partisanship on energy decisions; Academics and industry experts top list to inform decision-making."* (ii) There were only positives for oil and gas and only negatives for the Liberals on their energy plan. And the positives for oil and gas keep getting stronger each year. ii) Yesterday morning, we tweeted [LINK] "*I told you so, Cdn #Oil #NatGas will say to Liberals. More & more Cdns recognize: 1. Importance of oil & gas to Cdn current (79% now vs 65% in 11/20) and future (59% now vs 41% in 11/20) economy. 2. Canada done a poor job at developing a long term vision for Cdn energy future. 59% now vs 43% in 2017. 3. 61% CAN should expand oil & gas exports to help world have more secure energy supplies. Much more in this @niknanos @uOttawa_Energy survey. #OOTT [LINK]."* (iii) 79% of Cdns (was 65% in Nov 2020) recognize oil and gas is important to the current Cdn economy and 59% (was 41% in Nov 2020) see oil and gas as important for the future Cdn economy. (iv) 61% of Cdns believe Canada should expand its oil and gas exports to provide more secure energy to the world. (v) More Cdns believe the federal govt should look more to industry (17.2%) for advice on energy than environmental groups (11.4%) and civil servant (9.7%). (vi) 61% of Cdns think Canada has done a poor or very poor job (was 50% in 2017) at building public confidence in energy decision making. (vii) There are more items in the Positive Energy/Nano survey. Our Supplemental Documents package includes excerpts from the survey.

Figure 58: Importance of oil and gas to Canada's current economy



Source: Positive Energy, Nanos

TIPRO August jobs update

Oil & Natural Gas: TIPRO Texas oil & gas jobs see third consecutive month of growth

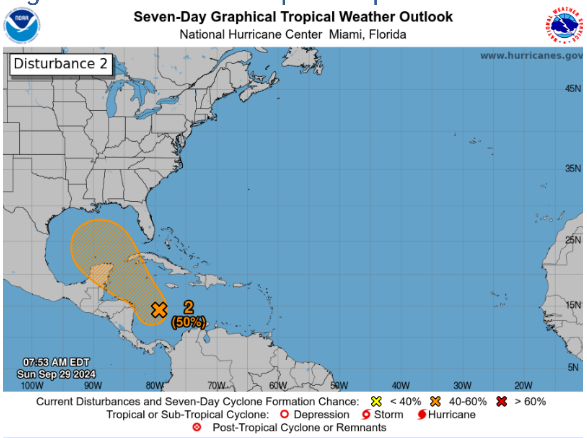
This week, the Texas Independent Producers and Royalty Owners Association (TIPRO) posted its recaps for August, which included their updated their employment figures for the Texas upstream sector [LINK]. Note that the release is dated September 20, 2024, however, the report was not posted until this week. TIPRO reported MoM a increase in jobs in August, and an increase in jobs in July, which makes August the 3rd consecutive month of growth. July jobs were up +1,600 jobs MoM vs June and August jobs are up +1,000 jobs MoM vs July. Direct Texas upstream employment totaled 194,400 in August, down -2,100 from the recent high in March. TIPRO wrote *"TIPRO's new workforce data yet again indicated strong job postings for the Texas oil and natural gas industry. According to the association, there were 11,823 active unique jobs postings for the Texas oil and natural gas industry last month, an increase of 299 posted employment opportunities compared to July and 4,602 new job postings added during the month by companies. In comparison, the state of California had 4,416 unique job postings in August, followed by Florida (2,147), New York (1,684), Pennsylvania (1,662) and Louisiana (1,564). TIPRO reported a total of 60,396, unique job postings nationwide last month within the oil and natural gas sector, an increase of 630 compared to July".* Our Supplemental Documents package includes excerpts from the TIPRO recaps for August.

Potential tropical depression

Oil & Natural Gas: Potential tropical depression this week

The National Hurricane Center's 7-day outlook reminds a lot of last week's warning. Last week's (Sept 22, 2024) Energy Tidbits memo noted the NHC's then 7-day outlook that for a 70% chance to have potential tropical depression strength. This ultimately became Hurricane Helene, a Cat 4 major hurricane. We remind that the 7-day outlook doesn't mean it won't get more than tropical depression strength, rather the NHC forest is for a 7-day period and during that 7-day period it was only forecast to reach tropical depression 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. As of our 7am MT news cut off, NHC's latest 7-day outlook (as of 5:53am MT) gives a 50% chance for tropical depression strength into the Gulf of Mexico. What isn't clear is how much stronger this will become. But as noted as of now, the path is right into the heart of the major offshore Gulf of Mexico oil and gas production, and then, at least for ow, towards major Texas and Lousian refineries, LNG and crude oil exports. Below is the latest National Hurricane Center 7-day outlook map.

Figure 59:: Potential tropical depression this week



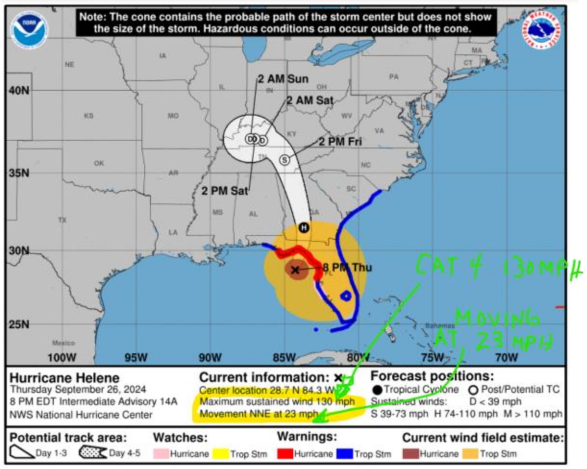
Source: NHC

Oil & Natural Gas: Hurricane Helene hit Florida as a Cat 4 but moving at a clip of 23 mph

Helene was moving fast at 23 mph

Hurricane Helene hammered Florida but many of the expert's comments were that it would have been worse but it was a fast moving hurricane so didn't stay over areas for long to cause worse damage.. The other reminder of Hurricane Helene was that there was some relief that it was such a fast moving storm. We have highlighted this many times more damage tends to come from flooding and storm surge vs wind. And one of the big factors for flooding is how fast the hurricane is moving. Slower moving hurricanes have longer to drop more precipitation than fast moving hurricanes. On Thursday dinner time, we tweeted [LINK] "*Hurricane Helene about to make landfall as a Cat 4 at 130 mph. Helene is very fast moving at 23 mph so hopefully won't linger too long over an area and will help to minimize damage and flooding. Hope everyone gets to safety! #OOTT.*" Below is the National Hurricane Center map for Hurricane Helene just before it was about to make landfall.that was attached to our tweet.

Figure 60: Hurricane Helene forecast just before it was about to hit Florida



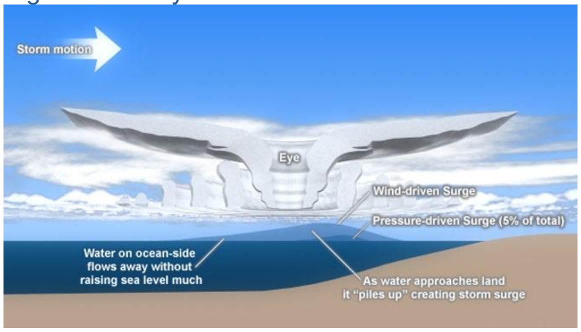
Source: NHC

Oil & Natural Gas: Right side of the Atlantic hurricane is the worst

Right side of a hurricane is the worst

On Thursday, we tweeted [LINK] "*Here's why #Helene is a big threat. Hurricanes 101. The right side of a hurricane more dangerous - higher max wind speed, waves and storm surge. See 👇@HillaryAndrews @foxweather recap. So hurricanes on the Gulf Coast side can have way worse impact than on Atlantic side. Hope Floridians can get to safety! #OOTT @NHC_Atlantic.*" Our tweet included an item from our Aug 28, 2023 Energy Tidbits memo on why the right side of an Atlantic hurricane is the worst and why hurricanes normally have a greater impact on Florida's Gulf Coast side vs the Atlantic side. We checked the link and it still works to a good Fox News Aug 28, 2023 report "*Why is the right side of a hurricane more dangerous?*" [LINK] It's a good quick read on why the right side of an Atlantic hurricane or tropical storm has more intense winds and storm surge, and also why the impacts of hurricanes or tropical storms is worse on Florida's Gulf Coast vs its Atlantic coast. Here is one of the hurricane 101 points *"How the right-front quadrant generates faster wind speed. Steering currents, driven by atmospheric airflow in the upper levels, add to the strength of the maximum sustained winds in that quadrant. For example, if a hurricane's steering currents were moving at 30 mph and the sustained winds of the hurricane were 80 to 100 mph, the combination generates a wind speed of 130 to 150 mph at 3 o'clock on the clock face. On the left side of the hurricane (9 o'clock on our imaginary clock face), the maximum sustained winds flow against the steering currents. So, in the example above, the steering current of 30 mph would reduce the 100 mph hurricane wind speed to 70 mph, according to UCAR. The National Hurricane Center takes this into account when issuing official wind estimates."* There is more in the Fox News report. Our Supplemental Documents package includes the Fox News report.

Figure 61: Why Florida's Gulf Coast is More Susceptible to Storm Surge



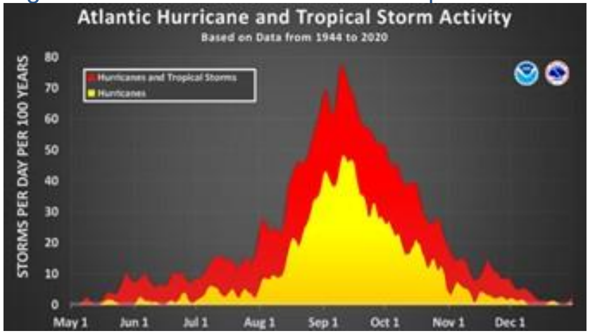
Source: Fox News

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

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 and this week's Hurricane Helene, 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].*"

Sept is normally the busiest hurricane emonth

Figure 62: 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

AECO QTD $0.67

We are still a month 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 27 close of prices. The big negative vs Q2 is AECO, which QTD has average $0.67, 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 63: 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$ 80.43	US$ 75.62	US$ 68.11	US$ 62.20	US$ 2.11	C$ 0.67

Source: Bloomberg

Source: Bloomberg, SAF Group

Oil & Natural Gas: Dallas Fed Survey, "*outlooks dim, uncertainty rises*"

Dallas Fed quarterly energy Survey

One of our favorite quarterly reports is the Dallas Fed quarterly energy survey was posted this week [LINK]. The survey provides a good window into what the US oil and gas sector is thinking about prices, activities, and issues. (i) The data for this survey was collected September 11-19 from a total of 136 firms; of which 91 were E&Ps and 45 were oilfield service companies. During the September 11-19 survey, WTI averaged $70.82/bbl and HH was $2.15/mcf. (ii) The main headline was "*Oil and gas activity edges lower as outlooks dim, uncertainty rises". (iii) The rising costs trend that was seen in previous quarters continued but at a slower pace, as the input cost index for oilfield service firms fell from 42.2 to 23.3. The lease operating expenses index also fell, dropping from 23.6 to 21.3 and the E&Ps' cost index fell from 15.7 to 9.9. (iv) Respondents said they expected WTI to be $73/bbl for 2024 year-end, which marks a significant decrease from 2024 year-end expectations reported in 2024-Q2, which saw expectations at $80/bbl. (v) For gas, respondents expect HH to be $2.52/mcf to end 2024. (vi) E&P firm comments. E&P respondents are expressing frustration with U.S. Administration issues, economic uncertainty, investor despondency, and weak commodity pricing, one survey respondent was quoted: "*The recession scare is front and center. The presidential election is a side show in terms of actual effects for most energy firms. As the Fed [Federal Reserve] cuts rates, the economy is either headed for a recession, which is bad news for oil, or somehow, we will manage the first soft landing in the history of the nation. For oil and gas companies, they will unfortunately be punished until the soft-landing outlook is actually in the rearview. No one wants to invest in oil and gas. Sentiment* *has thawed very slightly from zero investors interested to one or two on the margin. It is just brutal out there".* Many respondents also commented on the current U.S. Administration, and how it is affecting operations as a small E&P: "*The administration's "death by a thousand cuts" keeps impacting my company in different quadrants. All are aimed at increasing the cost of doing business in oil and gas and aimed at keeping oil and gas independents from staying in business*". (vii) O&G service firm comments. Respondents report that the wave of consolidation of OFS firms, and the upstream sector is affecting business. Concerns include the ability to effectively ramp up supply as more firms consolidate. In addition to this, the current focus on November's election has created some uncertainty around capex decisions; this has caused many capex decisions to be delayed. Our Supplemental Documents package includes excerpts from the Dallas Fed survey.

Energy Transition: Orsted CEO thinks offshore wind has bottomed

Has offshore wind bottomed?

One of the big negatives for the energy transition in 2023 was the crashing of the offshore wind market that included a number of offshore wind projects cancelled or delayed. On Tuesday, we saw the Bloomberg TV interview with Orsted CEO Mads Nipper who seemed relatively bullish on offshore wind and we tweeted [LINK] "*Offshore wind finally bottomed? Orsted CEO say yes. "I have good confidence the worst is over". "The 7.6 GW that we are building around the world, so roughly count on a GW powering a million homes. That is a lot of offshore wind" @NipperMads to @adsteel @RomaineBostick #OOTT.*" Our tweet included the transcript we made of Nipper's comments. SAF Group created transcript of comments by Orsted CEO Mads Nipper with Bloomberg's Alix Steele on Sept 24, 2024. [LINK]. Items in "*italics*" are SAF Group created transcript. At 0:00 min mark, Steele "*You have implemented a tough turnaround; it has been a tough few years. What is the confidence level that you have that the worst for the offshore wind industry is over?*" Nipper: "*I have a good confidence level that the worst is over. I mean, we are seeing a maturing supply chain. It is still a supply chain that faces bottlenecks, but it is maturing and we are seeing markets like the U.S., which literally were built from scratch, we are also seeing that scale up, and we also see generally how the 7.6 gigawatts that we are building around the world, so roughly count on a gigawatt powering a million homes that is a lot of offshore wind and that is going much better. So, we are confident*."

Rule of Thumb: Orsted CEO, 1 GW should power 1 million homes

There was a good rule of thumb from Orsted CEO Nipper in the above SAF transcript. Nipper said "*so roughly count on a gigawatt powering a million homes*." A gigwattt should power 1 million homes.

Energy Transition: EQT sees 6-13 bcf/d of NatGas demand for AI data centers by 2030

AI data center natural gas demand

On Wednesday, we tweeted [LINK] "D*ata Center Demand Becoming the Cornerstone to #NatGas Bull Case" reminds @EQTCorp @Shalennial. "AI-related electricity demand is expected to translate to between 6 to 13 bcf/d of NatGas in the short term, Toby Rice, EQT's CEO said Tuesday" reports @naurtorious @ruthcoverslng #OOTT [LINK].*" EQT CEO Toby Rice is different than most large company CEOs in that he has always been dialed in to all the elements of the natural gas call including the rapidly increasing natural gas demand from data centers to 2030. Bloomberg reported "*AI-related electricity demand is expected to translate to between 6 billion to 13 billion cubic feet of gas a day in the short term, Toby Rice, EQT's chief executive officer, said Tuesday. That compares with current total US* *consumption of just over 100 billion cubic feet a day."* This is consistent with EQT's Q2/24call that included the below slide that we attached to our tweet.

Figure 64: Data Center Demand Becoming the Cornerstone to Natural Gas Bull Case

Source: EQT Q2/24 call

Energy Transition: David Tepper "*going to have to use natural gas*" for AI power

Going to have use natural gas for AI

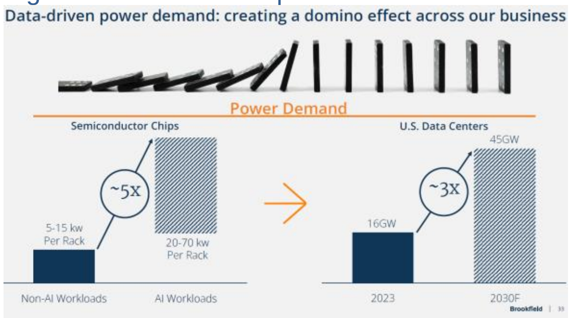
Appaloosa Capital's David Tepper has been more in the sports news of late for his Carolina Panthers NFL team. But he made his money to buy the team from his Appaloosa Capital, where he has had a great track record of investing and making big money. (i) China bull. Tepper was on CNBC Squawk Box on Thursday and his major message was on how he has been investing heavily in China post the recent US Fed decision to cut 50 bps. (ii) He also was clear the big electricity demand from AI had to come from natural gas. On Thursday, we tweeted [LINK] "*Common sense. "if you are going to meet these power needs of what they need for AI, you're going to have to use natural gas" Also can't retire a nuclear plant, won't get by PUCs "it can't, it's going to hurt the consumer too much" David Tepper Appaloosa Mgmt to @JoeSquawk @BeckyQuick @andrewrsorkin #OOTT #NatGas."* Tepper's message was simple, the AI power push is "*going to have to use natural gas*" and there will have to be natural gas drilling. Tepper said "*Okay, well, you can try but I am not going to accept it. But I do have a heck of a lot of common sense, and this is what I know, I know, I talked to some governors, you know, around the country, both sides of the isle - friendly with everybody as you know. Um, so um, they are not going to let their nuclear power come offline, it's not going to happen- it's a joke. Some of these projections, some of these things are crazy. It has to be if you are going to meet these power needs of what they need for AI, you're going to have to use natural gas…you are going to have to use natural gas, its just".* CNBC's Joe Kernen said "*And that comes from drilling*." And Tepper continued "*Yea I mean we have a lot of it, and you know so, you have to use, you know, you are going to have to use it*." (iii) Can't retire nuclear. Tepper was also clear that nuclear won't be retired because it means costs to consumers would go up. Tepper said "*You cannot take the, if you take a current nuclear plant, and you think you are going to get these things, it will never get by these individual, y'know, P.U.C.'s. It won't, it can't, it is going to hurt the consumer too much; you can't hurt the consumer that much, it's nuts. So, I hear these guys talk about well if we, y'know, if we did this, if I was… okay, well if I was 7'2" I would have been in the NBA one day, I am not 7'2". Okay, if you want to say something that can't possibly happen."*

Energy Transition: Brookfield also sees huge data center electricity demand growth

Brookfield on data center growth

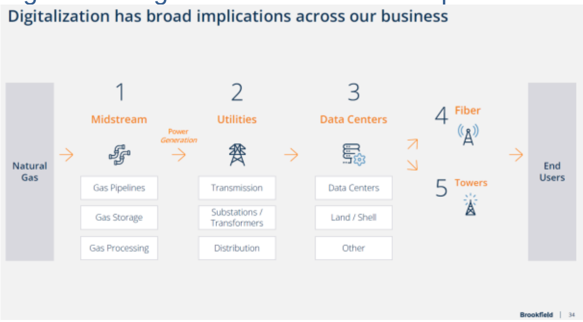
On Tuesday, Brookfield Infrastructure Partners held its investor day and was another major energy infrastructure player to highlight the massive AI data center growth requires natural gas. The vast majority of the presentation was on financial items, but BIP also highlighted the massive increase in data center electricity consumption and how this electricity demand would unlock value in their natural gas assets including their natural gas storage. BIP highlighted that power demand from US data centers would be up 3x in the next five years from 16 GW in 2023 to 45 GW in 2030. Brookfield did not specify how much of a role they see for natural gas in that electricity consumption growth but we assume they would be like others and assume natural gas is going to be the anchor for providing 24/7 electricity to data centers. Also note their view of data center electricity demand growth. If we use the Orsted 1 GW is enough to power 1 million homes, it reinforces the fight for baseload electricity this decade. My fears remain that data centers are 24/7 and they will do things to get 24/7 natural gas,, nuclear and coal before it gets to the grid and make the grid more vulnerable to outages.

Figure 65: Data-driven power demand



Source: Brookfield Infrastructure Partners

Figure 66: Digitalization has broad implications across Brookfield natural gas business



Source: Brookfield Infrastructure Partners

Energy Transition: No surprise, Volkswagen lowers car sales guidance again

Volkswagen lowers car sales guidance agaiun

No one should be surprised to see Volkswagen's Friday press release that it was lowering its financial guidance for the 2nd time in the last couple months. We say no surprise given last week's AECA data that showed Germany BEV sales were -68.8% YoY in Aug. We would have assumed Volkswagen would have made a specific comment on EVs but Volkswagen did not provide separate how much of the downgrade was from EVs vs ICE. Rather Volkswagen said [LINK] "I*n light of a challenging market environment and developments that have fallen short of original expectations, particularly at Brand Volkswagen Passenger Cars, Volkswagen Commercial Vehicles and Tech. Components, Volkswagen AG is updating its forecast for the 2024 financial year as follows: The company now expects deliveries to customers to be around 9 million vehicles (2023: 9.24 million vehicles; previous forecast: increase of up to 3 percent). Volkswagen now expects Group sales revenue to be around 320 billion euros (2023: 322.3 billion euros; previous forecast: increase of up to 5 percent)."* Volkswagen did not say how much of this was due to EVs but we suspect EVs was a key part in light of the ACEA Aug new car sales data for Germany that showed BEV sales in Germany (not just VW) in Aug were down 68.8% YoY.

Germany BEV sales in Aug 2024 were -68.8% YoY

Volkswagen may not want to say it but we have to believe disappointing BEV sales are a key reason for its lowering passenger car sales guidance. Last week's (Sept 22, 2024) Energy Tidbits memo highlighted the ACEA data that showed Germany BEV sales in Aug 2024 were down a whopping 68.8% YoY. Here is what we wrote on Mercedes that included the BEV sales data. " *Here is what we wrote on the ACEA data in our comment on Mercedes 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."*

Figure 67: Germany 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

Volkswagen warned 2 mm less cars/yr sold in Europe, more guests at the table

The other reason why no one should be surprised by Volkswagen cutting it car sales guidance is what the CEO warned three weeks ago. Here is what we wrote in our Sept 8, 2024 Energy Tidbits memo. "*There is no question there is an EVs demand is way less than expected in Europe and this has been reflected in the EV strategy changes at Mercedes, Volkswagen, Volvo, etc. But we were reminded this morning by the Volkswagen CEO of the bigger picture car problem – overall demand isn't growing as expected. Volkswagen CFO Arno Antlitz reportedly reminded employees that there are 2 million less cars per year being sold in Europe and Volkswagen is "missing sales of around 500,000 cars, the sales for around two plants." And then the added issue for EVs, Chinese EVs are increasing competitors. Earlier this morning, we tweeted [LINK] "Reality facing EU car manufacturers, not just VW. "Fewer vehicles are being bought in Europe. At the same time, new competitors from Asia are pushing into the market with force. The cake has become smaller and we have more guests at the table" VW CEO Blume. Thx @krone_at #OOTT [LINK]." VW CEO Blume was interviewed by Bild am Sonntag (German news) but that report is under subscription. Fortunately, Kronen Zeitung (Austrian news) posted some of Blume's key quotes. Our tweet linked to the Kronen Zeitung report, which wrote "At ailing carmaker VW, everything seems to be even worse than initially assumed. Group board member Oliver Blume has announced "further measures". Because: Things cannot go on as they are now. After the Volkswagen Group's announcement that it would once again intensify the austerity course with job cuts and possible plant closures at the core VW brand, Group Board Member Oliver Blume describes the poor economic situation at Volkswagen as alarming. At the VW brand, the situation is "so serious that you can't just let everything continue as before," Blume told Bild am Sonntag. "Fewer vehicles are being bought in Europe. At the same time, new competitors from Asia are pushing into the market with force. The cake has become smaller and we have more guests at the table," the CEO continued." Separately, Kronen Zeitung reported [LINK] on VW's leadership meeting with 10,000 employees on Wednesday. "With a view to the locations, Antlitz referred to overcapacity. In Europe, two million fewer cars are currently sold per year than before the Corona pandemic. And that will hardly change. For VW, with a market share of around a quarter in Europe, this means: "We are missing the sales of around 500,000 cars, the* *sales for around two plants. And that has nothing to do with our products or poor sales performance. The market is simply no longer there.".*

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

Brutal EU Aug BEV sales

Volkswagen cutting their guidance again is another reminder of the tough Europe car market. Here is what we wrote in last week's (Sept 22, 2024) Energy Tidbits memo. "*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 68: 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

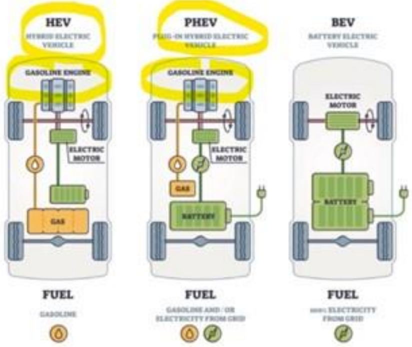
Source: ACEA

Energy Transition: 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 69: HV vs PHEV vs BEV



Source: Engineering Infrastructure

Capital Markets: Chicago Fed Goolsbee "lots of cuts to come over the next 12 months"

Goolsbee sees lots of rate cuts to come

One of the many stories to get the market looking for multiple FED rate cuts was from Chicago Fed President Austan Goolsbee on Tuesday on BloombergTV. Goolsbee ha a clear message that there are lots of rate cuts to come in the next year as rates are still hundreds of bps above the neutral rate. On Tuesday, we tweeted [LINK] "*Chicago Fed Goolsbee 👇1:38 min mark "make no doubt about it, we're hundreds of bps above the neutral rate" "there are , if conditions continue like this, there are a lot of cuts to come over the next 12 months. There is virtual unanimity about that." Thx @BloombergTV #OOTT."* Our tweet included the BloombergTV video clip of Goolsbee's more fulsome comments [LINK].

Capital Markets: USDA Consumer Price Index in Aug for food +0.1% MoM, +2.1% YoY

USDA CPI for food +2.1% YoY

We believe the USDA consumer food price index is supposed to be a much better indicator for grocery store prices than the UN's food commodity price index. But we continue to believe the actual prices at the grocery stores are way higher than indicated by the USDA inflation, or at least that is the view of consumers. And we highly doubt anyone who buys groceries, especially items like ground beef, would think grocery prices are only up +2.1% YoY. On Thursday, the USDA posted its August Consumer Price Index for food [LINK], which reported the Consumer Price Index for all food (CPI) was +0.1% MoM and +2.1% YoY in August. The +2.1% YoY increase in the Consumer Price Index has a relative weighting for the various food categories. Beef and veal were up +0.3% MoM, +4.2% YoY, and are expected to increase +5.2% over 2024, fresh vegetables are down -0.9% MoM, -0.4% YoY, and expected to increase +0.6% in 2024, retail eggs are up +4.8% MoM and +28.1% YoY, and expected to increase +4.9% in 2024. It is important to note the USDA said that the *"U.S. food prices are expected to continue to decelerate in 2024, compared to recent years. In 2024, prices for all food are predicted to increase 2.2 percent, with a prediction interval of 1.8 to 2.6 percent. Food-at-home prices are predicted to increase 1.1 percent, with a prediction interval of 0.5 to 1.6 percent. Food-away-from-home prices are predicted to increase 4.1 percent, with a prediction interval of 3.9 to 4.4 percent. In 2025, food prices are expected to increase more slowly than the historical average rate of growth. In 2025, prices for all food are predicted to increase 1.6 percent, with a prediction interval of -3.0 to 6.4 percent. Food-at-home prices are predicted to increase 0.8 percent, with a prediction interval of -5.9 to 8.2 percent. Food-away-from-home prices are predicted to increase 3.1 percent, with a prediction interval of 0.6 to 5.6 percent".*

Capital Markets: IFIC, mutual funds equity & balanced funds are net sales

IFIC Cdn mutual fund data

We have been highlighting the big change to Cdn mutual funds that started in Q2/22 – when there started a shift from net sales to massive net redemptions in balanced and equity funds. What started in H2/22 played out even bigger in 2023 and is continuing, but on a lesser scale, in 2024 to date. However, we are seeing the rate of net redemptions slow, and in 2024, we are beginning to see a return to net sales in some periods as YTD equity funds turning positive. IFIC does not provide any explanations but one of the key changes in the last few months is reducing interest rates. On last Thursday, IFIC (Investment Funds Institute of Canada) reported mutual funds and ETF sales for August [LINK]. IFIC reported net sales (purchasing of positions) for balanced funds to be -$1.383b in August net sales of -$1.025b in July. This brings the YTD figure for balanced funds net redemptions to -$21.271b, less than last year's August YTD figure of -$31.002b in YTD 2023. Equity funds saw net sales of $1.093b in August, after net sales of $2.088b in July and -$2.614b of net redemptions in

June. Equity fund net sales are down -$0.995b MoM from July. Recall February saw equity funds turn to net sales, which reversed a 12 month trend of net redemptions; March followed with small net sales in equity funds. Following this, Q2 saw net redemptions until July which once again returned to net sales. Our Supplemental Documents package includes the IFIC release.

Figure 70: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual fund net sales/net redemptions ($ millions)*

Asset class	Aug 2024	Jul 2024	Aug 2023	YTD 2024	YTD 2023
Long-term funds					
Balanced	(1,383)	(1,025)	(4,750)	(21,271)	(31,002)
Equity	1,093	2,088	(2,152)	1,212	(13,584)
Bond	2,538	3,307	(427)	16,339	8,591
Specialty	547	800	366	5,157	2,642
Total long-term funds	2,795	5,169	(6,963)	1,436	(33,353)
Total money market funds	(420)	31	1,302	2,194	10,142
Total	2,375	5,200	(5,661)	3,630	(23,211)

Source: IFIC

There were massive redemptions in Cdn active equity/balanced funds in 2023
2023 was a brutal year for net redemptions for Cdn balanced and equity funds and even more than in 2022. Here is what we wrote in our Jan 28, 2024 Energy Tidbits memo. *On Friday, we tweeted [LINK] "Brutal year for net redemptions in balanced and equity mutual funds in Canada. @ific reflects $82.5 billion net redemptions including $56.9b from balanced mutual funds and $25.6b from equity mutual funds. #OOTT." One of the big Cdn equity stories in 2022 continued to play out in an even bigger way in 2023 – the continued net redemptions from active managed Cdn equity and balanced mutual funds. This flipped in Q2/22 from massive net sales into balanced and equity mutual funds to massive net redemptions in equity and balanced mutual funds. This year, the 2023 net redemption total dwarfed those in 2022. On Wednesday, IFIC (Investment Funds Institute of Canada) reported [LINK] mutual funds and ETF sales for November. IFIC reported net redemptions for balanced mutual funds were $4.612b in December vs $6.510b in November and $8.569b in October. IFIC also reported net redemptions for equity mutual funds were $2.514b vs net redemptions of $3.178b in November and $4.142b in October. This means, barring any major revisions, that in 2023 there were $82.5b of net redemptions in balanced and equity mutual funds! This is more than double the net redemptions of 2022.*

Figure 71: Cdn Mutual Fund Net Sales/Net Redemptions ($ Millions)

Mutual fund net sales/net redemptions ($ millions)*

Asset class	Dec 2023	Nov 2023	Dec 2022	2023	2022
Long-term funds					
Balanced	(4,612)	(6,510)	(4,935)	(56,866)	(29,959)
Equity	(2,514)	(3,178)	(3,069)	(25,568)	(8,461)
Bond	845	(435)	(2,187)	6,986	(13,811)
Specialty	176	391	102	3,538	1,306
Total long-term funds	(6,105)	(9,732)	(10,088)	(71,909)	(50,925)
Total money market funds	790	1,227	1,802	14,825	7,196
Total	(5,315)	(8,506)	(8,286)	(57,084)	(43,729)

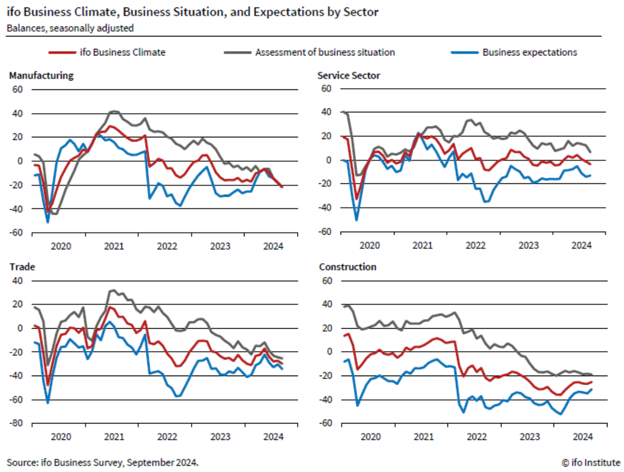
Source: IFIC

Capital Markets: Germany manufacturing index fell to its lowest level since June 2020

Germany business climate continues to decline

No surprise, the German business sector continue to look a declining business climate index. On Tuesday, Bloomberg interviewed Clemens Fuest on the then just released ifo Institute Business Climate Index for Germany. The ifo Institute posted its Business Climate Index for Germany and is message was clear and it continues to show a negative outlook. On Friday, we tweeted [LINK] "*ICYMI. German @ifo_Institut Business Climate Index. "in manufacturing, the index fell to its lowest level since June 2020...the core sectors of DEU industry are struggling". The core sectors (auto, machinery, chemical) are energy intensive & energy costs are way higher post end of cheap Russia pipeline #NatGas. #OOTT."* The ifo wrote. "*The outlook for the coming months continues to decline. The German economy is coming under ever-increasing pressure. In manufacturing, the index fell to its lowest level since June 2020. The companies assessed their current situation to be significantly poorer. Expectations are also significantly more pessimistic. The lack of orders has intensified. The core sectors of Germany industry are struggling*". In the interview, Bloomberg starts off the interview asking what are the biggest headwinds to the EU economy that has Germany at the core. Ifo's Clemens Fuest replies "*well I would say the key weakness is manufacturing, which is so important for the German economy. We see this weakness across the board really – machinery, the chemical industry, electrical equipment and the car industry. Companies are telling us we are lacking orders*". It jumped out at us that the common denominator for the highlighted industries is that they are high energy consumers and China is a key export market. Note later in the interview Bloomberg asks if we are getting to a floor in manufacturing. Fuest replies "*well the trouble is that we are seeing a decline in investment in manufacturing and, as long as we see that, the worry is that the production potential of this industry is declining further .. it's not quite clear when we will be reaching the floor …. It's difficult see a floor. It's really weakness of investment in Germany*". Our Supplemental Documents package includes the ifo Business Climate Index Sept 2024. [LINK]

Figure 72: ifo Business Climate, Business Situation, and Expectations by Sector

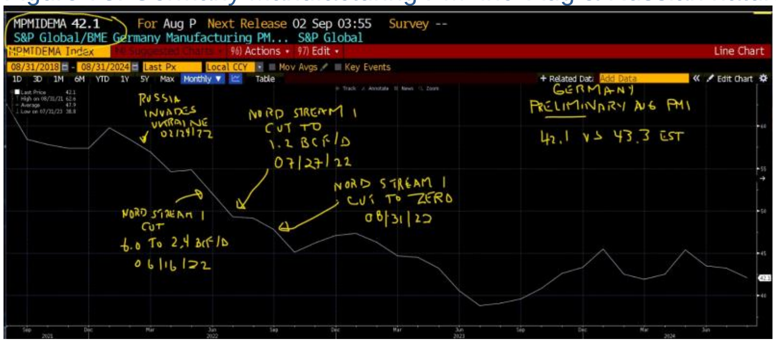


Source: Bloomberg, ifo Institute

Germany manufacturing PMI continues its big downward trend

Our tweet on the ifo data included the comment The core sectors (auto, machinery, chemical) are energy intensive & energy costs are way higher post end of cheap Russia pipeline #NatGas. As noted above ifo President in his Bloomberg TV interview highlighted "*We see this weakness across the board really – machinery, the chemical industry, electrical equipment and the car industry.*" We have been highlighting how Germany's industrial base has been hit having to get rid of cheap Russia pipeline natural gas. Our tweet included the below graph that was in our Aug 25, 2024 Energy Tidbits memo. Here is what we wrote in that memo. "*Germany manufacturing/industry started its big slide before Russia invaded Ukraine when Europe natural gas prices spiked and went into a steady big decline as cheap Russian natural gas via pipeline was cut to zero in 2022 following Russia's invasion of Ukraine. Cutting off cheap Russian natural gas has been the big hit to Germany's heavy industry. On Thursday, we tweeted [LINK] " "recession in Germany's manufacturing sector deepened in Aug, with no recovery in sight, in fact new orders took a shaper dive.." @CyrusdelaRubia There are other factors but the big one hammering DEU manufacturing was cutting off cheap Russian #NatGas via Nord Stream 1 post Russia invasion of Ukraine. Give Germany credit for supporting Ukraine #OOTT." On Thursday, the HCOB Manufacturing PMI for Germany showed an unexpected contraction in August from an already low number. It came in at 42.1 for August, down from 43.2 in July, and below estimates of 43.3. It was the lowest level in five months. Our tweet included the below Bloomberg graph of HCOB Manufacturing PMI for Germany and we noted the key cut off of Russian cheap pipeline natural gas and there is a clear correlation to lower Manufacturing PMI numbers*."

Figure 73: Germany Manufacturing PMI incl Aug & Russian natural gas events



Source: Bloomberg, SAF Group

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

Look for energy items on LinkedIn

Misc Facts and Figures.

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

Only 6 NFL teams that start 0-3 have made the playoffs
It's only week 4 of the NFL seasons but, in a relatively short 17-game season that sees 14 of 32 teams make the playoffs, every game counts. Almost all of the 0-2 teams won to go to 1-2. There were nine 0-2 teams and now that is down to three 0-3 teams: Cincinnati Bengals, Jacksonville Jaguars and Tennessee Titans. History says it's not impossible but highly unlikely for these teams to make the playoffs. All of these teams were considered good teams coming into the season, especially the Bengals who many picked to go far in the playoffs. One other reason why we could see the Jaguars and Titans surprise is that they are in the same division – the AFC South. If they can win within their division, they stand a better chance of winning a division with a much lesser winning record than some of the wildcard teams. The last to do so was the 2020 Washington Commanders who won the NFC East with a 7-9 record. Tere have only been six 0-3 teams that went on to make the playoffs. The last being the 2018 Houston Texans that finished at 11-5 to win the AFC South.

The 0-3 1998 Buffalo Bills made the playoffs thanks to Doug Flutie
Prior to the 0-3 2018 Houston Texans making the playoffs, the prior team to start 0-3 and get to the playoffs was the 1998 Buffalo Bills. Many Cdn sports fans followed all the Bills games that season because it was former CFL great Doug Flutie who got them into the playoffs only to not get the playoff start that the Bills lost. The Bills started Rob Johnson as QB for the first four games. Johnson was relatively inexperienced but was considered the prototypical QB with his size and speed and had been signed n the off season by the Bills for a big $25mm contract. But after getting the Bills to 1-3, the Bills moved to CFL great Doug Flutie to try to salvage the season. Flutie was old and short and never really got a great shot so came to be a star in the CFL. Flutie started the next 11 games, going 9-02 to get the Bills in the playoffs. They had their spot locked up so the Bills rested most of their starters in the final game. And despite Flutie being the reason for the Bills making the playoffs, then Head Coach Wade Phillips started Johnson in the playoff game and they lost.

Wine of the week: 2000 Chateau Giscours Grand Cru Classe en 1855, Margaux
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. On Friday, I tweeted out the wine of the week, which was the 2000 Chateau Giscours Grand Cru Classe en 1855, a Left Bank in Margaux. I decanted the wine for ~six hours. Keep in mind this was an inexpensive Bordeaux. It was very good and no different than I remember drinking a decade ago. 2000 was one of the best Left Bank vintages and prices were reasonable in 2003 so I bought some of the Premier Crus, more of the Deuxiemes Crus and Troisiemes Crus. And one Cinquiemes Crue, Chateau Lynch Bages, I visited them in the late 1980s and started buying Lynch Bages with the 1986 vingage. Chateau Giscours is a Troisiemes Cru. It wasn't expensive but Wine Spectator liked it and called it the best ever wine from Giscours. No reason to rush to drink the last couple bottles. The only lower level I buy is Chateau Lynch Bages, a Cinquiemes Cru because it was the first real Bordeau I bought in 1989.

Figure 74: 2000 Chateau Giscours Grand Cru Classe en 1855

Source: SAF Group