

Energy Tidbits

Oct 31, 2021

Produced by: Dan Tsubouchi

Macron “Ironic, Because We are Building a System Where in the Medium & Long Term Fossil Energy Will Cost More & More”.

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 and not just a specific company results. Our target is to write on 48 to 50 weekends per year and to post by noon mountain time on Sunday.

This week's memo highlights:

1. Macron admits that the Energy Transition will lead to oil and natural gas prices costing more and more in the medium and long term ([Click Here](#))
2. Biden tries to get Iran back to JCPOA table with new commitment to stay in JCPOA as long as Iran complies ([Click Here](#))
3. New York's rejection of 2 natural gas power plants is the blueprint for Liberals to reject Cdn oil and gas projects ([Click Here](#))
4. Australia's long term Net Zero plan reminds that half of emissions reduction need to come from technology advancements ([Click Here](#))
5. Bad week for Libya oil production, now down <1 mmb/d and worry what happens after Dec 24 election ([Click Here](#))
6. Please follow us on Twitter at [LINK](#) for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK](#).

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Natural Gas – Natural gas injection of 87 bcf, storage now -403 bcf YoY deficit

The EIA reported an 87 bcf injection (vs 86 bcf injection expectations) for the Oct 22 week, which was above the 5-yr average injection of 62 bcf, and above last year’s injection of -36 bcf. Storage is 3.548 tcf as of Oct 22, decreasing the YoY deficit to -403 bcf, from 458 bcf last week and storage is 126 bcf below the 5-year average vs 151 bcf below last week. Below is the EIA’s storage table from its Weekly Natural Gas Storage Report [\[LINK\]](#).

YoY storage at -403 bcf YoY deficit

Figure 1: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf)				Historical Comparisons			
					Year ago (10/22/20)		5-year average (2016-20)	
	10/22/21	10/15/21	net change	implied flow	Bcf	% change	Bcf	% change
East	885	862	23	23	938	-5.7	906	-2.3
Midwest	1,052	1,027	25	25	1,116	-5.7	1,070	-1.7
Mountain	212	211	1	1	245	-13.5	221	-4.1
Pacific	255	253	2	2	323	-21.1	305	-16.4
South Central	1,144	1,108	36	36	1,329	-13.9	1,173	-2.5
Salt	304	283	21	21	360	-15.6	308	-1.3
Nonsalt	840	825	15	15	968	-13.2	865	-2.9
Total	3,548	3,461	87	87	3,951	-10.2	3,674	-3.4

Source: EIAN

Natural Gas – US Aug gas production up 1.1 bcf/d MoM, +4.9 bcf/d YoY

EIA released its Natural Gas Monthly on Friday, [\[LINK\]](#), which includes its estimates for “actuals” for August gas production. US gas production in August was 95.1 bcf/d, up slightly MoM from July of 94.0 bcf/d and up 4.9 bcf/d YoY. Note that July’s data was revised upwards by 0.4 bcf/d. June (+0.3 bcf/d) also had a revision. As expected, the combination of stronger oil and natural gas prices has led to some modest production increases in the past few months. There continues to be a YoY surplus of +4.9 bcf/d and +4.2 bc/f for the month of August and July, respectively. August production is down 1.9 bcf/d since the Dec/19 peak of 97 bcf/d and still 0.5 bcf/d above March 2020 of 94.6 bcf. Our Supplemental Documents package includes excerpts from the EIA Natural Gas Monthly.

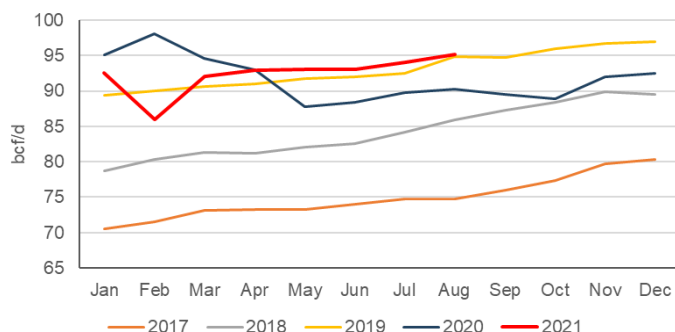
Figure 2: US Dry Natural Gas Production

EIA - Dry Gas Production (bcfd)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Jan	56.0	60.0	66.0	65.3	66.8	73.4	73.6	70.6	78.7	89.4	95.1	92.8
Feb	57.2	58.8	67.0	65.4	68.4	73.8	77.3	71.5	80.4	90.0	98.1	86.3
March	57.3	61.5	65.0	65.3	68.9	74.1	73.8	73.2	81.3	90.6	94.6	92.3
Apr	57.6	62.3	64.8	66.1	70.5	75.2	73.7	73.3	81.2	91.0	92.9	93.3
May	58.0	62.4	65.0	65.9	70.2	74.1	72.9	73.3	82.1	91.7	87.8	93.1
June	57.2	62.1	64.6	65.8	70.5	74.0	72.2	74.0	82.5	92.0	88.4	93.3
July	58.2	62.5	66.3	67.1	72.0	74.2	72.8	74.7	84.2	92.5	89.8	94.0
Aug	58.9	63.2	66.0	66.9	72.4	74.3	72.2	74.7	85.9	94.8	90.2	95.1
Sept	59.1	63.1	66.4	66.8	72.4	74.7	71.7	76.0	87.3	94.7	89.5	
Oct	60.1	65.1	66.5	67.0	73.1	74.2	71.4	77.3	88.4	96.0	88.9	
Nov	60.1	65.9	66.6	67.7	72.6	73.9	72.0	79.8	89.9	96.7	92.0	
Dec	61.0	65.6	66.0	66.5	73.2	73.9	71.2	80.4	89.5	97.0	92.5	
Average	58.4	62.7	65.9	66.3	70.9	74.2	72.9	74.9	84.3	93.0	91.6	

Source: EIA Natural Gas Monthly
Source: EIA

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Figure 3: US Dry Natural Gas Production



Source: EIA

Natural Gas – US LNG exports down MoM at 9.6 bcf/d in August

The big driver to stronger US natural gas prices has been the ramp up in US LNG exports, which are up ~7 bcf/d over the past 3 years. This is over 2.5 tcf a year of added gas demand. On Friday, the EIA Natural Gas Monthly reported “actuals” for US LNG exports were 9.6 bcf/d in August, which is up +6.0 bcf/d YoY and down -0.1 bcf/d from July of 9.7 bcf/d. After recording record highs in the first half of 2021, exports decreased in August as production has ramped up significantly. The EIA expects exports will remain “at high levels” for the remaining months of 2021. Note our table rounds to one decimal and the actual is 9.621 bcf/d for August. Below is our table of EIA’s monthly LNG exports.

US August LNG exports -0.1 bcf/d MoM

Figure 4: US LNG Exports (bcf/d)

(bcf/d)	2016	2017	2018	2019	2020	2021
Jan	0.0	1.7	2.3	4.1	8.1	9.8
Feb	0.1	1.9	2.6	3.7	8.1	7.4
March	0.3	1.4	3.0	4.2	7.9	10.4
Apr	0.3	1.7	2.9	4.2	7.0	10.2
May	0.3	2.0	3.1	4.7	5.9	10.2
June	0.5	1.7	2.5	4.7	3.6	9.0
July	0.5	1.7	3.2	5.1	3.1	9.7
Aug	0.9	1.5	3.0	4.5	3.6	9.6
Sept	0.6	1.8	2.7	5.3	5.0	
Oct	0.1	2.6	2.9	5.7	7.2	
Nov	1.1	2.7	3.6	6.4	9.4	
Dec	1.3	2.7	4.0	7.1	9.8	
Full Year	0.5	1.9	3.0	5.0	6.6	
Full Year bcf	186.8	707.5	1,083.1	1,819.4	2,390.0	

Source: EIA

Natural Gas – >700 bcf pull on US gas supply from Sabine Pass & Calcasieu Pass

On Monday, we tweeted [\[LINK\]](#) our key reminder for Henry Hub natural gas prices in 2022 and beyond “Reminder a huge YoY positive for #NatGas prices in 2022 is startup of 1.3 bcfd Calcasieu Pass LNG & 0.7 bcfd Sabine Pass Train 7. Means >700 bcf of US #NatGas for delivery to #LNG export contracts. See SAF Group July 25, 2021 Energy Tidbits. [\[LINK\]](#) #OOTT.” We first tweeted on this on July 19 [\[LINK\]](#) that the start up of natural gas inflows to Sabine Pass LNG Train 6 (0.7 bcf/d) and Calcasieu Pass LNG (1.3 bcf/d) means there is over 700 bcf of added pull on US natural gas in 2022. We don’t know the exact percentage, but we expect that almost all, if not all, of the volumes are contracted.

Sabine Pass & Calcasieu Pass LNG

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Natural Gas – US pipeline exports to Mexico -0.12 bcf/d MoM to 6.2 bcf/d in August

The EIA Natural Gas Monthly also provides its “actuals” for gas pipeline exports to Mexico, which were 6.2 bcf/d in August, which was +0.2 bcf/d YoY and decreasing from last month - 0.12 bcf/d from June of 6.6 bcf/d. Mexico natural gas production remains stuck below 5 bcf/d and the completion of new pipeline infrastructure such as the Wahalajara system [\[LINK\]](#) increases US penetration further into Mexico. Below is our table of the EIA’s monthly gas exports to Mexico.

US August pipeline exports to Mexico -0.12 bcf/d MoM

Figure 5: US Pipeline Gas Exports To Mexico (bcf/d)

bcf/d	2014	2015	2016	2017	2018	2019	2020	2021
Jan	1.7	2.2	3.2	3.9	4.4	4.9	5.2	5.6
Feb	1.8	2.3	3.5	4.0	4.5	4.8	5.4	4.9
March	1.9	2.4	3.3	4.2	4.3	4.8	5.4	5.9
Apr	1.9	2.6	3.5	3.7	4.4	4.7	4.6	6.1
May	2.0	2.8	3.7	4.0	4.4	5.0	4.7	6.2
June	2.2	3.0	3.9	4.5	4.6	5.2	5.4	6.6
July	2.2	3.3	4.0	4.4	4.9	5.4	5.8	6.4
Aug	2.1	3.3	4.3	4.4	5.0	5.4	6.0	6.2
Sept	2.2	3.3	4.1	4.2	5.0	5.4	6.1	
Oct	1.9	3.2	4.2	4.2	4.9	5.5	6.0	
Nov	1.9	3.0	4.0	4.5	4.7	5.3	5.5	
Dec	2.1	3.2	3.6	4.4	4.5	4.9	5.3	
Full Year	2.0	2.9	3.8	4.2	4.6	5.1	5.5	

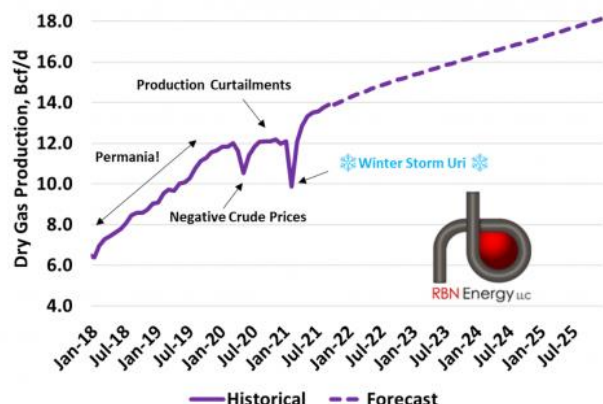
Source: EIA

Natural Gas – RBN blog: Permian gas production expected to increase

There was a good reminder from RBN this week that Permian natural gas production has been consistently higher in recent years and that we are likely to see it approach new highs this holiday season. On Monday, RBN posted a good blog *Play It Again - Permian Natural Gas Markets Singing A Familiar Tune As Constraints Loom* [\[LINK\]](#). Permian gas volumes currently sit at 14 bcf/d compared with 10.5 bcf/d at this time last year, with increasing production of oil and associated natural gas there is no end in sight for Permian gas-growth. Following the significant production growth in 2018-19 known as “Permania” production in the Permian basin has been relatively quiet aside from the associated effects of Covid and the impact of Winter storm Uri last winter. RBN projects that growth will continue from current production levels of 14 bcf/s, but likely not at the 2 bcf/d growth rate of the Permania period, projected to be a bcf/d over the next couple years. Permian primarily trades on the Waha hub, and it has been fluctuated frequently over the past two years. 2020 began the year at \$2/mmbtu, even dropping below zero throughout the pandemic and shutting in production. Prices rallied towards the end of 2020 with most of the oil and gas production in the basin coming back online. Waha started 2021 off at around \$6/mmbtu and shot up to \$200/mmbtu at the onset on winter storm Uri. Recent prices have been above \$5/mmbtu on a sustained basis for the first time since 2008. Permian more so than any other basin, has been responding to these prices by drilling more, the midstream industry is reacting predictably and building out the necessary capacity to get the gas to market. There are hurdles present though, recent Texas eminent domain laws may make it more difficult for producers to sign long term commitments to new capacity when facing pressure to rein in production. Below is a graphic depicting the Permian basin’s forecasted production growth. Our Supplemental Documents package includes the RBN blog.

Permian supplies Mexico LNG exports

Figure 6: Monthly Permian Natural Gas Production



Source: RBN

Natural Gas – Mexico’s natural gas production still stuck below 5 bcf/d, -3.7% YoY

On Thursday, Pemex reported its oil and gas data for September. Pemex reported natural gas production of 4.746 bcf/d, which was down -3.7% YoY and up slightly +1.93% MoM, from August. The increase in MoM is likely linked to the offshore oil shut-ins slowly coming back online. 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. We continue to believe Pemex is in the “natural gas production [that] is stuck below 5 bcf/d” phase, as it has since Sept 2017. 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 7: Mexico Natural Gas Production (bcf/d)

Natural Gas Production bcf/d	2015	2016	2017	2018	2019	19/18	2020	20/19	2021	21/20
Jan	6.584	6.162	5.326	4.910	4.648	-5.3%	5.005	7.7%	4.848	-3.1%
Feb	6.676	6.122	5.299	4.853	4.869	0.3%	4.942	1.5%	4.854	-1.8%
Mar	6.558	6.030	5.383	4.646	4.857	4.5%	4.946	1.8%	4.839	-2.2%
Apr	6.257	5.921	5.334	4.869	4.816	-1.1%	4.827	0.2%	4.671	-3.2%
May	6.202	5.841	5.299	4.827	4.841	0.3%	4.460	-7.9%	4.730	6.1%
June	6.390	5.881	5.253	4.840	4.843	0.1%	4.754	-1.8%	4.727	-0.6%
July	6.374	5.785	5.216	4.856	4.892	0.7%	4.902	0.2%	4.725	-3.6%
Aug	6.366	5.686	5.035	4.898	4.939	0.8%	4.920	-0.4%	4.656	-5.4%
Sept	6.477	5.619	4.302	4.913	5.017	2.1%	4.926	-1.8%	4.746	-3.7%
Oct	6.397	5.583	4.759	4.895	4.971	1.6%	4.928	-0.9%		
Nov	6.316	5.515	4.803	4.776	5.015	5.0%	4.769	-4.9%		
Dec	6.236	5.380	4.811	4.881	5.024	2.9%	4.846	-3.5%		

Source: Pemex

Natural Gas – Cheniere signs 13-yr LNG sales deal with Glencore

This may not be another Asian LNG buyer wanting to lock up long term LNG supply but, on Monday, Cheniere announced it “has entered into a binding liquefied natural gas (“LNG”) sale and purchase agreement (“SPA”) with a subsidiary of Glencore plc (“Glencore”). Under the SPA, Glencore has agreed to purchase approximately 0.8 million tonnes per annum of LNG from Cheniere Marketing on a free-on-board basis for a term of approximately 13 years beginning in April 2023. The purchase price for LNG under the SPA is indexed to the Henry Hub price, plus a fixed liquefaction fee.” While this is not another Asian LNG buyer and it’s a small deal at 0.11 bcf/d, it is a significant deal as it is a binding long term sales LNG deal that will help move Cheniere ahead to FID on its Corpus Christi Stage 3 LNG. Cheniere wrote

Cheniere 13 yr sales with Glencore

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“This SPA further builds upon Cheniere’s commercial momentum, marking another important milestone in contracting our LNG capacity ahead of an FID of Corpus Christi Stage 3, which we expect to occur next year.” Our Supplemental Documents package includes the Cheniere release. [\[LINK\]](#).

Asian LNG buyers changing to lock in long term supply is a game changer

We don’t consider the Cheniere/Glencore to be a material deal by itself. It’s a small deal at 0.11 bcf/d. And for Glencore, we suspect it’s just part of their portfolio approach to LNG. But the concept is key – the concept for buyers to move to lock up long term LNG supply through the 2020s. We have been highlighting that the best validation for a LNG supply gap in the 2020s is that Asian LNG buyers have 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 Mozambique 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 July 14 blog.

Natural Gas – Total Q3 Q&A doesn’t point to early 2022 Mozambique LNG restart

TotalEnergies held its Q3 call on Thursday, the day before Exxon’s Q3 call. As usual, the best insights come from the Q&A. We listened & recorded the call so we were able to create a transcript of the key comments and tweet [\[LINK\]](#) *“need to be patient & see how the situation will improve in the coming months” @TotalEnergies @PPouyanne on Mozambique #LNG restart. Doesn’t point to early 2022 restart. See SAF transcript & SAF 7-pg Apr 28 blog [\[LINK\]](#) Positive for #LNG #NatGas in 2020s. #OOTT.”* It’s the end of October now so CEO Pouyanne’s comments don’t point to an early 2022 restart of construction at its Mozambique LNG Phase 1 of 1.7 bcf/d. Here is the transcript we created and attached to our tweet. “At

**Total
Mozambique
LNG**

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6:25am MT a question on Mozambique re Exxon reports that undergoing review of their Mozambique LNG, how one of the benefits to TotalEnergies was having shared infrastructure and economies of scale with having both projects go ahead, and wondering what that does to TotalEnergies Mozambique LNG if Exxon doesn't go ahead, would you still look to push ahead if and when the security situation allows? Total CEO Pouyanne replied "Regarding Mozambique, what I can confirm to you is that of course we remain fully committed to develop this project, the resource coming from Area 1. But only of course when the condition will allow. We, for obvious reasons, a stable and peaceful environment to be able to mobilize our staff. And its not possible at the present time. We will see if it will be possible next year, in 2022, and if it's the case, production could be there in 2026, exactly what we indicated in September during the investor day. so we are committed to this project. It's there of course, so now we have to be patient and see how the situation will improve in the coming months".

As a reminder, TotalEnergies Mozambique LNG Phase 1 is the lead LNG project in Mozambique is, or at least was, under construction until March. A mid-2022 restart would be in line with our timing expectations from our 7-pg 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?" [\[LINK\]](#) Our blog said that even if Total makes a restart development decision in 12 months (ie. early 2022), it will take months just to get back to where they left off including rehiring services so any return to where they were in the construction process is at least more likely 18 months at a minimum.

Service provider Saipem is expecting TotalEnergies restart in mid 2022

Saipem, one of the service contractors for the TotalEnergies Mozambique LNG Phase 1, held its Capital Markets Day on Thursday, earlier in the day than the TotalEnergies Q3 call. We tweeted [\[LINK\]](#) "Sounds like @TotalEnergies not ready to restart Mozambique #LNG in early 2022. @business on \$SPM just ended cap mks day "Saipem's Mozambique LNG project expected to restart in mid-2022".

@TotalEnergies Q3 call in 45 min. LNG supply gap for 2020s. See SAF 7-pg Apr 28 blog. #OOTT." We did not listen to the Saipem webcast and could not find at a transcript. We reviewed the slide deck but it did not include this mid-2022 timing. However, we tweeted after seeing both Bloomberg and Reuters report similarly that Saipem told analysts it expects the Mozambique LNG "to restart around mid-2022".

Natural Gas – Exxon is committed to Mozambique LNG, just not sure when it restarts

It took to the last analyst question in Exxon's Q3 call Q&A on Friday morning to get to an analyst who would ask on the market rumors (WSJ Oct 20 report) that Exxon may revisit if they want to stay in the Rozuma Mozambique LNG project. It seemed like the early questioners didn't want to ask a direct question, rather would ask some general question on capex allocation and hope Exxon mgmt would address Mozambique LNG. After Exxon CEO Darren Woods got grilled by the House Oversight Committee on Thursday, the analysts should have known he wouldn't volunteer anything. Luckily it did get asked. We listened and recorded the call so were able to tweet right away as Woods shot down any speculation. He said that Exxon is committed to the project and added that TotalEnergies is also committed to their Mozambique LNG. Our first tweet [\[LINK\]](#) was "#Exxon CEO Woods just shot down any rumors that @exxonmobil would walk away from Mozambique #LNG. He gave clear answer when asked on these market rumors. Exxon continues to be committed to Mozambique LNG, as is TotalEnergies. See SAF created transcript below. #OOTT". His closing quote in the Q&A was "We see that as a very competitive resource, its large, we've got opportunities with Total that we've been working on. They're committed to the project. We got a really good working relationship with them as well as our other partners and our existing. But I think we will continue to develop that. we think that going to be very competitive in the long term

Exxon Rozuma
Mozambique
LNG

and something that's going to be needed. So we continue to be committed to that." The other point that was noted by Woods and CFO Mikells was that they don't know when Mozambique LNG will resume. So they are committed, just not clear when it will resume. Our second tweet [\[LINK\]](#) was "*But still no indication of timing for @exxonmobil to proceed on Mozambique #LNG. #Exxon CFO Mikells "paused simply because of the security situation on the ground, which we will continue to look at and revisit over time". see added SAF Group created transcript. #OOTT."* Our Supplemental Documents package includes the transcript we created of these answers and that were attached to our tweets.

Exxon reminds its Mozambique is really linked to TotalEnergies project

One of the reminders from the Exxon CEO comments is that Exxon's Rozuma Mozambique LNG is really linked to TotalEnergies LNG. The onshore facilities are more or less adjacent. We have always noted how Exxon Rozuma was expected to closely follow the construction of TotalEnergies Mozambique LNG Phase 1. This would allow for some common services to be used to minimize capital costs. We have noted this concept before in other LNG developments with what we have called a "continuous construction" process. Exxon doesn't say this specifically, but in the Q3 call Q&A, mgmt said "*and the work we have been doing there in collaboration with Total*".

Exxon's 2 bcf/d Rozuma Mozambique LNG is 3 yrs behind original timeline

Exxon's Rozuma 2 bcf/d has already been delayed and it is part of the major LNG market factor in the 2020s – the delay of 5 bcf/d of Mozambique LNG due to violence/fighting in Mozambique's LNG region. This was the game changer to LNG markets and why, on April 28 2021, we posted a 7-pg blog "*Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?*" [\[LINK\]](#) The April 28 blog included our view that there is a big new LNG supply gap starting around 2025 that is hitting faster and bigger than anyone expects. We saw Total's April 27, 2021 announcement of force majeure at its Mozambique Phase 1 LNG of 1.7 bcf/d was much more significant that viewed. We just didn't see market focused on the fact that this situation backs up an additional 3.3 bcf/d of LNG supply that is also being counted on in all LNG supply forecasts. Total's Phase 2 of 1.3 bcf/d was to follow, and Exxon's Rozuma Phase 1 of 2.0 bcf/d was originally expected to go FID in 2019 but FID is now not expected to have a FID decision until 2022 at the earliest. Mozambique is considered a premium LNG supply region for Asia and is in LNG supply forecasts. Total's original in service for Phase 1 is 2024. We had been warning that Mozambique has a major LNG market impact and its why we posted the April 28 blog. Our blog reminds that even if Total makes a restart development decision in 12 months, it will take months just to get back to where they left off including rehiring services so any return to where they were in the construction process is at least more likely 18 months at a minimum.

Natural Gas – No questions on Galp's Q3 call about Exxon Mozambique LNG timing

Notwithstanding the positive comments from Exxon CEO on Mozambique, at least for now, one of its partners in Rozuma Mozambique LNG, Galp Energia, has not yet given any indication that it expects to change its view on the timing for Rozuma and put capex into its 5 year plan. Galp held its Q3 call on Monday. There was no indication from the Q3 release, slide deck or call that they see any status change or need to plan differently for Exxon Rozuma. So we have to assume, there is no discussion of any plans at this time to move ahead on this soon. We were surprised that no analyst asked on Rozuma status given the WSJ report last week that Exxon may decide to remove that from its long term capex list.

**Exxon
Mozambique
LNG delay**

This was on Monday, so well before the Exxon Q3 call on Friday. And mgmt did not offer any comments on Rozuma. Surprisingly, an analyst asked about Rozuma, but only asked about emissions of the onshore LNG facilities in Mozambique and did not ask on the status. Galp is also in the Mozambique Coral FLNG (floating LNG) offshore that is the one project on track. This is the Eni operated 0.45 bcf/d FLNG that is still on track for first LNG in H2/22. In the Q3 call, they were asked about security issues and they said that, being offshore, said “we do not have any specific concerns around that, but we need to stay alert of course”. Our Supplemental Documents package includes excerpts from the Q3 call on Mozambique questions.

In June, Galp took any Exxon Rozuma LNG capex out of its 5-yr capex plan

Our June 20, 2021 Energy Tidbits noted Galp’s Capital Markets Day that week, and how they took any Exxon Rozuma LNG capex out of their 5 year spending plan. In the June 20 memo, we wrote “*This week, Galp (one of Exxon’s partners in Rozuma) confirmed the delay issues at Rozuma that fit the picture in our April 27 blog. We tweeted [\[LINK\]](#) on the Reuters report “Exclusive: Galp says it won’t invest in Rovuma until Mozambique ensures security”. [\[LINK\]](#) Reuters reported that Galp said they won’t invest in Exxon’s Rozuma LNG project until the government ensures security, that this may take a while, they won’t be considering the project until after Total has reliably resumed work on its Phase 1, taken the capex out of their new capex plans thru 2025 and will have to take out projects in their capex plan if Rozuma does come back to work. Note that Galp’s new capex plan puts Rozuma in the bucket of projects it calls “Further high-potential optionality: exploring 2025+ opportunities”. Reuters also reported Galp said first LNG was expected by 2025. Our April 27 blog noted that the original expectation was Exxon Rozuma Phase 1 of 2.0 bcf/d was expected to FID in 2019 with first gas before 2025. But FID is now not expected until 2022 at the earliest, which puts the gas back to at least 2027. The Galp comments are in line with our April 28 blog that Total’s delay for its 1.7 bcf/d Phase 1 backs up Exxon’s projectd. Its why we put in our Apr 28 blog that there Total’s force majeure actually backs up 5.0 bcf/d that was expected to start in, most part by 2025. Total’s Phase 1 and Exxon’s Rozuma Phase 1 would have been 3.7 bcf/d by 2025.”*

Natural Gas – Japan’s JERA replaces high price LNG with coal in Q3/21

It appears that the high JKM prices had Japan using coal over LNG this summer. On Thursday Bloomberg reported [\[LINK\]](#), that Jera, a joint venture between Tokyo electric and Chubu electric, increased their use of coal to generate electricity and decreased their LNG used in Q3. We tweeted [\[LINK\]](#) “*World’s biggest #LNG importer, JERA, has big #LNG #NatGas to #Coal switching for #Electricity in Q3/21. JERA coal use +54% YoY vs LNG use -14% YoY. Thx @shoko_oda @Inajima17 #OOTT*”. Jera used 5.38m tons of coal in Q3, up from 3.44m tons in 2020. LNG used was down from 0.96 bcf/d to 0.83 bcf/d a year ago. Our Supplemental Documents package includes the Bloomberg article.

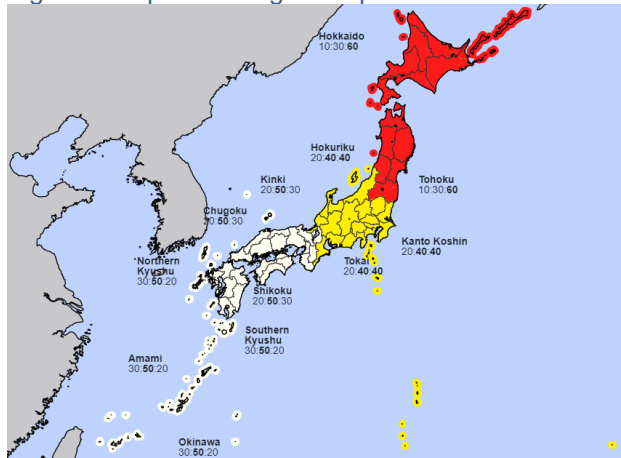
Japan increased use of coal in Q3

Natural Gas – Japan forecasts warm start to November then turning colder mid month

The Japan Meteorological Agency posted its 4 week temperature outlook on Tuesday [\[LINK\]](#). The forecast calls for an overall shift to colder than normal temperatures over the course of the month. However, the first half of November is expected to be above average, specifically in the northern regions. The southern regions are expected to cool faster. Temperatures are expected to drop to below seasonal norms for the south in the second half of the month. The northern regions are expected to remain near normal occurrences for most of the November. Below is the 4-week forecast for Japan concluding on Nov 26.

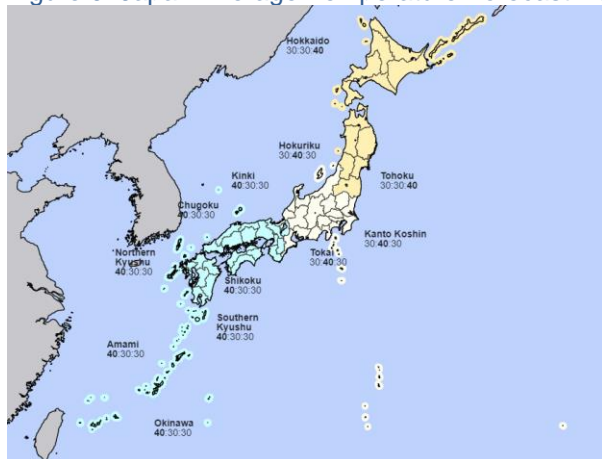
Warm first half of November

Figure 8: Japan Average Temperature Forecast Nov 6-Nov 12



Source: Japan Meteorological Agency

Figure 9: Japan Average Temperature Forecast Nov 13-Nov 26



Source: Japan Meteorological Agency

Natural Gas – Japan forecasts below normal temperatures for NDJ, but warm Nov

The Japan Meteorological Agency posted temperature probability look for Nov/Dec/Jan and is calling for a little below normal temperatures ie. at least supportive for LNG prices. Last winter, we saw overall above normal temperatures but that was a little misleading as it started off cold in December and early January. Before turning normal overall January and warmer than normal in February. On Friday, the Japan Meteorological Agency updated its N/D/J forecast [LINK](#) and it calls for below normal temperatures in Nov thru Jan. As noted above, the JMA is expecting a warmer than normal start to November before turning below normal to end November. Its looking a lot like last Nov/Dec/Jan as of right now. Below is the updated forecast for NDJ and the recap of last winter.

**Below normal
temperatures for
Nov in Japan**

Natural Gas – Putin tells Gazprom to start gas injections to storage facilities in Europe

Putin was given credit this week for bringing down Europe gas prices, although we suspect it was more driven by mild temperatures and decent winds. However, on Wednesday, Putin instructed Gazprom to begin injecting gas supplies into the company's storage units in Europe upon completion of gas injection to underground storage facilities in Russia. This really isn't anything new, unless people assumed Gazprom would shut in natural gas production after refilling Russia gas storage. Last week's (October 24) Energy Tidbits reminded the Putin said Nord Stream 2 was ready to deliver natural gas the day after it received approval by German regulators. Putin stated in his address to Gazprom [\[LINK\]](#), "I ask you, after you finish pumping gas into underground storage facilities in Russia, by November 7 or 8, to start scheduled work to increase the volume of gas in your UGS facilities in Europe - in Austria and Germany." This move is in hopes to reliably and regularly fulfill Gazprom's contractual obligations to supply their European partners in the autumn and winter seasons and ease the current natural gas crisis in Europe. Our Supplemental Documents package includes the TASS article.

Gazprom to begin filling European gas storage tanks

Figure 14: Nord Stream 2, ~5.3 bcf/d capacity



Source: Gazprom

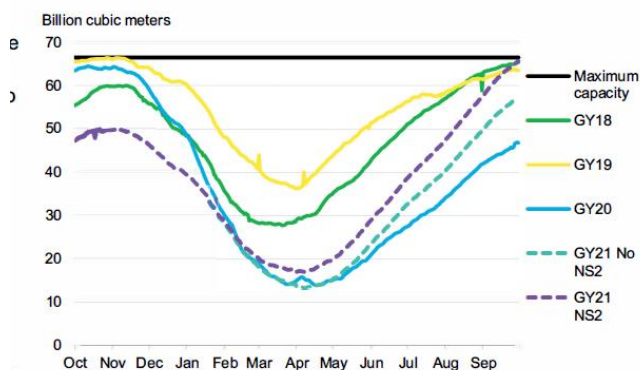
Natural Gas – Nord Stream 2 can restore Europe storage levels in 2022

On Friday, BloombergNEF posted its "Europe Gas Monthly: Nord Stream 2 to the Rescue?" This month's report featured Nord Stream 2, but there is much more than Nord Stream 2 in this good recap of Europe natural gas supply/demand outlook. We tweeted [\[LINK\]](#), "Good @BloombergNEF Europe Gas Monthly today - reminds #NordStream2 can bring EU gas storage back to normal in 2022. Yes, RU has a captive audience, but, unlike #LNG, pipelines can't be redirected in mid transport to go somewhere else. #NatGas." The picture is simple – if Nord Stream 2 starts up, it can bring Europe gas storage back to normal levels in 2022. If not, there will be another tough year for Europe natural gas. BloombergNEF assumes a partial start up from one string in mid January and then balance later in 2022. Note that BloombergNEF assumes that the balance of Nord Stream 2 is more or less offset by reducing supplies elsewhere. BloombergNEF wrote "In our Nord Stream 2 scenario, featuring a month-long ramp up of one 80Mcm/d string of the pipeline from the middle of January, we assume Russia would import an extra 3.58cm of gas into the BNEF perimeter in 1 Q 22. • Incremental flows through Nord Stream 2 would likely be in part offset by decreases in other pipeline routes." Our Supplemental Documents package excerpts from BloombergNEF Europe Gas Monthly.

Nord Stream 2 can help Europe gas inventories

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Figure 15: Europe Gas Storage Nord Stream 2 or Not Scenarios
European gas underground storage inventories



Source: BloombergNEF. Note: Gas year is a 12-month period starting from October, for example, gas year 2020 starts from October 1, 2020.

Source: BloombergNEF

Natural Gas – Centrica talking about reopening its Rough UK natural gas storage

There was another good example of why energy, in this case natural gas, will cost a lot more under the Energy Transition. Reportedly, there are discussions to look to restart Centrica's Rough gas storage site that shut down four years ago. So 4 years ago, it wasn't worth spending the capex to fix the problems, but now it may now be worth spending the capex. It's a good example that illustrates why natural gas prices and energy should be higher in the 2020s. On Wednesday, Bloomberg reported "*Rough Gas Storage Site May Be Reopened to Bolster Strategic Reserves. Britain's biggest energy supplier is in talks with the Government about reopening a mothballed gas storage facility in a bid to protect the industry from surging power costs. Centrica, the owner of British Gas, is seeking to restore the defunct Rough site off the Yorkshire Coast to boost the country's energy reserves. It comes after gas prices spiked to as much as 11 times normal levels in the wake of surging demand.*" Centrica reportedly talking about going back in to fix Rough storage so it can be restarted first as the major UK gas storage facility and then over time to hydrogen. And Centrica reportedly says don't need govt subsidies to do so, just can charge out to customers. This was abandoned because the cost to fix it wasn't worth it in 2017. The reality check is that the costs to fix it today have to be way higher than before. Yet Centrica can now make the math work by charging customers. ie. the costs of using storage are going much higher. Our Supplemental Documents package includes the Bloomberg report.

Rough gas storage shut in 2017

Centrica shut down UK largest gas storage, Rough, in 2017

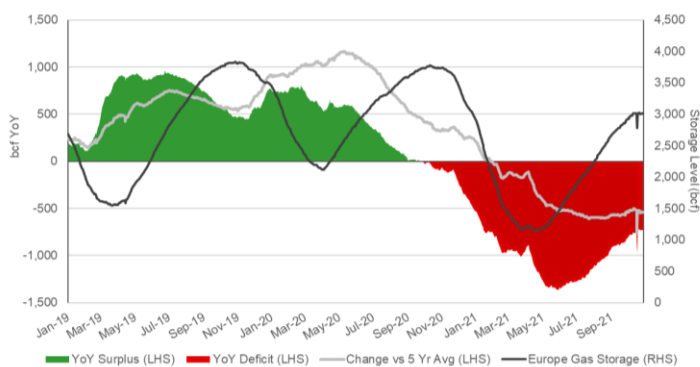
Our October 10, 2021 Energy Tidbits just happened to include a recap of Centrica shutting down its Rough UK gas storage in 2017. At that time, we wrote "*One of the big criticism on the UK natural gas system is that there is a lack of gas storage. In September, Energy UK estimated there was 141 bcf in UK natural gas storage and wrote [\[LINK\]](#) "Britain has over 4bcm of storage capacity that can be called upon to deliver over one quarter of national gas demand on a cold winter's day. Gas is sent to storage facilities throughout the summer and at other times of the year to make sure we have gas supplies available when we need them." UK natural gas storage was much higher in 2017. In 2017, Centrica ceased operations at the largest UK gas storage facility, Rough. Our July 2, 2017 Energy Tidbits noted that, at the time of its cessation, Centrica estimated there was 183 bcf of recoverable cushion gas. They had massive problems with the storage that led to pre tax charge of £176 in 2016*

results. Made the decision to shut it down in early 2017. We went back and couldn't see what the "working gas" level was prior to the problems. But Rough was the largest UK storage and believed to have represented something like 70% of the storage send out capacity. Rough was a depleted reservoir being used for storage. As a rule of thumb, we would use 50/50 split between cushion gas and working gas. So its probably reasonable to roughly assume working gas was about the same at 183 bcf. The closing of Rough is why UK has relatively low natural gas storage."

Natural Gas – Europe storage 77.04% full vs 5 year average of 91.66%

It looks like the draws to the gas storage units are already beginning. It was a small draw but is a sign that the heating season has begun. Europe inventories are at their lowest level at this time of the year in more than a decade. The set up for winter natural gas prices continues to look bullish. Russian pipeline import variability continues to deliver uncertainties to European gas storages throughout the remainder of injection season. With the key indicator for winter Europe natural gas prices, and global LNG prices is Europe storage. Europe gas storage started the winter (Nov 1) at basically full levels at 94.66% and had dropped by 65.77% to be 28.89% at Apr 1. This 65.77% decline since Nov 1, compares to the 5 yr average that would be down 53.99% in the same period or to last winter that was only down 43.29% in the same period. Europe storage levels bottomed in late Apr at 29%, which was the lowest level since Apr 2018. Storage as of Oct 28 is 77.04%, which is -17.39% less than last year levels of 94.43% and are -14.52% below the 5-year average of 91.66%. Europe storage levels over the next few weeks will be the key item to watch for indications on LNG markets going into the winter. Below is our graph of Europe Gas Storage Level.

Figure 16: Europe Gas Storage Level



Source: Bloomberg

Oil – US oil +1 WoW at 444 oil rigs

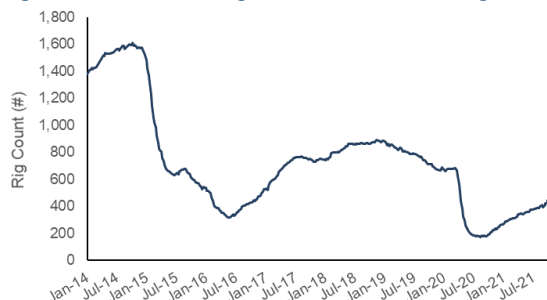
Baker Hughes released its weekly North American drilling activity data at 11am Friday. This week US oil rigs were up +1 rigs WoW at 444 rigs. Oil rigs are +272 off the bottom of 172 in Aug14/2020 week. Permian was -1 this week but is the oil basin expected to drive growth. With oil prices up 69% so far this year and expectations that consumers will switch to oil products with high gas prices, producers are increasing active rigs to boost production to accommodate demand and to rebuild DUCs inventory. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by 235 to 444 oil rigs (-35%). The biggest contributor to the decrease is the Permian being down 152 oil rigs from the March 13, 2020 peak (-36%),

**US oil rigs +1
WoW**

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although we are seeing it continue to ramp up slightly. Below is our graph of US oil rigs since January 1, 2014.

Figure 17: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

Oil – Frac spreads +1 to 266 as of Oct 29

Mark Rossano (C6 Capital Holdings) provided his US frac spread recap for week ended Oct 22 on the Primary Vision network. The YouTube video is at t [LINK](#). US frac spreads were +1 to 266 for week ended Oct 29. In total, there was only a + 1 week but need to look at breakdown, some had decent shifts in terms of activity, some that had none saw increases, some of the smaller basins that has 2 or 3 spreads have come down, and then some increases in areas like Fort Worth and the Williston. Still expect to see the top end of frac spreads around 275 and should hit that in the next two weeks. Then should see some pull back as move into Thanksgiving, but the low, on a percentage basis, won't be as far down as in the past.

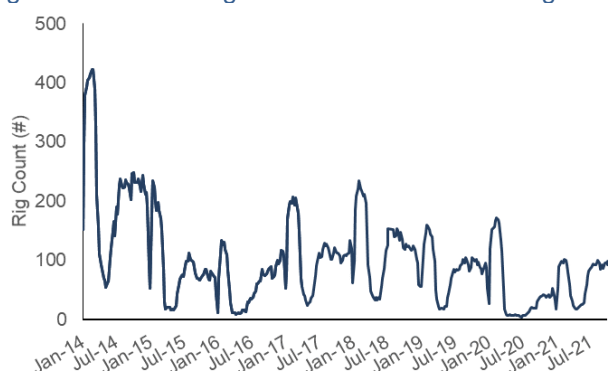
Frac spreads +1 to 266

Oil – Total Cdn rigs +2 to 166 total rigs and +84 rigs YoY

Total Cdn rigs were +2 this week to 166 total rigs. Cdn oil rigs were +5 at 98 rigs. Cdn gas rigs were -3 to 68 gas rigs and we a little surprised by this small WoW decrease and don't know if it's related to a single operator. Total rigs are now +149 since the June 26, 2020 all-time low. We have been expecting a ramp up with the normal Aug/early Sept pause comes to an end. Cdn drilling has recovered YoY, a year ago Cdn oil rigs were 40 and Cdn gas rigs were 46 for a total Cdn rigs of 86, meaning total Cdn rigs are +80 YoY and total rigs are up +19 vs 2019.

Cdn rigs -4 WoW

Figure 18: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

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Oil – US weekly oil production flat at 11.3 mmb/d

Weekly production in the US remained flat this week at 11.3 mmb/d for the week ended Oct 22. There are no items to highlight. US oil production is up YoY at +0.200 mmb/d and is still down significantly at -1.8 mmb/d since the 2020 peak of 13.1 mmb/d on March 13. The EIA DPR has expectations of a slight increase for Oct/Nov for the major shale/tight oil plays.

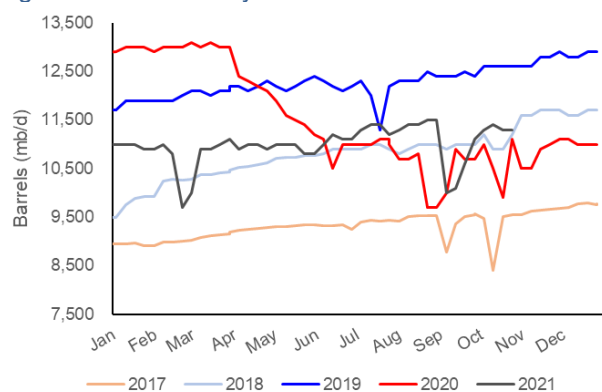
US oil production flat WoW

Figure 19: EIA's Estimated Weekly US Oil Production

Year-Month	Week 1		Week 2		Week 3		Week 4		Week 5	
	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
2019-Jan	01/04	11,700	01/11	11,900	01/18	11,900	01/25	11,900		
2019-Feb	02/01	11,900	02/08	11,900	02/15	12,000	02/22	12,100		
2019-Mar	03/01	12,100	03/08	12,000	03/15	12,100	03/22	12,100	03/29	12,200
2019-Apr	04/05	12,200	04/12	12,100	04/19	12,200	04/26	12,300		
2019-May	05/03	12,200	05/10	12,100	05/17	12,200	05/24	12,300	05/31	12,400
2019-Jun	06/07	12,300	06/14	12,200	06/21	12,100	06/28	12,200		
2019-Jul	07/05	12,300	07/12	12,000	07/19	11,300	07/26	12,200		
2019-Aug	08/02	12,300	08/09	12,300	08/16	12,300	08/23	12,500	08/30	12,400
2019-Sep	09/06	12,400	09/13	12,400	09/20	12,500	09/27	12,400		
2019-Oct	10/04	12,600	10/11	12,600	10/18	12,600	10/25	12,600		
2019-Nov	11/01	12,600	11/08	12,800	11/15	12,800	11/22	12,900	11/29	12,900
2019-Dec	12/06	12,800	12/13	12,800	12/20	12,900	12/27	12,900		
2020-Jan	01/03	12,900	01/10	13,000	01/17	13,000	01/24	13,000	01/31	12,900
2020-Feb	02/07	13,000	02/14	13,000	02/21	13,000	02/28	13,100		
2020-Mar	03/06	13,000	03/13	13,100	03/20	13,000	03/27	13,000		
2020-Apr	04/03	12,400	04/10	12,300	04/17	12,200	04/24	12,100		
2020-May	05/01	11,900	05/08	11,600	05/15	11,500	05/22	11,400	05/29	11,200
2020-Jun	06/05	11,100	06/12	10,500	06/19	11,000	06/26	11,000		
2020-Jul	07/03	11,000	07/10	11,000	07/17	11,100	07/24	11,100	07/31	11,000
2020-Aug	08/07	10,700	08/14	10,700	08/21	10,800	08/28	9,700		
2020-Sep	09/04	10,000	09/11	10,900	09/18	10,700	09/25	10,700		
2020-Oct	10/02	11,000	10/09	10,500	10/16	9,900	10/23	11,100	10/30	10,500
2020-Nov	11/06	10,500	11/13	10,900	11/20	11,000	11/27	11,100		
2020-Dec	12/04	11,100	12/11	11,000	12/18	11,000	12/25	11,000		
2021-Jan	01/01	11,000	01/08	11,000	01/15	11,000	01/22	10,900	01/29	10,900
2021-Feb	02/05	11,000	02/12	10,800	02/19	9,700	02/26	10,000		
2021-Mar	03/05	10,900	03/12	10,900	03/19	11,000	03/26	11,100		
2021-Apr	04/02	10,900	04/09	11,000	04/16	11,000	04/23	10,900	04/30	10,900
2021-May	05/07	11,000	05/14	11,000	05/21	11,000	05/28	10,800		
2021-Jun	06/04	11,000	06/11	11,200	06/18	11,100	06/25	11,100		
2021-Jul	07/02	11,300	07/09	11,400	07/16	11,400	07/23	11,200	07/30	11,200
2021-Aug	08/06	11,300	08/13	11,400	08/20	11,400	08/27	11,500		
2021-Sep	09/03	10,000	09/10	10,100	09/17	10,600	09/24	11,100		
2021-Oct	10/01	11,300	10/08	11,400	10/15	11,300	10/22	11,300		

Source: EIA

Figure 20: US Weekly Oil Production



Source: EIA, SAF

Oil – EIA Form 914 August actuals lower vs weekly production estimates

The EIA released its Form 914 data [\[LINK\]](#) on Friday, which is the EIA's "actuals" for August US oil and natural gas production. Form 914 shows August production of 11.141 mmb/d, down slightly from July production of 11,326 mmb/d after being revised up +22,000 b/d, and up +0.583 mmb/d YoY from August 2020 of 10.558 mmb/d. Three key items to highlight.

(i) The actuals for August were below the weekly estimates, and -158,000 b/d below the weekly estimates that are noted in our Energy Tidbits memos. The actuals are also 0.20

EIA Form 914 August

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mmb/d higher than the EIA STEO September had for August. (ii) This is the fourth consecutive month with YoY increases, and we expect to see this continue through the remainder of the summer. (iii) On the back of the strengthening oil prices, we believe that August's decrease in production was a function of the on-going depletion of DUC inventory wells, rather than new drilling, which requires ramp-up time to translate increasing rigs into actual oil production. Other specific state info: Alaska and New Mexico had the largest MoM increase, both up +29,000 and 50,000 respectively; North Dakota was up +29,000 b/d to 1.089 mmb/d, remaining the # 3 producer for the second consecutive week. ND is still 5,000 b/d below Jan levels, meaning it has still not fully recovered from the February freeze-out. Note, that the increase reflected the temporary lower production as a result of the scheduled maintenance taking place in July. The August actuals were 159,000 b/d below the weekly estimates average of 11.300 mmb/d for August, decreasing for the second consecutive week.

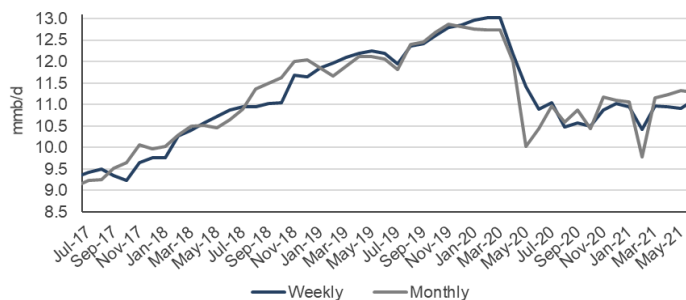
Figure 21: EIA Form 914 US Oil Production

thousand barrels per day

State	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	11,056	9,773	11,160	11,230	11,334	11,288	11,326	11,141				
2020	12,785	12,826	12,816	11,911	9,711	10,420	10,956	10,558	10,868	10,413	11,121	11,084
2019	11,848	11,653	11,899	12,125	12,141	12,179	11,896	12,475	12,572	12,771	12,966	12,910
2018	9,996	10,276	10,461	10,493	10,424	10,628	10,888	11,373	11,422	11,488	11,868	11,924
2017	8,873	9,109	9,168	9,103	9,184	9,110	9,246	9,245	9,516	9,659	10,077	9,979
2016	9,201	9,063	9,088	8,871	8,832	8,672	8,660	8,688	8,542	8,802	8,901	8,814
2015	9,382	9,504	9,582	9,658	9,474	9,358	9,446	9,409	9,480	9,400	9,332	9,275

Source: EIA

Figure 22: EIA Form 914 US Oil Production vs Weekly Estimates



Source: EIA

Oil – Imagine Michigan propane prices if Line 5 is shut down

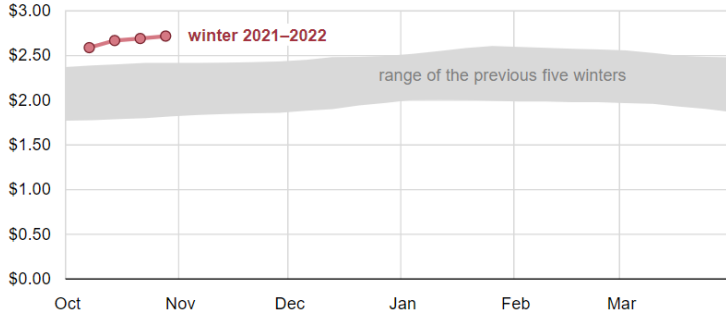
It's a good thing for Michigan residents that Michigan Gov Whitmer hasn't been able to shut down Enbridge Line 5 so far. As it is, winter fuel prices, including propane are higher this winter. And Michigan would be hit even harder if Line 5 is stopped. The EIA blog [\[LINK\]](#) noted propane prices are at their highest levels since 2011. The residential price of propane reached \$2.59/gal on October 4, with the prices of the first 4 weeks of the heating season already 49% higher than the equivalent period last year. The EIA wrote "This year, retail propane prices have risen with wholesale propane spot prices that reflect greater global demand and tight global supply. That tightness is reflected in inventory levels in the United States. U.S. propane and propylene inventories are starting this winter season lower than in recent years; weekly U.S. inventories are averaging 28% lower than the same time last year and 21% lower than their recent five-year (2015–2020) average." 4.8% of US homes primarily use propane to generate heat, with majority in the Midwest US, where temperatures are typically cooler. These households are expected to spend 54% more on average compared to last winter. The cost of propane across states are generally highest in New England and lowest in the Midwest. On October 25, prices across the US ranged from

Gazprom to begin filling European gas storage tanks

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\$2.01/gal all the way to \$4.93/gal in Florida. Below is a graphic depicting residential propane price. Our Supplemental Documents package includes the EIA article.

Figure 23: US Weekly Residential Propane Prices \$/gal

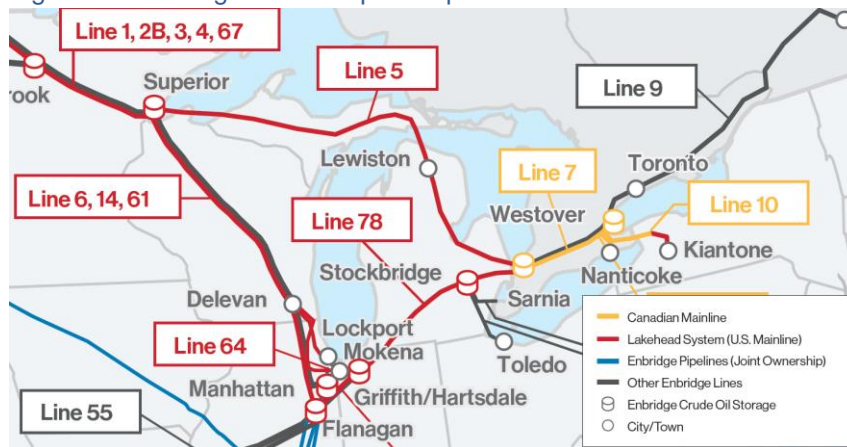


Source: EIA

Who, Where, What gets impacted by a Line 5 shut down

This item has showed up several times in our Energy Tidbits memos and it is especially relevant in light of the high propane prices going into the winter. We first noted this in a June 19, 2020 tweet [\[LINK\]](#) started “A weekend must read, Enbridge “impact of a Line 5 shutdown” is excellent recap of who, where, what gets hit by Line 5 shut down.” It includes tidbits such as “Line 5 supplies 65% of propane demand in Michigan’s Upper Peninsula, and 55% of Michigan’s statewide propane needs.” There would also be a big impact on refineries to the east “Refineries served by Enbridge in Michigan, Ohio, Pennsylvania, Ontario and Quebec would receive approximately 45% less crude from Enbridge than their current demand.” There was a good map that shows how Line 5 fits into other Enbridge pipelines delivering oil to places like Imperial’s Sarnia and Nanticoke refineries in Ontario. Our Supplemental Documents package includes the “impact of a line 5 shutdown” brief. [\[LINK\]](#)

Figure 24: Enbridge Line 5 Liquids Pipeline



Source: Enbridge

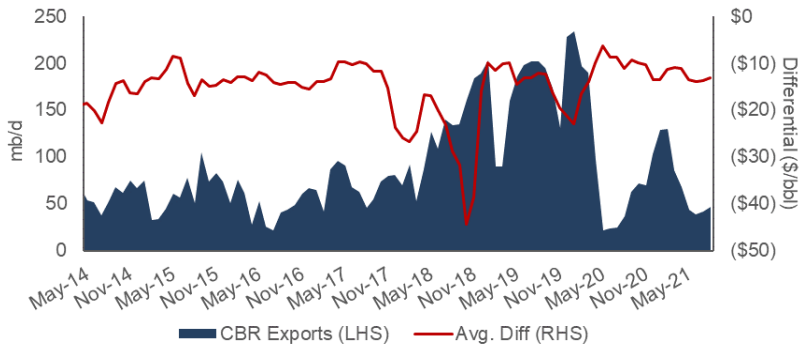
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Oil – Cdn crude by rail imports to Gulf Coast up 10,000 b/d YoY in August to 47,000 b/d

The EIA posted its monthly “U.S. Movements of Crude Oil by Rail” [\[LINK\]](#) on Friday, which also had good insights on Cdn crude by rail. Canadian CBR volumes to PADD 3 (Gulf Coast) were 47,000 b/d in August, which is up 5,000 b/d MoM from July, and up 10,000 b/d YoY vs July 2020. There were no revisions to last months data. Tighter YoY WCS to WTI differentials were the key factor in the low crude by rail volumes since December. Below is our graph of Cdn CBR exports to the Gulf Coast.

Cdn crude by rail imports to Gulf Coast up 10,000 b/d YoY

Figure 25: Canada CBR Exports to US Gulf Coast vs WCS Differential



Source: EIA, Bloomberg

Source: EIA, Bloomberg

Oil – Covid outbreaks up in oil sands facilities

Wood Buffalo has not posted a Covid-19 update for oil sands facilities. The last posted update is still their Oct 5 Covid-19 update [\[LINK\]](#). But Alberta posts its Covid updates on Tuesdays and Fridays. Per Alberta’s Friday October 29 update [\[LINK\]](#), there are two more oil sands facilities on the Covid outbreak list since the last Wood Buffalo Oct 5 update. As of the Oct 5 update, there were 6 outbreak oil sands facilities are: CNRL Albion, CNRL Horizon, CNRL Kirby Jackfish, MEG Christina Lake, Suncor Firebag and Suncor Fort Hills. The Alberta update has those 6 oil sands facilities and 2 more - Cenovus Foster Creek, CNRL Primrose-Wolf Lake.

Covid in oil sands

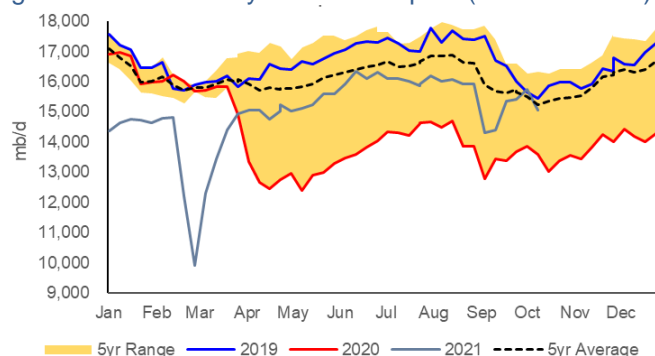
Oil – Refinery inputs +1.660 mmb/d YoY at 15.048 mmb/d

Refineries continue to recover from the impacts of Covid and Hurricane Ida and normal seasonal maintenance; we observed inputs rebound as refineries begin increased operations as the maintenance season progresses. There was a slight increase in refinery inputs as refineries across the US finish with their seasonal maintenance. Crude inputs to refineries were up -0.058 mmb/d this week to 15.048 mmb/d and are +1.660 mmb/d YoY. Refinery utilization was up +0.4% to 85.1%, which is still +10.5% YoY with the maintenance season ramping up across the nation. Total products supplied (i.e., demand) was down -2.001 mmb/d to 19.832 mmb/d. Motor gasoline was down -0.311 at 9.323 mmb/d from 9.634 mmb/d last week. Gasoline supplied, a proxy for demand, was down last week. Not a surprise with higher retail prices. With the driving season over, demand tends to fall. The four-week average of production supplied increased to 9.392 mmb/d, up from last year. Below is our graph of crude inputs to US refineries.

Refinery inputs up WoW

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Figure 26: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA, SAF

Oil – Exxon lets Beaumont locked out workers know about higher pay structure

ExxonMobil sent a message to hundreds of locked out union workers at its Beaumont refinery, saying that pay is greater at non-union sites [\[LINK\]](#). In a message titled “decertification update,” Exxon stated “we are not allowed to make promises, and we will not do so. We can report that non-represented employees at comparable sites are paid 5% to 7% more and have similar benefits.” The message comes two weeks after union members overwhelmingly voted down the company’s contract offer by a vote of 243-13. It looks like Exxon is doing everything in its power to persuade union voters, which are scheduled to vote by mail between Nov. 12 and Dec. 22 in a decertification election, that, if successful, will remove the United Steel Workers. Whether or not Exxon’s tactics will influence any voters remains to be seen. Exxon continues to operate the refinery at about 60% of its capacity with managers and supervisors as well as temporary operators. We still don’t know what the actual throughput is at Beaumont relative to its 369,000 b/d capacity since the lockout, but we would assume it would be at less than 100%, perhaps in the 75% range. Our Supplemental Documents package include the Reuters report posted on Yahoo.com. [\[LINK\]](#)

Exxon pays more at non-union refineries

Oil – US “net” oil imports up +0.703 mmb/d WoW at 3.467 mmb/d

US “NET” imports were up +0.703 mmb/d to 3.467 mmb/d for the Oct 22 week. US imports were up +0.429 mmb/d to 6.254 mmb/d. US exports were down -0.237 mmb/d to 2.787 mmb/d. The WoW increase in US oil imports was driven by US’s top 10 imports by country were up +0.335 mmb/d from Top 10. Some items to note on the by country data. (i) Canada was down this week by +0.218 mmb/d to 3.472 mmb/d, which is now -0.211 mmb/d below the average levels in Jan/Feb of 2020. (ii) Saudi Arabia was up 17,000 b/d to 0.336 mmb/d this week. (iii) Colombia was down 0.070 mmb/d to 0.141 mmb/d. (iv) Ecuador increased imports this week, up 0.222 mmb/d to 0.222 mmb/d. (v) Iraq was down -84,000 b/d to 155,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico was up by +169,000 b/d to 0.631 mmb/d.

US “net” oil up WoW

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Figure 27: US Weekly Preliminary Oil Imports by Major Countries

	Aug 13/21	Aug 20/21	Aug 27/21	Sept 03/21	Sept 10/21	Sept 17/21	Sept 24/21	Oct 1/21	Oct 8/21	Oct 15/21	Oct 22/21	WoW
Canada	3,057	3,555	3,612	3,580	3,200	3,143	3,034	4,039	3,441	3,254	3,472	218
Saudi Arabia	363	286	345	296	369	399	561	622	304	319	336	17
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	629	595	674	372	538	835	764	652	316	462	631	169
Colombia	143	370	71	145	0	212	255	0	382	211	141	-70
Iraq	150	77	174	106	50	42	0	31	188	239	155	-84
Ecuador	197	261	195	0	174	102	235	59	208	0	222	222
Nigeria	214	95	43	116	82	95	64	133	211	137	0	-137
Kuwait	0	0	0	0	0	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0	0	0	0	0	0
Top 10	4,753	5,239	5,114	4,615	4,413	4,828	4,913	5,536	5,050	4,622	4,957	335
Others	1,597	918	1,226	1,195	1,348	1,637	1,639	1,499	944	1,203	1,297	94
Total US	6,350	6,157	6,340	5,810	5,761	6,465	6,552	7,035	5,994	5,825	6,254	429

Source: EIA, SAF

Oil – Mexico Sept oil production +4.0% YoY to over 1.7 mmb/d

September production was up MoM due recovery of their offshore platform. On Thursday, Pemex reported September crude oil production of 1.709 mmb/d, an increase of +4.0% YoY and +3.14% MoM. September was expected to be lower due to a fire at an offshore platform estimated to be 421,000 b/d of output, but the impact was far less than we, and we suspect most others, expected. On Aug 30, we tweeted [\[LINK\]](#) “have to admit, was surprised to see #Pemex announce it restored all 421,000 b/d of shut in oil after the Aug 22 fire. #OOTT.” Pemex continues to post YoY increases though this is attributed to Covid induced production decreases last fall and not necessarily actual growth.

Pemex Sept oil production +4.0% YoY

Figure 28: Pemex Mexico Oil Production

Oil Production (thousand b/d)	2015	2016	2017	2018	18/17	2019	19/18	2020	20/19	YTD 2020	2021	21/20
Jan	2,251	2,259	2,020	1,909	-5.5%	1,623	-15.0%	1,724	6.2%	1,724	1,651	-4.2%
Feb	2,332	2,214	2,016	1,876	-6.9%	1,701	-9.3%	1,729	1.6%	1,726	1,669	-3.5%
Mar	2,319	2,217	2,018	1,846	-8.5%	1,691	-8.4%	1,745	3.2%	1,714	1,697	-2.8%
Apr	2,201	2,177	2,012	1,868	-7.2%	1,675	-10.3%	1,703	1.7%	1,711	1,693	-0.6%
May	2,227	2,174	2,020	1,850	-8.4%	1,663	-10.1%	1,633	-1.8%	1,695	1,688	3.4%
June	2,247	2,178	2,008	1,828	-9.0%	1,671	-8.6%	1,605	-3.9%	1,680	1,698	5.8%
July	2,272	2,157	1,986	1,823	-8.2%	1,671	-8.3%	1,595	-4.5%	1,668	1,701	6.6%
Aug	2,255	2,144	1,930	1,798	-6.8%	1,683	-6.4%	1,632	-3.0%	1,663	1,657	1.5%
Sept	2,271	2,113	1,730	1,808	4.5%	1,705	-5.7%	1,643	-3.6%	1,667	1,709	4.0%
Oct	2,279	2,103	1,902	1,747	-8.1%	1,655	-5.3%	1,627	-1.7%	1,663		
Nov	2,277	2,072	1,867	1,697	-9.1%	1,696	-0.1%	1,633	-3.7%	1,660		
Dec	2,275	2,035	1,873	1,710	-8.7%	1,706	-0.2%	1,650	-3.3%	1,659		

Source: Pemex

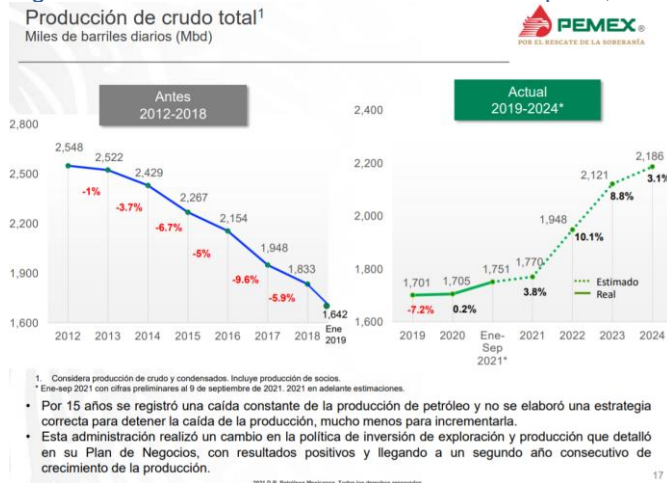
Oil – Pemex lowers oil production forecast

Pemex also posted a new investor presentation on Thursday, which, no surprise, lowered its oil production forecast. This has been the story for Pemex for the last few years – oil production forecasts aren’t met. We tweeted [\[LINK\]](#) “Positive for Cdn heavy/med oil. New #Pemex slide deck, continues to lower #Oil production forecasts. no change to 2022, but 2023 now 1.971 mmb/d (was 2.121) & 2024 now 2.063 mmb/d (was 2.186). Will help AMLO reach his no exports goal. #OOTT.” So no real change for 2021 and 2022 forecasts but lowering 2023 and 2024. Below are the Pemex oil production forecasts from their Sept 13, 2021 investor presentation and October 28, 2021 investor presentation.

Pemex lowers oil production forecast

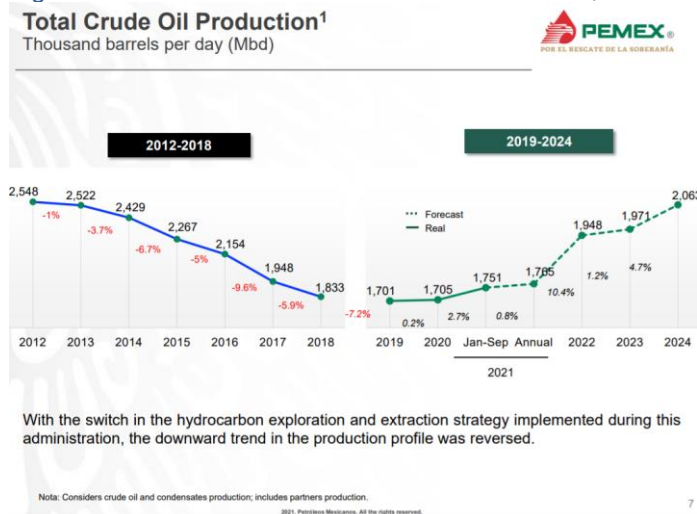
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Figure 29: Pemex Oil Production Forecast Sept 13, 2021



Source: Pemex

Figure 30: Pemex Oil Production Forecast Oct 28, 2021



With the switch in the hydrocarbon exploration and extraction strategy implemented during this administration, the downward trend in the production profile was reversed.

Source: Pemex

Oil – Mexico September oil exports -3.9% YoY to 0.983 mmb/d

As expected, on Thursday Pemex also reported lower MoM crude oil exports in September. Mexico oil exports in September were 0.983 mmb/d, which -3.9% YoY, and -10.5% from August of 1.099 mmb/d. As expected, September exports have decreased due to a fire on the E-Ku-A2 platform that saw 421,000 bp/d taken offline. Below is our table of the Pemex oil export data.

**Pemex
September oil
exports down**

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Figure 31: Pemex Mexico Oil Export

Oil Exports (thousand b/d)	2015	2016	2017	2018	2019	19/18	2020	20/19	YTD 2020	2021	21/20
Jan	1,261	1,119	1,085	1,107	1,071	-3.3%	1,260	17.6%	1,260	979	-22.3%
Feb	1,305	1,241	1,217	1,451	1,475	1.7%	1,093	-25.9%	1,179	1,006	-8.0%
Mar	1,228	1,062	1,001	1,176	1,150	-2.2%	1,144	-0.5%	1,167	925	-19.1%
Apr	1,035	1,081	1,017	1,266	1,023	-19.2%	1,179	15.2%	1,180	923	-21.7%
May	1,114	1,204	958	1,222	1,205	-1.4%	1,062	-11.9%	1,156	1,031	-2.9%
June	1,047	1,098	1,157	1,110	995	-10.4%	1,114	12.0%	1,149	1,106	-0.7%
July	1,187	1,146	1,255	1,156	1,079	-6.7%	1,051	-2.6%	1,135	1,173	11.6%
Aug	1,261	1,261	1,114	1,181	1,082	-8.4%	1,190	10.0%	1,142	1,099	-7.6%
Sept	1,169	1,425	1,159	1,206	995	-17.5%	1,023	2.8%	1,132	983	-3.9%
Oct	1,280	1,312	1,342	1,027	963	-6.2%	908	-5.7%	1,110		
Nov	1,178	1,273	1,388	1,135	1,114	-1.9%	1,171	5.1%	1,115		
Dec	1,008	1,115	1,401	1,198	1,115	-6.9%	1,243	11.5%	1,126		

Source: Pemex

Oil – AMLO still plans to stop MX oil exports in H2/22 with Dos Bocas refinery start up

On Wed, we tweeted [\[LINK\]](#) on a big developing upside to Cdn heavy/medium oil starting in H2/22 with the still planned inauguration of the under construction Dos Bosca Refinery that has expected capacity of 340,000 b/d. We tweeted “H2/22 #Oil supply gap >0.5 mmbd heavy/med to PADD 3. #Pemex Dos Bocas refinery start up 07/01/22, AMLO says MX oil prod needed for refineries & to stop exports. Should be upside to Cdn heavy/med. Thx @CarolinaBGP. See SAF Group 12/27/20 Energy Tidbits [\[LINK\]](#) #OOTT.” Bloomberg reported “The government of President Andres Manuel Lopez Obrador is preparing to cancel crude oil export contracts, if necessary, once the new Dos Bocas refinery is launched, local newspaper El Universal reported. * “There are instructions from the president to stop exporting to allocate all crude oil to the National Refining System and the new refinery that will be inaugurated on July 2, 2022,” energy sector officials told El Universal * With the Dos Bocas refinery, at least 1.5 million barrels of crude oil will be required for domestic consumption each day next year, the sources explained.” For those fluent in Spanish, the El Universal 1.39 min video “Alistan cierre de grifo a exportaciones de crudo por Dos Bocas” is at [\[LINK\]](#). Dos Bocas alone does not lead to the Pemex refineries having the capacity to process all Mexican oil production. The other part is that focus for Pemex to increase existing refinery utilizations. Our Supplemental Documents package includes the Bloomberg report.

AMLO plans no more oil exports in H2/22

Increasing refinery capacity to zero out exports has been AMLO energy priority

This has been coming since AMLO became President. It also just so happens that the new Dos Bocas refinery is located in his home state of Tabasco. AMLO’s energy priority has been to increase existing refinery utilization and build the new Dos Bocas refinery so Mexico had refinery capacity to process all of its crude oil production. This would eliminate oil exports with the big win being that Mexico would be able to produce the gasoline, diesel, etc it needs and not have to import these petroleum products. Our Wed tweet included the excerpt from our December 27, 2020 Energy Tidbits on this Dos Bocas refinery and the lift to Cdn heavy/medium crude oil. Our Supplemental Documents package includes that longer December 27, 2020 write up on these plans.

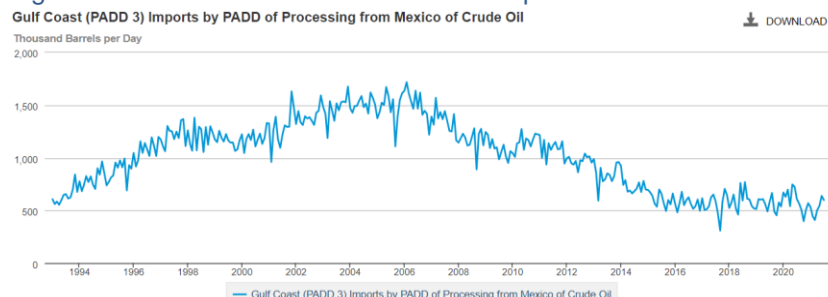
Creates >0.5 mmb/d heavy/medium supply gap in Gulf Coast PADD 3 refineries

Assuming Pemex can increase its refinery utilization to go along with the new Dos Bocas refinery and Mexico can then stop oil exports in H2/22, this will create a heavy/medium oil supply gap in Gulf Coast PADD 3 refineries. We have been highlighting for years how Cdn heavy/medium crude oil has been the big winner when there are declining US Gulf Coast PADD 3 imports of heavy/medium crude oil from Mexico and Venezuela. And if Mexico stops heavy/medium oil exports in

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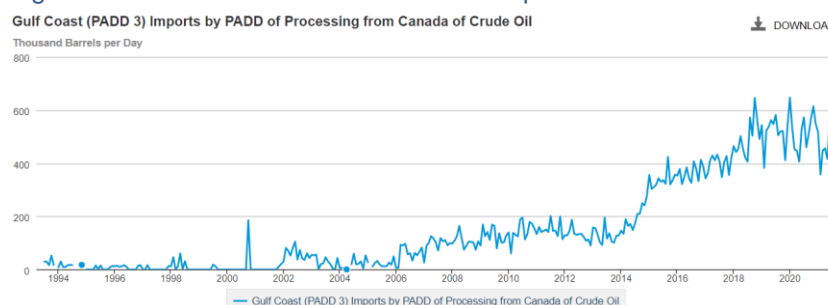
H2/22, Cdn heavy/medium crude stands to be the desired supply. The biggest risk is that the US removes Venezuela sanctions and that Venezuela then increase oil production and exports including to the US. Our Wednesday tweet said it would create a >0.5 mmb/d supply gap. Below are the EIA’s current PADD 3 imports of crude oil from Mexico and Canada. Please note the different scales in the graphs.

Figure 32: Gulf Coast PADD 3 Crude Oil Imports From Mexico



Source: EIA

Figure 33: Gulf Coast PADD 3 Crude Oil Imports From Canada



Source: EIA

Oil – Sudanese Coup puts crude exports at risk

The recent coup in Sudan has led to severe civil unrest and put 130,000 b/d of crude oil exports at risk. Bloomberg reported on Tuesday [LINK](#), that this will pose enormous strain on South Sudan if Sudan exports are affected. South Sudan is dependant on Sudan to export its crude via a pipeline throughout the nation to coastal export facilities. It also supplies Sudan’s only operational oil refinery in Khartoum with roughly 30,000 b/d of crude. South Sudan has only 10 days of crude storage capacity. Our Supplemental Documents package includes the Bloomberg report.

Sudan coup threatens oil exports

Oil – Next OPEC+ meeting is Thursday November 4

OPEC+ held its Joint Technical Committee meeting on Thursday “to discuss oil market developments in preparation for the 34th Meeting of the Joint Ministerial Monitoring Committee and the 22nd #OPECnonOPEC Ministerial Meeting planned for next week.” The meeting date is Thursday, November 4.

OPEC/non-OPEC Nov 4 meeting

Oil – OPEC makes minor changes to its oil demand/supply views

It doesn’t look like OPEC’s views on oil supply and demand have changed much and not enough to change their schedule of planned production increases. OPEC does not provide a release on the OPEC Joint Technical Meeting and the JTC views on oil supply and demand. However, Argus reported [LINK](#) on feedback from the JTC and it sounds like the JTC sees

Minor changes to OPEC+ demand/supply views

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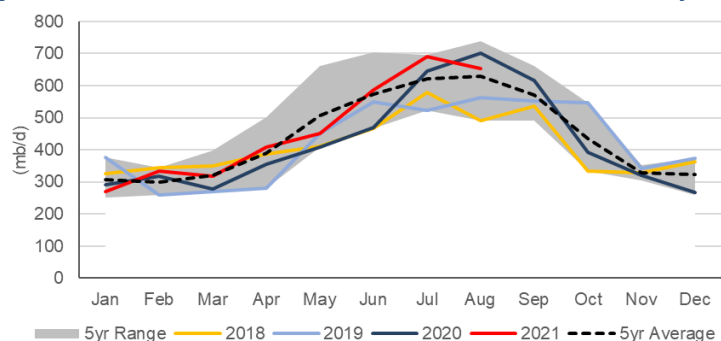
minor changes to oil demand and supply versus the October OPEC Monthly Oil Market Report. And, if so, it wouldn't point to any reason for OPEC+ to change their planned production increase schedule. Argus report "*The Opec+ coalition's Joint Technical Committee (JTC) has trimmed its forecast for global oil demand growth this year ahead of next week's ministerial meeting to decide on December output policy. The JTC, which met yesterday, considered a base case scenario in which demand grows by 5.7mn b/d in 2021. Opec's most recent Monthly Oil Market Report (MOMR) pegged demand growth at 5.8mn b/d this year, while the JTC's base case last month was for 6mn b/d growth. The JTC's updated base case also includes a downward revision in global oil supply growth for this year, to 1.7mn b/d from 1.9mn b/d previously. The base case for 2022 demand growth is unchanged at 4.2mn b/d, while next year's supply increase has been adjusted to 6.8mn b/d from 6.6mn b/d in the JTC's September report.*" Our Supplemental Documents package includes the Argus report.

Oil – Saudi Arabia has more export capacity with seasonal demand for oil down

We remind that the peak season for Saudi Arabia's use of oil for electricity is coming to an end. The typical decline from trough to peak during this reduced consumption is a swing of 400-500,000 b/d, which would be volumes that would be available for export without changing Saudi production levels. Last Sunday, we tweeted [\[LINK\]](#), "*Reminder, even before any production increases, Saudi will have more #Oil for export as it has started the normal seasonal decline in oil used for electricity. Summer peak to winter trough normally down 400-500,000 b/d. #OOTT.*" With that, we note that Saudi Arabia will have greater export capacity moving along into the start of winter. Below is our graphic depicting Saudi Arabia's use of crude for electricity generation.

**Saudi Arabia
seasonal use of
oil to decrease**

Figure 34: Saudi Arabia Direct Use of Crude Oil for Electricity



Source: JODI

Oil – Saudi-Kuwait neutral zone technical issues: Currently <200,000 b/d

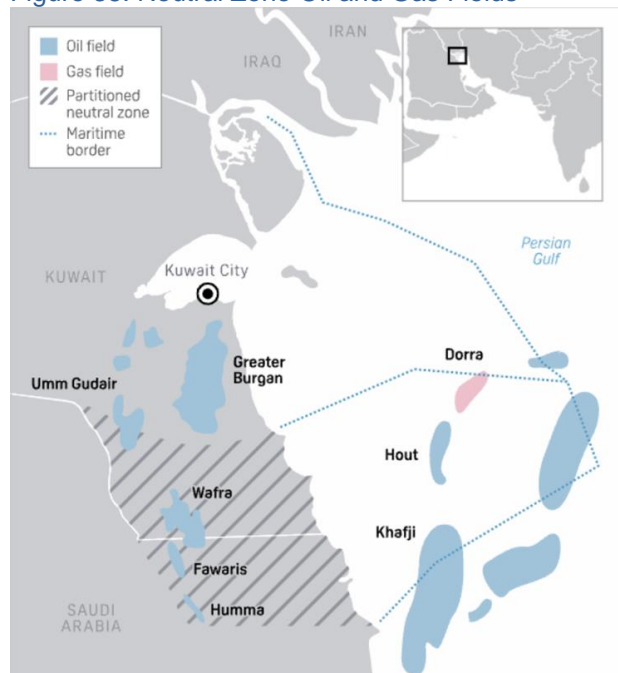
The Neutral Zone in which both Saudi Arabia and Kuwait extract oil from is still significantly underproducing relative to the expected quick return to its pre-shut in volume of 500,000 b/d. S&P Global Platts reported on Tuesday [\[LINK\]](#), that the region had been experiencing technical difficulties after years of inactivity during the ramp up process. Current production between the two countries is under 200,000 b/d, with the take split evenly. Concerning the production timeline, the article stated, "*total production would likely be capped at about 400,000 b/d to 450,000 b/d in five years due to technical challenges following its 2020 restart, and 500,000 b/d would be a 'great achievement' if attained.*" The Kuwait Petroleum Corp CEO believes that Neutral Zone production would reach pre-shutdown levels of 500,000 b/d in 2022 and reach 700,000 b/d by 2023. The Neutral Zone has experienced on again off again production since 2016 due to a political dispute that was resolved in 2020. Below is a

**Kuwait/Saudi
Neutral Zone oil**

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map of the Neutral Zone's oil and gas fields. Our Supplemental Documents package includes the Platts report.

Figure 35: Neutral Zone Oil and Gas Fields



Source: Kuwait oil ministry, S&P Platts

Oil – Iran hostage crisis started Nov 4, 1979

US sanctions have been in place on Iran for over 40 years. The game changing event of the US/Iran relationship happened on Nov 4, 1979, when what was called a group of Iranian militant students stormed the US embassy and took 52 Americans as hostage. The hostages were held for 444 days (Nov 4, 1979 to Jan 20, 1981). It also led to the six fortunate American diplomats who were able to escape to the Canadian embassy and eventually, posing as Canadians, were able to get out of Iran on Jan 27, 1980. We are sure that most of seen some of the movies on the Canadian Caper. Iran was a big news item for all of 1979 when the Shah of Iran fled Iran on Jan 16, 1979 and then to the forming of the Islamic state created by the Ayatollah Khomeini. The Shah of Iran was considered the #1 US ally in the Persian Gulf. Iran became an Islamic Republic on Apr 1, 1979. International concerns and tensions were escalating in the seven months before the hostage taking. Algeria played the role as mediator. Carter got wiped out in the Nov 1980 election by Reagan. And the hostages were released after the signing of the Algiers Accord, minutes after Reagan was sworn in. And then it led to the start of US sanctions against Iran that have more or less been in place since then.

Iran hostage crisis Nov 4, 1979

Oil – US tries to get JCPOA going with Biden's commitment to not walk away

It looks like the US is trying to get Iran back to the JCPOA table with a new position or, at least, a new stated public position. Last night, we tweeted [\[LINK\]](#) "US tries to break #JCPOA impasse. #Biden says US will stay in full compliance as long as Iran does the same. He can't obligate future presidents to stay in a JCPOA, so this is the best he can offer. #OOTT." We have not seen this position before with Biden committing to stay in compliance as long as

New US position on JCPOA

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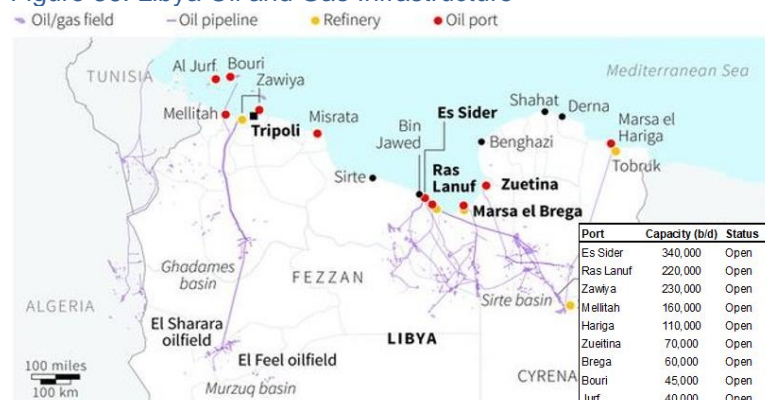
Iran does the same. Iran has been seeking guarantees that the US not be able to walk away again like happened under Trump. The reality is that there is no way Biden could ever commit to future administrations not walking away so the best he could give is that he won't walk away. We don't know if this will be enough to get a firm restart date, but it is a change in US public position to do so. The White House press release [\[LINK\]](#) said "*The current situation underscores the importance of a negotiated solution that provides for the return of Iran and the U.S. to full compliance with the JCPOA and provides the basis for continued diplomatic engagement to resolve remaining points of contention – both our concerns and Iran's. In this spirit, we welcome President Biden's clearly demonstrated commitment to return the U.S. to full compliance with the JCPOA and to stay in full compliance, so long as Iran does the same.*" Our Supplemental Documents package includes the White House release.

Oil – A bad week for Libya NOC, oil production below 1 mmb/d, reduces oil shipments

We believe there should be an increasing geopolitical risk to Libya oil in the run up to, and even moreso after, the Dec 24 election. As we have stated, we find it hard to believe both the west and east (including Haftar) will automatically accept the results and move on with a united Libya. It was a bad week for Libya oil. (i) First, we have to wonder if this is east vs west initiated but, on Tuesday, the Libya NOC announced [\[LINK\]](#) their Zawiya Oil Complex was severely damaged as a result of skirmishes of armed groups the previous night. In their statement, "*Those involved held no regard for the lives of workers at the sites or to the damage that may have caused to the capabilities of the Libyan state and the livelihoods of citizens there.*" Damages to the facility include: 13 storage tanks for both finished petroleum products, crude oil and additives, with significant quantities being leaked from their T9 tank. There was also damage to an electrical transformer, the source of power for the complex's main station of oil mixing and filling facility; additionally, the mixing plant saw extensive damage to the ceilings and halls. Inspections on production units of the company are ongoing to determine the full extent of the damage. We tweeted [\[LINK\]](#), "*Positive to #Oil. @NOC_Libya confirms "Zawiya Oil Complex was severely damaged" from armed skirmishes. Zawiya is major export terminal w/ loading capacity of ~230,000b/d for Sharara/EI Feel oilfields. Also has refinery. Still worry what happens post Dec 24 election. #OOTT*". It was interesting to see this is the key terminal for the oil production for the west. The NOC later indicated it did not impact exports. (ii) Second, there was an example of how years or no capex has led to damage. On Wednesday, the NOC announced [\[LINK\]](#) that a major leak in the key pipeline to the Es Sider loading terminal in central Libya has shut down the pipeline and will reduce Libya oil shipments by ~0.2 mmb/d for a couple weeks. As a result Libya oil production is back below 1 mmb/d. The NOC blames this directly on the lack of capex budget. Below is our SAF Group Libya oil infrastructure map. Our Supplemental Documents package includes the National Oil Corporations releases.

**A bad week for
Libya oil**

Figure 36: Libya Oil and Gas Infrastructure



Source: Bloomberg, HFI, SAF

Oil – Rosneft says maybe the end of an era of relatively low energy prices

Russia’s Rosneft CEO reminds of what happens when oil investment is reduced – cheap oil prices are gone. Rosneft CEO Sechin commented that the current gas crisis and discouragement of traditional energy sources could continue to heat up oil prices. He stated, “Discouragement of traditional energy will reduce the investment required to maintain the level of production of traditional energy resources, which will cause scarcity and even greater price increases,” he said. “High energy prices will certainly slow down economic growth, and an era of relatively low energy prices, which has been going on for almost 100 years and which has become the main stimulus for the development of the world economy, may come to an end.” According to the release, Rosneft believes that India will be one of the key drivers of global demand growth in the long term with consumption likely to double by 2050. Rosneft claimed the gas crisis in Europe was a complex issue though excessive confidence in wind played a significant role in the low underground gas storage capacity. Rosneft believes that the record European gas prices threaten European economic recovery, alluding to the incorrect hope that these European prices would be alleviated by US LNG cargoes. The US involvement in the gas crisis was not overlooked as Rosneft claimed that while US exports increased to Europe by 47%, exports to Asia where 2.6 times of that sent to Europe. The head of Rosneft said “As you can see, the political and economic priorities of the United States differ, promising to significantly increase gas supplies to Europe, in reality, the United States first of all increases them in a completely different direction. As a result, in oil equivalent, the price of gas in Europe reached \$ 200 per barrel, which is more than twice the price of oil.” Our Supplemental Documents package includes the TASS article.

High energy prices are likely here to stay

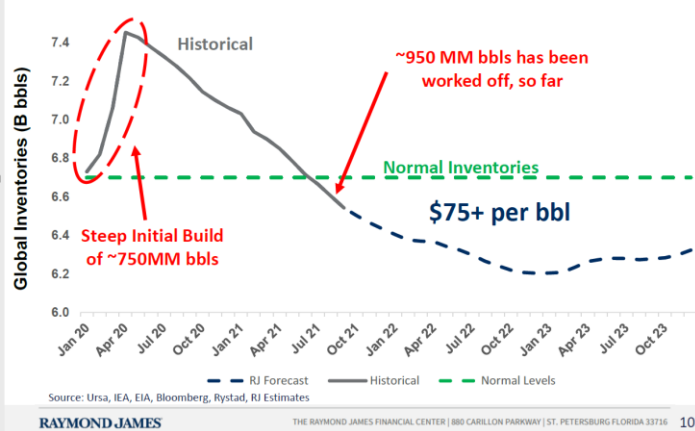
Oil – Great data & insights from Raymond James oil outlook

Before anyone discounts the Raymond James Oil Outlook as just another bullish oil outlook with oil over \$85, remember the key point – they had what was viewed as a super bullish oil call long before others (excluding Eric Nuttall at Ninepoint) and one that came true. And similar to what followers of Eric Nuttall have seen, the Raymond James has been making sure to focus on the key data point – inventory and days of supply. or as Marshall Adkins puts it “Follow the oil inventories!”. So power to Raymond James for their early bullish call. One other key slide to remember is that global excess productive capacity is expected to be gone in id 2022. Think about that. Raymond James Marshall Adkins did an amazing job in covering many of the 70+ slides in 30 min and left 30 min for Q&A. We recommend reaching out to your Raymond James contacts for the slide deck. Below we paste a couple of their slides.

Raymond James oil outlook

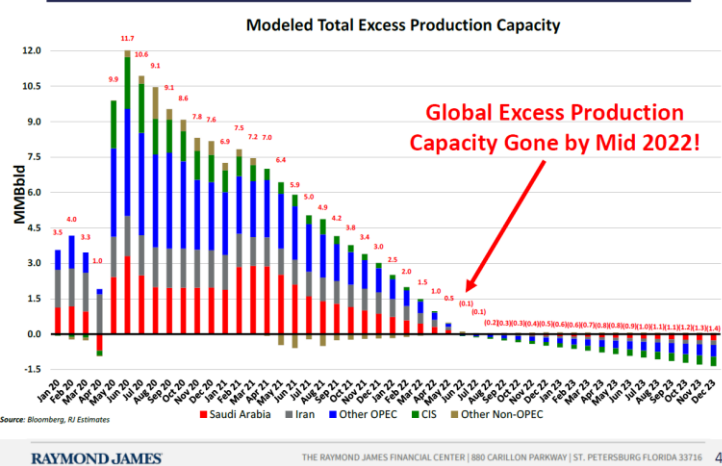
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Figure 37: Global Oil Inventories Heading Way Below Normal
And, Inv. Heading Way BELOW Normal



Source: Raymond James

Figure 38: Global Excess Productive Capacity
Global Excess Productive Capacity



Source: Raymond James

Oil – China releasing gasoline/diesel stocks to try to reduce price

No one will be surprised to see China is trying to reduce pressures on gasoline and diesel prices. Earlier today, China’s National Food and Strategic Reserves administration announced it would be releasing gasoline and diesel from its strategic reserves. It did not disclose how much would be released. The Google Translate of their short press release [\[LINK\]](#) said “According to the recent domestic refined oil supply and demand situation, and in response to the need to maintain supply and price stability in some regions, the gasoline and diesel that have been rotated out of the warehouse this time will be used to increase market resources, ease supply tensions, and play a role in regulating the national refined oil reserve market.”

China releasing gasoline/diesel stocks

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Oil – Vortexa est 84.07 mmb at Oct 29, note massive revisions up to Oct 22 estimates

Note that we are referencing the Vortexa global crude oil floating storage data posted on the Bloomberg terminal as of 4pm MT yesterday and that these estimates often get revised over the weekend, and then again for the next week. Note we do not check daily for the revisions so our comments are compared to the Oct 15 and 22 estimates that were posted on Sat Oct 23 at 5:15pm MT. There were massive revisions to the Oct 22 data, but we believe the Vortexa estimates provide a good picture of global crude oil floating storage over the last several weeks ie. they show the trends in floating oil storage. The posted Vortexa estimate for crude oil floating storage as of Oct 29 is 84.07 mmb, which is only +7.27 mmb vs the recent June 25, 2021 trough but down 136.72 mmb from the June 26, 2020 peak of 220.79 mmb. Vortexa crude oil floating storage as of Oct 29 is estimated at 84.07 mmb, which is down 29.81 mmb vs a revised Oct 22 of 113.88 mmb. There was a massive revision to Oct 22 data vs what was estimated last Sat at 5:15pm MT. At that time, Bloomberg posted a Vortexa estimate of 86.24 mmb for Oct 22. Or basically flat to the new Oct 29 estimate. Interestingly, there was no major revision to the Oct 15 data. Today, Oct 15 is estimated at 108.01 mmb, whereas last Sat it was estimated at 110.12 mmb. Oct 29 of 84.07 mmb is above the recent June 25 trough of 76.80 mmb. There was a small revision to the June 25 trough that was estimated at 78.92 mmb as of last Sat. Oct 29 of 84.07 mmb is down 136.72 mmb from the June 26, 2020 peak of 220.79 mmb. There were immaterial revisions to the June 26, 2020 peak. Oct 29 of 84.07 mmb is up vs pre-Covid of 66.91 mmb as of Oct 28, 2019. Below is the Bloomberg graph of the Vortexa data back to Oct 28, 2019 as posted on the Bloomberg terminal at 4pm MT yesterday.

Vortexa floating storage

Figure 39: Vortexa Floating Storage Oct 29, Posted on Bloomberg 4pm MT Sat



Source: Bloomberg, Vortexa

Oil – Bloomberg Oil Demand Monitor, Asian roadway volumes increasing

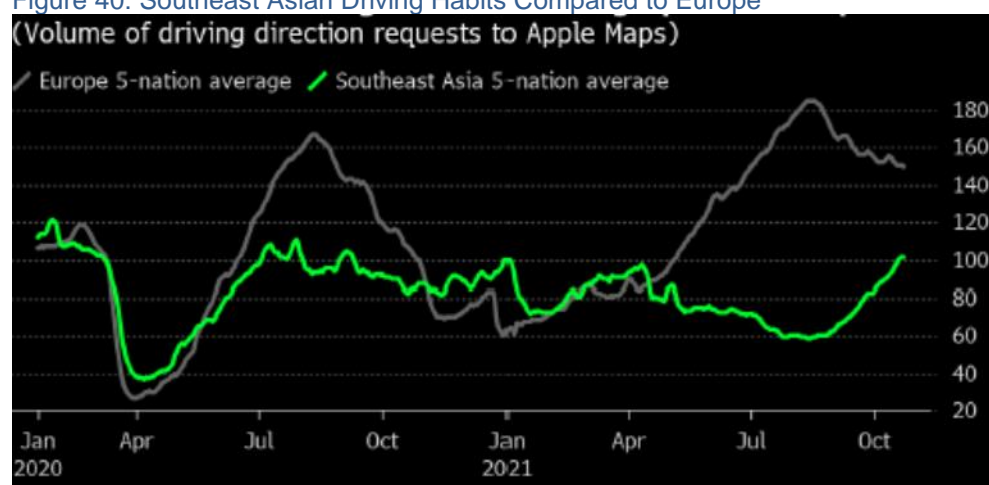
We recommend reading the weekly Bloomberg terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. Motorists have returned to roadways with a sizeable upswing this week while Chinese air travel has declined. Goldman Sachs analysts are predicting that oil demand will soon be back to 2019 levels following Asia's rebound as processors are taking advantage of higher prices and demand. Driving habits aggregated from southeast Asia show a similar upswing of driving navigation requests as in the Europe peak in mid-August. New York and Berlin roadway congestion were 12% and 23% above 2019 levels while other monitored cities were below for the week ended Oct 25. New York,

Bloomberg's Oil Demand Monitor

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Paris, Mexico City and San Paulo all saw MoM increases for the equivalent week in September. London saw the biggest decline in congestion this week, down 65% MoM, and fuel sales are 17% below the 2019 equivalent week following the panic buying present at the end of September. Gasoline consumption was level with pre-pandemic levels, while distillate fuel was 5% above 2019. Global airline capacity was 78.5% this week, 27% below 2019 levels; China saw a significant revision down 7.5% below 2019 levels following added restrictions due to Covid. The US and Mexico are 9.1% and 10% below 2019 levels with rapid gains being made by France, Spain, and the UK WoW. Singapore remained down 81% with uncertainty surrounding when improvement will be observed, following announced plans to lift travel restrictors. Jet fuel demand was down 4.9% MoM, still down 23% from 2019. Refinery utilization is down 2.8% across the US as maintenance season continues across the country, with eastern refineries leading the decreases, down 16% MoM. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 40: Southeast Asian Driving Habits Compared to Europe
(Volume of driving direction requests to Apple Maps)



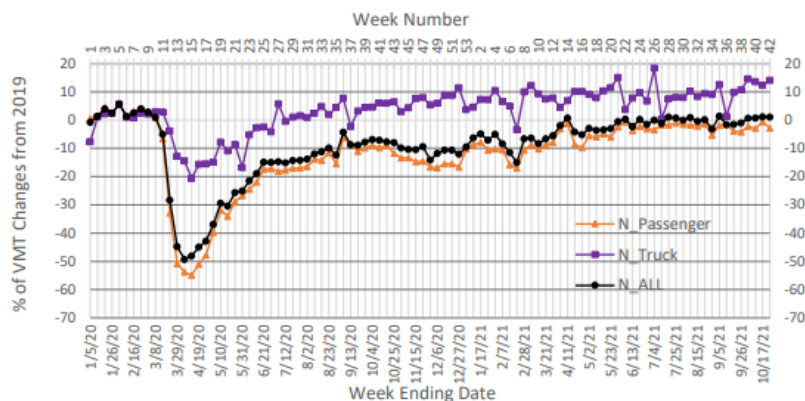
Source: Bloomberg

Oil – US overall vehicle miles for Oct 18-24 week was +1% vs 2019

The US Department of Transportation released their weekly traffic volume report for the week of October 18-24 [LNK]. The DOT estimates “vehicle miles traveled by all vehicles on all interstate highways for Week 42, starting Monday, October 18, 2021, ending Sunday, October 24, 2021, are estimated to be 16.4 billion vehicle miles, the same as the previous week. VMT for the week is 1% higher than the same week of 2019. Passenger vehicle miles traveled on all interstate highways for Week 42 are 3% lower than the same week of 2019. Truck vehicle miles traveled on all interstate highways for Week 42 are 14% higher than the same week of 2019.”

Trucking saw a better recovery than passenger travel

Figure 41: All vehicles, passenger vehicles and truck vehicle miles travelled vs 2019 levels



Source: US Department of Transportation

Oil & Natural Gas – Exxon to raise comp, a trend that will be for all O&G companies

We have been highlighting that employee compensation is going up in 2021 and 2022 in a reversal, if not more, of compensation cuts from the Covid cost cutting in 2020. All oil and gas companies cut costs in 2020 and now have even stronger than expected cash flows. We know some companies have already put in compensation increases and we expect to see even higher compensation across the board with the higher than expected oil and natural gas prices. On Monday, all the headlines from Exxon’s Oct 20 town hall with employees was focused on guiding to higher pay. On Monday, Bloomberg wrote report “Exxon CEO Floats Pay Hikes to Combat ‘Major’ Employee Attrition” “Exxon Mobil Corp. is weighing salary increases as it tries to halt employee attrition across its business divisions after sweeping job and benefit cuts. Chief Executive Officer Darren Woods told employees at a town hall-style meeting that they should be “encouraged” by the ongoing salary-review process, according to a recording of the event. “The policies we’re putting in place will get back to where people can begin to see a different path going forward than the path we came out of in 2020,” he said at the Oct. 20 gathering in suburban Houston.” Our Supplemental Documents package includes the Bloomberg report.

Comp going up for all oil & gas companies

Oil & Natural Gas – Oil & Gas Q3 cash flow will be very good, Q4 even better

This will be the first big week for Cdn oil and gas Q3 reporting and the numbers should be very good. Our October 3, 2021 Energy Tidbits noted, “Q3 reporting for the producers starts near the end of October and the conference calls will have the analysts starting off with the “great quarter guys”. Q3 oil and natural gas prices are up huge YoY and very strong QoQ especially for natural gas. And it is also significant that Q4 prices are looking up QoQ for oil and then other very big increase for natural gas. Closing Sept 30 were Brent \$78.42, WTI \$75.03, WCS \$63.01, HH \$5.87, and AECO \$4.62. Below is our running table of quarterly oil and natural gas prices.” Our reminder is that Q4 reporting should be even better given the strong start to oil and gas prices in October relative to Q3/21 average prices. Closing October 29 were Brent \$83.80 WTI, \$83.52, WCS \$68.07, HH \$5.61 and AECO \$5.94.

Great oil & gas prices for Q3

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Figure 42: Oil and Natural Gas Prices

Quarter	Brent US\$	WTI US\$	EdPar US\$	WCS US\$	HH US\$	AECO C\$
Q1/18	\$67.00	\$62.86	\$57.19	\$37.11	\$3.09	\$2.06
Q2/18	\$74.41	\$67.83	\$60.78	\$49.88	\$2.84	\$1.23
Q3/18	\$75.27	\$69.69	\$59.81	\$42.32	\$2.92	\$1.25
Q4/18	\$68.18	\$59.41	\$36.53	\$25.63	\$3.78	\$1.62
Q1/19	\$62.91	\$54.49	\$50.28	\$43.79	\$2.92	\$2.55
Q2/19	\$68.58	\$59.96	\$54.41	\$47.46	\$2.55	\$1.13
Q3/19	\$61.95	\$56.48	\$52.43	\$43.91	\$2.37	\$1.00
Q4/19	\$62.51	\$56.83	\$50.61	\$37.98	\$2.36	\$2.46
Q1/20	\$51.28	\$46.73	\$39.75	\$28.55	\$1.91	\$2.04
Q2/20	\$31.14	\$27.67	\$21.84	\$18.02	\$1.70	\$2.00
Q3/20	\$42.70	\$40.87	\$36.83	\$31.13	\$1.98	\$2.26
Q4/20	\$44.47	\$42.67	\$37.92	\$31.34	\$2.47	\$2.65
Q1/21	\$60.51	\$57.75	\$54.17	\$45.83	\$3.39	\$3.13
Q2/21	\$68.44	\$65.90	\$61.94	\$53.11	\$2.89	\$2.95
Q3/21	\$72.95	\$70.57	\$66.90	\$57.65	\$4.28	\$3.41
Q4/21	\$83.40	\$80.92	\$78.44	\$66.95	\$5.48	\$5.04

Source: Bloomberg

Oil & Natural Gas – Third Point wants Shell split into pure plays

Third Point released their Q3/21 on Wednesday which disclosed their new position in Shell and how they believe Shell should break up into pure plays to maximize shareholder value. Given the valuations being seen for Energy Transition businesses, we believe the basic financial logic is valid. After what we saw with Exxon having to reconstitute its board, no one should ever say never. However, it doesn't seem like the market expects to see success on forcing Shell to split up. Third Point expects Shell's 2022 LNG and renewables marketing to generate over \$25 bn in EBITDA with sustaining capex of only \$5bn. These businesses account for 40% of Shell's EBITDA, and they believe investors will share in the remaining 60% of EBITDA. The letter highlights Shell's inability to attract investors and attributes it to multiple strategies attempting to appease various interests while satisfying none. Shareholders are split between investing heavily in renewables or focusing on the return on capital from legacy oil and gas. Governmental pressures pull Shell in multiple directions with some wanting them to decarbonize as quickly as possible while others want the company to continue investment in oil and gas to keep energy prices affordable for consumers. Third Point highlights that Shell can appease shareholders by optimizing its corporate capital structure to allow investment in decarbonization; match business units with unique shareholder constituencies and allow each of its business units greater flexibility in their reaction to market and environmental policy developments, which could involve the creation of standalone companies. The letter notes *"While daunting, there is perhaps no bigger ESG opportunity than in 'Big Oil', and specifically, at Royal Dutch Shell. We are early in our engagement with the company but are confident that Shell's board and management can formulate a plan to accelerate decarbonization while simultaneously improving returns for its long-suffering shareholders."* Our Supplemental Documents package includes excerpts from the Third Point letter.

Third Point wants a Shell bust up

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

This is our favorite time each time of each quarter as it is quarterly reporting and this is when we get the best insights into a range of oil and gas themes/trends, sectors and plays. This week saw the rest of the oilfield services and the a number of the supermajors. Cdn oil and gas reporting will pick up this week. As a reminder, our Energy Tidbits memo does not get into the quarterly results, forecasts, or valuation. Rather the purpose of highlighting a company is to note themes/trends and plays that will help shape a reader's investment thesis to the energy sector. In the conference calls, we also tend to find the best insights from the Q&A portion as opposed to the prepared remarks. Plus, we tend to get the best E&P sector insights from services, pipelines, refineries and utilities and that was the case again this week. We did not get to write up many Q3 calls given the big energy and climate news on

Sector insights from Q3 calls

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Saturday and this morning ie. we didn't write up Exxon, Chevron, and Liberty Oilfield and others. And will get them in next week's memo.

Schlumberger – Very bullish oil & gas outlook

Schlumberger held its Q3 call on Oct 22. (i) They give the most bullish outlook for oil and gas service companies. Mgmt said *“The market fundamentals have improved steadily throughout 2021, especially over the last few weeks, with oil and gas prices attaining recent highs, inventories at their lowest levels in recent history, a rebound in demand and encouraging trends in the pandemic containment efforts. These strengthening industry fundamentals, combined with the actions of OPEC plus and continued capital discipline in North America, have firmly established a prospect of an exceptional multi-year growth cycle ahead. In the international markets, all regions are set to benefit from this highly favorable environment, something not seen internationally since the last super cycle. This expansion will occur at different paces, across different basins, operating environments and customer groups, resulting in a sustained, multipronged growth cycle”*. (ii) Believe supply will pick up out of necessity for investment. Mgmt said *“I think the condition are set -- it's a unique combination that we are living with. We are living with from the result of under investment in the last five to seven years, combined with a reset that we have experienced in industry during 2020, and also -- and the limited capital discipline, particularly in North America. When you combine these and look at the demand outlook that we surpass through the GDP growth expected for the next two or three years that we surpassed the 2019 level sometime next year. I think the result of which will catapult international supply and will create a necessity for reinvestments in our industry. So, I think the condition are set undoubtedly that this demand will have to be met with supply and this supply cannot come with inventory, cannot come with only raising the OpEx spare capacity, more will have to be built, hence it will create activity growth in the coming years. And it's not only a shock in 2022. This FID I talked about, this capacity expansion in Middle East, long-term project that will have a long-tail effect beyond the 2022-2023 horizon.”* (iii) Palliser Block sale taking longer than expected, didn't explicitly state specifically but likely due to big ramp up in oil prices. In the Q&A Mgmt said, *“Look for -- Waqar, for APS asset in Canada, which is what we discussed previously, we have received offers with values commercial constructs, and now we are addressing the process of evaluating the potential merits and risk associated reverse proposals. So, this is what we're doing now. In the meantime, we are, of course, managing these assets as to optimize cash flows in the current commodity, pricing environment and it generates quite a lot of cash flow.”* (iv) Highlighted Latin America growth for now and a cycle. Mgmt said, *“For example, this growth inflection is already visibly underway in Latin America, sparked by the resumption of exploration and the initiation of long-cycle development campaigns. Activity has strengthened throughout 2021, and revenue in this market is already at 2019 pre-pandemic levels. Year-to-date revenue growth in Latin America is at 30%, with broad activity growth across multiple countries, including Argentina, Brazil, Ecuador and Guyana. This growth is expected to strengthen further in the coming years due to ongoing long-cycle development campaigns.”* Our Supplemental Documents package includes excerpts from the Schlumberger Q3 call transcript.

Oil & Natural Gas – Trudeau's new cabinet doesn't look good for oil & gas

We expect that Canada's news Environment and Natural Resources ministers will be highlighted in future Energy Tidbits memos. For now, their initial messaging seemed reserved, at least from the perspective of trying to minimize any strong anti-oil and gas

**New Environment
and Natural
Resources
ministers**

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opinions. On Tuesday, the Trudeau announced his new cabinet, and it looks like there will be strong support for climate policy but not for oil and gas. Chrystia Freeland will remain as the Minister of Finance, but there were significant changes in the Minister of the Environment and the Natural resources Minister. We tweeted [\[LINK\]](#), “Buckle up Cdn #Oil #NatGas sector. New environment minister is what CBC calls long-time environmental activist Steven Guilbeault. New Natural Resources minister is Jonathan Wilkinson, former Minister of Environment and Climate Change. #OOTT”. Steven Guilbeault was formerly the Minister of Heritage and is a long-time climate activist; he has previously worked with the activism groups Equiterre Quebec and Greenpeace in Quebec. We expect this to stir some circles in western Canada. Natural Resource Minister Jonathon Wilkinson is also new to the role and was previously the Minister of the Environment and Climate Change. We remember the good old days when governments tried to put someone in Natural Resources who had some sort of strong link or experience in natural resources. And give credit where credit is due, Guilbeault certainly has a long background in fighting for the environment. We expect to see Guilbeault and Wilkinson featured as the new Liberal government comes out with its throne speech and new plans, which we continue to expect will have tougher actions against oil and natural gas.

Energy Transition – G20 seeing can’t bring China, India, poor nations along on climate

Last week’s (October 24, 2021) Energy Tidbits memo asked How can COP26 keep 1.5c alive without poor nations & China? All we saw this week was more confirmation that there is no way to bring poor nations, China, India and others to the level of aspirations desired by the wealthy G7 nations. As of our 7am MT news cut off, the G20 meeting is still ongoing and there is no final communique. Twitter is reporting on various drafts, but it seems like the G20 messaging on climate will be the tone for COP26 and there won’t be the strong firm commitment to 1.5c. Rather the message will be trying to stay firm on Paris 2.0c commitments. It will be important to closely read the drafting as it sounds like the commitments will be soft.

G20 about to finish

Energy Transition – Macron: mid/long term fossil fuel prices will cost more & more

Its more than annoying that we finally see political and business leaders acknowledge the Energy Transition will take longer, be a bumpy road and have higher energy costs. One of our tweets yesterday was a reply [\[LINK\]](#) “Yes. Its unfortunate G7 leaders knew they wouldn’t get commitment to #NetZero if they told people they really didn’t have a plan on how to get there without causing a self inflicted energy crisis for the 2020s, hopefully not longer than that.” We think its too late, for the most part, to see these new confessions – this time by France’s Macron. These political leaders and also business leaders drove thru the push to the Energy Transition in 2019, 2020 and the first part of 2021 and now we see some start to warn that this isn’t going to be pretty. They didn’t have a plan on how to execute this and certainly didn’t have (and still don’t have) an idea of how much it will cost. Although some like Macron are admitting it means higher energy prices for years to come. As we put in or tweet, hopefully its no more than a decade. Our first tweet yesterday morning [\[LINK\]](#) was on the FT’s report “Macron warns of threat to global economy from energy crisis” [\[LINK\]](#). Macron’s concern on current energy prices got all the attention. However, the part that is getting less attention is what Macron said on fossil fuel prices. Our tweet was “Oops, #Macron on #EnergyTransition “ironic, because we are building a system where in the medium & long term fossil energy will cost more & more, that’s what we want to [to fight climate change]”. 2020s will be very good for #Oil #NatGas prices. Great report @laboudles #OOTT.” Note Macron is saying medum and long term, he is not just talking about the energy crisis this winter. This is an acknowledgement that is acknowledging what our thesis has been, even before Covid, that the 2020s will be a period of stronger for longer oil and natural gas prices. FT posted the full report without subscription and there is more in it such

Macron, expect higher fossil fuel prices

as more natural gas supply is needed. Our Supplemental Documents package includes the FT report.

Does anyone really know how much the Energy Transition will cost?

The Macron confession really comes back to the our tweet that G7 political and business leaders didn't have a plan or idea of how much the Energy Transition would cost before getting G7 countries committed to the Energy Transition. On Sunday, we tweeted [\[LINK\]](#) on a WSJ report "report "The U.S. Is Turning Green. What Will This Climate Plan Cost and Who Will Pay?" [\[LINK\]](#) on the cost for the Energy Transition based on a Princeton energy team report. These estimates are academic, but power to them for giving it a go. The WSJ writes "The bill would range from \$7.8 trillion to \$13.9 trillion over the next 30 years, according to a team of energy researchers at Princeton University." Our tweet said "How many \$trillions for US #EnergyTransition? Princeton est \$7.8-13.9t. Inherently speculative, but at least they gave it a go. Recall @SenJohnKennedy couldn't get @SecGranholm to say how many \$. See SAF 06/27 Energy Tidbits Thx @shaneshifflett #OOTT." Our Supplemental Documents package includes the WSJ report.

June 27, Biden has no idea how many \$ trillions to get US to carbon neutral

We titled our June 27, 2021 Energy Tidbits memo "Biden Either Doesn't Estimate or Won't Say How Many \$ Trillions To Get US to Carbon Neutral". Here is what we wrote in the June 27 memo. "We think Energy Secretary Granholm may have inadvertently taken away the credibility for the Biden administration to shoot down any views that the energy transition will make energy very expensive in the future. We recognize that Senate and House hearings with Biden cabinet members, in this case Energy Secretary Granholm, are basically used by the questioners to make their political point. However, in this case, we tweeted on an exchange between Rep Senator Kennedy and Granholm. Kennedy's problem is that the Biden's push to reduce emissions won't mean much if China and India don't similarly step up. But linked to that was the exchange that caused us to tweet [\[LINK\]](#) "US can't control what CN IN actually spend to be #CarbonNeutral, but politics aside, shouldn't #Biden admin have a rough estimate of how many \$trillions to get US to carbon neutral? How can anyone say #EnergyTransition won't cost more? #NatGas #OOTT". The exchange starts with Kennedy asking Granholm how many trillions it will cost to get the world to carbon neutral, she doesn't have a number, he asks hundreds of trillions and she replies "it would be a lot, for sure" with a smile. We don't think we are been bias by saying most people think she is a well liked person and we suspect she probably that might be enough to change questions. However, it was Kennedy so he comes back asking how much the energy department thinks it will cost to make the US carbon neutral? Granholm replies, "again, it would be a lot", Kenney asks "hundreds of trillions?", Granholm "I don't know about hundreds of trillions but it would a lot of money", Kennedy "it'd be in the trillions", Granholm "Yes", Kennedy "mid trillions?", Granholm "I don't know". We recognize Kennedy is trying to play at gotcha you in getting Granholm to commit to an estimate but, the more we thought about it, we thought it was a good question – shouldn't the Biden administration have some even really rough idea of what they think it will cost? Because without some rough cost with many unproven assumptions, how can they continue to argue that estimates or even calls that the energy transition will be expensive are incorrect or based on old thinking? Didn't Granholm take away their credibility to say that in the future. The gotcha you question may not have worked the way Kennedy wanted, but

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really did work in a different way. Our Supplemental Documents package includes the transcript of the Kennedy/Granholm exchange. “

Its understandable, but a little scary that Biden has no idea what it will cost

In our June 27, 2021 Energy Tidbits memo, we also wrote “The clear reminder from the Granholm comments is that the Biden administration has no idea how much this energy transition will cost the US, who will be required to pay up to get there and what it means to the cost of energy relative to today. No one can or at least should not disagree with the ambition to reduce global emissions. But it is a little scary to be committed to a path with no idea of what it costs. Maybe this is okay for the US, but think about how countries in the world can commit to a similar path? Maybe there is an estimate but the only reason we can think she would not disclose it is if it was very high. But, if we take her at face value, there isn’t one and, to be fair to Granholm and the Biden administration, any estimate of how much it will cost to get to carbon neutral would require many far from confident assumptions. Just think about the comments from John Kerry (that he tried to backtrack) that half of the ability to get there will come from technologies still to be developed. So what could Granholm assume?”

Energy Transition – Half of Australia emissions reduction is from future advancement

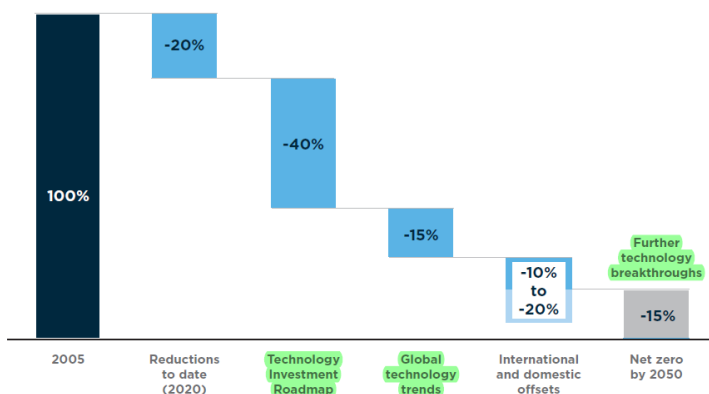
Australia’s Net Zero plan

Net Zero plans do not use the term plug numbers, but all Net Zero plans have huge plug numbers to get to the answer. They aren’t called plug numbers, but are the plug numbers to get to what John Kerry said in the spring, half of the emissions reductions will come from technology advancements that aren’t available today ie. something that requires advancements to make it available in scale and economic. There was a good reminder from Australia this week in their “Australia’s Long-Term Emissions Reduction Plan: A whole-of-economy Plan to achieve net zero emissions by 2050” that hitting their Net Zero target is mostly dependent on future technology advancements ie. plug numbers. To be fair, this is not just for Australia, it is for every Net Zero plan – there are massive plug numbers. Below is Australia’s key emissions reduction graph. (i) 20% of the reductions are already done so which we suspect was the low hanging fruit. (ii) 10-20% is from international and domestic offset – our concern is not with Australia but we believe this will be an area of double or triple counting of tree planting, forest protection when all the global offsets are added up. (iii) There is 15% to Global Technology Trends, which Australia says “that global technology trends will drive demand shifts at home and abroad.” They didn’t give any detail on this in the 130-pages, but just items that drive demand shifts and home and abroad. We don’t know if this is things like smart electricity grids automatically limit electricity use at peak times or what. So its hard to say how real is this 15% or if it is part of the technology plug. One thought that came to mind is in the below American Airlines item on how AA sees 39% of its emissions comes from more expensive Sustainable Aviation Fuel. That has to drive up the costs of airfare and maybe that is what Australia means by demand shift in response to technology trends. (iv) And then the remaining 45%-55% looks like it fits into what we call a plug or what Kerry called future technology advancements. (v) 15% is clearly defined as further technology breakthroughs. (vi) the big portion 40% is Technology Investment Roadmap. Australia describes this as “economic stretch goals” and that “The Technology Investment Roadmap is the cornerstone of this approach”. Note that Australia is clear to add the adjective “economic” to describe the stretch goals. Normally, people use stretch goals as an aspiration that isn’t likely to be achieved but, for Australia, this is 40% of their emissions reduction plan. Australia is prioritizing clean hydrogen, ultra low-cost solar, energy storage, low emissions steel & aluminum, CCS, and soil carbon. Our Supplemental Documents package includes excerpts from the Australia Net Zero plan.

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Figure 43: Priority technology contribution to meeting Australia's net zero by 2050 goal

Figure ES.2 Priority technology contribution to meeting Australia's net zero by 2050 goal



Source: Based on McKinsey and DISER analysis. *Sources of offsets include voluntary soil carbon of up to 20%, depending on cost reductions in technology and voluntary demand.

Source: Australia

Energy Transition – American Airlines Net Zero plan has to add to airfare costs

There was a good reminder from Axios this week of why airfare prices have to inevitably go up in their report “*First look: American Airlines' new plan for net-zero emissions*” [\[LINK\]](#). Axios reported “*The Fort Worth-based airline gave Axios a first look at new details on how it plans to get to net zero.*” And Axios reported “*Here's how the airline plans to get to net zero: 39% from sustainable aviation fuels (SAFs), 17% from next-generation planes, 17% from carbon offsets, 15% of emissions cuts would come from buying new, more efficient planes to replace older aircraft, 9% from air traffic control modernization to enable more efficient flight paths, and 3% would come from operational efficiency gains.*” This means 71% of the emissions comes from blending in more expensive sustainable aviation fuels (39%), from buying next generation planes (17%), and buying new planes to replace old planes (15%). Maybe this is part of the what Australia (see above) calls “*global technology trends will drive demand shifts at home and abroad*” – technology means things get more expensive so demand goes down. Our Supplemental Documents package includes the Axios report.

American Airlines Net Zero plan

Energy Transition – Blueprint for Liberals to reject future oil & natural gas projects

We recommend Cdn oil and gas followers note New York's reasoning this week for rejecting two natural gas turbine power projects as it is what we should expect from the Liberals. Earlier this morning, we tweeted [\[LINK\]](#) “*Blueprint for #Trudeau to reject #NatGas #Oil projects. NY rejects #NatGas power as inconsistent/interfere with GHG emissions in Climate Act. #Liberals received royal assent in July, it's now the law to ensure Flag of Canada is on track to #NetZero. See SAF Group July 4 Energy Tidbits #OOTT.*” We have been warning for almost a year that this is an overlooked part of the Liberals climate plan – it is the law that they keep Canada on track for Net Zero. And we believe they can simply play this card whenever they want – it's the law. Here is the New York rationale for rejecting these natural gas turbine projects “*Our review determined the proposed project does not demonstrate compliance with the requirements of the Climate Leadership and Community Protection Act. The proposed project would be inconsistent with or would interfere with the statewide greenhouse gas emissions limits established in the Climate Act.*” Our Supplemental

NY rejects gas turbines due to Climate Act

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Documents package includes the two New York rejections and the Governor statement on the rejections.

In July, it became the law for the Liberals to stay on track for Net Zero

This has been over looked for a year. Our November 29, 2020 Energy Tidbits wrote “We recognize that we worry more about near/mid term trends and how this will impact capital allocation decisions in 2021 and beyond but, we continue to be surprised that the oil patch isn’t up in arms and worried about the recent Liberals announcement “Government of Canada charts course for clean growth by introducing bill to legislate net-zero emissions by 2050” [\[LINK\]](#). This bill will “legally bind the Government to a process to achieve net-zero emissions by 2050” and require the federal govt to “Set rolling five-year emissions-reduction targets and require plans to reach each one and report on progress.” This rolling five-year plan doesn’t sound like much, but it is a huge hammer when combined with the legal requirement to get to Net Zero by 2050. This bill sets up an escalation in the Liberals anti emissions fight in 2021. This isn’t setting a 10 or 20 or 30 year plan to get to Net Zero by 2050..This is having rolling five-year plans and checks on progress, This will provide the reason or excuse for the Liberals to introduce new items on an ongoing basis. And their argument will be they have no choice, they are legally bound to be on track with a near term schedule to get to Net Zero by 2050.” Then Our July 4, 2021 Energy Tidbits wrote “It’s official, there is now no turning back from a major Liberals negative to the Cdn oil and gas sector. Its now the law for the Cdn government to be on track to meet 2030 emissions targets. We are surprised that this Bloomberg report received no headlines. On Wednesday, Bloomberg reported the Canadian Net-Zero Emissions Accountability Act received Royal Assent, which means the bill is now law. We have warned on this bill since last year because it is now the law for the government (Liberals) to lay out the specific plans to meet emissions reduction targets by 2030 so they can ensure Canada is on track for Net Zero 2050. Our concern is that this means the Liberals have to take big emissions reduction actions right now. And the bill obligates them to have 2023, 2025 and 2027 progress reports so they can see where they are and adjust the emissions reduction plan. As we have been warning, it means the Liberals will be taking more aggressive action and their defence is “it’s the law” “we have to do it”, “we are following the law, we have to stay on track or get back on track”. We have been warning that the oil and gas sector have to be prepared for more aggressive emissions reduction hitting them as part of the Liberals upcoming election platform.”

Energy Transition – Big Oil grilled by Congress on climate change

The House Oversight Committee brought in Big Oil for a grilling on Thursday. We felt we had to listen just in case some insight or big reveal came out, but probably moreso because of the way the Committee posted the meeting notice. We tweeted [\[LINK\]](#) “Today’s #BigOil CEOs must be so envious of their predecessors when #Oil was understood/accepted to be critical to economic growth. In 1 hr, the grilling starts. Wonder if only grandstanding or some insight, maybe material for @JimmyKimmelLive @LateNightSeth @TheDailyShow #OOTT.” And our tweet included the meeting notice “Fueling the Climate Crisis: Exposing Big Oil’s Disinformation Campaign to Prevent Climate Action”. We listened to 3+ hours of the hearing and we did not hear any Big Oil slips or secrets. And notwithstanding, the Democrats saying they weren’t trying any gotcha questions, they were almost all gotcha questions. And some of the comments were unusual, to be polite. The other big strategy by the Democrats was their move to paint Big Oil with the Big Tobacco saying nicotine wasn’t addictive in the early 90s. So unfortunately, it may have been entertaining, but we didn’t get any real different takeaways from the hearing. We tweeted [\[LINK\]](#) what we thought was the best Democrat vs

Big Oil grilled by Congress

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Republican commentary “*Even if you are a Dem, got to give best line to other side. @RoKhanna tried to get \$CVX \$XOM to commit to reduce #Oil production like \$RDSA \$BP. @Jim_Jordan follows you're telling them to reduce oil prod at same time as #POTUS is begging #OPEC to increase prod. #OOTT.*” Democrat Khanna was pushing Exxon and Chevron to commit to reduce oil production like BP and Shell plans to do in the 2020s. Republican Jordan then jumped in on the Biden line. Lots of grandstanding and entertainment but we don't think it changed anything.

Energy Transition – Hertz to purchase 100,000 Teslas by the end of 2022

Renting a Tesla from the airport will soon be easier than ever. Hertz Global Inc is wasting no time implementing an ambitious EV rollout plan just four months removed from bankruptcy. Bloomberg reported on Monday [\[LINK\]](#), that Hertz has placed an order with Tesla to purchase 100,000 of their EVs in accordance with plans to electrify their fleet. This is the largest single-purchase of EVs and represents \$4.2 bn in revenue for Tesla. Rental companies typically demand large discounts from automakers when making large purchases, but given the reported revenue take, it appears Hertz is paying close to the listing price. Deliveries will rollout over the next 14 months with the Tesla-3 Model available for rent across North America and Europe beginning in November. The Hertz Press release discussed plans to install thousands of superchargers throughout its location network and customers will have access to almost 3,000 Tesla Supercharging stations. The released stated “*with the current order, EVs will comprise more than 20 percent of Hertz global fleet and is expected to be supported by a combination of Level 2 and DC fast charging in approximately 65 markets by the end of 2022 and more than 100 markets by the end of 2023. Hertz said these ambitions could be affected by factors outside of Hertz's control, such as semiconductor chip shortages or other constraints.*” Our Supplemental Documents package includes the Hertz press release.

Hertz with record purchase from Tesla

Energy Transition – \$10b/yr for Japan shipping fleet to be net-zero by 2050

Japan has the largest global ship fleet at approx. 10% of total global fleet, which made us shake our head at how much it will cost to take the world's shipping fleet to Net Zero by 2050 if we use Japan's estimates as a market. Where will the ship building/retrofitting capacity come from to meet this huge demand. Besides the fact, shipping is going to be very expensive. On Thursday, the Japanese Shipowners Association announced on Thursday, their plans to have the Japanese Shipping Industry reach net zero carbon targets by 2050. They aim to have the Japanese merchant fleet, 2,200 ships, completely powered by clean fuels of the future (methane, hydrogen, and ammonia). The transition is expected to have an annual cost of US \$10 bn to build 100 new ships per year to refit the fleet by 2050. The total expected cost of this transition is \$280 bn over the 25 year timeline. That is for Japan's fleet. Multiply these numbers by 10 to get an approximate world cost if Japan's costs are a good marker. Cooperative actions with relevant industries will be essential to achieve the 2050 goal of net zero. These industries include the port industry, cargo owners, and trading companies as well as the ship building industries. Japanese government will also promote the development of zero-emission ships, commenting, “*The Japanese shipping industry strives to play an infrastructural role in people's lives and industry in not just Japan but the world, as well as a leading role in the activities of the IMO and, is working with a wide range of stakeholders in society to achieve overall carbon neutrality. The industry is rising to the challenge of net zero GHG, on the way to attaining a sustainable society.*” Our Supplemental Documents package includes the Japanese Shipping Associations press release.

JSA releases their net-zero plan

Renewables force poverty on developing economies

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Energy Transition – Uganda says renewables will force Poverty on Africa in near term

Last week's (October 24, 2021) Energy Tidbits memo noted that one big problem area for COP26 is for the wealthy nations to deliver the financial support for poor nations on the Energy Transition. There was a good reminder from Uganda's President that its not just money, the whole push by western countries for Africa to move aggressively on renewables will force poverty on Africa. Last Sunday, WSJ released an opinion piece by Uganda President Museveni titled "*Solar and Wind Force Poverty on Africa: Letting us use reliable energy doesn't mean a climate disaster*" [\[LINK\]](#). The title describes his view. Africa's Population is expected to double by 2050 to 2.6 bn people, with energy consumption likely to surpass that of the EU by then. Continued western aid that promotes development infrastructure in Africa is widely praised by western countries but leaves Africans with access to unreliable and expensive electricity that is reliant upon generators or batteries on overcast days. Renewables are argued to delay Africa's rise from poverty, which is reliant on reliable energy sources for both manufacturing and agriculture in the continent. The transition will take time and the consumption of fossil fuels is necessary to make the transition. Africa obtaining natural gas has been met with resistance from developed economy with many nations putting a blanket on public fundings for fossil fuel projects in Africa. The article stated "*Africans have a right to use reliable, cheap energy, and doing so doesn't prevent the development of the continent's renewables. Forcing Africa down one route will hinder our fight against poverty.*" Our Supplemental Documents package includes the WSJ Uganda report.

Energy Transition – Two nuclear power plants in Illinois plan to stay open

We continue to believe nuclear will play a bigger role in the energy mix under any emissions reduction plan and we have been highlighting for years our view that mini-nukes will be a key growth areas. It won't just be new mini-nukes but, as seen in Japan, extending the allowable life of existing nuclear plants. That is also happening in the US, this week, the EIA [\[LINK\]](#) noted two northern Illinois nuclear power plants have reversed their plans to retire this fall. Exelon, the owner of the two plants, announced that both the Byron and Dresden facilities will continue operations. The announcement came after the state senate and governor signed a bill in support of carbon free energy resources. The bill aims for the Illinois to transition to 50% clean energy by 2040, and 100% by 2050. Illinois has the greatest nuclear operating capacity in the US, accounting for 58% of the state's electricity generation in 2020. Byron and Dresden accounted for 20% of all in state electricity generation last year. The bill requires remaining fossil fuel generated plants to reduce emissions by 2030 and be completely net-zero by 2045; 18% of electricity generated by the state was from coal and 14% came from natural gas fired plants. As of August 2021, 6,000 MW of electrical generating capacity in Illinois have announced plans to retire, most of them being coal powered facilities. The remaining 24,000 units of both coal and natural gas-powered facilities will be required to switch to non fossil fuels or retire by 2045; exceptions may be granted for units needed to support the grid. Our Supplemental Documents package include the EIA blog.

Illinois legislation friendly to nuclear plants

Energy Transition – Rystad sees higher solar costs impacting solar ramp up

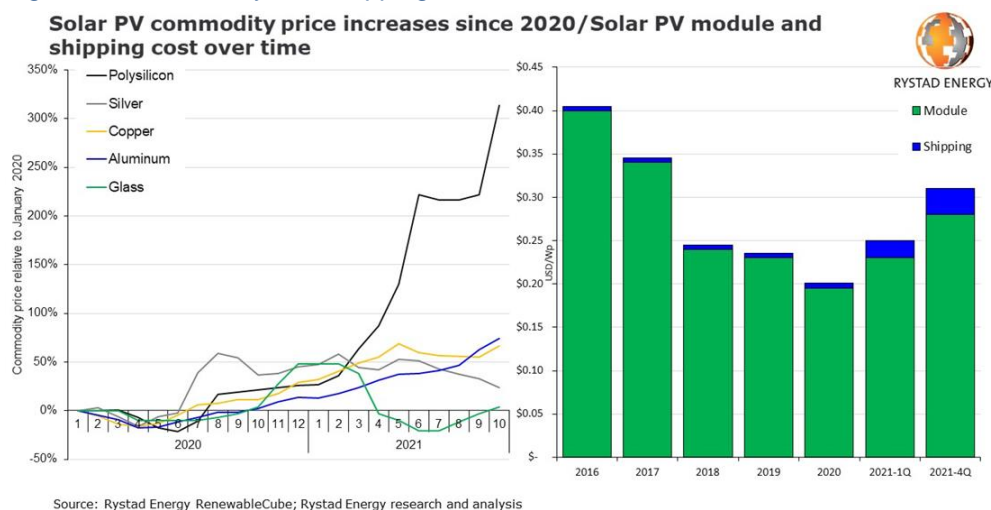
Another good update from Rystad Energy on solar ramp up, this one with a blunt message that higher costs will lead to delays in solar ramp up. The energy transition to solar PVs are at risk of delay or being cancelled due to the soaring material and shipping costs. Manufacturing materials costs have surged 56% of the 90GW global utility PV developments planned for 2022. Our October 3, 2021, Energy Tidbits reminded that Rystad forecasts solar costs to experience a significant YoY increase in 2022. Commodity price inflation and bottlenecked supply chains are expected to severely impact these projects and may result in

Rystad on increasing solar costs

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their cancellation. PV modules have increased from, \$0.2 per watt peak (Wp) to \$0.28 per Wp in 2021, almost a 50% increase. The cost of polysilicon has skyrocketed, up almost 300%, and is also a core component of PV manufacturing; price increases to other modules have also had a significant impact on the price of modules. Their blog stated *"The utility solar industry is facing one of its toughest challenges just days ahead of COP26. The current bottlenecks are not expected to be relieved within the next 12 months, meaning developers and offtakers will have to decide whether to reduce their margins, delay projects or increase offtake prices to get projects to financial close."* Shipping costs have played a significant role in overall production expenditure with shipping costs increasing nearly 500% from \$0.005 per Wp to \$0.03 per Wp in October 2021. Modules and their associated shipping costs typically make up between a quarter and a third of the total project capex, with both inputs increasing, it will have a significant impact on the project's economics. Rystad analysts have calculated that the cost of new projects has increased between 10 and 15% for projects planned in 2022. Our Supplemental Documents package includes the Rystad blog.

Figure 44: Commodity and Shipping Price Increases for Solar PV modules



Source: Rystad

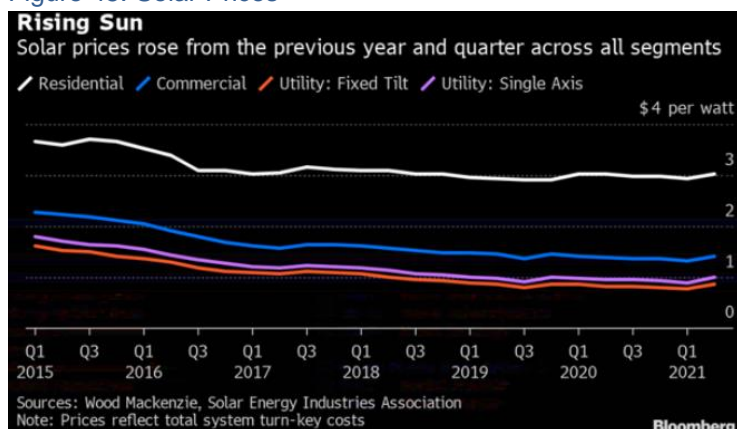
We don't think Net Zero solar ramp up forecasts reflect solar cost increases

On Tuesday, we tweeted [\[LINK\]](#) on the Rystad solar blog writing *"Most of 2022's solar PV projects risk delay or cancelation due to soaring material & shipping costs"* @RystadEnergy new blog. See 09/14 tweet, higher 21/22 solar costs not reflected in #COP26 plans. #NatGas electricity will be needed for longer. #OOTT [\[LINK\]](#)." We also retweeted our Sept 14, 2021 tweet [\[LINK\]](#) that included the Bloomberg report that week on how solar costs were reversing a long term trend and going higher in 2021 and in 2022. Our Sept 14 tweet said *"No surprise, US #solar costs up across all segments in 2021 & expected up again in 2022. Is this reflected in #EnergyTransition plans like DOE Solar Futures Study that say electricity costs aren't going up? Hmmm! #NatGas will be needed for longer. Thx @danmurtaugh."* Our September 12 2021 Energy Tidbits highlighted the DOE Solar Futures Study, which seemed to overlook/not consider how solar costs have stopped their downward trend. We believe these Net Zero forecasts convenient do not take into account the 2021 and 2022 solar cost increases. How come the greenwashers don't go after

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these forecasts? Below is the Bloomberg graph from Sept 14 report “U.S. Solar Gets More Expensive in Threat to Climate Change Fight”.

Figure 45: Solar Prices



Source: Bloomberg

Capital Markets – ABP Pension Fund to divest from fossil fuels by 2023

No surprise, in the run up to COP26 that there were also announcements by pension funds to announce their move out of fossil fuels for its investments. This includes their investment in Netherlands based Royal Dutch Shell. Shell’s CFO noted that Shell had no idea this selling fossil fuels was coming. And this week, there was a major announcement as Europe’s largest pension fund, ABP (Netherlands) announced their intent to divest [\[LINK\]](#). ABP wrote “Pension fund ABP will stop investing in producers of fossil fuels (oil, gas and coal). Reasons for this decision are recently published reports by the International Energy Agency (IEA) and the UN Climate Panel (IPCC). Groups of ABP pension participants and employers have shown broad support for this decision. ABP will divest from the fossil fuel producers in phases; the majority of which is expected to be sold by the first quarter of 2023. This concerns more than 15 billion euros in assets, almost 3% of ABP’s total assets. The fund does not expect this decision to have a negative impact on long-term returns.” ABP Chairman Wortmann said “The ABP Board sees the need and urgency for a change of course. We part with our investments in fossil fuel producers because we see insufficient opportunity for us as a shareholder to push for the necessary, significant acceleration of the energy transition at these companies. From now on we will focus on bulk users of fossil energy such as electricity companies, the car industry and aviation.” Our supplemental Documents includes the ABP release.

ABP divests from fossil fuels

Capital Markets – Two New York City pension funds agree to net-zero goal

We also saw a similar move by US pensions to divest from fossil fuels continues to ramp up as the two largest pension funds in New York agree to achieve net-zero emissions in their investment portfolios by 2040. The trustees of the New York City Teachers Retirement System and the New York Employees’ Retirement System voted to approve the policy last week, the two funds manage over \$189.2 bn. The decision was announced on Oct 20 by Mayor de Blasio and three trustees of the city’s pension funds [\[LINK\]](#). The plans include a goal to double investments in climate change solutions, over \$8 bn, by 2025 and over \$35 bn in climate solutions by 2035 across all of their funds. The New York Retirement Systems has 5 pension funds with two remaining out of discussions while the New York City Board of Education is likely to move forward on a vote imminently. The press release said “Climate change poses significant threats to New York City. Rising temperatures; stronger, more

NY pension fund net-zero agreement

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destructive hurricanes; severe flooding; and increasing precipitation tied to climate change have already affected neighborhoods and communities across all five boroughs and are projected to become increasingly severe and costly over the coming decades. Only by achieving net zero emissions before 2050 and eliminating the use of fossil fuels can these challenges be fully addressed.” Our Supplemental Documents package includes the Pension & Investments report.

Capital Markets – IFIC: Mutual funds and ETF assets -2.0% in September

On Monday, the IFIC (Investment Funds Institute of Canada) reported [\[LINK\]](#) mutual funds and ETF sales for September. IFIC does not provide any commentary on the numbers but given the impact of restrictions being implemented in September, we are not surprised of the slight decrease. Market price decreases accounted for majority of the overall decrease in net assets. For September, the IFIC reported “*Mutual fund assets totalled \$1.986 trillion at the end of September 2021. Assets decreased by \$42.3 billion or 2.1% compared to August 2021. Mutual funds recorded net sales of \$8.0 billion in September 2021. ETF assets totalled \$318.3 billion at the end of September 2021. Assets decreased by \$6.4 billion or 2.0% compared to August 2021. ETFs recorded net sales of \$2.8 billion in September 2021.*” Our Supplemental Documents package includes the IFIC release.

Mutual Fund & ETF assets decrease MoM

Demographics – UK Boomers are also moving back in with their parents

We have been highlighting how the impact of Covid hit a lot of young people harder and forced more to move back in with their parents. But we were a little surprised by The Guardian Monday report “*Boomerang boomers: the over-50s moving back in with their parents*” [\[LINK\]](#) that wrote “*The Covid pandemic has led to growing numbers of baby boomers in Britain moving back in with their elderly parents, experts have said. The reasons are varied, from the positive – grown-up children ensuring their parents had care and company during lockdowns – to the negative, including financial and relationship breakdowns.*” And “*Financial concerns are a key reason for older people moving back home: more than 355,000 people aged 50 and older are unemployed, with 31,000 having been made redundant between May and July alone, according to the Office for National Statistics I have heard of some boomers moving back into the home of their sole living parent but that was to take care of the parent and let them live in their own home.*” Normally, we hear of boomer parents moving in with the boomers and we have heard of a few boomers who moved back into the home of their sole living parent but that was to take care of the parent and let them live in their own home. And a key reason why we haven’t heard many of these situations is that many of the boomer parents are deceased or not living in their own houses. But it makes sense, just like for younger people, that there are boomers with financial problems and need to find accommodation. Our Supplemental Documents package includes the Guardian report.

UK boomers moving in with their parents

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

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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.

It looks like 14 of the G20 leaders want to come back to Rome

Anyone who has traveled to Rome knows the big crowded tourist site is the Trevi Fountain and, if you go in any normal time, you are crowding your way to get to be on the edge of the fountain. We suspect there have been few very people who have been to Rome and not tossed their coin(s) in the Trevi Fountain. Earlier today (~9:15am local time), 14 of the G20 leaders had their photo-op doing exactly just that. Draghi did not bother tossing a coin. It was hard to tell from the video how many coins each leader tossed in the fountain ie. did they throw 1 or 2 or 3 coins. Fodors notes *“According to legend, tossing one coin into the Trevi Fountain means you’ll return to The Eternal City (Rome), tossing two coins means you’ll return and fall in love, and tossing three coins means you’ll return, find love, and marry. Luck or no luck, your money goes to a good cause.”*

Figure 46: Some of G20 leaders at Trevi Fountain



Source: @PresserWatch

Facebook to Meta reminds of former Lakers Ron Artest name change

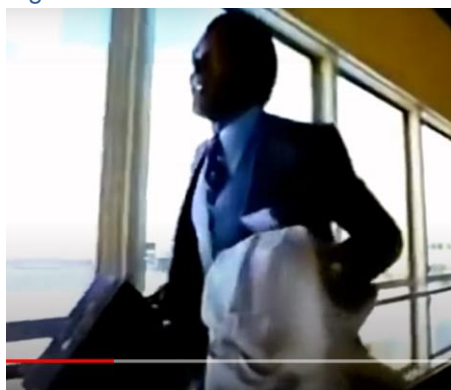
On Thursday, Facebook announced [\[LINK\]](#) *“Announcing @Meta — the Facebook company’s new name. Meta is helping to build the metaverse, a place where we’ll play and connect in 3D. Welcome to the next chapter of social connection.”* No question, it’s a cool name and concept. Facebook has had a fair amount of negative press in the last month, which is why our first thought on seeing the name change was thinking about former Los Angeles Laker Ron Artest. Twenty years ago, he changed his name from Ron Artest to *“World Metta Peace”*. The LA Times wrote [\[LINK\]](#) *“I changed my name because I got tired of Ron Artest, he’s a [expletive],” said Metta World Peace. “And when fans get mad at me, they can’t say, ‘I hate World Peace.’” Wanting to give World Peace a chance, I met the Lakers forward in his first public appearance since he petitioned to legally change his name earlier this summer. We shook hands and I called him Ron. I didn’t use his new first name because, frankly, I had no idea which part was his first name. “World Peace is going on the back of my jersey, so Metta is my first name,” he said. “It’s Buddhist, but I’m Baptist.”*

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Hertz signs up Brady, its 70s NFL “superstar in rent-a-car” was OJ Simpson

How could we not remember OJ Simpson even though its not the anniversary of the White Bronco car chase on June 17, 1994 or his acquittal on Oct 3, 1995, but because of the Hertz Tesla announcement. The Hertz announcement on Teslas also included said *“In addition, Hertz is teaming up with seven-time Super Bowl champion and entrepreneur Tom Brady to showcase how it is making EV rentals fast, seamless and more accessible, as the company accelerates its commitment to lead the future of mobility and travel.”* Boomers will remember OJ was the star of the Hertz commercials in the late 70s/early 80s. Hertz commercials tag line with OJ was the “superstar in rent-a-car”. And the commercials were famous for OJ running thru the airport in a suit with a briefcase and top coat in his hands, hurdling and running to get to the Hertz counter (and butting in front of people) to get his quickly.

Figure 47: Hertz 1977 commercial with OJ Simpson



Source: YouTube