

Energy Tidbits

June 26, 2022

Produced by: Dan Tsubouchi

Russia's Natural Gas Squeeze Play is Real and Working: EU Govts Scramble To Avoid Winter 2022/23 Shortage

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. Our priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector. Our target is to write on 48 to 50 weekends per year and to post by noon MT on Sunday. The Sunday noon timing was because PMs said they didn't have research to read on Sundays and Sundays are a day when they start to think about the investing week ahead.

This week's memo highlights:

- 1. Russia's natural gas squeeze play is real and working, forcing Europe governments to scramble to try to avoid natural gas outages in winter 2022/2023 [LINK]
- 2. France energy CEOS warn high energy prices threaten "our social and political cohesion", and there is an immediate need to cut back on energy consumption [LINK]
- 3. The wave of LNG buyers locking up long term supply continues with 9.99 bcf/d of long term LNG supply locked up since July 1, 2021 [LINK]
- 4. Freeport LNG's review of its outage "do not indicate any manipulation or compromise of our security solutions" [LINK]
- 5. Grannholm/Oil CEO meeting called "productive" and "constructive" ie. no agreement but at least a discussion [LINK]
- 6. Please follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
- 7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK].

Dan TsubouchiPrincipal, Chief Market Strategist dtsubouchi@safgroup.ca

Ryan Dunfield Principal, CEO rdunfield@safgroup.ca Aaron Bunting Principal, COO, CFO abunting@safgroup.ca Ryan Haughn Principal, Energy rhaughn@safgroup.ca



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Natural Gas - Natural gas injection of +74 bcf, storage now -305 bcf YoY deficit

The YoY storage deficit started the winter at -282 bcf YoY at Oct 31 and is now -305 bcf YoY. The EIA reported a 74 bcf build (91 bcf expectations) for the June 17 week, which was above 5-yr average build of +100 bcf, and last year's injection of +55 bcf. Storage is 2.169 tcf as of June 17, decreasing the YoY deficit to -305 bcf vs -330 bcf last week and is -331 bcf below the 5-year average vs -323 bcf below last week. Below is the EIA's storage table from its Weekly Natural Gas Storage Report [LINK].

YoY storage at -305 bcf YoY deficit

Figure 1: US Natural Gas Storage

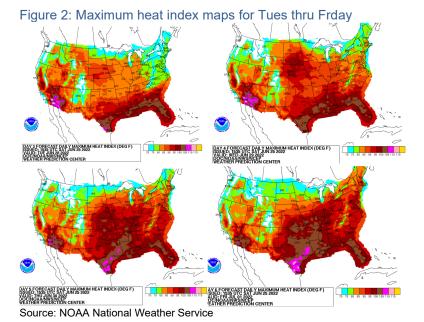
						Historical C	ompariso	ns
		billion		ear ago 6/17/21)		5-year average (2017-21)		
Region	06/17/22	06/10/22	net change	implied flow	Bcf	% change	Bcf	% change
East	430	407	23	23	484	-11.2	501	-14.2
Midwest	506	482	24	24	591	-14.4	577	-12.3
Mountain	128	122	6	6	168	-23.8	153	-16.3
Pacific	231	221	10	10	239	-3.3	260	-11.2
South Central	875	863	12	12	992	-11.8	1,009	-13.3
Salt	248	251	-3	-3	296	-16.2	305	-18.7
Nonsalt	628	612	16	16	697	-9.9	704	-10.8
Total	2,169	2,095	74	74	2,474	-12.3	2,500	-13.2

Source: EIA

Natural Gas - Hot temperatures to continue across most of the US

It's been a good month for temperature driven natural gas demand and looking to end on a strong note. Yesterday, we tweeted [LINK] "Same story as last week. Continued weather related demand for #Natgas. A hot June is also ending hot with warm temps across most of the US. Let's hope Americans set their AC to 64 degrees F. Thx @NOAA #OOTT" and

Hot weather in US



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Natural Gas – Americans see perfect temp for air conditioning is 64 degrees F

It's a good thing Americans aren't facing the same energy crisis as in Europe or in Japan. because they would be asked to reduce their use of air conditioning. Yesterday, we tweeted [LINK] ""According to the survey, the perfect temperature to keep the AC running at during the summer months is 64 degrees Fahrenheit". If accurate, the expected hot summer in US should be good for #NatGas. #OOTT." Newsweek reported [LINK] on a survey "conducted by OnePoll in partnership with Dave & Buster's, a Texas-based restaurant and video arcade chain" and wrote "According to the survey, the perfect temperature to keep the AC running at during the summer months is 64 degrees Fahrenheit."

Americans like AC set to 64F

Tokyo asked air conditioners be set to 28c or 82F

Here is what we put in our May 16, 2022 Energy Tidbits. "It was interesting to see Tokyo make a big push on energy conservation, which is a focus we expect other countries/regions to follow. The Tokyo Metropolitan Government announced [LINK] it "will strengthen and accelerate its efforts not only from the perspective of the climate crisis, but also from the perspective of ensuring stable energy over the medium to long term. The point is to reduce power consumption, create it, and store it. The keyword is HTT.From these three perspectives, we need to work together with the citizens of Tokyo and businesses in a total war." We tweeted [LINK] "Tokyo's energy conservation push 🖣 will be followed by EU. Also reminds of business trips to Japan post Arab Oil Embargo with office temps set to >80F except it was suits & ties. no suggestion of wearng cool (temp not fashion) short sleeve shirts to work. Thx @shoko_oda #OOTT." A few of their energy saving guidelines were put air conditioning room temperature to 28 °C during cooling times, don't overload the refrigerator, set refrigerator setting to a warmer temp, and the one that got the most headlines was turn off toilet seat heating off. Tied to the warmer room setting, Tokyo also suggested "Cool Biz fashion" showing a picture of short sleeves shirts. There were many other energy saving ideas. Our tweet noted that the higher temperature under air conditioning is much what Japan did post the Arab Oil Embargo,

Freeport LNG was <20% of US LNG exports

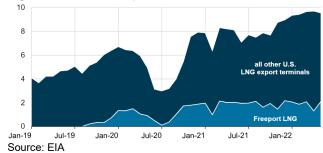
Natural Gas – Freeport LNG was <20% of US LNG exports

Last week's (June 19, 2022) Energy Tidbits noted the Freeport LNG update that its that it expected to get to partial (not defined how many bcf/d) in 90 days and full operations in late 2022. This has been the major negative to HH prices as it means that up to 2.2 bcf/d of natural gas wouldn't be exported via Freeport LNG and be looking for markets in the US. On Thursday, the EIA posted a blog [LINK] on the June 8 fire at Freeport LNG's natural gas liquefaction plant that provided a good picture showing what Freeport LNG means to US LNG exports. The shutdown of Freeport LNG will reduce total U.S. LNG export capacity by approximately 2 bcf/d, or 17% of total U.S. LNG export capacity. The article highlighted that feedgas flowing to Freeport LNG averaged 1.77 bcf/d from January to May 2022, and it averaged 1.83 bcf/d during the seven days before the fire. It had been operating at high utilization rates this year, similar to other U.S. LNG export facilities. During January–May 2022, Freeport LNG's utilization averaged 92% of peak capacity, compared with 86% of peak capacity during the same period last year and 87% of peak capacity in 2021. On exports from the terminal, the EIA stated "Exports from the Freeport LNG terminal averaged 1.9 Bcf/d from January to May 2022, compared with 1.8 Bcf/d during the same period last year and an



annual average of 1.9 Bcf/d in 2021. In a shift from historical trends in LNG export destinations, and similar to other U.S. LNG export facilities, almost three-quarters (72%) of exports from Freeport LNG were shipped to Europe (including Turkey) during the first five months of this year, compared with 29% on average during 2021. During January–May 2022, LNG exports from Freeport LNG to Asia declined by 64% compared with 2021 and averaged 0.3 Bcf/d (17% of the total exports)". Our Supplemental Documents package includes the EIA article.

Figure 3: US LNG Exports

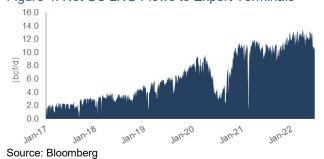


Natural Gas - US LNG feedgas flows reflecting Freeport LNG shutdown

For years, we have been highlighting how the predictive nature of US LNG export growth would be the key to providing less downside and more upside risk to US natural gas prices. To the most part, all of the capacity is contracted to the LNG buyer so it means the natural gas volumes are leaving the US. We have been highlighting how that means, prior to Freeport LNG shutdown, there was over 4 tcf of US natural gas leaving for export markets. The above EIA graph shows how US LNG exports doubled over the past two years. Below we put the Bloomberg data that shows how natural gas flows to LNG export terminals averaged 12.5 bcf/d in May but have since fallen to an average of 10.6 bcf/d since Freeport LNG shut down on June 8, hitting a low of 10.4 bcf/d on June 14.

LNG feedgas flows decline -2.4 bcf/d

Figure 4: Net US LNG Flows to Export Terminals



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Natural Gas - Freeport LNG says it wasn't a cyber attack that caused the shut down

Was it a cyber attack that shut down Freeport LNG? Freeport LNG says no. We don't have any inside information on what really happened to cause the explosion/fire that led to the shutdown of Freeport LNG 2.2 bcf/d export for at least 3 months. However, on Thursday, Bloomberg reported "Freeport LNG Says Cyberattack Wasn't the Cause of Terminal Fire. Freeport LNG ruled out a cyberattack as the cause of a June 8 fire at the Texas export terminal, the company said in an emailed statement. * "After a thorough assessment of our network, our internal cyber detection systems have been confirmed to be have been functioning properly and do not indicate any manipulation or compromise of our security solutions," the company said * NOTE: Plant expected to resume partial operations in September." Perhaps the real question is would Freeport LNG admit it was a cyber attack that forced a shut down? We would tend to say no.

Freeport LNG update

Natural Gas – Natural gas is still used for 56% of new single family US homes

One area that should continue to see increasing US natural gas demand well thru 2030 is natural gas for home heating in the US. We don't doubt that the Biden Administration will try to reduce natural gas for home heating, but, to do so, will require them to eliminate/outlaw natural gas for home heating. And we hope that, if that happens, he has a realistic alternatives that will be reliable, available and affordable. On Monday, the US Census Bureau posted "A House Tour by the Numbers. Highlighting Census Bureau Data on Housing and Construction During American Housing Month, National Homeownership Month", The Census Bureau provided the excel sheets that show how, despite the decline, natural gas is still the heating system was 56% in 2021, 56% in 2020 and 58% in 2019.

Gas is 56% of new US homes heating

Figure 5: % of Constructed Single Family Homes Heated by Gas or by Electricity



Source: US Census Bureau

Natural Gas - Cheniere FIDs Corpus Christi Stage 3 of ~1.3 bcf/d start end of 2025

There was no surprise that, on Wednesday, Cheniere announced [LINK] positive final investment decision on the Corpus Christi stage 3 liquefaction project. Stage 3 has a capacity of 10+ MTPA, which is ~1.3 bcf/d. Cheniere expects stage 3 to "provide much-needed volumes to the global LNG market by the end of 2025". Last Week, Cheniere closed on an

Cheniere FID Corpus Christi Stage 3



amended and restated approximately \$4 billion Senior Secured Term Loan due 2029, as well as an amended, extended and upsized \$1.5 billion Working Capital Facility due 2027. Cheniere's CEO stated "Reaching FID on Corpus Christi Stage 3 represents an important milestone for Cheniere as we move forward on this significant growth project, which will strengthen our market-leading LNG infrastructure platform, provide much-needed volumes to the global LNG market by the end of 2025, and create long-term value for our stakeholders". Our Supplemental Documents package includes the Cheniere press release.

Natural Gas - Mexico's natural gas production still stuck below 5 bcf/d, -0.6% YoY

Last week's (June 19, 2022) Energy Tidbits memo highlighted Mexico natural gas production figures taken from the monthly Comision Nacional de Hidrocarburos report because the Pemex data had yet to be released. On Friday, Pemex reported [LINK] its oil and gas data for May. Pemex reported natural gas production of 4.702 bcf/d, which was down -0.6% YoY and down slightly -0.8% MoM, from April. This was immaterially different from the CNH report, which had natural gas production at 4.739 bcf/d for May. For the past 3 years, an ongoing theme of the Mexican energy sector, has been their inability to grow domestic natural gas production. As a result, Mexico has relied on imports from the US which are reaching record levels; US pipeline exports to Mexico have increased ~2 bcf/d since Jan 1, 2018. Pemex does not provide any commentary along with its production data. Below is our ongoing table of Pemex reported monthly natural gas production.

Mexico natural gas still stuck below 5 bcf/d

Figure 6: Mexico Natural Gas Production (bcf/d)

Natural Gas Production bcf/d	2016	2017	2018	2019	2020	2021	21/20	2022	22/21
Jan	6.162	5.326	4.910	4.648	5.005	4.848	-3.1%	4.713	-2.8%
Feb	6.122	5.299	4.853	4.869	4.942	4.854	-1.8%	4.646	-4.3%
Mar	6.030	5.383	4.646	4.857	4.946	4.839	-2.2%	4.766	-1.5%
Apr	5.921	5.334	4.869	4.816	4.827	4.671	-3.2%	4.740	1.5%
May	5.841	5.299	4.827	4.841	4.460	4.730	6.1%	4.702	-0.6%
June	5.881	5.253	4.840	4.843	4.754	4.727	-0.6%		
July	5.785	5.216	4.856	4.892	4.902	4.725	-3.6%		
Aug	5.686	5.035	4.898	4.939	4.920	4.656	-5.4%		
Sept	5.619	4.302	4.913	5.017	4.926	4.746	-3.7%		
Oct	5.583	4.759	4.895	4.971	4.928	4.718	-4.3%		
Nov	5.515	4.803	4.776	5.015	4.769	4.751	-0.4%		
Dec	5.380	4.811	4.881	5.024	4.846	4.697	-3.1%		

Source: Pemex

Natural Gas – Why Chevron, Exxon, Shell & RWE are buying US Gulf Coast LNG

There is a reason why RWE (Germany), Chevron, Exxon and Shell have all looked to long term LNG deals from US Gulf Coast players – contract flexibility. On Thursday, Bloomberg reported "Qatar to Demand EU Sign Long-Term LNG Deals If It Wants More Gas: Push comes after Germany inked a 20-year LNG deal with the US". Bloomberg notes the reason why German LNG buyers haven't done deals yet with Qatar is that Qatar isn't moving to provide the same buyer flexibility as US Gulf Coast LNG players ie. Qatar is sticking to 20-year terms, not offering destination flexibility or the flexibility for the buyers to pass on cargos with a penalty. The reasons why Qatar hasn't been able to do deals with Germany are also the reason why Chevron, Exxon and Shell are doing their long term LNG deals with US Gulf Coast LNG suppliers. They have to have destination flexibility to be part of a portfolio. Our Supplemental Documents package includes the Bloomberg report.

US Gulf Coast LNG deal flexibility



Natural Gas – Qatar adds Exxon and ConocoPhillips to its massive LNG expansion

As expected, Qatar continues to roll out supermajors who are going to be involved in their massive LNG expansion. Last week, they announced TotalEnergies and Eni as partners, and, on Monday, they announced two more ConocoPhillips and ExxonMobil. On Monday, we tweeted [LINK] "Breaking: #Conoco wins 3.125% in @gatar_energy North Field East #LNG expansion that adds ~4.3 bcf/d by end 2025 report @V Ratcliffe @SimoneFoxman. No word yet if in North Field South that adds ~2.2 bcf/d in 2027. Current Qatar 10.1 bcfd reaches ~16.6 bcfd in 2027. #NatGas #OOTT". Our tweet noted that Conoco and Qatar are saying they are in the North Field East expansion and did not mention the North Field South expansion ie. they are only in North Field East. This is also true for ExxonMobil, which was the second partner announced on Monday. ExxonMobil announced [LINK] "With North Field East, ExxonMobil's participation in Qatar LNG volumes is expected to increase total capacity from 52 to 60 million tons per year. Under the terms of the agreement, QatarEnergy and ExxonMobil will become partners in a new joint venture company (JV), in which QatarEnergy will hold a 75% interest with ExxonMobil holding the remaining 25% interest. The JV will own 25% of the entire North Field East project, including four LNG trains with a combined nameplate capacity of 32 million tons per year".

Qatar continues naming partners in expansion

Qatar's LNG expansion is two Phases to add 6.5 bcf/d in total

Our tweet this on Monday [LINK] reminded that Qatar's expansion is two phases. (i) Phase 1: North Field East: increases existing LNG capacity from 77 to 110 million tons by 2026 ie. operational in 2025. This is an increase of 4.4 bcf/d from current 10.1 bcf/d to 14.5 bcf/d. (ii) Phase 2: North Field South: increases then 110 million tons to 126 million tons but won't be finished until 2027 ie. operational in 2027. This is an increase of 2.1 bcf/d from then current 14.5 bcf/d to 16.6 bcf/d. (iii) So total expansion of 6.5 bcf/d from current 10.1 bcf/d to 14.5 bcf/d sometime in 2025, and then ultimately to 16.6 bcf/d sometime in 2027.

Four more long term LNG deals

Natural Gas – Four more long-term LNG supply deals

The rush continues for LNG buyers locking up long term LNG supply as there has been 9.99 bcf/d of long-term LNG supply locked up since July 1, 2021. We say continues because it started a year ago and was well underway before Russia invaded Ukraine. But no question it has accelerated post the invasion. Our March 13, 2022 Energy Tidbits memo noted Europe's plan to move away from Russian pipeline natural gas and LNG is a global game changer for energy for at least the 2020s. We were already seeing clear signals of the bullish LNG for 2020s call since the end of June 2021 with the abrupt shift of Asian LNG buyers to long term contracts. Now, with Russia, the rush continues and from more than Asian LNG buyers. There continues to be a consistent news flow of more long-term LNG supply deals, especially for the quickest to market LNG from the US Gulf Coast. (i) On Monday, Venture Global LNG and EnBW announced [LINK] the execution of two long-term Sales and Purchase Agreements for 0.2 bcf/d of LNG from Venture Global's Plaquemines and CP2 facilities, starting 2026. We tweeted [LINK] "#LNGSupplyGap forcing LNG users to lock up long term supply. Germany's EnBW is latest, "binding agreement" to lock up 0.2 bcfd for 20 yrs from #VentureGlobalLNG. #EnBW says LNG "..builds a bridge to a green energy supply". #LNG #NatGas looks good thru 2030. #OOTT". According to the agreement, EnBW will purchase 0.1 bcf/d from Plaquemines LNG and 0.1 bcf/d from CP2 LNG for 20 years. (ii) On Wednesday, Sempra Infrastructure and INEOS Energy Trading announced [LINK] they have



entered into a heads of agreement for the long-term supply of LNG from Sempra Gulf Coast LNG portfolio of projects under development. We tweeted [LINK] "#LNGSupplyGap forcing #LNG users/traders to lock up long term supply. EU's INEOS Energy Trading is latest, HOA to lock up 0.18 bcf/d for 20 yrs from #Sempra proposed #PortArthurLNG or #CameronLNG Phase 2. #NatGas #LNG look strong thru 2030. #OOTT". (iii) On Wednesday, there were also two long term deals announced involving the supply of LNG to Chevron. Cheniere Energy announced [LINK] that two of its subsidiaries, Sabine Pass Liquefaction (SPL) and Cheniere Marketing, have each entered into long-term LNG sale and purchase agreements with Chevron. We tweeted [LINK] "#LNGSupplyGap. @exxomobil, @shell previously, @Chevron latest of #LNG supply leaders to lock up long term supply for their supply portfolios. #Chevron locking up 0.26 bcf/d for 15 yrs from @Cheniere. #NatGas & LNG look good thru 2030. #OOTT". At plateau, Chevron will purchase a combined 0.26 bcf/d of LNG from Cheniere. Under the first SPA, Chevron has agreed to purchase approximately 0.13 bcf/d of LNG from SPL. Deliveries under the SPA will begin in 2026, reach the full 0.13 bcf/d during 2027 and continue until mid-2042. Under the second SPA, Chevron has agreed to purchase approximately 0.13 bcf/d of LNG from Cheniere Marketing with deliveries beginning in 2027 and continuing for approximately 15 years. (iv) Venture Global announced [LINK] the execution of two long-term Sales and Purchase Agreements with Chevron for the purchase of 0.26 bcf/d of LNG for 20 years. We tweeted [LINK] "#LNGSupplyGap. A 2nd @Chevron deal today. This time, #Chevron locks up 0.26 bcf/d in 20 yr deal @VentureGlobal for their supply portfolio. #NatGas & #LNG look good thru 2030. #OOTT". Under the agreements, Chevron will purchase 0.13 bcf/d from the Plaquemines LNG facility and 0.13 bcf/d from CP2 LNG. Plaguemines LNG has been under full construction since August of 2021 and the construction of CP2 LNG is expected to commence in 2023. Our Supplemental Documents package includes the Venture Global, Sempra, and Cheniere releases.

Major LNG suppliers are also buying other's LNG for their supply portfolios Our Wednesday tweet on the first Chevron LNG deal [LINK] reminded that Chevron has now joined Exxon and Shell as major global LNG suppliers who are committing to buy long term LNG from other LNG providers to add to their LNG portfolios. This gives them the flexibility to have other LNG supply in the event of outages in their own LNG supply projects. One of the major LNG stories of the past year has been LNG supply outages including at Chevron's Gorgon LNG and Shell's Prelude LNG.

Asia is still well in front of Europe in securing long term LNG supply

Our March 13, 2022 Energy Tidbits memo noted that Europe LNG buyers were starting 9 months behind the wave of Asian LNG buyers who started to lock up long term LNG supply starting in July 2021. It was clear to many that there was a major sea change in LNG outlook. We turned very bullish on LNG outlook for the 2020s once TotalEnergies went force majeure on its Mozambique LNG in April 2021. We posted our April 28, 2021 blog "Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?" as we thought the market had overlooked that this force majeure backed up 5.0 bcf/d of Mozambique LNG that was originally planned to start in phases in 2024. And that this would create an earlier and larger LNG supply gap in the mid 2020s. Then we started to see validation of this view when Asian LNG buyers in July made an abrupt change to their LNG contracting and pivoted to trying to lock in long term LNG



supply. On July 14, 2021 we posted our 8-pg "Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs". Here is an excerpt from the blog "The last 7 days has shown there is a sea change as Asian LNG buyers have made an abrupt change in their LNG contracting and are moving to lock in long term LNG supply. This is the complete opposite of what they were doing pre-Covid when they were trying to renegotiate Qatar LNG long term deals lower and moving away from long term deals to spot/short term sales. Why? We think they did the same math we did in our April 28 blog "Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?" and saw a much bigger and sooner LNG supply gap driven by the delay of 5 bcf/d of Mozambigue LNG that was built into most, if not all LNG supply forecasts. Asian LNG buyers are committing real dollars to long term LNG deals, which we believe is the best validation for the LNG supply gap. Another validation, Shell, Total and others are aggressively competing to invest long term capital to partner in Qatar Petroleum's massive 4.3 bcf/d LNG expansion despite plans to reduce fossil fuels production in the 2020s. And even more importantly to LNG suppliers, the return to long term LNG contracts provides the financing capacity to commit to brownfield LNG FIDs. The abrupt change by Asian LNG buyers to long term contracts is a game changer for LNG markets and sets the stage for brownfield LNG FIDs likely as soon as before year end 2021. It has to be brownfield LNG FIDs if the gap is coming bigger and sooner. And we return to our April 28 blog point, if brownfield LNG is needed, what about Shell looking at 1.8 bcf/d brownfield LNG Canada Phase 2? LNG Canada Phase 1 at 1.8 bcf/d capacity is already a material positive for Cdn natural gas producers. A FID on LNG Canada Phase 2 would be huge, meaning 3.6 bcf/d of Cdn natural gas will be tied to Asian LNG markets and not competing in the US against Henry Hub. And with a much shorter distance to Asian LNG markets. This is why we focus on global LNG markets for our views on the future value of Canadian natural gas." Our Supplemental Documents package includes our April and July blogs.

There have been 9.99 bcf/d of long term LNG supply deals since July 1, 2021 We first highlighted this abrupt shift to long term LNG supply deals 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 included a table of the deals done in that short two week period. We continue to update that table, which now shows 9.99 bcf/d of long term LNG deals since July 1, 2021. 67% 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. And as seen in the Equinor deal, major LNG supply companies like Exxon, Shell and now Equinor are locking up long term LNG supply to add to their portfolios for LNG supply to others. Below is our updated table of Asian and Europe LNG buyers new long term supply deals since July 1, 2021.



Figure 7: Long Term LNG Supply Deals since July 1, 2021

Date	Buyer	Seller	Country	Volume	Duration	Start	End
			Buyer / Seller	(bcf/d)	Years		
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
Sept 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
lov 5, 2021	Sinochem	Cheniere	China / US	0.12	17.5	2022	2040
lov 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	2043
				0.13	15.0	2022	2034
Dec 8, 2021	S&T International	QatarEnergy	China / Qatar				
Dec 10, 2021	Suntien Green Energy	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 15, 2021	SPIC Guangdong	BP Venture Clahel I NC	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
lan 11, 2022	ENN	Novatek	China / Russia	0.08	11.0	2024	2035
lan 11, 2022	Zhejiang Energy	Novatek	China / Russia	0.13	15.0	2024	2039
eb 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	0.20	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
lune 5, 2022	China Gas Holdings	Energy Transfer	China / US	0.09	25.0	2026	2051
	uyers New Long Term Co			6.67			
lon-Asian LNG De							
lul 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
March 7, 2022	Shell	Venture Global LNG	US / US	0.26	20.0	2024	2044
March 16, 2022	NFE	Venture Global LNG	US / US	0.20	20.0	2024	2044
March 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
May 2, 2022	Engie	NextDecade	France / US	0.13	15.0	2026	2043
May 17, 2022	PGNiG	Sempra Infrastructure		0.40	20.0	n.a.	n.a.
May 25, 2022	RWE Supply & Trading	Sempra Infrastructure		0.67 0.23	15.0 15.0	n.a.	n.a.
une 9, 2022	Equinor	Cheniere	Norway / US			2026	2041
lune 21, 2022	EnBW	Venture Global LNG	Germany / US	0.20	20.0	2026	2046
une 22, 2022	INEOS Energy	Sempra Infrastructure		0.18	20.0	n.a.	n.a.
June 22, 2022	Chevron	Venture Global LNG	US / US	0.26	20.0	n.a.	n.a.
June 22, 2022	Chevron	Cheniere	US / US	0.26	15.0	2027	2042
	NG Buyers New Long Ter		/21	3.32			
	rm LNG Contracts since	Jul/21		9.99			
	rt term/spot deals						

Source: Company reports, SAF Group

Natural Gas – Average length of 2022 LNG contracts is >17 years

We have been highlighting for the past year that the best indicator for the strength of the LNG outlook is the big pivot of LNG buyers abruptly shifting to long term LNG contracts. On Thursday, we tweeted [LINK] "Best validation of #LNGSupplyGap - buyers lock up long term #LNG supply. @pat_syk graph notes average term of 2022 deals not >17 yrs. Abrupt change to long term started July 2021, see SAF Group July 14/21 blog [LINK]. LNG, #NatGas looks strong thru 2030 #OOTT." Bloomberg tweeted [LINK] the below graph saying "The duration of LNG supply contracts is rising just as Europe tries to cut reliance on Russian pipeline gas. Good news for sellers trying to finance projects. Bad for EU buyers hoping gas is a short bridge to renewables. Data from @BloombergNEF. #ONGT". It's a pretty clear picture, it shows the average length of new LNG contracts started to accelerate off the all time bottom in 2020 and is now >17 years. Our tweet referenced our July 14, 2021 blog "Asian LNG"

LNG contract length now >17 yrs

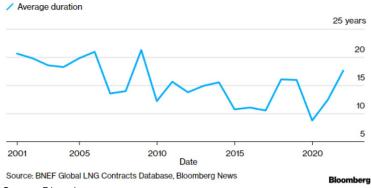


Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs".

Figure 8: Average duration of LNG contracts

Long Haul

The average duration of LNG contracts has risen to a 13-year high



Source: Bloomberg

Natural Gas – Will Total restart Mozambique LNG if security issues are next door?

It's been reasonably quiet in the security issues situation in the key Palma district in Cabo Delgado province in Mozambique, which is the key district for TotalEnergies Mozambique LNG and Exxon's Rozuma Mozambique LNG. This seemed confirmed by this week's Cabo Ligado Weekly: 13-19 June 2022 security update. The thought that jumped out at us from reading the security update is will TotalEnergies restart their Mozambique LNG if the security situation is fine in the Palma district but there are increasing insurgent attacks in neighbouring districts. The Cabo Ligado security update had the below map and noted how the insurgent attacks are in adjacent districts. It raises the question of how much of a security buffer does TotalEnergies need? We don't know the logistics of the Mozambique supply chain, but would assume that there will be options for many items as Palma district is on the coast. Our Supplemental Documents package includes the Cabo Ligado weekly update. [LINK]

Mozambique security update



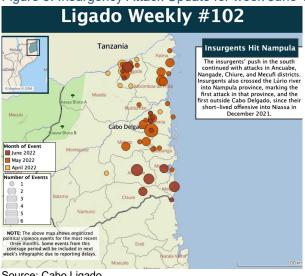


Figure 9: Insurgency Attack Update for week June 13-19

Source: Cabo Ligado

TotalEnergies said take at least thru 2022 before restart Mozambigue LNG

We have not see any official update from TotalEnergies on a potential restart date for construction on the Mozambique LNG project. Here is what we wrote in our May 1, 2022 Energy Tidbits. "It wasn't what Mozambique was hoping to hear from the TotalEnergies Q1 call on when they expect to restart their Mozambique LNG Phase 1 construction. But, in reality they should be happy as TotalEnergies did seem to point to a potential restart a few months earlier than they said in their Q4/21 earnings call. Will take at least through 2022 before a potential restart. TotalEnergies did not say when but they seemed to leave the door open to a restart could happen in early 2023. A restart in April 2023 would mean that the force majeure caused a minimum two year delay. On Thursday, we tweeted [LINK] "Restart of TotalEnergies Mozambique LNG Phase 1 not expected in 2022. @PPouyanne "my view is that all that will take at least 2022, and then what we plan on our side is to willing to go back there." Security much improved but "not yet fully recovered" Thx @business. #OOTT #LNG" CEO Pouyanne noted the improving security situation but said "So that I said there is an activity on the ground, not from us, but from the Government of Mozambique and utilize to recover the security and then to bring back as a population in piece to over normal life. We saw the two conditions we agreed with the Mozambique government, my view is that all that will take at least 2022, and then what we plan on our side is to willing to go back there. And as I said, last time we reshuffled activities a but I will have be able to visit (inaudible) Palomar and Mozambique mostly by the prior year. Because my security people told me not to go, I will not send any of my people of contractors to face a difficult situation. So I think it's a matter of, as I said before, there is a good news. Good news and the run the security as much improved and less, much less. I would say with the fact, it's not yet fully recovered. I think the Government of Mozambique communicated, but they the objective is to recover the security."



Natural Gas - Korea to suspend coal plant restrictions due to high LNG prices

The rapidly growing global theme is how high LNG prices are causing countries to try to cut back on natural gas consumption, and not just in Europe. On Friday, Argus reported [LINK] Seoul plans to suspend voluntary coal plant restrictions during July-August this year in a bid to reduce LNG use during the peak demand period. This suggests that Kepco's coal-fired fleet could operate closer to available capacity, which is set to average 27.8GW in July-August, based on the latest maintenance schedule. Argus stated "Assuming that Kepco's coal-fired units are loaded at 93pc — an average load in July-August 2018, before any coal-fired plant restriction measure was introduced — the state-owned company's coal-fired output could increase to 25.9GW in July-August this year, up from 24.5GW average output a year earlier. Based on Argus analysis, South Korea's combined nuclear and coal-fired output could increase by around 6.5GW in July-August, which is equivalent to around 1.26mn t of LNG or 17-18 standard-sized LNG cargoes". The stronger coal-fired generation in South Korea could help utilities to reduce LNG use during the peak cooling season. Our Supplemental Documents package includes the Argus article.

Korea to suspend coal plant restrictions

Natural Gas - China's LNG imports -29.9% YoY in May

We have been warning that China's LNG imports will be less in 2022 for three key reasons - higher pipeline imports of cheaper Russian natural gas via Gazprom's Power of Siberia, increasing domestic natural gas production, and higher LNG prices. China customs posted China's May natural gas imports split by pipelines vs LNG. The customs data is at [LINK]. The customs data reports China May LNG imports of 7.64 bcf/d, -29.9% YoY and +9.68% MoM. And China natural gas pipeline imports of 6.4 bcf/d, +26.1% YoY and +7.38% MoM. This marks a new record for China's pipeline imports, which are primarily from Turkmenistan and Russia. Below are our running tables of China LNG and pipeline imports.

China LNG and pipeline imports

Figure 10: China LNG Imports

bcf/d	2018	2019	19/18	2020	20/19	2021	21/20	2022	21/22
Jan	8.03	10.20	27.1%	10.31	1.1%	13.15	27.6%	12.10	-8.0%
Feb	6.84	7.46	9.1%	7.26	-2.7%	9.52	31.1%	8.34	-12.4%
Mar	5.04	6.28	24.8%	6.49	3.3%	8.74	34.6%	7.17	-17.9%
Apr	5.43	7.27	34.0%	8.16	12.3%	10.77	32.0%	6.96	-35.4%
May	6.39	6.87	7.6%	8.10	18.0%	10.89	34.4%	7.64	-29.9%
June	6.31	7.25	14.9%	9.27	27.8%	10.76	16.1%		
July	6.40	7.56	18.1%	7.79	3.1%	8.78	12.7%		
Aug	7.26	8.04	10.8%	9.23	14.8%	10.30	11.6%		
Sept	7.00	8.16	16.7%	9.17	12.4%	10.81	17.8%		
Oct	7.13	4.09	-42.6%	7.78	90.0%	9.56	22.9%		
Nov	9.59	10.42	8.7%	10.58	1.6%	11.05	4.4%		
Dec	9.75	10.01	2.7%	11.76	17.5%	11.82	0.5%		
Full Year Avg.	7.10	7.80	9.9%	8.83	13.1%	10.51	19.1%	8.44	-19.7%

Source: Bloomberg, China Customs



Figure 11: China Pipeline Imports

bcf/d	2018	2019	19/18	2020	20/19	2021	21/20	2022	22/21
Jan	4.0	5.0	24.9%	5.2	3.5%	4.9	-4.5%	5.4	8.8%
Feb	5.0	5.5	9.0%	5.7	3.8%	6.1	7.2%	6.4	3.9%
Mar	4.2	4.5	6.4%	4.2	-5.2%	4.8	12.8%	5.2	9.1%
Apr	5.5	5.0	-9.3%	4.2	-15.5%	5.5	30.1%	6.0	9.4%
May	5.1	4.8	-4.3%	4.0	-16.6%	5.1	26.2%	6.4	26.1%
Jun	5.3	4.8	-10.3%	4.1	-15.0%	5.6	37.4%		
Jul	4.7	4.7	0.0%	3.6	-23.3%	5.7	58.9%		
Aug	4.7	4.9	3.1%	5.3	7.9%	5.9	11.5%		
Sep	5.2	5.0	-4.2%	4.7	-6.0%	6.2	32.1%		
Oct	4.2	3.8	-8.1%	3.9	1.0%	5.0	28.0%		
Nov	5.1	4.7	-6.9%	4.1	-13.0%	6.1	48.9%		
Dec	4.6	4.7	3.9%	5.6	18.9%	6.2	10.7%		

Source: Bloomberg, China Customs

Natural Gas - Japan near term temps continue to be positive for natural gas demand

The warm June continues with JMA forecasting much warmer than normal temperatures to end June. Warmer than normal temperatures in late June are positive for natural gas demand. The Japan Meteorological Agency posted its June 25 to July 1 weather forecast [LINK] calling for warmer than normal near-term temperatures. This type of weather will finally drive some significant weather-related natural gas demand for air conditioning. For example, AccuWeather is forecasting daily highs of 33c to 34c for Tokyo this week.

Warm near-term forecast in Japan





Source: Japan Meteorology Agency

Natural Gas - Japan's LNG stocks down -0.9% from last week

As a reminder, Japan's LNG stockpiles are not huge relative to LNG imports that have ranged from 7 to 14 bcf/d since Jan 1, 2021. LNG stockpiles held by Japanese power producers have exceeded both last year's level and the 4-year average. Japan's METI weekly LNG stocks data was released on Wednesday [LINK]. LNG stocks at June 19 were ~110 bcf, -0.9% WoW from 111 bcf and up from the 5-yr average of 94 bcf. Below is the LNG stocks graph from the METI weekly report.

Japan LNG stocks -0.9% WoW



Figure 13: Japan's LNG Stocks



Natural Gas – Russia natural gas squeeze play on EU is real, govt are scrambling

Last week's (June 19, 2022) Energy Tidbits highlighted an item "Russia starts natural gas squeeze play on EU, winter 22/23 looks ugly" that built on our June 19 tweet [LINK] "Russia starts #NatGas squeeze play on EU. Never let a good crisis go to waste. #FreeportLNG 2.2 bcfd goes down, then 2.4 bcfd cut in #NordStream available capacity. EU needs to urgently cut #NatGas consumption to try to avoid winter 22/23 shortages. Bullish for #LNG #Coal. #OOTT." This week, we had a number of tweets that started off "#RUS #Natgas supply squeeze is real" as we have seen a number of European countries realize there is a huge risk to power/natural gas shortages in winter 2022/2023. And at least the governments realize they need to take immediate action now to try to do their best to try to have full natural gas storage going into the winter. No surprise, they are already focused on conservation of natural gas consumption, but the other big winner is coal is back. It's not just the below countries, we ran out of time this weekend to write up other countries.

Austria changing a natural gas plant back to coal fired power

On Monday, we tweeted [LINK] "#RUS #NatGas Supply Squeeze is real. @ReutersCarrel reports Austria agreed with utility Verbund to convert a reserve, gasfired power plant so that it can produce electricity with coal should restricted gas supplies from Russia result in an energy emergency. #NatGas #OOTT." On Monday, Reuters reported [LINK] on Austria's flip flop on closing coal plants. Austria had previously shut down its last coal-fired power plants (Mellach) so it could be converted to a natural gas-fired power plants, but now Austria has decided to reverse that. Reuters wrote "The federal government and the energy group VERBUND have agreed to convert the Mellach (Styria) district heating power plant, which is currently shut down, so that in an emergency it can once again produce electricity from coal (not gas)," Nehammer's office said in a statement." Our Supplemental Documents package includes the Reuters report.

Germany changing law to let coal-fired power until March 31, 2024

Last week's (June 19, 2022) Energy Tidbits highlighted the WSJ report that was posted just before our 7am MT news cut off. WSJ reported "Germany Steps Up Measures to Conserve Gas as Russia Slows Supply to Europe. Berlin to restart coalfired plants and auction gas to reduce consumption." [LINK]. Later last Sunday, the 4-pg Germany press release "Habeck: "We are further strengthening precautions and

Russia natural gas squeeze is real



taking additional measures to reduce gas consumption" [LINK] provided the details. (i) One key detail is that Germany is changing the law to allow for more coal-fired power generation and that this is until March 31,2024 ie. basically 2 years, not just for the winter 2022/23. (ii) Germany wrote "In order to reduce gas consumption, less gas is to be used to produce electricity. Instead, coal-fired power plants will have to be used more. The corresponding law on the availability of replacement power plants, which makes this possible, is currently in the parliamentary process and is to be dealt with in the Bundesrat on July 8th and then come into force quickly". (iii) High gas prices, not Russia, have already hit gas consumption. "In view of the price structure, this means that gas-fired power plants are being squeezed out of the market. Gas contributed around 15 percent to public electricity generation in 2021, but the share is likely to be lower in the first few months of 2022." (iv) "A gas auction model is to be launched in the summer, which will encourage industrial gas consumers to save gas." (v) "THE is thus obliged to gradually fill the gas storage facilities up to 90 percent by December 1, 2022. The filling level should reach at least 65 percent by August 1st and at least 80 percent by October 1st." Our Supplemental Documents package includes the Germany release.

Netherlands to boost coal-fired electricity production

The Netherlands plans to use coal-fired power stations at full capacity in the coming period to make sure there is enough gas to heat homes over the winter, though there is no acute shortage of gas at the moment. On Monday, we tweeted [LINK] "#RUS #NatGas supply squeeze is real. NLD lets 4 #Coal-fired power generators go at 100% capacity vs current 35% restriction. Urge Dutch to cut back on consumption now ie. take shorter showers. Thx @DutchNewsNL Robin Pascoe. No wonder JKM #LNG futures are ~\$39 in Aug/Sep. #OOTT". The four power stations are all supposed to have switched to non-fossil sources by 2030. The Dutch climate minister stated, "It might be an odd thing to ask in the summer, but every cubic metre of gas counts. So take shorter showers and increase your home insulation now, to use less gas in the winter". Our Supplemental Documents package includes the Dutch news report.

Natural Gas - France energy CEOs warn need to immediately cut natural gas use

It's not just governments that are worried about natural gas shortages this winter, it's also France energy CEOs. Earlier this morning, we tweeted [LINK] "Fears or expectations of #NatGas #LNG shortage this winter? "We must initiate a major energy efficiency program and a national waste hunt. The effort must be immediate, collective and massive" (@TotalEnergies (@ENGIEgroup (@EDFofficiel CEOs. #OOTT." This morning, the CEOs of TotalEnergies, EDF and Engie posted their op-ed on the need to immediately cut back on consumption of natural gas. The headlines from the op-ed "The soaring energy prices that result from these difficulties threaten our social and political cohesion and have a too heavy impact on the purchasing power of families. This is why we are launching this joint appeal." There was much more in the op-ed. "Although increasing, imports of liquefied natural gas (LNG) are today still too limited to offset these declines. The level of alert on gas stocks at European level is therefore high and rationing measures are put in place in some countries." This was the reality check — LNG can't replace Russian pipeline gas. As a result, the CEOs focused on the need to immediately cut natural gas consumption. And one that requireds a

France energy CEOs warn on energy



massive effort. They wrote "But – more than ever – the best energy is still the one we don't consume. We must, collectively, act on energy demand by reducing our consumption to restore our room for manoeuvre. We will need it to manage future peaks in consumption and to cushion any technical hazards or geopolitical shocks that we may have to face. Acting this summer will allow us to be better prepared to tackle next winter and in particular to preserve our gas reserves. Make no mistake: saving energy means increasing purchasing power and also reducing greenhouse gas emissions. We therefore call for awareness and collective and individual action so that each of us - each consumer, each company - changes their behavior and immediately limits their consumption of energy, electricity, gas and petroleum products. We must initiate a major energy efficiency program and a national waste hunt. The effort must be immediate, collective and massive. Every gesture counts." Our Supplemental Documents package includes the France CEOs op-ed. [LINK]

Natural Gas – Europe storage is now +9.50% YoY ie. 54.78% full vs 45.28%

The urgency to refill Europe storage post Russia has worked, at least so far, but the real test is now coming with the cut back in Nord Stream volumes. But, the YoY Europe storage gap has changed to a YoY storage surplus. Europe gas storage started down 18.52% YoY and is now a YoY surplus of 9.50%. Inventories are rising all across Europe, as is normal during spring and early summer. Europe gas storage started last winter (Nov 1/20) at basically full levels at 94.66% and had dropped by 65.77% to be 28.89% at Apr 1/21. Europe storage levels bottomed in late Apr at 29%, which was the lowest level since Apr 2018. This winter began (Nov 1/21) with gas storage at 77.14% capacity, down 18.52% YoY. The YoY deficit has turned to surplus after months of the deficit tightening. Thanks to the warm weather and US LNG, storage as of June 22 is at 54.78 %, which is +9.50% greater than last year levels of 45.28% and are -2.13% below the 5-year average of 57.32%. As spring injections continue, we expect to see a decline in demand for LNG as less is used to heat homes. Below is our graph of Europe Gas Storage Level.

1 500 4 500 4 000 1.000 3,500 3.000 € 500 bcf YoY 1,500 -500 1.000 -1.000 500 0 -1,500 Od-19 Jan-20 Apr-20 Jul-20 Od-20 Jan-21 Apr-21 Jul-21 Od-21 YoY Surplus (LHS) YoY Deficit (LHS) — Change vs 5 Yr Avg (LHS) — Europe Gas Storage (RHS)

Figure 14: Europe Gas Storage Level

Source: Bloomberg

Europe storage now 54.78% full

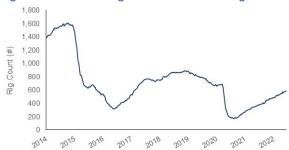


Oil - US oil rigs +10 WoW to 584 oil rigs at June 24

Baker Hughes released its weekly North American drilling activity data on Friday. There are still extremely strong oil, NGLs and natural gas prices and industry has fresh (and many modestly increasing) 2022 capex budgets and the reality is that industry needs to crank up drilling to increase the depleted inventory of DUCs. This week US oil rigs were +10 WoW at 594 oil rigs. Oil rigs are +422 off the bottom of 172 in Aug 14/2020 week. Permian was +4 at 348 rigs this week, and the Bakken was flat at 37 rigs after no change last week. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by -89 to 594 oil rigs (-13%). US gas rigs were +3 to 157 rigs.

US oil rigs +10 WoW

Figure 15: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

Oil - US frac spreads +5 to 289 for the week ending June 24

Mark Rossano (C6 Capital Holdings) held his weekly US frac spread recap for the week ending June 24 on the Primary Vision network. YouTube video is at [LINK]. For the week ending June 24, US frac spreads at the high point in the week were +5 to 289. Even with the +5, there were declines in some of the smaller basins. Instead of hitting 290 by the end of June, now thinks should get to 295 as get to the kick off of July and closer to 300. Realistically, seeing 300 to 310 as the likely range with about 325 "out there", but typically won't get there even if there are 325 spreads. Permian is close to being sold out. Western Gulf saw additional levels, an area he sees with opportunity along with the Permian and Anadarko. Still sees US on track to hit his 12.2 mmb/d 2022 exit rate. Also sees rig count rising which should see a buildup of DUCs that are needed

Frac spreads +5 to 289

Oil - Total Cdn rigs -2 WoW at 154 total rigs, +115 rigs YoY

Total Cdn rigs were -2 total rigs this week at 154. Cdn oil rigs were flat at 104 rigs. Cdn gas rigs were -2 at 50 gas rigs. This was the first minor down week and we don't believe it indicates anything other than rig moves. Canada is in the post spring break up period, which means there will be strong increases in rig counts through the summer. Total rigs are now +141 since the June 26, 2020 all-time low. Cdn drilling has recovered YoY, a year ago Cdn oil rigs were 82 and Cdn gas rigs were 44 for a total Cdn rigs of 126, meaning total Cdn oil rigs are +22 YoY and total rigs are +28 vs 2021.

Cdn rigs -2 WoW



Figure 16: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

Oil - EIA "systems issues" have delayed all the weekly oil data

We are a little surprised that more aren't concerned, or at least wondering if there is an escalation in cyber attacks. Some of these potential cyber attacks do not cause physical damage or potential loss of life, perhaps such as the "systems issues" that dogged the EIA this week and led to the delay in all their weekly oil data. There was no weekly oil production, inventory, import, export, inputs to refineries, etc. On Wednesday, the EIA tweeted "EIA statement on data releases for the week of June 20, 2022. Several U.S. Energy Information Administration (EIA) product releases scheduled for the week of June 20, 2022, will be delayed as a result of systems issues. Our experts are working on a solution to restore the affected systems. We will release the Weekly Natural Gas Storage as scheduled on June 23. All other data releases scheduled for this week will be delayed. We will resume our normal production schedules and release delayed data as soon as possible. We apologize for the inconvenience of this delay, and remain committed to our mission of collecting, analyzing, and disseminating independent and impartial energy information as we resolve this issue." On Thursday, the EIA tweeted an update [LINK] "Our team is continuing its work to restore our systems. We will not release any additional data products this week. We will provide further updates Monday morning, so please keep an eye on our press room for details.

Oil – Cdn crude by rail exports at 144,169 b/d in April, up 11.1% YoY

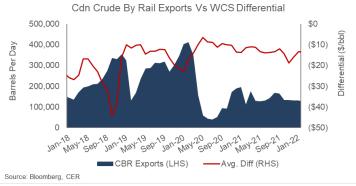
The Canadian Energy Regulator (successor to NEB) reported Canadian crude by rail exports were -7,725 b/d MoM in April to 144,169 b/d vs 151,894 b/d in March [LINK]. This puts April export volumes at +14,442 b/d YoY (+11.1%) vs April 2021 of 129,727 b/d. CBR volumes are +105,302 since the July 2020 bottom of 38,867 b/d, when COVID-19-fueled capital spending reductions and lower drilling activity in Western Canada were in full effect. April WCS-WTI differentials increased to -\$12.68 as prices dropped slightly over the course of the month. Normally, differential closer to \$10 than \$15 lead to lower CBR but, with the high WCS prices, most, if not all, Cdn heavy/medium is being moved to markets. There is also the support for declining Russia oil exports into US markets. Below is our graph of Cdn crude by rail exports compared to the WCS–WTI differential.

EIA's "system issues"?

Cdn crude by rail exports



Figure 17: Cdn Crude by Rail Exports vs WCS Differential



Source: Canadian Energy Regulator, Bloomberg

Oil - Will need to watch how IBEW strike impacts CN's rail volumes

On Monday, we tweeted on the news that the CN Rail members of the IBEW union were going on strike. The IBEW are the signal workers. We tweeted [LINK] "#CN says keeping railroad operating safely. Sure mgmt & maybe replacement workers can fill some of the capacity, but how can they operate safely at the same pre-strike volume if #IBEW is on strike? If volume cuts inevitable, how does CN prioritize? #OOTT #CrudebyRail." We have not seen any CN formal statements on how this will impact rail volumes at this busy time of the year. But on Thursday, CTV News reported [LINK] on emailed comments from CN "The plan is designed to keep the railroad operating normally and safely" and ""CN's operational contingency plan uses managers and contractors that are qualified to do the work they are doing." We thought these were careful comments to infer that the strike isn't impacting operations. We tweeted [LINK] "#CNRailStrike. CN says "plan is DESIGNED to keep the railroad operating normally & safely". Seems carefully drafted to infer no change to @CNRailway volumes. How can they move same volumes safely if #IBEW is on strike? Thx @StaceyHein _. #OOTT". We don't believe anyone doubts that the people are qualified to do the jobs they are doing, but surely there has to be an impact from the regular experienced signal workers and the replacement management? Our Supplemental Documents package includes the CN announcement and CTV report.

Oil - PBO says TMX no longer continues to be profitable

On Wednesday, we tweeted [LINK] "PBO: #TransMountain assets will have negative \$0.6b NPV for federal govt. Surprised it's not more w/ key assumptions change #TMX expansion cost from \$12.6b to \$21.4b, startup delayed 1 yr. Doesn't look like any change in tolling assumption. Thx @RodNickel_Rtrs @ismail___s #OOTT." Canada's Parliamentary Budget Officer published the Trans Mountain Update. The headlines were like Reuters "UPDATE 2-Canada-owned Trans Mountain oil pipeline not profitable after higher costs: budget officer – Reuters" [LINK]. The PBO report said "Trans Mountain no longer continues to be a profitable Undertaking. Based on the new developments since the previous report, specifically the increased construction costs and the delay in the in-service date, PBO finds that the Government's 2018 decision to acquire, expand, operate, and eventually divest of the Trans Mountain assets will result in a net loss for the federal government." Our tweet said that we thought the negative PV would be more the \$0.6b. The two key assumption changes in the

IBEW strike on CN Rail

Updated PBO TMX analysis



PBO analysis was that they used the higher capital cost of \$21.4b vs \$12.6b in the last analysis. And they also reflected the one year delay to startup revenues. We also noted one item not changed is any change to tolling assumptions. Our Supplemental Documents package includes the Reuters report and excerpts from the PBO report. [LINK]

Oil - Explaining 321 crack spreads

We continues to highlight that the physical market numbers are such that there is no reason for refiners to stop wanting as much crude oil as possible. And we remind that consumers don't buy oil, they buy refined products like gasoline and diesel. Rather, it's the oil refiners are the buyers of crude oil. And refiners have huge financial incentive to use as much oil as possible. Refiners have what is called a crack spread. This is the spread or margin that refiners make from buying crude at a certain price and then selling the finished petroleum products at their respective prices. The 321 crack spread is meant to represent what a typical US refinery produces. It assumes that for every three barrels of crude oil, the refinery will produce two barrels of gasoline and one barrel of distillates. So the crack spread is based on that formula and worked back to a crack spread per barrel. Below is the current 321 crack spread, which was \$58.50 as of the Friday close.

Crack spreads still huge





Source: Bloomberg

Oil – Pemex oil production still stuck around 1.7 mmb/d, but partners now 65,000 b/d On Friday, Pemex released its May production for its interests, it was 1.690 mmb/d of oil, which is basically unchanged for the last several months. Pemex has been unable to grow its own oil production. However, the non-Pemex oil production in Mexico is now up to 65,000 b/d and has averaged 59,000 b/d for YTD April 30. As a result, total Mexico oil production (Pemex and non-Pemex) was 1.686 mmb/d for April and 1.690 mmb/d for YTD May 31. Below is our chart tracking Pemex oil production.

Pemex May oil 1.690 mmb/d



Figure 19: Pemex Mexico Oil Production

Oil Production (thousand b/d)	2015	2016	2017	2018	2019	2020	2021	2022	22/21
Jan	2,251	2,259	2,020	1,909	1,623	1,724	1,651	1,705	3.3%
Feb	2,332	2,214	2,016	1,876	1,701	1,729	1,669	1,684	0.9%
Mar	2,319	2,217	2,018	1,846	1,691	1,745	1,697	1,696	-0.1%
Apr	2,201	2,177	2,012	1,868	1,675	1,703	1,693	1,686	-0.4%
May	2,227	2,174	2,020	1,850	1,663	1,633	1,688	1,690	0.1%
June	2,247	2,178	2,008	1,828	1,671	1,605	1,698		
July	2,272	2,157	1,986	1,823	1,671	1,595	1,701		
Aug	2,255	2,144	1,930	1,798	1,683	1,632	1,657		
Sept	2,271	2,113	1,730	1,808	1,705	1,643	1,709		
Oct	2,279	2,103	1,902	1,747	1,655	1,627	1,692		
Nov	2,277	2,072	1,867	1,697	1,696	1,633	1,691		
Dec	2,275	2,035	1,873	1,710	1,706	1,650	1,694		

Source: Pemex

Oil - Mexico May oil exports down to 0.965 mmb/d

Our April 3, 2022 Energy Tidbits highlighted the major (and a surprising one) change in Mexico oil export strategy for 2022. On March 31, AMLO announced "plan emergente" that would see Mexico oil exports relatively flat YoY in 2022, and not down huge as has been one of the primary election promises to the Mexican people. We still don't get this plan in light of the startup this week of the new 340,000 b/d Dos Bocas refinery and why Mexico wouldn't want to do all it could to reduce imports of gasoline and diesel considering the huge refinery crack spreads being seen around the world. Regardless, on Friday, Pemex reported May oil exports were 0.965 mmb/d, which was down MoM vs April of 1.024 mmb/d, and down -6.4% YoY vs May 2021 of 1.031 mmb/d. Pemex oil exports to US were 0.740 mmb/d in May, which was up 25% from last month. Below is our table of the Pemex oil export data.

Figure 20: Pemex Mexico Oil Export

Oil Exports (thousand b/d)	2016	2017	2018	2019	2020	2021	21/20	2022	22/21
Jan	1,119	1,085	1,107	1,071	1,260	979	-22.3%	832	-15.0%
Feb	1,241	1,217	1,451	1,475	1,093	1,006	-8.0%	925	-8.1%
Mar	1,062	1,001	1,176	1,150	1,144	925	-19.1%	905	-2.2%
Apr	1,081	1,017	1,266	1,023	1,179	923	-21.7%	1024	10.9%
May	1,204	958	1,222	1,205	1,062	1,031	-2.9%	965	-6.4%
June	1,098	1,157	1,110	995	1,114	1,106	-0.7%		
July	1,146	1,255	1,156	1,079	1,051	1,173	11.6%		
Aug	1,261	1,114	1,181	1,082	1,190	1,099	-7.6%		
Sept	1,425	1,159	1,206	995	1,023	983	-3.9%		
Oct	1,312	1,342	1,027	963	908	935	3.0%		
Nov	1,273	1,388	1,135	1,114	1,171	1,025	-12.5%		
Dec	1,115	1,401	1,198	1,115	1,243	1,037	-16.6%		

Source: Pemex

Oil - Pemex's new 340,000 b/d Dos Bocas refinery cost could be \$18b

We have to remember that the new 340,000 b/d Dos Bocas refinery won't have its full impact on full year average Pemex refining volumes of crude oil in 2022, but will have its full impact as it ramps up its processing volumes in H2/22. And any increased Pemex refining of crude means less crude oil for export. Other than when there are new interruptions as seen yesterday with the Cadereyta refinery fire. Pemex is still on track to have the official inauguration of the new 340,000 b/d Dos Bocas refinery this week. No one disputes that there is a massive cost overrun, it's just a debate on the number. The initial 2019 budget for Dos Bocas was \$8 b. On Wednesday, Bloomberg reported "A week before the grand opening of Mexican President Andres Manuel Lopez Obrador's flagship oil refinery project,

Pemex May oil exports

Dos Bocas refinery cost overrun



costs have spiraled out of control to reach as much as \$18 billion -- more than double its original price tag. The value of contracts for construction work through to 2024 signed by Mexico's energy ministry rose to more than \$14 billion in May, and the final amount is likely to be between \$16 billion and \$18 billion, according to people with knowledge of the matter, who asked not to be identified because they aren't authorized to speak publicly about the Petroleos Mexicanos project." Our Supplemental Documents package includes the Bloomberg report.

Oil - Fire at Pemex 275,000 b/d capacity Cadereyta oil refinery

As of our news cut off at 7am MT, we haven't seen any Pemex word on the impact of yesterday's fire at the Cadereyta oil refinery. Earlier this morning, we tweeted [LINK] "No @Pemex word yet on Cadereyta oil refinery operations. Q1/22, #Pemex refineries processed 822,000 b/d: Salina Cruz 178,000, Tula 176,000, Salamanca 134,000, Minatitlan 123,000, Cadereyta 115,000 & Madero 95,000. Last thing Mexico needs is more #Gasoline #Diesel imports. #OOTT." Cadereyta oil refinery has a reported capacity of 275,000 b/d, but, as noted in the Q1/22 results, processed 115,000 b/d. Note that overall, Pemex refineries in Q1 operated at 46% capacity. Our tweet included the video from El Norte.

Pemex refinery fire

Figure 21: Pemex Cadereyta oil refinery fire on June 25, 2022



Source: El Norte

Oil - Norway May oil production of 1.620 mmb/d, down -2.4% MoM

The Norwegian Petroleum Directorate released its May production figures [LINK] of 1.620 mmb/d of oil, which is -2.6% YoY and -2.4% MoM from April of 1.742 mmb/d. May production was down (-0.040 mmb/d) from the forecast amount of 1.660 mmb/d. The NPD does not provide any explanations for the MoM changes. The theme for Norway through 2021 was that Norway oil production returned to growth because of the Johan Sverdrup oil field, and tax breaks from the government allowing increased capex in the energy sector. Norway oil production was still expected up modestly in 2022.

Norway oil production



Figure 22: Norway May 2022 production

		Oil	Sum liquid	Gas	Total
		mill bbl/d	mill bbl/d	MSm³ /d	MSm³ o.e/d
Production	May 2022	1,620	1,831	322,8	0,614
Forecast for	May 2022	1,660	1,884	316,3	0,616
Deviation from forecast	May 2022	-0,040	-0,053	6,5	-0,002
Deviation from forecast in %	May 2022	-2,4 %	-2,8 %	2,1 %	-0,3 %
Production	May 2021	1,662	1,846	280,5	0,574
Deviation from	May 2021	-0,042	-0,015	42,3	0,040
Deviation in % from	May 2021	-2,5 %	-0,8 %	15,1 %	7,0 %
Production	April 2022	1,664	1,860	329,2	0,625
Deviation from	April 2022	-0,044	-0,029	-6,4	-0,011
Deviation in % from	April 2022	-2,6 %	-1,6 %	-1,9 %	-1,8 %

Source: Norwegian Petroleum Directorate

Oil - Operators assurances mean Nigeria can hit OPEC+ target by end-August?

This is one that we will have to see to believe. Nigeria has been a big underperformer on meeting its OPEC+ quota but seems to believe they will hit their quota by the end of August. On Friday, Argus reported [LINK] that Nigeria hopes to meet its OPEC+ production quota by the end of August per oil minister Timipre Sylva. He stated "We've not been able to meet Opec quota, which is our biggest headache right now. The assurance that from all of the operators from the region we had was that we're going to at least produce our Opec quota by the end of August. Some people who have committed to end of July, but I don't want to put that on the table". It is estimated that Nigerian crude production was 433,000 b/d below its OPEC+ target last month and has fallen short of its monthly quotas since August 2020. This was due to challenges with infrastructural collapse, loading delays at terminals, theft from oil pipelines and vandalism. Nigeria's president has now given the oil ministry a mandate to ensure energy security to coax further international investment. The oil minister went on to say, "We're giving ourselves just about a month to ensure that we're able to at least achieve some measurable milestone. By the end of August, we would have seen some improvement in the security, the oil sector, and then we'll be ready for investors at the same time". Our Supplemental Documents package includes the Argus article.

Can Nigeria make its quota

Oil – Ukrainian drone hits 110,000 b/d refinery in Russia

We still wonder how Putin is going to respond to Ukraine drone strike that hit a Russian oil refinery. On Wednesday, media including TASS, reported on the Ukrainian drone attack that hit the 110,000 b/d Novoshakhtinsk oil refinery in the Krasnosulinsky district of the Rostov region. We tweeted [LINK] "Good video of drone hitting RUS 110,000 b/d Novoshakhtinsk #Oil refinery. Mon, attack on RUS #NatGas rig in Black Sea. What will Putin do with Ukraine fighting back and striking "in" Russia? #OOTT". There was a well circulated video of the drone attack [LINK].

Ukraine drone hits Russia oil refinery



Figure 23: Drone attack on Russian oil refinery



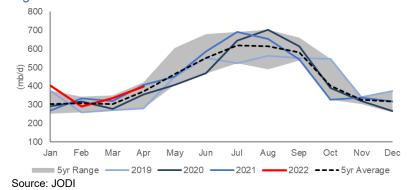
Source: Ukraine Weapons Tracker

Oil - Saudi uses 300-400,000 b/d more oil for electricity every summer

For the last several years, we have highlighted this reminder that Saudi Arabia uses more than twice as much oil for electricity in the summer vs the winter. This means that increased production in the summer months doesn't mean increased oil exports. The ramp up really cranks up in May, June, July and August. The JODI data for Saudi Arabia oil supply and demand for April was updated on Monday [LINK]. And one of the key data pieces is Saudi Arabia's use of oil for electricity. Saudi used more oil for electricity in April vs March. This is attributed to the warmer temperatures experienced throughout April. The peak summer use was July at 691,000 b/d, that declined to 339,000 b/d in Nov and now reported +62,000 b/d MoM to 397,000 b/d for April. April 2022 is down -10,000 b/d YoY from April 2021 of 407,000 b/d. April was above the 5-yr average of 370,000 b/d.

Saudi summer oil use for electricity

Figure 24: Saudi Arabia Direct Use of Crude Oil For Electric Generation



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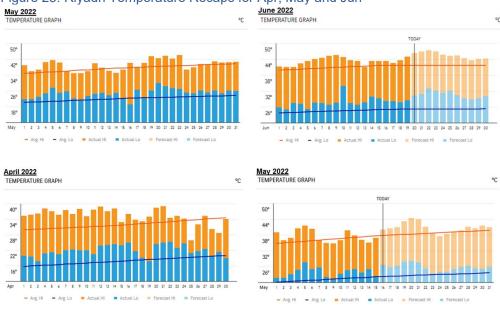


Figure 25: Riyadh Temperature Recaps for Apr, May and Jun

Source: AccuWeather

Oil - Saudi exports hit new two-year high in April

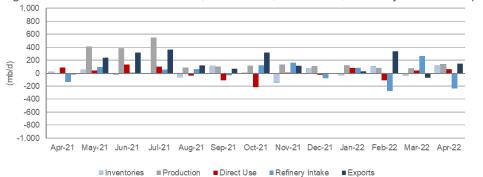
In addition to the Saudi Arabia use of oil for electricity, the JODI data for Saudi Arabia oil supply and demand for April, updated on Monday [LINK], also includes key oil data for production, exports, and input to refineries. (i) The prominent headline from the JODI April oil data for Saudi Arabia was that oil exports rose to a 23-month high, but there was also a build to inventories. The increased MoM production and build to inventory was above the increases in direct use and exports and decrease to refinery intake. There was an MoM increase in direct use of crude oil for electricity. Exports rose 2% in April to the highest levels since April 2020 after decreasing 1% in March. Saudi Arabia's exports are holding above the 7 million bpd mark. (ii) As noted above, Saudi used +62,000 b/d more oil for electricity in April vs March. (iii) Oil input to refineries was down -235,000 b/d MoM to 2.538 mmb/d. We were surprised last month, when oil input to refineries in March was +267,000 b/d MoM. We had wondered if oil input to refineries would be down in March given the confirmed missile attack on the Riyadh refinery. There is no explanation for the -235,000 b/d MoM decrease in April, but we suspect that, at least some of this decline, was due to partial maintenance of the 550,000 b/d Ras Tanura refinery which continued through mid-April. (v) On the overall JODI data for April, there was 43,000 b/d of unaccounted for supply and 0 b/d of unaccounted for demand. Increased supply of +17,000 b/d MoM was from production +141,000 b/d MoM and inventory up +124,000 b/d MoM. Demand decreased -26,000 b/d from refinery intakes -235,000 b/d MoM, exports +147,000 b/d MoM, and direct use for electricity +62,000 b/d MoM. (vi) Inventories were built 3.732 mmb MoM from 135.847 mmb to 139.579 mmb. Inventories remain at historically low levels, sitting below 150 mmb. (vii) Below are the AccuWeather Temp maps for Riyadh for Apr, May and June MTD. Careful they are different

JODI data for Saudi oil in April



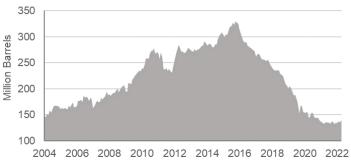
scales but look for oil for electricity to increase as we move further into peak season. Below are our updated graphs for the Saudi JODI data for April.

Figure 26: MoM Saudi Inventories, Production, Direct Use, Refinery Intake & Exports



Source: JODI, Bloomberg

Figure 27: Saudi Arabia Crude Oil Inventories (million barrels)



Source: JODI

Oil – Should we be prepared for MBS to become Saudi King in the coming months?

We can help wonder if the stage is being set for MBS to become Saudi King in the coming months, perhaps ahead of the G20 leaders summit in October? There were two unrelated items on Monday morning that make us wonder. (i) On Monday, we tweeted [LINK] "Hmmm! #Biden/#MBS meet. "i think what MBS ultimately gets, in my opinion is the final blessing of Washington to ascend to become King. I think that is the real big prize here for him. Because up to know, they haven't given that" said @sean_evers. MBS is a positive for #Oil. #OOTT" There was a direct comment from Sean Evers (Gulf Intelligence founder) on their daily podcast. We have been listening to his daily podcast for the past year or two and he is an experienced oil follower, who generally doesn't make any outrageous type statements. He is in UAE. Here is what he said this morning "I struggle, I can see what the Saudis obviously get and the region. I think what MBS ultimately gets is, in my opinion, is the final blessing of Washington to ascend to become King. I think that is the real big prize here for him. Because up to now, they haven't given that." (ii) A Bloomberg report on Monday morning "Saudi Arabia's de facto ruler will go on a rare regional tour to build bridges ahead of US President Joe Biden's visit." The "rare" description caught my eye. Leaders don't normally do "rare"

Is stage being set for MBS to become King



things without some reason. If we hadn't listened to Evers comments, we might not have linked it. (iii) So two unrelated events but we have to wonder. Then the question is what does this mean? There are so many potential implications but a few to come to mind. It will be the end of a redemption tour post Khashoggi killing. At least from MBS perspective. So we think there could be two items: First, If we accept the premise that MBS has been the de facto leaders, then it means continuation of what has been happening ie. aggressively using OPM to fund Vision 2030, no change to their oil policy (it's working), building relations with Israel (we think this is more the enemy of my enemy is my friend), continued negative vs Iran, cracking down on the Saudi wealthy who don't agree with him, etc.). Second, the real question is has MBS has been holding back on some items post the Khashoggi killing to get to this redemption, if he backs off of some of these to go back to his original approach pre-Khashoggi, or if he is agreeing with Biden's team to keep on some of these relaxed items as part of this deal. Ie. will he keep trying for some sort of peace with the Houthis or go back to blowing them away. Will he maintain the truce with Qatar for the past year or go back to trying to squeeze Qatar. We think this will be one of the key quesitons, will he go back to causing regional conflicts in Yemen, Qatar. (iv)

Remember MBS's Atlantic March 3 interview

We still wonder what MBS is getting from Biden because there has to be a lot more than the chance to be smiling/gloating in a photo op with Biden. We can't help remember what we wrote in our March 6, 2022 Energy Tidbits. "Oil - Saudi MBS simply, I do not care" if Biden misunderstands something about him. The Atlantic's: March 3 report "Absolute Power" [LINK] based on its interviews Saudi crown prince Mohammed bin Salman got some good headlines. MBS says their "aim is to keep it and strengthen it" talking about their long historical relationship with the US. The headlines were on his Biden comments and warning to not interfere in Saudi domestic issues. The Atlantic wrote "We asked whether Biden misunderstands something about him. "Simply, I do not care," he replied. Alienating the Saudi monarchy, he suggested, would harm Biden's position. "It's up to him to think about the interests of America." He gave a shrug. "Go for it." For now, MBS's main request to the outside world, and especially the United States, is the usual request of misbehaving autocrats—namely, to stay out of his internal affairs. "We don't have the right to lecture you in America," he said. "The same goes the other way." Saudi affairs are for Saudis. "You don't have the right to interfere in our interior issues." It reminds that no one should expect the Saudi's to bend over in anyway to the US on oil. The problem for Biden and the Democrats is that it's difficult to reverse their view on MBS. We look at it as another of the situations where Biden and the Democrats like to have a villain to make sure they can get people onside their views. But by doing so, it makes it difficult for Biden to back track in a public way. It's like now with the oil companies, they really can't say anything positive about them or ask them to help without looking very weak. They made the oil companies the villains to sell energy transition for so long. How can they go back and say something good. They made MBS out to be a huge villain, Biden's team making it clear that Biden wouldn't meet or talk with MBS, only the King, they pulled out a Patriot missile defense system from Saudi Arabia, and have supposedly not given in to Saudi's request for more Patriot missiles to replace the shot missiles. So no surprise by the MBS comments on US. And unfortunately for the US, it means that Saudi isn't likely to help the US

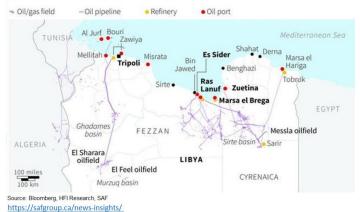


unless it helps them. We will be watching to see if there are reports on restocking Patriot missiles and any potential MBS/Biden meeting. Our Supplemental Documents package includes The Atlantic report."

Oil - Libya oil minister said production back to ~700,000 b/d

Last Sunday afternoon, Reuters reported [LINK] "Libya oil output rises to about 700,000 bpd, minister says. Libyan oil total production is at about 700,000 barrels per day (bpd), the Libyan oil minister Mohamed Oun told Reuters on Monday. Libya's oil output was at 100,000-150,000 bpd, a spokesman for the oil ministry said last week. Oun did not give details on when or how the output level had risen." A big jump in production make sense primarily because Oun's statement last week about production being down about 1.1 million b/d didn't make sense. Last week's (June 19, 2022) Energy Tidbits said "Feels like Libya oil production must be way higher than oil minister comments. It certainly seems like the feud between Libya oil minister Aoun and Libya National Oil Corporation Sanella is reaching new levels. which is not a good thing because it brings into question the validity of their statements." "The Minister of Oil and Gas in the Government of National Unity, Mohammed Aoun, said that Libya is currently losing more than 1,100,000 barrels per day (bpd) of oil production due to the closures imposed on major export fields and ports." And "(ii) As of our 7am MT news cut off, we still have our same question mark on this crashing of Libya oil production - if it's down >1 mmb/d, why haven't we seen force majeure notices from the Libya National Oil Corporation? That would be a given if production was down >1 mmb/d. So the question is where is Libya oil production?" We had trouble believing Libya oil production was down to 100,000 b/d as Aoun said given that we never saw any Libya National Oil Corporation force majeure. Our biggest concern is that the ongoing dispute between Oun and Sanella is leading to unpredictable information. Our Supplemental Documents package includes the Reuters report.

Figure 28: Libya Ports, Major oilfields and Terminals map SAF Group Compiled Libya Ports & Terminals Status



Source: SAF Group

Libya production back and forth

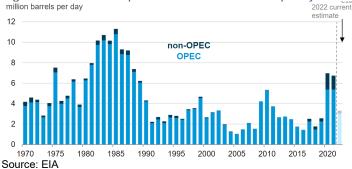


Oil – EIA estimates a decrease in global surplus crude oil production capacity in 2022

No surprise, that the EIA [LINK] that the EIA estimates the non-OPEC countries within the OPEC+ group only have about 280,000 b/d of surplus oil production capacity ie. they are down 80% vs 2021 due to Russia. The EIA wrote "The data shows that, in 2021, 1.4 million barrels per day (b/d) of surplus production capacity was available in non-OPEC countries, about 60% of which was in Russia. As of May 2022, we estimate that all surplus production capacity in Russia was eliminated due to the sanctions implemented after Russia's full-scale invasion of Ukraine. We determined that excess oil production capacity declined in other non-OPEC producing countries as well. We estimate that, as of May 2022, producers in non-OPEC countries had about 280,000 b/d of surplus production capacity". This assessment of surplus crude oil production capacity does not include volumes of oil that are offline because of unplanned outages and disruptions including sanctions. Therefore, the EIA has excluded crude oil production that is offline in Iran, Libya, Venezuela, and now Russia, from surplus capacity estimates. As reported in the June STEO, most of the lost surplus capacity is from OPEC. It is estimated that OPEC surplus capacity declined to 3.0 million b/d by May 2022 from 5.4 million b/d in 2021. Our Supplemental Documents package includes the EIA report.

Decreased surplus crude production capacity

Figure 29: Global Surplus Crude Production Capacity



Oil – China's oil imports up 11.8% YoY to 10.8 mmb/d in May

The impact of Covid restrictions is less this year than last, but still a factor holding back China oil consumption as evidenced by the lower refinery runs. But there is an added factor driving China oil imports now – availability of abundant cheap Russian oil. China is in the driver's seat for buying oil right now with access to heavily discounted Russian oil and sanctioned Iran and Venezuela oil. China imported the equivalent of 10.8 mmb/d in May which was up 11.8% from May 2021. This was driven by imports from Russia, which were up 55% from a year earlier to a record level in May. Bloomberg reported [LINK] on Monday "China stepped up purchases of Russian energy in May amid steep discounts offered by suppliers facing Western sanctions over the invasion of Ukraine, customs data showed. Crude oil imports from Russia soared to a record 8.42 million tonnes last month, increasing by 29 per cent from April and by 55 per cent from a year earlier, according to data from China's General Administration of Customs released on Monday. The surge lifted the value of total Russia crude imports to US\$5.8 billion in May, more than double the value compared to a year earlier. China's overall crude oil imports rose by 11.8 per cent in May from a year earlier to 45.8 million tonnes." Our Supplemental Documents package includes the Bloomberg article.

China preliminary oil imports



China crude imports from Russia climb to record 1.99 mmb/d in May

On Monday, Bloomberg reported [LINK] China's imports of Russian oil hit a record May. Russian imports were up 29% MoM at 1.99 mmb/d from 1.55 mmb/d in April. China resumed Iranian imports this month, importing 0.06 mmb/d. Saudi oil imports were slightly below Russia at 1.85 mmb/d, down 12% from 2.11 mmb/d in April. Imports from Iraq were up 15% at 1.11 mmb/d from 0.97 mmb/d. Oman, Angola and UAE were all up MoM 34%, 13% and 32% at 0.70 mmb/d, 0.66 mmb/d, and 0.73 mmb/d respectively. Malaysia imports were up 2% at 0.52 mmb/d from April and Brazil was down 9% from 0.58 mmb/d to 0.52 mmb/d in May. The US delivered just 0.12 mmb/d of crude to China in May. Our Supplemental Documents package includes the Bloomberg report.

Oil - Asian demand for oil as Asian refiners also seeing huge crack spreads (profits)

There is no question that high gasoline prices are starting to change consumer views and adding risk to the oil call post the summer relief of being out of Covid. But we continue to see the data to remind that near term oil demand should stay strong - refinery crack spreads are huge ie. refiners make huge money by refining oil and selling the resultant diesel and gasoline. In our June 13 tweet [LINK], we reminded that physical markets are that refiners buy the crude oil, it's not the consumer. We tweeted "Yes \$5 #Gasoline, but huge crack spreads are key to near term #Oil demand. Consumers don't buy oil, they buy gasoline, diesel. refiners have no incentive to stop buying oil, if cracks fall by \$25, they will keep buying more & more oil. Great reminder from @ARaj Energy. #OOTT. Rajendran's perspective is simple - refineries are the buyers of crude and they are making huge margins from refining, so no incentive for them to stop buying crude oil. This week, there was a good reminder from Bloomberg that Asian refiners also have huge crack spreads. On Friday, we tweeted [LINK] "Asian demand for physical #Oil still strong despite recession fears. Good reminder from @iamsharoncho @helloimserene Asian refiners are, like US refiners, seeing record crack spreads ie. making record profits by buying #CrudeOil & producing #Gasoline #Distillates. #OOTT." Bloomberg included the below graph in their report "Demand for Physical Oil Still Strong Despite Recession Fears" and wrote "However, fuel markets remain under-supplied -in part due to Russia's invasion of Ukraine -- just as demand climbs during the northern hemisphere summer. That's led to profit margins for refiners skyrocketing as they try and meet rising consumption." Our Supplemental Documents package includes the Bloomberg report.

Asian crack spreads still huge



Record Highs
Profit from turning crude into diesel, gasoline hit fresh records in Asia

Asia gasoline cracking margins
Asia diesel cracking margins
Asia diesel cracking margins

Deer Jan Feh Mar Anr May Jun

Deer Jan Feh Mar Anr May Jun

Figure 30: Profits from turning crude into diesel, gasoline hit fresh records in Asia

Source: Bloomberg

Oil -Vitol CEO's bullish comments on oil

On Tuesday, we tweeted [LINK] on comments from Vitol CEO Russell Hardy with Hardy (Group CEO of Vitol) with Bloomberg's Haslinda Amin at Qatar Economic Forum [LINK]. Hardy was bullish on oil. We created a transcript of Hardy's comments. At 9:00 min mark, Amin "your thoughts on when you expect the energy crisis to ease, what would it take?" Hardy "it's tough to see, it's tough to see markets really giving up much ground until we see some abatement in demand. We're still really not back to 2019 demand levels for gasoline and for jet fuel. There's still 2 to 3 million barrels a day of demand to come back next year. So all and all, that's fairly supportive of prices. It just means we've got to keep, keep a little bit of focus on the supply side. So reasonably support for prices going forward and the one thing that obviously everybody is concerned about is runaway prices would make recessions more likely".

Vitol CEO's is bullish on oil

Oil – Vortexa crude oil floating storage 92.53 mmb as of June 24, -15.62 mmb WoW

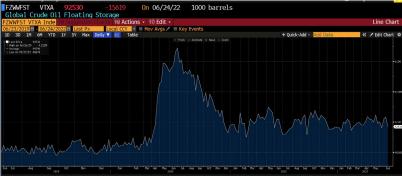
We are referencing the Vortexa global crude oil floating storage data posted on the Bloomberg terminal as of noon MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments today are compared to the prior weeks Vortexa estimates posted on Bloomberg on June 18 at noon MT. (i) As of noon MT yesterday, Bloomberg has posted Vortexa crude oil floating storage estimate as of June 24 was 92.53 mmb, which is -15.62 mmb WoW vs upwardly revised June 17 estimate of 108.15 mmb. Note June 17 of 108.15 mmb was revised +7.74 mmb vs the 100.41 mmb posted on Bloomberg as of noon MT on June 18. (ii) All of the last several weeks were revised up, ranging from 2 to 8 mmb upward revisions relative to those estimates posted on Bloomberg at noon MT on June 18. Absent a couple weeks, crude oil in floating storage is in the 100 to 105 mmb range. Also remember Vortexa revises these weekly storage estimates on a regular basis and we do not track the revisions through the week. (iii) June 24 estimate of 92.53 mmb is -128.56 mmb vs June 26, 2020 peak of 222.09 mmb. (iv) Note that the below graph goes back 3 years and not just 2 years as floating oil storage was in the big ramp up period in late March/April/May 2020 as Covid started to have a huge impact. June 24 estimate of 92.53 mmb is +42.18 mmb vs pre-Covid of 50.35 mmb on June 24, 2019. Note June 24 estimate of 92.53 mmb is +13.54 mmb

Vortexa crude oil floating storage



YoY from 78.99 mmb on June 25, 2021. (v) 3. Below are the last several weeks of estimates made as of today at noon MT, June 18 at noon MT and June 11 at noon MT.

Figure 31: Vortexa Floating Storage as of June 24 Posted on Bloomberg noon MT yesterday



Source: Bloomberg, Vortexa

Figure 32: Vortexa Estimates Posted June 25 noon MT, June 17 noon MT, June 11 noon MT

Est as of June	Est as of June 18, noon MT							Est as of June 11, noon MT							
FZWWFST VT>				WFS				94) S	ugge			T VT			
06/23/2019 □ : 1D 3D 1M	06/24/2022 6M YTD 1Y	i <mark>Las</mark> . 5Y	06/ 1D	/16/20 3D	19 □ 1M	- 06 6M	/17/2	2022 t	i <mark>La:</mark> 5Y	06, 1D	09/20 3D	19 □ 1M	06/ 6M	/10/20	022 🗀
10 30 IN	FZWWFST VT	31	ш	30	TIM		/WFST	VT	21	10	30	IM		WFST	
Date					Date	е		st Px				Date		Las	t Px
Fr 06/24/2022	92530		Fr	06/17	/202	2	100	.413k		Fr	06/10)/2022		9.	4260
Fr 06/17/2022	108.149k		Fr	06/10	/202	2	102	.742k		Fr	06/03	3/2022		9	2415
Fr 06/10/2022	104.819k		Fr	06/03	3/202	2	8	37852		Fr	05/27	7/2022		9	9911
Fr 06/03/2022	90401		Fr	05/27	/202	2	ç	95454		Fr	05/20)/2022		9	8358
Fr 05/27/2022	100.2k		Fr	05/20	/202	2	ç	95365		Fr	05/13	3/2022		110.	132k
Fr 05/20/2022	97852		Fr	05/13	3/202	2	1	08.5k		Fr	05/06	5/2022		9	7831
Fr 05/13/2022	111.555k		Fr	05/06	/202	2	ç	94502		Fr	04/29	9/2022		102.	054k
Fr 05/06/2022	99756		Fr	04/29	/202	2	100	.133k		Fr	04/22	2/2022		102	.07k
Fr 04/29/2022	103.893k		Fr	04/22	2/202	2	100	.452k		Fr	04/15	5/2022		106.	081k
Fr 04/22/2022	104.963k		Fr	04/15	/202	2	103	.696k		Fr	04/08	3/2022		9	9352
Fr 04/15/2022	108.712k		Fr	04/08	3/202	2	ç	96650		Fr	04/01	1/2022	2	9	2359

Source: Bloomberg, Vortexa

Oil - BloombergNEF: oil stocks deficit narrowed while product stocks deficit widened

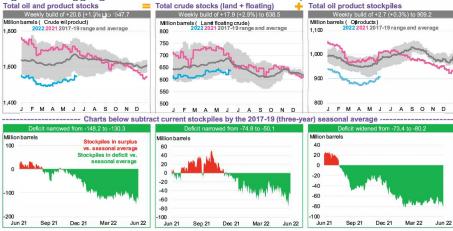
For those with a Bloomberg terminal we recommend flipping thru BloombergNEF's "Oil Price Indicators" weekly that comes out on Mondays as it provides good charts depicting near-term global oil demand and supply indicators. The key global oil and products stocks data continues to be positive with a large deficit relative to the 2017-2019 average, but a change came this week as crude oil inventories increased, and the stockpile deficit narrowed. The stockpile deficit narrowed for crude and products from 148.2 mmb to 130.3 mmb. The stockpile deficit against the five-year average (2015-19) narrowed from 92.2 mmb to 84.8 mmb. Total crude inventories increased by 2.9% to 638.5 mmb, including global floating inventories. Product stocks were up 0.3% WoW with the stockpile deficit against the 3-year average widening from 73.4 mmb to 80.2 mmb. Gas oil and middle distillate stocks have

BNEF's global oil inventories



narrowed slightly against their three-year average deficit (2017-2019) from 35.6 mmb to 35.5 mmb. Jet fuel consumption by international departures increased by 35,400 b/d WoW while consumption by domestic passenger departures increased by 116,200 b/d. The global mobility index strengthened over the past week, gr by 0.2% in the week to June 16. Below is a snapshot of aggregate global stockpiles. Our Supplemental Documents package includes excerpts from the BloombergNEF report.





Source: Bloomberg

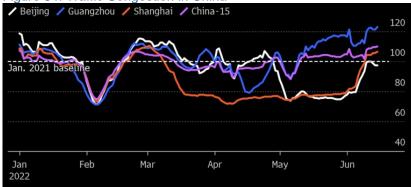
Oil – Bloomberg Oil Demand Monitor: China's Roads Get Busy as Planes Still Idled

We recommend reading the weekly Bloomberg terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. China's roads are getting busy again after major lockdowns in two of its biggest cities ended, though the country's air travel still lags behind other parts of the world, keeping demand for aviation fuel down. Average congestion in 15 Chinese cities with the highest vehicle registrations has now been above a January 2021 baseline for more than a month after spending much of April and March at reduced levels. Gasoline and diesel demand has mostly recovered already in other parts of the world, though not all regions show consumption higher than pre-pandemic levels. UK road fuel sales were below a pre-Covid baseline again. US gasoline demand, while rising, is still underperforming the pre-pandemic years of 2017, 2018 and 2019. The IEA expects global oil demand growth to get weaker in coming quarters, after strong year-on-year increases in early 2022. The global airline industry is still about 15% less active than it was before the pandemic hit, with the main drag being the lack of international flights to and from China. China's flight activity is difficult to predict since a large number of scheduled flights are routinely canceled. The number of seats offered on planes in North East Asia for the coming week rose by 4.4% from a week earlier, according to OAG Aviation. Seat capacity for international flights in the region is still massively down from pre-pandemic levels, by 86%. Domestic capacity is only 4% lower. U.S. refineries have been steadily ramping up the amount of crude oil they process in recent months. Refiners were using 93.7% of available capacity as of June 10, near the top of the five-year range. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Bloomberg's Oil Demand Monitor







Source: Bloomberg

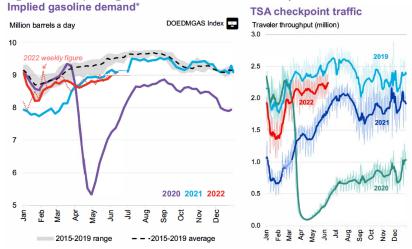
Oil - BloombergNEF US gasoline and jet fuel demand edge lower

The headlines are clear that unleashing the post Covid travel build up is leading to a major travel boom right now and over the summer. But the headlines are also clear that the combined impact of very high food and gasoline prices is forcing many Americans to change what they expect to do post the summer boom. For the majority of Americans, this combination of high food and fuel prices is starting to hit home sooner than expected. So no surprise, BloombergNEF's U.S. Oil Indicators Weekly report showed both gasoline and jet fuel demand edging lower, a reversal of the previous reports. On Monday, we tweeted [LINK] "#Oil demand response. "#Gasoline demand edged lower .. dampening the fresh optimism around its growth trajectory" "#JetFuel demand mirrored gasoline's weak demand". Thx @BloombergNEF Danny Adkins. #OOTT". BNEF had a couple of key messages. "Gasoline demand edged lower based on the weekly figure, dampening the fresh optimism around its growth trajectory following the previous report's promising figures." And "Jet fuel demand mirrored gasoline's weak demand showing last week with the four-week average falling to the lowest for this time of the year since 2012." Our Supplemental Documents package includes excerpts from the BloombergNEF report.

US oil indicators weekly



Figure 35: Implied gasoline demand, TSA checkpoint traffic



Source: BloombergNEF

Oil - AAA expects record US travel during 4th of July weekend

As noted above, the US is still in their big post Covid travel push and that, at least so far, the high gasoline and airfare prices haven't yet had a big impact. Don't forget many of the plane reservations were done before the latest big move up in airfares. The AAA Travel released their 2022 Independence Day travel forecast [LINK] on Tuesday. They expect 47.9mm Americans to travel 50 miles or more from their home this Independence Day (June 30 - July 4), which is a YoY increase of 3.7%, bringing volumes almost in line with those seen in 2019. Car travel volume, despite national average gas prices over the \$5 mark, will break previous records as 42mm opt to drive this Independence Day. Recent issues with air travel and ongoing concerns of cancelations and delays may be driving this increase. The share of people traveling by air will be the lowest since 2011 at 7%. AAA's senior vice president stated "Earlier this year, we started seeing the demand for travel increase and it's not tapering off. People are ready for a break and despite things costing more, they are finding ways to still take that much needed vacation". Our Supplemental Documents package includes the AAA release.

July travel expected

Record 4th of

Oil – Biden wants Congress to approve a 3 month holiday on fed govt 18.4¢/gallon tax No surprise, on Wednesday Biden announced [LINK] his proposal and request for Congress to approve his proposal to suspend the Federal Government's 18.4¢/gallon tax on gasoline for 90 days over the summer. This is a tax issue and requires Congress approval. And it seems more likely that he will not get that approval. We have to believe he knew that so clearly it looks like this will also be part of the mid-term elections messaging. In addition, Biden also said "By suspending the 18-cent gas tax — federal gas tax for the next 90 days, we can bring down the price of gas and give families just a little bit of relief. I call on the companies to pass this along — every penny of this 18-cents reduction — to the consumers. This is — there's no time now for profiteering". And "That's why the second action I'm taking is calling on states to either suspend the state gas tax as well or find other ways to deliver

Biden wants to suspend 18.4¢/ fed govt gas tax



some relief. State gas taxes average [another] 30 cents per gallon. Already, some states have acted."

Obama slammed a summer 2008 gas tax holiday as a political stund

Needless to say, we doubt any of the Biden team consulted Obama for his views on a proposed gas tax holiday for the summer. Anyone who follows US politics remembers the tough and politely aggressive fight for the Democrat Presidential nomination between Obama and Clinton in 2008. And they will also remember one of Obama's attacks on Clinton that linked her to then Republican nomination in the bag McCain. It was on exactly the same thing Biden just proposed – a holiday on the federal gas tax for the summer. Clinton and McCan were both in favor of the gas tax holiday over the summer 2008. On Wednesday, we tweeted [LINK] "Re #Biden's proposed suspension of fed govt 18.4 cents/gallon #Gasoline tax. Great flashback from @Forbes 2008 Democrat Presidential nomination race, with Obama slamming Clinton's proposal to do exactly this. #OOTT" We made a transcript of his comments, but the headline part was "This isn't a real solution. It's a political stunt. This is what Washington does whenever there's a big problem. Politicians pretend they're looking out for you but they're just looking out for their poll numbers. Senator Clinton's own staff even told the Washington Post that they knew the idea might not make much of a difference for you but it could make a big difference for her campaign. And when the Clinton campaign was pressed to find a single expert who supported her plan, I'm not making this up, they put her campaign pollster on the phone to talk about how the idea polls well. Our Supplemental Documents package includes the full SAF transcript

Oil - Granholm and Oil CEOs had "productive" "constructive" meeting

The much awaited Energy Secretary Granholm meeting with the oil company CEOs came and went without much fanfare. There weren't reports of a contentious meeting as might have been expected. Rather the meeting was described as "productive" by the US Dept of Energy readout and "constructive conversation" by Chevron CEO Wirth. So while it was not contentious, it is important to remember that political speak using productive and constructive also says nothing was agreed. So we believe it's hard to see what specifically will come out of this meeting. Our Supplemental Documents package includes the DOE readout of the Granholm meeting.

Brian Sullivan on Granholm's US oil production record levels

On Friday morning's CNBC Squawk Box, Brian Sullivan highlighted how things aren't what they are inferred to be. He noted the Dept of Energy release on the Energy Secretary Granholm meeting with the oil company executives on Thursday and their standard defense suggesting US oil production has never been better/higher than under Biden. He noted their careful wording. The DOE noted "The Secretary made clear that the Administration believes it is imperative that companies bring supply online to get more gas to the pump at lower prices. She reiterated that the President is prepared to act quickly and decisively, using the tools available to him as appropriate, on sensible recommendations. At a time when the U.S. is achieving record oil production under the Biden administration.." Sullivan said he confirmed with the EIA their published actual data for US oil production. He noted they may be

Granholm and Oil CEOs met on Thursday.



inferring US oil production has never been higher, but what they are saying is that it has never been higher in the time frame since Biden took over ie. it's the highest ever during his Presidency and not during all time. When we saw the CNBC clip, we tweeted [LINK] "Crafty drafting, or @SullyCNBC just called it political #Wordle. "At a time when the U.S. is achieving record oil production UNDER the Biden Administration" from @ENERGY readout of @SecGranholm oil co meet. It's true, but record #Oil production was Nov 2019. @SquawkCNBC #OOTT."

Chevron CEO Wirth's letter to Biden ahead of the Granholm meeting

There was a great runup to the Granholm/Oil CEO meeting. On Tuesday, we tweeted [LINK] on Chevron CEO Wirth's "a letter to president biden from chevron CEO mike wirth" [LINK]. The headlines on the letter were Wirth writing "your Administration has largely sought to criticize, and at times vilify, our industry. These actions are not beneficial to meeting the challenges we face and are not what the American people deserve." We haven't seen all of who was at the meeting, but the other interesting part of the Wirth letter was him wanting more than just Granholm at the meeting - the inference being try to make the meeting not just about politics, but have some expertise at the meeting. Wirth wrote "We can only meet these challenges by working together. Chevron will engage in this week's meeting with Secretary Granholm. I encourage you to also send your senior advisors to this meeting, so they too can engage in a robust conversation. Your "whole of government" philosophy in addressing major issues should apply here too, as a comprehensive approach is best to address the energy needs of our nation and of our allies." When Biden was asked about the Wirth letter, he replied "He's mildly sensitive. I didn't know they'd get their feelings hurt that quickly." Our Supplemental Documents package includes the Wirth letter.

Why didn't Chevron CEO use Michael Douglas's line in his letter to Biden?

After reading Chevron CEO Wirth's letter on Biden's approach to vilify the oil industry, we couldn't help wonder why didn't Chevron's investor relations team use Michael Douglas's line from the American President movie in 1994. We suspect it is likely because that movie was from prior generations. But it would have been a great line, which is why we tweeted on Douglas speech from the ending press conference going after Richard Dreyfuss's character Senator Bob Rumson. We tweeted [LINK] "Too bad @Chevron CEO Wirth letter didn't channel some @KDouglasMichael American President & say your Administration "is interested in two things, & two things only. making you afraid of it, & telling you who's to blame for it. That ladies & gentlemen is how you win elections" #OOTT". Our Supplemental Documents includes the more fulsome part of his speech.



Figure 36: Michael Douglas as President Shepherd in American President



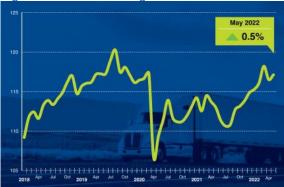
Source: YouTube

Oil - May truck tonnage rose 0.5% MoM, up 3.7% YoY

We continue to wonder how record diesel prices will be impacting trucking volumes. But, so far, it doesn't seem to have had a big impact on trucking volume. The American Trucking Association released its seasonally adjusted Truck Tonnage Index for May on Tuesday [LINK]. May observed a 0.5% increase MoM from April, after falling 1.4% last month. Chief Economist Bob Costello noted, "The transition in the freight market continued in May with the index hitting the second highest level since the pandemic started. Specifically on the market transition, ATA's tonnage index is dominated by contract freight. The traditional spot market has slowed as freight softens, but these contract carriers are backfilling any losses in freight with loads from shippers that is reducing spot market exposure. Essentially the market is transitioning back to pre-pandemic shares of contract versus spot market. Overall, economic indicators that are important to trucking slowed in May, including retail sales, housing starts, and manufacturing output". The index is up 3.7% YoY from May 2021. This was the ninth straight year-over-year gain and the largest since April 2021. Trucking serves as a barometer of the U.S. economy, representing 72.5% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 10.23 billion tons of freight in 2020. Motor carriers collected \$732.3 billion, or 80.4% of total revenue earned by all transport modes.

Truck tonnage index +0.5% MoM in May





Source: ATA



Oil & Natural Gas - TIPRO Texas oil natural and gas jobs up for 12th straight month

The Texas Independent Producers and Royalty Owners Association (TIPRO) updated their employment figures for the Texas upstream sector for May [LINK]. The release noted that employment for May totalled 188,700 marking a decrease of 1,400 jobs from the revised April numbers. This decrease comes after 12th consecutive months of job growth in the industry. The release stated, "Texas upstream employment for May 2022 totaled 188,700, a decrease of 1,400 jobs from April numbers, subject to revisions. Texas upstream employment in May 2022 represented an increase of 25,500 positions compared to May 2021, including an increase of 5,700 in oil and natural gas extraction and 19,800 jobs in the services sector". There has been strong job posting data for May in upstream, midstream, and downstream sectors, showing a continued demand for talent in the Texas oil and natural gas industry. From the release "TIPRO once again noted strong job posting data for upstream, midstream and downstream sectors for the month of May showing a continued demand for talent and increasing exploration and production activities in the Texas oil and natural gas industry. According to the association, there were 11,695 active unique job postings for the Texas oil and natural gas industry in May of 2022." Our Supplemental Documents package includes the TIPRO release.

TIPRO May jobs update

Energy Transition – Germany wants G7 to back off on fossil fuel funding restrictions

As of our news cut off at 7am MT, we are only starting to see some reports from some of the one-on-one leader meetings, who are all in Germany for the G7 leaders meetings June 26-28. The official G7 news is still to come. Yesterday, we tweeted [LINK] "#G7 dilemma this weekend. how to craft a communique at the end of June 26-28 leaders meeting that has stance of unchanged commitment to #NetZero, BUT deals with the reality that they need way more #Oil #NatGas #Coal and for a lot longer. Thx @Jess_Shankleman. #OOTT" Our tweet retweeted the Bloomberg report yesterday hat Germany was going to try to get the G7 leaders to backtrack on natural gas. Bloomberg reported "Germany is pushing for Group of Seven nations to walk back a commitment that would halt the financing of overseas fossil fuel projects by the end of the year, according to people familiar with the matter. That would be a major reversal on tackling climate change as Russia's war in Ukraine upends access to energy supplies. A draft text shared with Bloomberg would see the G-7 "acknowledge that publicly supported investment in the gas sector is necessary as a temporary response to the current energy crisis." The caveat in the proposal is that such funding is done "in a manner consistent with our climate objectives and without creating lock-in effects."

Germany wants G7 to ease off fossil fuel hits

Energy Transition - Norway's EV penetration has had little impact on gasoline/diesel

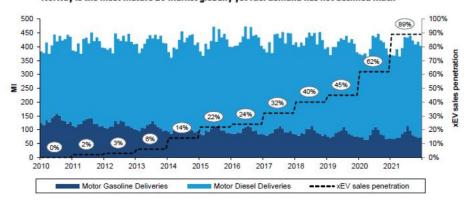
There was a good reminder from Sanford Bernstein that it takes time for EV sales penetration to impact gasoline consumption. They reminded that, even though Norway is the most mature EV market, there has been very little impact on gasoline and diesel consumption. On Monday, we retweeted [LINK] "Hmmm! Reminds the #EnergyTransition will take longer. #OOTT #Gasoline". There was a good Sanford Bernstein tweet [LINK] "EVs are almost 90% of Norwegian car sales, but gasoline demand has barely budged." Bernstein included the below graph.

EVs take a long time to impact gasoline



Figure 38: Oil and Natural Gas Prices

Norway is the most mature EV market globally yet fuel demand has not declined much



Source: SNE, IHS, Statistics Norway, Norwegian Road Federation, Bernstein analysis

Source: Sanford Bernstein

Energy Transition - Vitol CEO, take time for sustainable to take EU hydrocarbon share

The Bernstein Norway EV graph reminds of Vitol CEO Russell Hardy also gave his views on EU's push on sustainables and his expectation for sustainable investment to continue to increase. But he also reminded it will take for sustainables to take a share of hydrocarbon demand in EU. On Tuesday, we tweeted [LINK] and referenced the Bernstein graph in our tweet "sustainable investment will continue to increase, but it's something that will take time in order for it to take a share of hydrocarbon demand in EU" @vitolnews CEO to @haslindatv @BernsteinBuzz Greminds #EnergyTransition will take a lot longer ie. big + to #Oil #NatGas. #OOTT." We created a transcript of Hardy's comments with Bloomberg's Haslinda Amin at Qatar Economic Forum on June 21, 2022 [LINK] At 6:50 min mark, Amin "... in terms of energy security for the future, how will this play out?" Hardy "so I think, importantly, security, energy security has come to the fore. Affordability is still a government priority. And in addition, sustainability. So how do you solve all three of these problems. And I think governments are just recalibrating a little bit in terms of what we're going to need over the next 5 to 10 years because a certain amount of investment is needed, a certain amount of rebalancing of supply and demand of hydrocarbons is needed and the sustainability agenda is going to continue. The latest crisis does support sustainables and that sustainable investment will continue to increase, but it's something that will take time in order for it to take a share of hydrocarbon demand in Europe."

Capital Markets - Powell appropriate to move rates above neutral to a restrictive level.

We were able to catch most of Fed Chair Powell's testimony on Wed to Senate Banking Committee. While watching, we tweeted [LINK] "FED chair Powell just now. appropriate to move rates above neutral level to a restrictive level. it's been surprisingly good to watch and not just for us market nerds. #OOTT". Our tweet included the clip. Powell was pretty clear in his statements on what the Fed will do, and this was one of his clear statements on where he thinks rates are going to go – he expects them to go above neutral level to a restrictive level. We probably watched more of it than needed, but it was good entertainment.

Vitol CEO on sustainables

Powell on rates



Capital Markets – Powell said war on Ukraine not the primary reason for US inflation

We had a second tweet on Fed Chair Powell's Wednesday testimony. All we have heard from the Biden Administration is how the FED is independent. Well that was evidenced this week in the Powell testimony. We tweeted [LINK] "For those who like "gotcha" moments, @SenatorHagerty got one on #Biden Admin. He asks inflation was 7% in 12/21, now 8.6%, is war on Ukraine the primary driver of inflation in US? #Powell "No, inflation was high before, certainly before the war in Ukraine broke out." Ouch! #OOTT." No surprise Senator Hagerty posted the transcript of his Q&A with Powell. ""In January of 2021, inflation was at 1.4 percent. By December of 2021, it had risen to 7 percent—a fivefold increase. Now, since the war in Ukraine began in late February, the rate of inflation has risen incrementally another 1.6 percent to a current level of 8.6 percent...Given how inflation has escalated over the past 18 months, would you say that the war in Ukraine is the primary driver of inflation in America?" Hagerty asked. Powell responded, "No, inflation was high before, certainly before the war in Ukraine broke out." Our Supplemental Documents package includes the Hagerty release. [LINK]

Powell on inflation and Ukraine

Capital Markets – Tom Fairly "risk management is difficult and learned by experience" On Tuesday, we tweeted [LINK] on a good reminder quote from Tom Fairley (former NYSE President) on CNBC Squawk Box that morning. We tweeted ""risk management is difficult and learned by experience" @ThomasFarley to @JoeSquawk on @SquawkCNBC. unfortunately the "learned by experience" is the norm. Even if you made the right call, a great reminder to look at what didn't work for others & why. #OOTT."

Risk management is difficult

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

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

@Energy_Tidbits
on Twitter

LinkedIn - Look for quick energy items from me on LinkedIn

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

Look for energy items on LinkedIn

Misc Facts and Figures.

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

KPMG Women's PGA Championship winner today takes home \$1.35 million It looks tough for Cdn star Brooke Henderson to win in today's KPMG Women's PGA Championship. She is T6 but 5 strokes off the lead with some great golfers ahead of or tied with here. It's too bad because there is a major first prize purse at stake

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today. KPMG doubled the purse this year to \$9mm, which includes \$1.35 mm to the winner. This is fantastic for the LPGA to see more big purses at stake. The largest to date was when Minjee Lee won \$1.8mm for winning the US Women's Open. Even the second place finisher then, Mina Harigae, won \$1.08mm.

Remembering Wendi Murdoch's famous slap in defense of Rupert

This week, it was announced that Rupert Murdoch was divorcing from his fourth wife, Jerry Hall after six years of marriage. Hall first really came to big world fame for being married to Mick Jagger. But, whenever we hear about Rupert Murdoch and his wives, we always think back to his third wife, Wendi and her famous slap in defense of Rupert on July 19, 2011. At that time, Cosmopolitan reported [LINK] "It was the bitch slap heard 'round the world. Or at least the interwebs. Wendi Deng, wife of News Corp. Chairman and Chief Executive Rupert Murdoch, smacked a comedian who looked like he was about to pie her huzz in the face. Murdoch was at a hearing in London, being grilled by lawmakers about the phone-tapping scandal that shut down one of News Corp.'s papers last week, when a comedian and activist named Jonathon Mays-Bowles approached Murdoch, holding a shaving cream pie. Deng immediately came to his defense. Actually, "came to his defense" is putting it lightly. Watch the video and you'll see what we mean. (That's Deng in the salmon-colored blazer, practicing her right hook.)" The Cosmopolitan report had the short Sky News video clip that doesn't get her landing the blow, but it's clear she did land it.

Figure 39: Wendi Murdoch Slap Vs Pie Thrower at Rupert Murdoch



Source: Sky News, Cosmoplitan

The classic Rob Gronkowski moment – damaging the Lombardi trophy

Tampa Bays Buccaneers tight end, Rob Gronkowski, retired this week, although his agent, Drew Rosenhaus, was quick to say "It would not surprise me if Tom Brady calls him during the season to come back and Rob answers the call. This is just my opinion but I wouldn't be surprised if Rob comes back during the season or next season." No question, "Gronk" was one of the best all-time tight ends but he was probably one of, it not, the biggest personality in the NFL. There was huge coverage of his retirement with many stories about his personality. Everyone remembers last year's Buccaneers victory float and Tom Brady tossing the Lombardi trophy to another boat. But one Lombardi trophy that never seemed to get the coverage was how Gronkowski damaged the Lombardi following the Patriots 2018 season win. The Lombardi wasn't fixed, rather it shows a visible dent on the football shaped head of the trophy that came courtesy of Gronkowski. Post the win, Gronkowski and Julian



Edelman brought the trophy to a Boston Red Sox game at Fenway Park. As they were fooling around, Gronkowski held the Lombardi in a baseball bat pose, Edelman tossed him the ball and, luckily, Gronkowski bunted instead of swung away. The bunt left a dent in the Lombardi.

Figure 40: Damaged Lombardi Trophy courtesy of Rob Gronkowsi bunt



Source: Daily Express