SAF GROUP

Energy Tidbits

Aug 15, 2021

Produced by: Dan Tsubouchi

Expect Liberals Platform Values To Be Negative To Oil and Natural Gas

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. As of our 7am MT news cut off, Trudeau is about to make an announcement on Sept 20 election, which we expect to be negative to oil and natural gas. (Click Here)
2. Saudi Aramco takes different approach to IOCs and ranks oil productive capacity growth above special shareholder dividends/distributions. (Click Here)
3. IEA says oil "*demand growth abruptly reversed course in July*" (Click Here)
4. India PM Modi says "India should be a gas based economy" (Click Here)
5. Ninepoint Eric Nuttall's graph shows eye-opening Cdn public E&P free cash flow valuations. (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 49 bcf, storage now -548 bcf YoY deficit

YoY storage at -548 bcf YoY deficit

The EIA reported a 49 bcf injection (vs 48 bcf injection expectations) for the Aug 6 week, which was above the 5-yr average injection of 42 bcf, and below last year's injection of 58 bcf. Storage is 2.776 tcf as of Aug 6, decreasing the YoY deficit to 548 bcf from 555 bcf last week and storage is 7 bcf above the 5 year average vs 15 bcf below last week. Below is the EIA's storage table from its Weekly Natural Gas Storage Report. [LINK]

Figure xx: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (08/06/20)		Historical Comparisons: 5-year average (2016-20)	
Region	08/06/21	07/30/21	net change	implied flow	Bcf	% change	Bcf	% change
East	629	604	25	25	735	-14.4	674	-6.7
Midwest	741	719	22	22	852	-13.0	757	-2.1
Mountain	185	184	1	1	205	-9.8	187	-1.1
Pacific	241	244	-3	-3	314	-23.2	286	-15.7
South Central	979	976	3	3	1,218	-19.6	1,050	-6.8
Salt	247	250	-3	-3	337	-26.7	271	-8.9
Nonsalt	732	726	6	6	882	-17.0	779	-6.0
Total	2,776	2,727	49	49	3,324	-16.5	2,954	-6.0

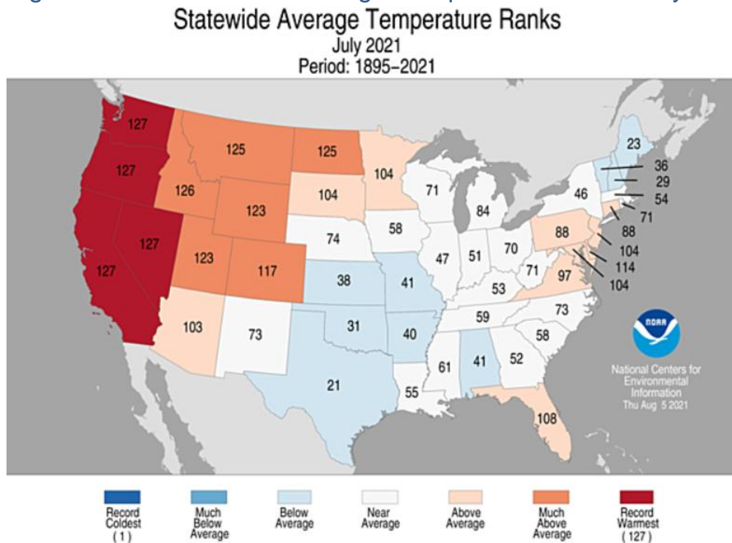
Source: EIA

Natural Gas – July 2021 was 13th hottest in the last 127 years

Record heat in the west

Weather in July was a bit of a mixed bag but, overall, it was a positive to natural gas demand. On an overall US basis, NOAA ranks July 2021 as the 13th warmest July in the last 127 years. It was extremely hot in the west and NW, the Plains, parts of the Atlantic Coast and in Florida. But it was colder than normal in most of the rest of the country, especially in Texas, which was the 21st coldest in the last 127 years. Below is the NOAA's statewide average temperature map for July 2021. [LINK]

Figure 2: US Statewide Average Temperature Ranks July 2021



Source: NOAA

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Natural Gas – 99% probability for La Nina/Neutral in key hurricane ASO season

Expecting a La Nina/El Nino summer

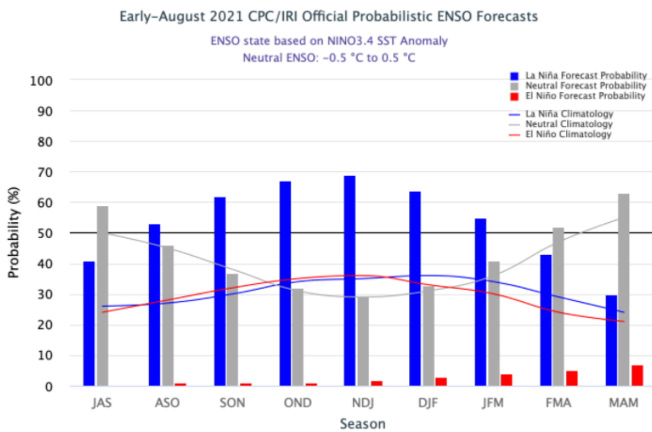
The CPC/IRI released its updated monthly El Nino/La Nina outlook, which is issued on the 2nd Thurs of every month [LINK]. The focus now for oil and gas is for the peak Atlantic hurricane season in Aug/Sept/Oct and the call continues to be for La Nina/Neutral conditions for ASO with a shift to more La Nina than Normal but almost zero probability for El Nino conditions. The trends have shifted more to La Nina conditions, but still a La Nina/Norma for the key Aug/Sept/Oct. The consensus forecast for ASO is 53% Neutral (was 45%), 46% Nina (was 51%) and only 1% El Nino (was 4%) conditions. Again, weather is never 100% the same, but El Nino summers are normally associated with low Atlantic hurricane seasons, whereas La Nina/Neutral conditions are more likely normal hurricane seasons.

Natural Gas – Early outlook calling for a La Nina/Neutral winter

La Nina winters are unpredictable

As it's August, we are now starting to look ahead to the winter for natural gas. The big fear for market watchers is that more worry about the risk of a warm winter if it is El Nino condition. The new CPC/IRI updated El Nino/La Nina outlook probability forecast for Dec/Jan/Feb is 64% La Nina, 33% Neutral and 3% El Nino. There is not a 100% correlation or even close to that for La Nina or El Nino conditions and specific winter temperatures. La Nina winters are viewed as more likely to be normal to colder than normal, but the next item will show there are also very hot La Nina winters. Nonetheless, this early outlook will, at least for now, have people less worried about that very warm winter risk.

Figure 3: Early-August NOAA El Nino/La Nina Outlook



Source: CPC/IRI

Natural Gas – But La Nina correlations to cold winters are far from 100%

La Nina winters are unpredictable

La Nina winters are more often normal to colder than normal than a warmer winter. But we remind of a Oct 6, 2017 NOAA *brief "Temperature patterns during every La Niña winter since 1950"*, which looked at all La Nina winters from 1950 thru 2016/17, classified them as strong, moderate or weak La Ninas, and then showed the average winter (Dec thru Feb) temperature map. We checked this weekend and the link still works [LINK]. The bottom line is that it may slightly favor a normal to colder than normal winter, but there have some been near record high temperature La Nina winters. Below is the NOAA graphic. Our Supplemental Documents package includes the NOAA blog.

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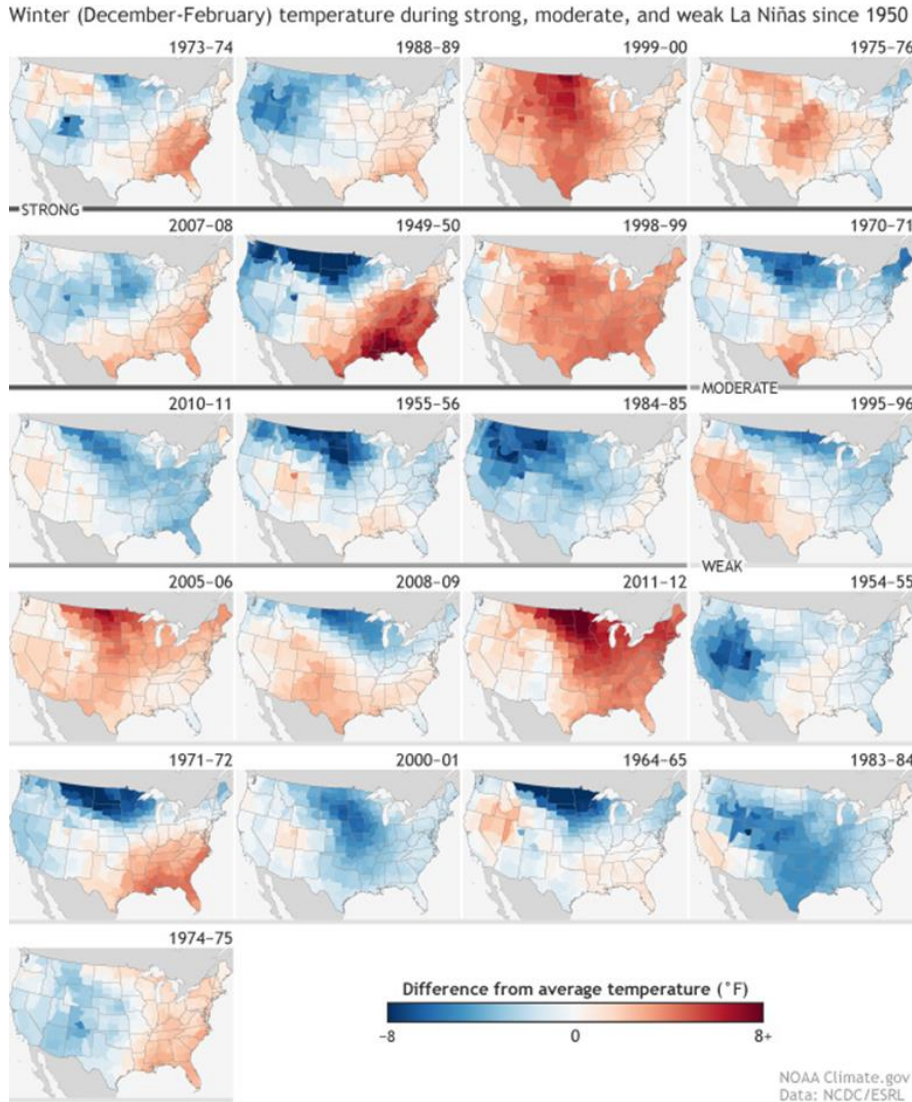
Figure 4: Winter (Dec-Feb) Temp In Strong, Moderate And Weak La Ninas 1950 - 2017



Source: NOAA

Natural Gas – EIA forecasts US gas production to return to growth in 2022

EIA sees US gas production +2.73 bcf/d YoY in 2022

The EIA released its monthly Short Term Energy Outlook Aug 2021 [LINK] on Tuesday. (i) The forecast revised down its 2021 forecast and revised up its 2022 forecast for US natural gas production, the EIA forecast still shows US natural gas not returning to the Q4/19 peak of 96.58 bcf/d, with Q4/22 US natural gas of 96.47 bcf/d (down 0.10 bcf/d from peak). (ii) The reason why natural gas gets almost back to peak levels is that natural gas prices are much stronger than forecast a couple years ago. (iii) For 2021, the EIA made downward revisions to all quarters. 2021 US natural gas production is forecast to average 92.15 bcf/d (down from 92.55 bcf/d previously). (iv) US natural gas production is expected to average 94.88 bcf/d in 2022 (94.69 bcf/d previously) and 2022 is up 2.73 bcf/d YoY. (v) The EIA wrote *"We expect dry natural gas production will average 92.9 Bcf/d in the United States during 2H21—up from*

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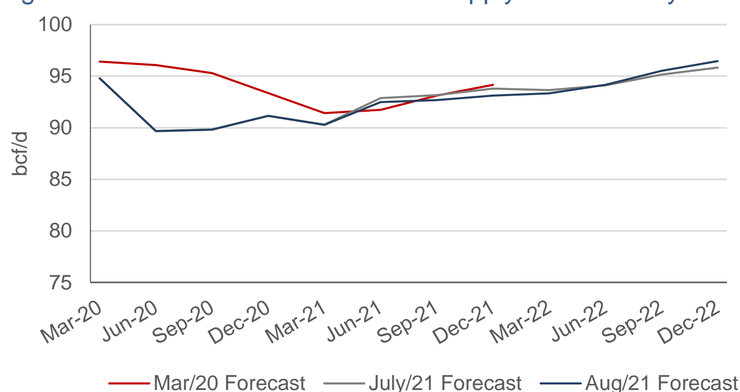
91.4 Bcf/d in 1H21—and then rise to 94.9 Bcf/d in 2022, driven by natural gas and crude oil prices, which we expect to remain at levels that will support enough drilling to sustain production growth." Our Supplemental Documents package includes excerpts from the EIA STEO.

Figure 5: EIA STEO US Natural Gas Supply Forecasts By Forecast Month

bcf/d	Q1/19	Q2/19	Q3/19	Q4/19	2019	Q1/20	Q2/20	Q3/20	Q4/20	2020	Q1/21	Q2/21	Q3/21	Q4/21	2021	Q1/22	Q2/22	Q3/22	Q4/22	2022
Aug 2021	90.01	91.57	94.01	96.58	93.06	94.79	89.68	89.83	91.15	91.35	90.29	92.49	92.67	93.11	92.15	93.34	94.15	95.51	96.47	94.88
July 2021	90.01	91.57	94.01	96.58	93.06	94.79	89.68	89.83	91.15	91.35	90.31	92.88	93.17	93.8	92.55	93.65	94.1	95.16	95.82	94.69
June 2021	90.01	91.57	94.01	96.58	93.06	94.79	89.68	89.83	91.15	91.35	90.53	92.26	92.63	93.26	92.18	93.13	93.48	94.31	94.81	93.93
May 2021	90.01	91.57	94.01	96.58	93.04	94.79	89.68	89.83	91.15	91.35	90.09	90.75	91.34	92.03	91.06	91.97	92.54	93.60	94.36	93.12
Apr 2021	90.01	91.57	94.00	96.58	93.04	94.79	89.68	89.83	91.18	91.36	90.82	90.90	91.59	92.31	91.41	92.23	92.75	93.76	94.39	93.29
Mar 2021	90.01	91.57	94.00	96.58	93.04	94.79	89.68	89.82	91.08	91.34	90.50	91.04	91.71	92.13	91.35	91.87	92.25	93.28	93.90	92.83
Feb 2021	90.01	91.57	94.00	96.58	93.04	94.79	89.68	89.82	90.89	91.29	90.88	90.17	90.40	90.54	90.50	89.95	90.18	91.41	92.26	90.96
Jan 2021	90.01	91.57	94.00	96.58	93.04	94.79	89.67	89.87	88.73	90.76	87.48	87.54	88.54	89.11	88.17	88.54	88.86	90.17	91.02	89.66
Dec 2020	90.01	91.57	94.00	96.58	93.04	94.79	89.67	89.72	89.36	90.88	87.65	87.25	88.13	88.61	87.91					
Nov 2020	90.01	91.57	94.00	96.58	93.06	94.85	89.73	90.14	89.29	90.99	87.50	87.10	88.16	88.86	87.91					
Oct 2020	90.01	91.57	94.00	96.58	93.06	94.48	89.44	89.81	88.86	90.64	86.56	86.02	87.04	87.58	86.81					
Sept 2020	89.32	90.50	92.98	95.97	92.21	94.48	89.50	88.44	87.14	89.88	85.67	85.87	87.07	87.73	86.59					
Aug 2020	89.32	90.50	92.98	95.97	92.21	94.48	89.20	86.27	84.73	88.65	83.21	82.93	84.35	85.55	84.02					
July 2020	89.32	90.50	92.89	95.97	92.21	94.50	89.91	87.27	85.37	89.24	83.48	83.25	84.53	85.63	84.23					
June 2020	89.32	90.50	92.98	95.97	92.21	94.47	90.60	87.95	85.66	89.65	83.96	84.44	85.75	87.34	85.39					

Source: EIA, SAF

Figure 6: EIA STEO US Natural Gas Supply Forecasts By Forecast Month



Source: EIA, SAF

Natural Gas – US LNG exports still near all-time highs

US LNG exports near all-time highs

Although US LNG exports are down from the all-time record of 10.36 bcf/d in March, July exports of 8.94 bcf/d are still an all time high for the month. The EIA forecasts US LNG exports of 8.98 bf/d in Q3/21 to increase to 9.93 bcf/d in Q4/21.

Natural Gas – US natural gas inventories expected to enter winter below-average

Storage 336 bcf lower than last year heading into winter

The EIA posted a separate blog on their outlook for US storage to start the winter. As we highlighted above, in its August STEO, the EIA forecasted [LINK] that US inventories of natural gas will reach 3,592 bcf by November 1, which marks the beginning of the winter heating season. This amount is 159 bcf below the previous 5 year average and is 336 bcf below last year's October 31 storage of 3,929 bcf. A combination of factors has led them to this conclusion: above average withdrawal of natural gas from storage over the past winter, below-average injections into storage this summer and relatively flat production. To add to the matter, US exports of LNG has reached record highs, and pipeline exports of natural gas have also increased. This injection season (April 1-Oct 31), inventores have frown by only 960 bcf – 14% less than the 5-yr average build for the same period. This is sure to lend

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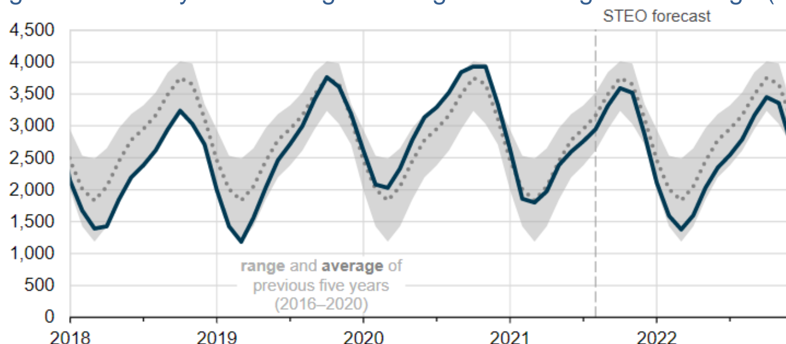
support for natural gas prices going into the winter. Our Supplemental Documents package includes the EIA blog.

Figure 7: Monthly US working natural gas in underground storage (bcf)



Source: EIA

Natural Gas – No surprise, looks like Peru country risk for natural gas

Peru to participate in natural gas

Its been almost 1 month since leftist President Pedro Castillo was declare the winner in the Peru elections. So we are now seeing more statements/indications of the policy direction for his administration. Last Sunday, Reuters reported last Sunday [LINK] the interview with new Prime Minister Guido Bellido, who confirmed the state's plan to participate in many key industries including natural gas and new hydroelectric projects. Call it participation or some level of nationalization, the question will be what form, how much and when. This should not surprise anyone as this was the expectation. This is a reversal as the state was in the process of divesting its state-controlled corporations in recent decades. Castillo grew up in an impoverished town in rural Peru and Bellido said, *"It is a lesson that a peasant is now the president of the republic, it is a cultural lesson"*. Previously, during his campaign, he condemned private enterprise for "plundering" the nation's wealth and declared that he would seek to nationalize natural gas, gold, silver, uranium, cooper and lithium mining projects. Since then, he walked those comments back, but Bellido did confirm in the interview that the state will have some degree of participation in key industries. While he specified that the mining sector would remain private, this will not be the case for natural gas. He said *"Our feeling is that strategic sectors need to be in the hands of the government. In my opinion, natural gas is a strategic resource and needs to have government participation (as well) as new hydroelectric projects of large size"*. This will likely impact the Camisea consortium, led by Argentina's Pluspetrol. South Korea's SK Group, Hunt Oil and Reposol SA also have stakes. The LNG consortium too is going to be impacted, which includes Shell, Japan's Marubeni Corp, SK Group and Hunt Oil. Our Supplemental Documents package includes the Reuters article.

Natural Gas – Algeria's Skikda LNG 0.5 bcf/d resumes operations

Algeria 0.5 bcf/d Skikda LNG back up and running

There is finally some word on the unplanned shutdown of Algeria's 0.5 bcf/d Skikda LNG plant, which has been shut down since June 11. Last week, there were reports that Sonatrach was able to restart operations on July 30 for a plant shut down of almost 50 days. Previously, Sonatrach had released a statement about the shutdown, writing *"A technical incident occurred on June 11 at the Skikda LNG Complex and led to the shutdown of this complex. The technical incident was caused by a sudden failure of a gas turbine control mechanism. No other damage is to be deplored thanks to the operation of the automatic safety devices of the machine and the plant…Sonatrach has decided to carry out a thorough inspection in order to carry out the necessary repairs."* LNGPrime reported last Friday [LINK]

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that during the shut down, Sonatrach repaired a gas turbine and carried out other maintenance which was originally planned for 2022. It was interesting to see the reports that Sonatrach said it was able to offset the lost Skikda LNG volumes with additional LNG volumes from three other units located at its Arzew facility. Sounds plausible but there will be no way of knowing if Skikda had any impact on the record high LNG prices this summer. Note that rather than replacing the turbine, the company opted to repair it, saving an additional 16 months of maintenance. This is not the first time that Skikda has had issues – back in 2020, it was forced to shutdown for 6 months and was not able to fully compensate for the loss. Our Supplemental Documents package includes the LNGPrime report.

Natural Gas – Are Rwandan troops the game changer for Mozambique LNG?

Rwandan troops a game changer?

We have to wonder if Mozambique calling in Rwandan troops in late July will turn out to be the game changer to bring back and establish sufficient security for TotalEnergies to lift force majeure in early 2022. Our Aug 1, 2021 Energy Tidbits highlighted TotalEnergies Q2 comment that they still expect at least a 1 year force majeure period and also TotalEnergies comment that its "probably as well but Rwanda is involved now" because the one thing that jumps out with Mozambique having the Rwandan troops is that it seems like either a change in tactics or strategy to one to go and try to wipe out the insurgents. Our July 25, 2021 Energy Tidbits noted the KT Press (Rwanda news) reported [LINK] the just arrived Rwandan trips killed, or slaughtered in the words of Mozambique defence minister, a number of insurgents. It looks like the Rwandan troops are having a big impact. On Monday, Bloomberg reported "*troops from Mozambique and Rwanda retook a port town at the heart of a four-year insurgency that led to the suspension of a $20 billion project by TotalEnergies SE*" and "*Regaining control of the town is a major victory for the Rwandan soldiers and police who helped spearheaded a counter-offensive at the request of Mozambique President Filipe Nyusi over the last month. Lasting peace and stability in the area may convince TotalEnergies to resume work on its mega liquefied natural gas project, about 60 kilometers (37 miles) north of Mocimboa da Praia.*" Clearly, the Rwandan troops are making a difference. On Friday, we tweeted [LINK] "*Was July a game changer for #TOT #XOM in Mozambique #LNG? Give a chance for force majeure removal in early 2022? Rwanda troops weren't under international scrutiny, aggressively fought and pushed out rebels from key ports/towns. Thx @AntonySguazzin*". Bloomberg reminded why Mozambique called in Rwanda troops first instead of the coalition led by South Africa – They wouldn't be under the same international scrutiny as opposed to troops led by South Africa. And clearly Mozambique calling in Rwandan troops was to make progress quickly in taking back territory. Bloomberg wrote "*A multi-nation force would bring scrutiny to the affected region, Cabo Delgado, which is riven with ruling party patronage. Rwanda is less likely to look too closely, Mason said. "It's no accident that Rwanda got there first," he said.*" We ask the question as it just seems, at least for now, Rwandan troops are making a huge difference. And if they stay, we have to believe it will increase the chance for Mozambique to establish and maintain security. Rwandan troops can be the game changer. Our Supplemental Documents package includes the two Bloomberg reports.

Natural Gas – Petronet LNG demand is growing much faster than happened in the past

Petronet LNG

India's Petronet LNG reported its quarterly yesterday but we could only find press coverage on mgmt comments to the media post the results. We note the following from press reports. (i) The headline from the Petronet should not be a surprise to anyone, Indian LNG buyers have been deferring spot purchases in the face of $14 - $16 LNG prices. Petronet CEO said ""People are trying to defer, reschedule cargoes for prices to cool down". (ii) LNG demand to grow faster than in the past. Hindu Business Line reported *""LNG demand is going to grow much faster than what has happened in the past. We see huge potential for LNG use in*

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transportation sector and we are working hard to increase the use of the LNG in transport sector and replace diesel," he said." India's Business Standard gave one example writing "*"Another new area is the utility of LNG in the transport sector. We foresee diesel being replaced with LNG for long distance transport trucks," Singh added. Elaborating on the outlook for LNG as a transport fuel, he said, "We will need at least 3000 LNG stations in the country to offset 10 per cent diesel demand (this comes to around 9 million tonnes per annum)."* (iii) Interesting how India's push to renegotiate lower long term LNG contracts linked to oil prices from 2 years ago has died and Petronet is noting the big price break from the long term prices. Reuters reported "*Asian spot LNG prices are hovering at about $16 per million British thermal units, while supplies under long-term deals are costing about $10/mmBtu, he said.".* (iv) Any Indian domestic gas production increases will be short lived. We have been noting the expectation for India to reverse years of production decline with near term increases. Petronet was clear, these increases are short lived. India's Business Standard reported "*Responding to a query on whether higher domestic demand hampers prospects for Petronet LNG, a company predominantly into regasifiying and importing natural gas, Singh said, "The increased domestic gas production is not going to sustain for a long period. New deepwater gas that is coming onstream will last for six to seven years. LNG demand is going to grow.".* (iv) Discounted any impact of hydrogen for the 2020s but did not address the 2030s. We suspect Petronet avoided the long term due to Modi's speech today (see later in memo) highlighting hydrogen. Hindu Business Line reported "*Singh also said that Petronet LNG does not consider hydrogen a threat to LNG for the next five years. He said hydrogen is only an emerging fuel while LNG is already an established fuel. He noted that all fuels will have their share in the fuel pie in the country. "Our assessment is that LNG is going to remain as preferred transport fuel for long time in our country," he said."* Our Supplemental Documents package includes the media reporting of Petronet LNG comments.

Recall Petronet sees India LNG imports +13 bcf/d to 2030 to meet gas targets
Our June 20, 2021 Energy Tidbits highlighted Petronet's bullish view for India's increasing LNG demand. At that time, we wrote "*There was an even better reminder on Friday from India on how their plan to increase natural gas to 15% of its energy mix will be a major catalyst to LNG markets in the 2020s. Recently our June 6, 2021 Energy Tidbits noted the June 4 tweet from India's Energy Minister Dharmendra Pradhan [LINK] "We are rapidly deploying natural gas in our energy mix with the aim to increase the share of natural gas from the current 6% to 15% by 2030. One Nation, One Gas Grid is being implemented to remove regional imbalances in access to natural gas. #IndiasGreenFuture." Pradhan didn't give a forecast of what this meant for increased bcf/d of natural gas and LNG imports. But this week Petronet CEO AK Singh gave a specific forecast. Reuters report "LNG's share of Indian gas demand to rise to 70% by 2030: Petronet CEO" [LINK] included Petronet's forecast if India is to hit its target for natural gas to be 15% of energy mix by 2030. Singh forecasts India's natural gas consumption would increase from current 5.5 bcf/d to 22.6 bcf/d in 2030. And LNG shares would increase from 50% to 70% of natural gas consumption ie. ~3 bcf/d to 15.8 bcf/d in 2030. Singh did not specifically note his assumption for India's natural gas production, but we can back into the assumption that India natural gas production grows from ~3 bcf/d to 6.8 bcf/d. Our Supplemental Documents package includes the Reuters report*."

Petronet's natural gas demand forecast is in line with our Oct 2019 forecast
Our June 20, 2021 Energy Tidbits also compared the Petronet June LNG forecast to our Oct 2019 forecast. At that time, we wrote "*It was good to finally see India come out with a specific forecast for 2030 natural gas consumption and LNG imports if*

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India is to get natural gas to 15% of its energy mix in 2030. Petronet's Singh forecasts India natural gas consumption to increase from 5.5 bcf/d to 22.6 bcf/d in 2030. This forecast is pretty close to our forecast in our Oct 23, 2019 blog "Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030". Here is part of what we wrote in Oct 2019. "It's taken a year longer than we expected, but we are finally getting visibility that India is taking significant steps towards India's goal to have natural gas be 15% of its energy mix by 2030. On Wednesday, we posted a SAF blog [LINK] "Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030". The blog noted comments from earlier on Oct, when India Oil Minister Dharmendra Pradhan said that there are $60 billion of natural gas infrastructure and LNG import terminals that are "under execution". He said "I am not talking about potential investment. This number relates to the project that are under execution". In the blog, we said "Natural gas consumption in India is only now back to 2011 levels at 5.6 bcf/d and represents only 6.2% of its energy mix. If India hits its 15% target of its energy mix by 2030, it would add natural gas demand, on average, of >1.5 bcf/d per year. At the same time India's domestic natural gas production peaked in 2010 at 4.6 bcf/d, but has been flat from 2014 thru 2018 at ~2.7 bcf/d, which means the big winner will be LNG. The most important factor driving this expectation for natural gas consumption growth is likely price. Asian LNG landed prices are down about 50% YoY and, more significantly, the expectation is for future Asian LNG prices to be at lower levels than prior cycles. India, by itself, may not be a LNG global game changer, but it is another positive support for why we believe LNG markets will rebalance sooner than expected ie. in 2022/2023". We projected how much India's natural gas consumption would increase if it can hit its target of 15% of total energy mix in 2030. BP data shows India's natural gas consumption in 2018 was 5.6 bcf/d and natural gas was only 6.2% of total energy mix. BP also estimates India's total energy consumption grew at a rate of 5.2% per year for the 2007 – 2017 period, but energy consumption growth increased to +7.9% in 2018 YoY vs 2017 But if we only assume a 5% growth in total energy mix to 2030, then if natural gas is 15% of India's energy mix, it would be 18.8 bcf/d in 2025 and 24.0 bcf/d in 2030 ie. growth of +13.2 bcf/d to 2025 and +18.4 bcf/d to 2030. India may not be a global LNG game changer by itself like China, but it does support the call that LNG markets rebalance sooner than expected. Our blog also includes our table of LNG projects for 2019 and 2020, which reinforce the potential for LNG growth post 2020. Below is our projection of India's natural gas consumption @15% of Energy mix, and our Supplemental Documents package has our India blog." Our Supplemental Documents package includes our Oct 23, 2019 blog.

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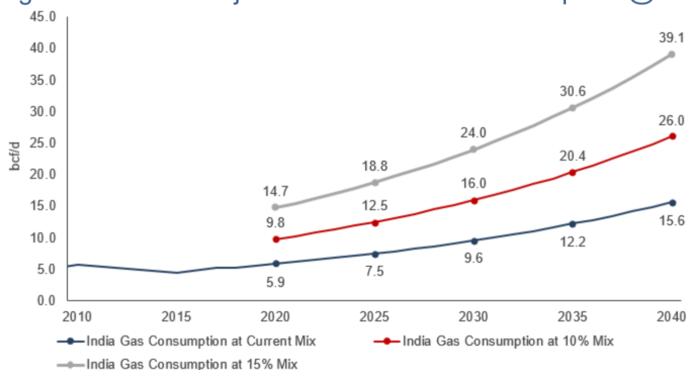
Figure 5: India's Projected Natural Gas Consumption @15% Of Energy Mix (bcf/d)



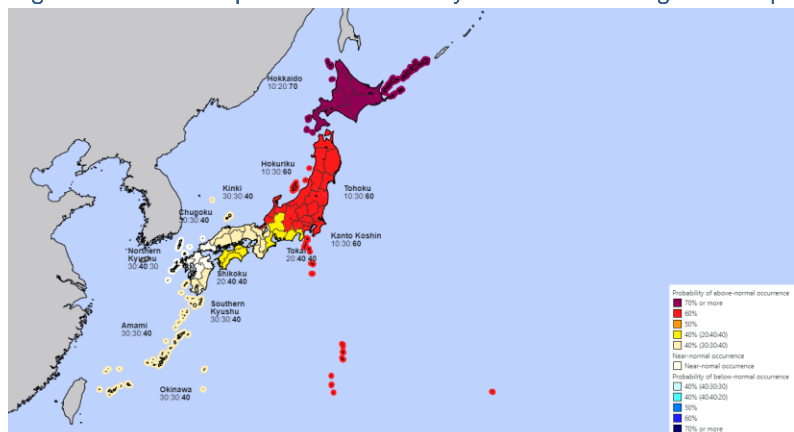
Source: BP, SAF

JMA forecasting a warm end to summer

Natural Gas – Expectation for continued hot weather in Japan for the end of summer

It looks like the hot humid temperatures will continue into August and the weather in Japan will continue to be very supportive of the strong summer LNG prices. Weather always changes and there is no certainty of that the forecasts will be accurate. However, the last week continued the warm outlook for Japan for the next 30 days, and this week's updated look-ahead further supports those expectations. August temperatures are forecasted to be very hot throughout the country, especially in central and northern Japan, although the forecast for the south is for slight above normal to normal temperatures. The Japan Meteorological Agency issued its updated month ahead weather forecast for Aug 14 – Sept 13 on Thursday [LINK]. Below is the current JMA forecast for the remainder of the month of Aug and the first bit of September.

Figure 8: JMA Temperature Probability Forecast for Aug 14 – Sept 13



Source: Japan Meteorological Agency

US oil rigs +10 WoW

Oil – US oil +10 WoW at 397 oil rigs

Baker Hughes reported its weekly rig data on Friday. This week US oil rigs were +10 rigs WoW at 397 oil rigs. We finally saw the needed and expected increase in Bakken oil rigs that were +4 this week. Eagle Ford was +3 oil rigs and +1 gas rig this week, but we expect that some of the increasing Eagle Ford oil rigs are in the higher natural gas percentage fairways. Oil rigs have been on a strong recovery path and are +225 off the bottom of 172 in the Aug

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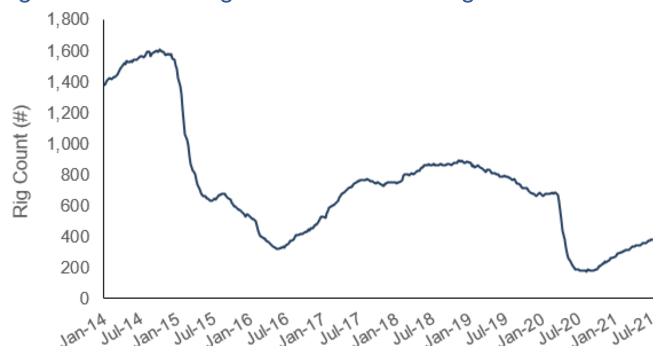
14/2020 week. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by 286 to 387 oil rigs (-42%). Below is our graph of Baker Hughes US oil rigs.

Figure 9: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

Oil – Frac spreads +3 to 238 as of Aug 13

Frac spreads +3 to 238

Every week, Mark Rossano (C6 Capital Holdings) posts a YouTube recap of frac spreads for the week on the Primary Vision Network. [LINK]. US frac spreads were +3 to 238 as of Aug 13. Rossano noted the increase in oil rigs, expects to see frac spreads to continue to increase but not a big jump up. He didn't give specific numbers but highlighted the Permian and Williston as key increase areas. He expects the Williston to keep increasing up to about 20 spreads. Rossano didn't note the current frac spread count in the Williston, but the Williston Herald reported on Friday that North Dakota estimates the current frac spread count is 10. Rossano noted his previous guidance to get to 250 – 255 spreads by the end of August, a little behind because not seeing some of the smaller basin pick up, he thinks those smaller basins are coming but not sure if its in Aug or early Sept so still expects to get to 250 – 255 spreads, when will depend on the smaller basins, but should be in Aug or early/mid Sept. Note Rossano stopped providing his frac spread graphs for free.

Oil – Total Cdn rigs +8 to 164 total rigs and +110 rigs YoY

Cdn rigs +8 this week

Total Cdn rigs were +8 to 164 total rigs. Cdn rigs were +5 to 100 oil rigs. Cdn gas rigs were +3 to 63 gas rigs. Total rigs are now +151 since the June 26, 2020 all-time low of 13 rigs. There was a little bit of precipitation this week, but the province of BC continues to be hit by high wildfire activity. BC rigs were -1 this week, whereas Alberta was +7 rigs and Saskatchewan was +1 rig. Cdn drilling has recovered YoY, a year ago Cdn oil rigs were 19 oil rigs and Cdn gas rigs were 35 for total Cdn rigs of 54, meaning total Cdn rigs are +110 YoY and total Cdn rigs are up +22 vs 2019. Below is our graph of Baker Hughes Cdn oil rigs.

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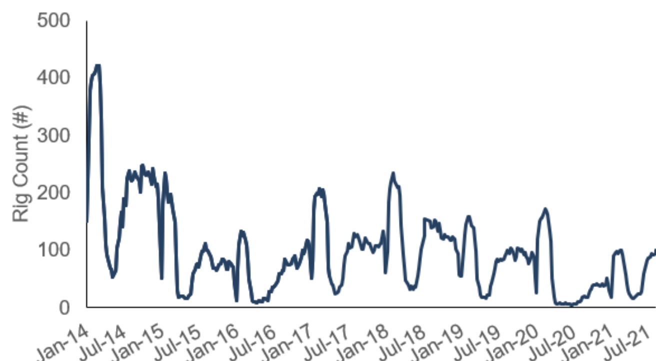
Figure 10: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

Oil – US weekly oil production +0.1 mmb/d to 11.3 mmb/d

US oil production +0.1 mmb/d WoW

US oil production was up +0.1 mmb/d to 11.3 mmb/d for the Aug 6 week. Lower 48 up +0.1 mmb/d at 10.9 mmb/d. This puts US oil production up +0.6 mmb/d YoY, and is down 1.8 mmb/d since the 2020 peak of 13.1 mmb/d on March 13. The August STEO forecast slightly raised its US crude expectations thru 2021 however it is still not returning anywhere near the Q4/19 peak of 12.88 mmb/d, with Q4/21 US crude of 11.30 mmb/d (down 1.58 mmb/d from peak). In US oil production commentary, the EIA wrote "*We expect production to be relatively flat through October before it starts rising in November and December and throughout 2022. Forecast U.S. crude oil production for 2022 averages 11.8 million b/d, up from 11.1 million b/d in 2021.*" The EIA DPR has the expectation of slight MoM increases in July/August. The EIA Form 914 May actuals were 281,000 mb/d above the weekly estimates average of 10.950 mmb/d for May, following a similar trend from April's +201,000 mmb/d underestimate.

Figure 11: 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								

Source: EIA

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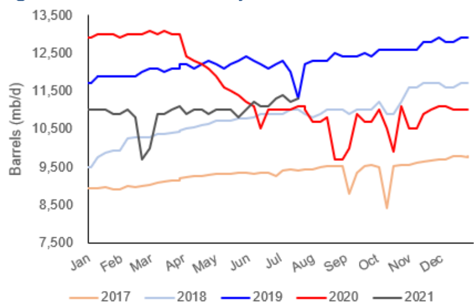
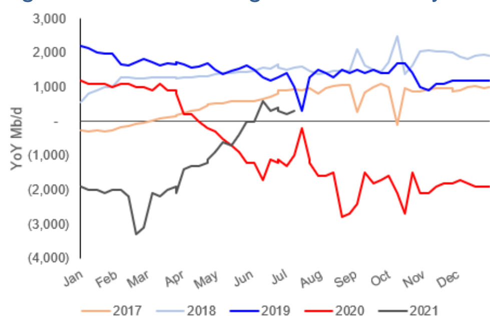
Figure 12: US Weekly Oil Production



Source: EIA, SAF

Figure 13: YoY Change in US Weekly Oil Production



Source: EIA, SAF

Oil – EIA STEO expecting sustained production growth to Q4/22

EIA forecasts US oil exit in 2022 at 12.11 mmb/d

The EIA STEO had slight revisions to US oil production for 2021 and 2022 with assumed prices remaining relatively flat vs last month. (i) The EIA forecast slightly lowered its US crude expectations thru 2021, and it is still not returning anywhere near the Q4/19 peak of 12.78 mmb/d, Q4/21 US crude of 11.30 mmb/d (down 1.58 mmb/d from peak). Q4/21 of 11.30 mmb/d is +0.43 mmb/d YoY vs Q4/20. Full year 2020 US oil production is at 11.28 mmb/d and is down 1.01 mmb/d YoY from 12.29 mmb/d in 2019. (ii) Full year 2021 is increased by 0.02 mmb/d vs July STEO to 11.12 mmb/d, which is down 0.16 mmb/d YoY from 2020. (iii) The EIA forecasts a shift back to YoY growth in 2022 with production averaging 11.77 mmb/d, +0.65 mmb/d YoY (was 11.85 mmb/d previously), with Q4/22 production of 12.11 mmb/d, ie still down 0.77 mmb/d from Q4/19. (iv) In the US oil production commentary, the EIA wrote *"We expect production to be relatively flat through October before it starts rising in November and December and throughout 2022. Forecast U.S. crude oil production for 2022 averages 11.8 million b/d, up from 11.1 million b/d in 2021."*

Figure 14: Estimated US Crude Oil Production By Forecast Month

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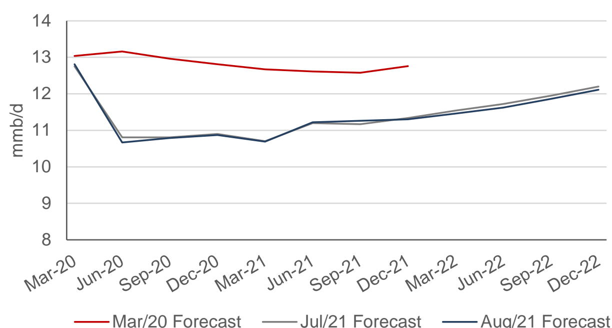
(million b/d)	Q1/19	Q2/19	Q3/19	Q4/19	2019	Q1/20	Q2/20	Q3/20	Q4/20	2020	Q1/21	Q2/21	Q3/21	Q4/21	2021	Q1/22	Q2/22	Q3/22	Q4/22	2022
Aug 2021	11.80	12.15	12.31	12.88	12.29	12.81	10.67	10.79	10.87	11.28	10.69	11.22	11.26	11.30	11.12	11.46	11.62	11.86	12.11	11.77
July 2021	11.83	12.13	12.25	12.78	12.25	12.75	10.81	10.81	10.90	11.31	10.70	11.20	11.17	11.34	11.10	11.54	11.72	11.95	12.20	11.85
June 2021	11.83	12.13	12.25	12.78	12.25	12.75	10.81	10.81	10.90	11.31	10.70	11.04	11.17	11.38	11.08	11.55	11.67	11.88	12.05	11.79
May 2021	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.81	10.90	11.31	10.65	10.97	11.12	11.34	11.02	11.51	11.68	11.96	12.21	11.84
Apr 2021	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.81	10.90	11.31	10.75	10.93	11.13	11.35	11.04	11.54	11.74	11.99	12.18	11.86
Mar 2021	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.81	10.87	11.31	10.79	11.06	11.27	11.46	11.15	11.67	11.84	12.16	12.41	12.02
Feb 2021	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.81	10.89	11.31	10.98	10.91	11.00	11.18	11.02	11.30	11.38	11.61	11.83	11.53
Jan 2021	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.81	10.81	11.29	11.06	11.03	11.07	11.25	11.10	11.32	11.37	11.52	11.74	11.49
Dec 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.80	10.99	11.34	11.02	11.00	11.09	11.29	11.10					
Nov 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.93	11.07	11.39	11.06	10.97	11.08	11.28	11.10					
Oct 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.82	11.02	11.22	11.45	11.07	11.00	11.05	11.22	11.09					
Sept 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.91	11.08	11.38	10.96	10.97	11.08	11.32	11.08					
Aug 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.57	10.79	10.96	11.26	11.00	10.99	11.16	11.40	11.14					
July 2020	11.81	12.10	12.23	12.78	12.23	12.74	11.41	11.29	11.10	11.63	11.02	10.93	10.97	11.13	11.01					
June 2020	11.81	12.10	12.23	12.78	12.23	12.74	11.65	11.13	10.74	11.56	10.71	10.83	10.80	11.02	10.84					

Source: EIA, SAF

Figure 15: Estimated US Crude Oil Production By Forecast Month



Source: EIA, SAF

Oil – Looks like high prices continue to bring back any North Dakota shut in wells

North Dakota production flat MoM

We have the same comment as last month that a key factor being overlooked in the stronger North Dakota oil production is the return of marginal shut in oil wells in Q2 due to high oil prices. On Friday, the North Dakota Industrial Commission posted its Director's Cut, which includes June oil and natural gas production data [LINK]. North Dakota June oil production was up flat MoM at 1.128 mmb/d, but is +26.3% YoY from Covid hit June 2020 of 0.894 mmb/d. May and June are off the Feb bottom of 1.084 mmb/d, Feb was low due to the extreme weather. But rigs and frac crews in the Bakken have been low despite the high oil prices. We believe the key reason for the increase off the bottom was the return of shut in oil wells due to high oil prices. The return of these wells has helped to offset declines despite the lower rig and frac spread levels. Friday's Director's Cut noted there 16,825 producing wells (preliminary estimate), up from 16,623 producing wells in May, 16,374 producing wells in April, 16,212 producing wells in March and 15,778 producing wells in Feb. The MoM increase of 202 producing wells is despite only 47 wells being completed ie. infers 155 shut in wells brought back on production. Our Supplemental Documents package includes excerpts from the NDIC Director's Cut.

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Figure 16: North Dakota Oil Production By Month

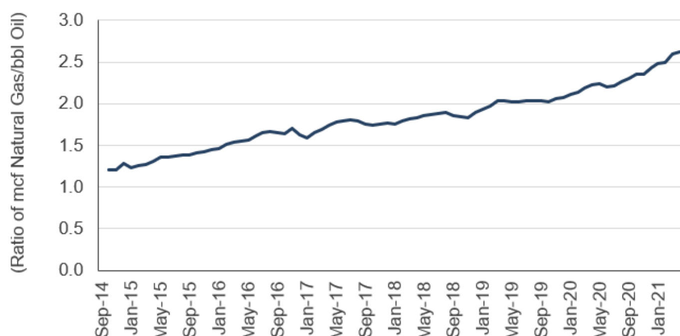
(b/d)	2016	2017	2018	2019	2020	2020/2019	2021	2021/2020
Jan	1,122,462	981,380	1,179,564	1,403,808	1,430,511	1.9%	1,147,377	-19.8%
Feb	1,119,092	1,034,248	1,175,316	1,335,591	1,451,681	8.7%	1,083,554	-25.4%
Mar	1,111,421	1,025,690	1,162,134	1,391,760	1,430,107	2.8%	1,108,906	-22.5%
Apr	1,041,981	1,050,476	1,225,391	1,392,485	1,221,019	-12.3%	1,123,166	-8.0%
May	1,047,003	1,040,995	1,246,355	1,394,648	859,362	-38.4%	1,128,042	31.3%
June	1,027,131	1,032,873	1,227,320	1,425,230	893,591	-37.3%	1,128,185	26.3%
July	1,029,734	1,048,099	1,269,290	1,445,934	1,042,081	-27.9%		
Aug	982,011	1,089,318	1,292,505	1,480,475	1,165,371	-21.3%		
Sept	971,760	1,107,345	1,359,282	1,443,980	1,223,107	-15.3%		
Oct	1,043,693	1,183,810	1,392,369	1,517,936	1,231,048	-18.9%		
Nov	1,034,484	1,194,920	1,375,803	1,519,037	1,227,138	-19.2%		
Dec	942,322	1,182,836	1,402,741	1,476,777	1,191,429	-19.3%		

Source: NDIC, NDPA

North Dakota gas-oil ratio increases as Bakken matures

One of the long term trends that we have been highlighting for all of the US tight/shale oil plays that produce associated natural gas and NGLs is that, over time, the percentage of natural gas increases in the production. This is the case for all the oil plays with associated natural gas, not just the Bakken. We see this clearly in North Dakota where the gas-oil ratio continues to increase. The gas-oil ratio in June was 2.64, vs June 2020 of 2.21, June 2019 of 2.02, June 2018 of 1.88, and June 2017 of 1.79. Below is our running graph of North Dakota gas-oil ratio updated for the new NDIC April production data.

Figure 17: North Dakota Gas-Oil Ratio



Source: NDIC, NDPA

North Dakota sees activity inching up in 2021, more in 2022

Every month, we normally reference the Bismarck Tribune's coverage of the monthly press conference on the North Dakota data. But this month we are referencing the Williston Herald's reporting on the press conference. The Williston Herald noted a number of comments from North Dakota Department of Mineral Resources Lynn Helms that suggest the bottom has been found for North Dakota, activity is increasing, frac spreads are "inching" up, but the bigger increase in activity should be in 2022. They reported "*Among reasons Helms believes production is set to take off are the number of DUC available DUC wells and completions that are just high enough to keep production steady. Meanwhile, industry is hiring as many workers as possible for workover crews to keep what's producing going. There's also a record 16,825 wells producing right now, Helms said. Some of the top 10 are also telling Helms that more hydraulic crews are coming." "North Dakota has around 10 frack crews right now, Helms said, and based on his conversations with industry, he*

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believes the state's numbers are "inching" their way to the 20 that would be needed boost production above 1.5 million barrels per day. On Friday, Aug. 13, there were 23 rigs listed as running. Helms said he's been told by companies in the top 10 that they plan to add three rigs by year-end, which would bring that number to at least 25. "Again, it seems like a sleeping giant. We have the potential to get back to and above 1.5 million barrels a day. We have the potential of getting 6 or 7 billion cubic feet of natural gas production and export and processing a day," Helms said. "But the pandemic put our service companies and our operators to sleep and they're being very disciplined about really ramping up activity. They're paying down debt. They're buying back stock. They're paying back investors on the private capital side. And it looks like what they've been telling us that we're not going to see significant rig count increases until next year is really coming to pass." Our Supplemental Documents package includes the Williston Herald report.

Oil – North Dakota crude by rail down MoM to 171,829 b/d in June

North Dakota CBR down in June

The North Dakota Pipeline Authority also posted its monthly update "*June 2021 Production & Transportation*" [LINK]. Please note that we always go to the backup excel sheets from the North Dakota Pipeline Authority for more detailed numbers of crude by rail out of North Dakota. The NDPA Monthly Update (graph below) report only provides rounded numbers, and these rounded numbers are not accurate enough to match the graphs. In the backup excel, the NDPA estimates crude by rail in June was a low of 156,829 b/d to a high of 186,829 b/d for an average of 171,829 b/d, This is down from a May low 188,301 b/d to a high of 218,301 b/d for an average of 203,301 b/d. Below is a chart from the NDPA monthly update showing the crude by rail volumes since 2013. Our Supplemental Documents package includes excerpts from the NDPA monthly update.

Figure 18: Estimated North Dakota Rail Export Volumes

Source: North Dakota Pipeline Authority

Oil – No changes, still 2 remaining Covid outbreak facilities in oil sands facilities

No change to 2 oil sands Covid outbreak

On Friday, Alberta put a 6-week pause on their Covid reopening due to the increasing Covid cases. Wood Buffalo posted its weekly Covid update effective Aug 13. [LINK] and the Wood Buffalo new cases are very low relative to Alberta. From Aug 1 to Aug 13, there were 3,592 new cases in Alberta, but Wood Buffalo only saw 11 new cases. Wood Buffalo's update

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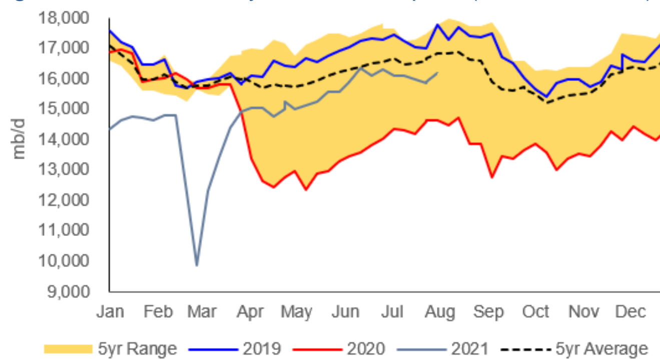
noted no changes to the 2 remaining Covid outbreak facilities in the oil sands – CNRL Albian and Suncor Fort Hills

Oil – Refinery inputs +1.539 mmb/d YoY to 16.197 mmb/d, down 1.382 mmb/d vs 2019

Gasoline demand tapers off due to seasonality

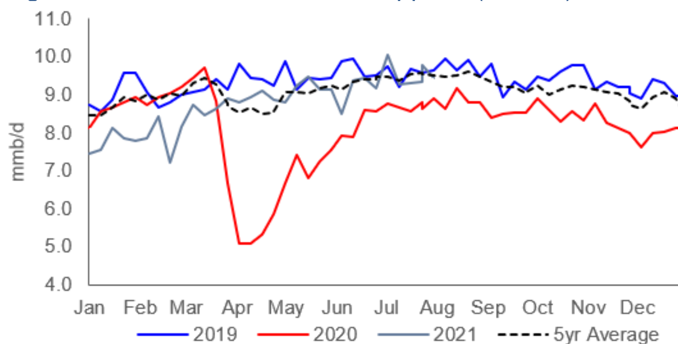
Crude inputs to refineries were up this week and were +0.277 mmb/d to 16.197 mmb/d, and are +1.539 mmb/d YoY, and are -1.382 mmb/d vs 2019. Refinery utilization was up by 0.5% this week at 91.8%, which is +10.8% YoY. Total products supplied (ie. demand) decreased this week with a -1.654 mmb/d decrease to 19.514 mmb/d, and this week motor gasoline was down, being -0.345 b/d to 9.430 mmb/d. For motor gasoline, the market has entered a period where demand will start to fall ahead of fall, so we expect demand to start levelling off at ~9.3 mmb/d, in line with seasonal trends. EIA expects gasoline demand to reach its peak this month, writing in their 2021 Summer Fuels Outlook [LINK] *"We forecast that gasoline consumption in 2021 will peak in August at 9.1 million b/d, which is up from 8.5 million b/d in August 2020 but down from the 9.8 million b/d in August 2019."* Below is our graph of crude inputs to US refineries and our graph of US motor gasoline supplied.

Figure 19: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA, SAF

Figure 20: US Motor Gasoline Supplied (mmb/d)



Source: EIA, SAF

Oil – Not clear what caused need to flare at Chevron Richmond 250,000 b/d refinery

Flaring at Chevron refinery

On Tuesday afternoon [LINK], a huge plume of black smoke was seen rising from Chevron's Richmond refinery. Locals feared it was another fire, as back in 2012 a massive fire occurred, resulting in 15,000 residents in the area injured. Chevron reportedly noticied Contra Costa County that flaring was happening at the plant due to *"an unplanned upset in one of its*

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systems" , which had released sulfur dioxide. Officials from Chevron are describing the incident as "Level 1", and as such no actions by the public are needed. On Tuesday, Chevron tweeted [LINK] "A *safety flare was activated for a short time due to a process upset that was quickly corrected this afternoon. A CWS Level 1, the lowest on the scale, was issued to keep residents informed. To view real-time air quality data, visit http://richmondairmonitoring.org".* We are not sure anyone but Chevron knows the exact meaning of a "*process upset*". There was a local news thread [LINK] that raised a number of questions ie. what equipment had the perceived high pressure reading, more on the 738 pounds of sulfur dioxide released, and the cause of the malfunction. We haven't seen any specific reports, but assume the plant has been operating. Our Supplemental Documents package includes the Chevron Richmond refinery overview and the Chevron and local news tweets.

Oil – US "net" oil imports down -0.795 mmb/d to 3.732 mmb/d

US "net" oil imports -0.795 mmb/d WoW

US "NET" imports were down -0.795 mmb/d to 3.732 mmb/d for the Aug 6 week. US imports were basically flat, down by -0.036 mmb/d to 6.396 mmb/d. US exports were up, being +0.759 mmb/d to 2.663 mmb/d. The WoW decrease in US oil imports was driven by decreases by Other, namely Brazil was down big by -0.234 mmb/d and Russia also saw a decrease of -74,000 b/d. Otherwise, imports would have shown an increase, as there were considerable increases from Canada, Colombia and Ecuador this week. Some items to note on the by country data. (i) Canada was up this week, and was +0.143 mmb/d to 3.371 mmb/d for the Aug 6 week, which is now ~0.33 mmb/d below the average levels in Jan/Feb of 2020. (ii) Saudi Arabia was down by 49,000 b/d to 0.302 mmb/d this week. (iii) Colombia was up big this week after 4 weeks of hovering around the low-140,000 b/d mark, +0.152 mmb/d to 0.293 mmb/d this week. (iv) Ecuador was up by 104,000 b/d at 150,000 b/d. (v) Iraq was up +38,000 b/d to 120,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico was down by 33,000 b/d to 0.601 mmb/d.

Figure 21: US Weekly Preliminary Oil Imports By Major Countries

US Weekly Preliminary Crude Imports By Top 10 Countries (thousand b/d)	May 28/21	June 04/21	June 11/21	June 18/21	June 25/21	July 02/21	July 09/21	July 16/21	July 23/21	July 30/21	Aug 06/21	WoW
Canada	3,147	3,971	3,644	3,435	3,282	3,744	3,480	3,611	3,476	3,228	3,371	143
Saudi Arabia	188	144	381	555	565	316	347	359	363	351	302	-49
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	702	423	764	878	747	408	648	797	621	634	601	-33
Colombia	185	137	143	340	139	154	140	144	144	141	293	152
Iraq	163	173	305	151	142	229	182	480	145	82	120	38
Ecuador	226	122	96	29	260	0	95	171	168	46	150	104
Nigeria	169	264	169	183	33	142	187	195	55	212	150	-62
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	4,780	5,234	5,502	5,571	5,168	4,993	5,079	5,757	4,972	4,694	4,987	293
Others	851	1,404	1,244	1,372	1,238	882	1,142	1,340	1,535	1,738	1,409	-329
Total US	5,631	6,638	6,746	6,943	6,406	5,875	6,221	7,097	6,507	6,432	6,396	-36
Source: EIA												

Source: EIA, SAF

Oil – Venezuela, Maduro and Guaido teams start negotiations in Mexico

Maduro/Guaido start negotiations

It's a step forward to see the Maduro govt and Guaido group agree on a MOU on Friday night that will lead to the start of negotiations in Mexico. But its far from clear how far this first step takes the parties to potentially getting to a deal. Its not as if the parties have made any concessions, but have agreed to a negotiation. Reuters [LINK] and other similarly reported on the Friday night MOU. One difference from prior talks is that "*Unlike previous negotiation efforts, the talks will include more than a dozen countries, among them the Netherlands, Russia, Bolivia, Turkey and Norway, which will act as the facilitator*." Reuters also noted the continuing differences, writing "*For the talks to advance to a potential agreement, Venezuelan President Nicolas Maduro demands that sanctions imposed by the United States*

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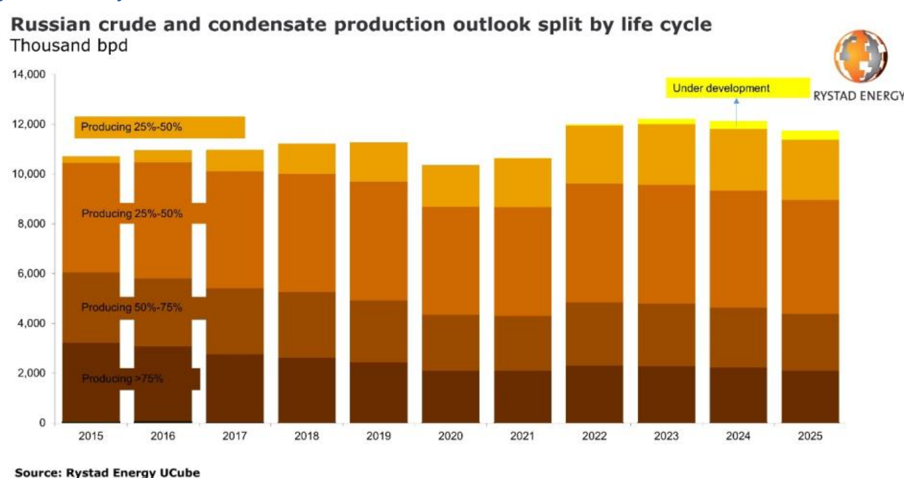
and Europe on officials and institutions be lifted. Venezuela says the sanctions are responsible for the OPEC member's economic crisis. For its part, the opposition coalition calls to allow humanitarian aid, including vaccines against COVID-19, to enter into Venezuela; the release of dozens of supporters whom it considers "political prisoners;" and guarantees it will be allowed to participate in regional elections in November. "We already know what we do not agree on. ... The job now is to find points of confluence to guarantee the future and the happiness of the people of Venezuela," Jorge Rodriguez, president of Venezuela's parliament, said at the beginning of the talks." Yesterday, US Secretary of State Blinken tweeted [LINK] "*The announcement of negotiations between Venezuela's democratic opposition and the Maduro regime is a welcome first step toward restoring democracy. We join the EU and Canada in urging parties to reach enduring agreements that lead to the democratic future Venezuelans deserve.*" Our Supplemental Documents package includes the Reuters report.

Oil – Rystad sees Russia oil production growth to 11.3 mmb/d in 2023, then decline

Rystad on Russia oil growth

We have been believers that Russia would be happy with lower near term oil prices if it meant that it could be the crippling blow to US shale and other non-OPEC oil production as it would mean higher oil prices in the 2020s so they could maximize oil revenues before the declines start to accelerate. But it looks like Russia doesn't have to do that as capital providers and governments are ensuring that US shale and other non-OPEC production won't have the level of expected growth that would have been expected under $70 oil ie. Russia gets higher oil prices in the 2020s without having hammer near term oil prices. On Friday, Rystad Energy posted another good blog "*Russia's oil supply set to break Covid-19 chains, rise to a new record in July 2022 and peak in 2023*" [LINK]. Rystad wrote "*Russia is also expected to set new records for crude oil alone. Its existing monthly record of 10.7 million bpd from April 2020 will be matched by May 2022. Crude production will keep rising to a peak of 11.3 million bpd in mid-2023, before starting to decline. "Russian production will rise from relatively new fields – fields with early production and producing fields with 25% to 50% depletion rates. Operators will not be able to increase production from mature fields, as it will be difficult and expensive to bring back online wells that were shut to comply with OPEC+ output cuts," says Daria Melnik, senior analyst at Rystad Energy."* Our Supplemental Documents package includes the Rystad blog.

Figure 22: Rystad Forecast Russia Crude Oil and Condensate Production



Source: Rystad

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Recall in Jan at $55 oil, Russia said 64% of its oil reserves are not profitable

We were, and still are, surprised that markets basically overlooked Russia's comments in late January that 64% of its oil reserves are not profitable. At that time, Brent was trading around $55. Here is what we put in our Jan 31, 2021 Energy Tidbits. "Imagine what markets would say if Exxon were to come out in their year end reporting and say that 64% of its existing oil reserves are not profitable at >$50 oil. The stock would be creamed as markets would think Exxon wouldn't have oil growth potential and its oil production had likely peaked. This is what Russia said this week for their oil reserves. We were surprised by a TASS Russian news story on Wed morning and would have thought it was a fake if it wasn't on TASS as we would never have thought Russia's #2 oil official (after Novak) would be saying what he did. We tweeted [LINK] "*1/2. must read, bullish for oil @tass_agency story "only 36% of oil reserves in Russia are profitable". multiple indicators of maturing oil supply ie. deeper, smaller pools, etc. Effectively says RUS has more or less reached peak oil supply unless #Oil prices are higher #OOTT* .." and [LINK] "2/2*. surprising RUS lays this out, but fits to Novak's Dec comments and why they would want higher oil prices for 2020s sooner. see SAF Group blog Russia Says its a Price Taker at $45 in 2021, May Be the New Strategy Needed for OPEC+ to Fix Post Covid OIl Prices For 2020s. #OOTT*". TASS wrote "*Only 36% of 30 billion tons of oil reserves in Russia are profitable, which is associated with the deterioration of development conditions and a drop in the quality of reserves, writes the Deputy Minister of Energy of the Russian Federation Pavel Sorokin in an article for the Energy Policy magazine. "According to the data of the inventory of the economics of field development, carried out on behalf of the Russian government, out of 30 billion tons of recoverable oil reserves in Russia, only 36% is profitable in the current macroeconomic conditions. This is due to the deterioration of development opportunities: an increase in water cut, the need to permeability and compartmentalization of reservoirs, withdrawal into marginal zones and strata with small thicknesses, and so on, "Sorokin explained*." This is significant, Sorokin is basically saying Russia has more or less reached peak oil supply, or at least peak oil supply unless prices are going higher. Maybe there is some growth but Russia has to first arrest declines. This is very different than what we see in the Middle East. Russia is saying its maturing oil production/reserves base needs higher oil prices as its oil base is maturing and they are going after smaller pools (higher cost per barrel), deeper zones (higher costs per barrel) and need new technology (we wonder if this means shale, although Putin has been negative). And also very different than Saudi Arabia. Their costs are going up to, but they aren't saying their oil production/reserves needs higher oil prices to be economic. Rather they and others like we saw with Kuwait this week need higher oil prices to balance their govt budget. They don't say they need higher oil prices to develop its oil reserves. One reminder, producing oil reserves isn't like drinking a glass of water, where you turn the cup down and the water flows out at the same rate until the glass is empty. As oil reserves produce more from a reservoir that is economic today, the oil recovery rate declines over time and the future barrels become more expensive to produce. This is more than food for thought. If peak oil demand isn't here until 2030, then its bullish for oil post Covid. Even if oil demand only recovers to pre Covid, its bullish or at least supportive of higher prices. Our Supplemental Documents package includes the Google Translate version of the TASS Russian story.

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Oil – Biden asks OPEC to help to lower US gasoline prices

Biden's ask OPEC to help lower gas prices

We are keeping the Biden asking OPEC to do more relatively short as this been extremely well covered by the media. What was amusing was that Biden and his advisors must have thought they could get away with the typical careful drafting where they try to message something that isn't what they are doing. In this case, they tried to convey the message they are doing all they can to lower gasoline prices and using every tool possible. But for once, no one fell for it. Its not just the careful drafting, they sent out the unnamed sources to message something broader that wasn't written or said publicly. In this case, the messaging was the original CNBC reporting an unnamed white house official says "*He'd like his administration to use whatever tools that it has to help address the cost of gas, to help bring those prices down*." Inferring Biden will do anything he can to lower gasoline prices. But then the letter to the FTC says "*the President wants to ensure that consumers are not paying more for gas because of anti-competitive or other illegal practices*". That is a very narrow reason for why he doesn't want high gas prices – anti competitive or other illegal practices. And then of course, the item he got the most abuse/ridicule was asking OPEC to do more to increase supply but not being prepared to do whatever he can to get more US oil supply. No surprise oil producing state governors, industry associations and oil and gas companies were not impressed. Also Alberta jumped in on the hypocrisy of Biden asking OPEC but having quashed Keystone XL that would have brought Cdn oil via pipeline to the Gulf Coast refiners. One voice silent in this was Canada.

Oil – OPEC MOMR Q4/22 demand 102.62 mmb/d, +1.83 mmb/d vs Q4/19

OPEC Q4/22 demand +1.83 mmb/d vs Q4/19

OPEC released its Monthly Oil Market Report on Thursday. The 2021/2022 growth forecast was unchanged and made no mention of Delta, which will make it stand in contrast to the IEA OMR earlier this morning. We believe the MOMR was more or less overlooked because it made no mention of Delta in its demand outlook. The overall takeaway from the August MOMR is OPEC continues to have a very bullish 2022 oil demnd outlook. They see demand getting back to pre-Covid levels in Q3/22 and doing so in a big way with Q4/22 of 102.62 mmb/d, which is +1.83 mmb/d vs Q4/19. That is big momentum in H2/22 and going into 2023. That is more than just getting back to pre-Covid. And that is considering the way larger than normal seasonal hit to Q1/22 demand. (i) OPEC's Aug demand forecast vs Jul forecast in brackets. No change to OPEC 2021 oil demand or to the lookback at 2020, OPEC kept it at 90.62 mmb/d. No change to full year 2021 demand growth rate of +6.0 mmb/d YoY. The 2021 forecast is 96.57 mmb/d. This is down 10,000 b/d vs July, so no change. The criticism of their demand forecast is that there is no specific mention of Delta outbreak and no change to Q3/21 or Q4/21 demand forecasts with Q4/21 demand unchanged at 99.82 mmb/d. Big ramp up in demand continues with Q2/21 demand is +3.0 mmb/d QoQ, Q3/21 is 2.72 mmb/d QoQ, Q4/21 is +1.59 mmb/d QoQ. OPEC did not change their call on 2022 oil demand, forecasting growth of +3.28 mmb/d to 99.86 mmb/d. For 2022, the average is marginally less than the pre Covid 2019 average of 99.97 mmb/d, but demand jumps past pre Covid levels in Q3/22 at 101.17 mmb/d and then even higher at 102.62 mmb/d in Q4/22. Note Q4/19 was 100.79 mmb/d. This month had the same strange 2022 demand forecast. Normal seasonal patterns of oil demand always see Q1 demand lower than the just finished Q4. But OPEC's forecast for Q1/22 demand is 96.83 mmb/d, which is down 2.99 mmb/d QoQ vs 99.82 mmb/d in Q4/21. But I don't recall ever seeing something like this QoQ drop in normal times. In previous years, we saw had Q1/19 down 0.86 mmb/d QoQ, and Q1/18 was down 1.04 mmb/d QoQ. (ii) OPEC July production per "secondary sources" were in total was up 637,000 b/d to 26.657 mmb/d. As expected, July production was up due to OPEC increases. Nothing unusual on the by-country basis. Angola is still stuck, Iran is still sneaking in oil, now now at 2.485 mmb/d, and Venezuela is still aboe 0.5 mmb/d. (iii) Non-OPEC supply was revised up both in 2021 & 2022. They had a minor

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revision to the look back at 2020 and it was revised -0.03 mmb/d to 62.91 mmb/d. For 2021, growth was revised +0.27 mmb/d for YoY growth of +1.09 mmb.d to 64.00 mm/d in 2021. OPEC notes the biggest revision factor is revising up non-OPEC countries who are now allowed to increase due to the new OPEC+ deal ie. Russia. There were only minior revisions vs the July MOMR: Russia +0.15 mmb/d, US +0.656 mmb/d, Malaysia +.40 mmb/d, Canada +0.02 mmb/d and Kazakhstan +0.15 mmb/d. OPEC forecasts non-OPEC supply for 2022 to be +2.94 mmb/d YOY to 66.94 mmb/d. Some of the major growth areas are Russia (+1.00 mmb/d YoY), US (+0.78 mmb/d YoY), Brazil (+0.24 mmb/d YoY), Norway (+0.17 mmb/d YoY), Canada (0.16 mmb/d YoY) and Kazakhstan (+0.12 mmb/d YoY). (iv) On stocks, June OECD stocks were forecasted at 25.2 mmb below the 2015-2019 average. Note the IEA OMR earlier had a lower June stocks estimate of 2,882 mmb or 66 mmb below the 2015-2019 average. For days of forward cover, OPEC estimates June is 2.0 days above 2015-2019 average *"At 1,416 mb, OECD crude stocks stood 96.2 mb below the latest five-year average and 70.5 mb below the 2015–2019 average."* Our Supplemental Documents package includes excerpts from the OPEC MOMR.

Oil – IEA OMR "*demand growth abruptly reversed course in July*"

IEA, Delta hits H2/21 demand

The IEA released its monthly Oil Market Report August earlier on Thursday morning. They only release very limited public info and Bloomberg only provided tables and reporting on some items rather than their normal detailed report. (i) The IEA's main messaging point for the Aug OMR is a big reversal from their positive July OMR and highlighted that Delta is hitting oil demand in H2/21. Markets didn't really take anything else from the OMR except their demand message. And this is especially so since it is contrast to the OPEC MOMR tht came out 4 hours later on Friday and did not highlight Delta. (i) "*Demand growth abruptly reversed course in July*". This was the headline and the message. "*Global oil demand surged by 3.8 mb/d month-on-month in June, led by increased mobility in North America and Europe. However, demand growth abruptly reversed course in July and the outlook for the remainder of 2021 has been downgraded due to the worsening progression of the pandemic and revisions to historical data."* Our ongoing table below shows the new IEA OMR demand forecast relative to prior month's OMRs. (ii) The second big headline was risk to go back to surplus in 2022. IEA wrote "*But the scale could tilt back to surplus in 2022 if OPEC+ continues to undo its cuts and producers not taking part in the deal ramp up in response to higher prices. Following a modest increase of 600 kb/d on average in 2021, supply from outside the group is forecast to expand by 1.7 mb/d next year, of which the US will account for nearly 60%. OPEC+ can still pause, continue or even reverse its curbs as required by the market and it looks unlikely that the unwinding of cuts will continue on a linear trajectory in 2022."* (iii) The last big headline was no super cycle for oil. IEA wrote "*The immediate boost from OPEC+ is colliding with slower demand growth and higher output from outside the alliance, stamping out lingering suggestions of a near-term supply crunch or super cycle."* (iv) Notwithstanding the headlines, the lookback to oil correcting prior to Delta was positive with continued oil stocks correction. IEA wrote "*OECD total industry stocks fell by a large 50.3 mb in June and stood at 2 882 mb, 131.2 mb lower than the 2016 2020 average and 66 mb below the pre-Covid 2015-19 average."* Our Supplemental Documents package includes the IEA release and Bloomberg terminal IEA wrap.

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Figure 23: IEA Global Demand Forecast By OMR Report Month

mmb/d	2019	2020	20-19	Q1/21	Q2/21	Q3/21	Q4/21	2021	21-20	Q1/22	Q2/22	Q3/22	Q4/22	2022	22-21
Aug 21	99.7	91.0	-8.7	93.4	94.9	97.4	98.9	96.2	5.2	98.0	98.8	100.1	100.2	99.3	3.1
July 21	99.7	91.0	-8.7	93.6	94.7	98.1	99.4	96.4	5.4	98.2	98.7	100.3	100.6	99.5	3.1
June 21	99.7	91.0	-8.7	93.3	94.9	98.0	99.3	96.4	5.4	98.3	98.6	100.3	100.6	99.5	3.1
May 21	99.7	91.0	-8.7	93.1	94.6	98.3	99.6	96.4	5.4	-	-	-	-	-	-
Apr 21	99.7	91.0	-8.7	93.7	95.1	98.3	99.5	96.7	5.7	-	-	-	-	-	-
Mar 21	99.7	91.0	-8.7	93.9	95.0	97.8	99.2	96.5	5.5	-	-	-	-	-	-
Feb 21	99.6	91.0	-8.6	93.7	94.9	97.9	99.2	96.4	5.4	-	-	-	-	-	-
Jan 21	99.9	91.2	-8.7	94.1	95.2	98.1	99.0	96.6	5.4	-	-	-	-	-	-
Dec 20	99.9	91.2	-8.7	94.7	95.4	98.0	99.2	96.9	5.7	-	-	-	-	-	-
Nov 20	99.9	91.3	-8.6	94.9	95.8	98.4	99.1	97.1	5.8	-	-	-	-	-	-
Oct 20	99.9	91.7	-8.2	95.6	96.1	98.2	98.8	97.2	5.5	-	-	-	-	-	-
Sept 20	99.9	91.7	-8.2	95.6	95.8	98.2	98.9	97.1	5.4	-	-	-	-	-	-
Aug 20	99.9	91.9	-8.0	95.4	95.8	98.6	98.7	97.1	5.2	-	-	-	-	-	-
July 20	99.9	92.1	-7.8	95.5	96.2	99.0	98.9	97.4	5.3	-	-	-	-	-	-

Source: IEA, SAF

Oil – Saudi Aramco puts growth ahead of special shareholder dividends

Aramco places growth ahead of special dividends

Last week's (Aug 8, 2021) Energy Tidbits noted the then just released Saudi Aramco H1/21 brief release and that it wouldn't be releasing its full H1/21 results or having its earnings call until Monday morning. We thought the earnings call was excellent as it gave a clear mgmt statement on their priorities for the 2020s, which was not in the brief Sunday morning release. On Monday, we tweeted [LINK] "*Stronger for longer #Oil demand & prices. #Aramco ranking for use of cash "sustaining capital, ordinary dividends, followed by growth, and then a combination of distribution and leveraging", increasing MSC f/ 12 to 13 mmbd to "anticipate the growth you see in the future". #OOTT.* The question of special dividends was raised a couple of times on the call. Prior to the Q&A, the analyst expectation was that Aramco would, like other supermajors, be using the big increase in free cash flow for special dividends. Management did not specifically say it, but their comments on capital priorities and other international oil companies look like pretty solid support for the thesis that Saudi sees oil demand growing to 2030 to some degree and increasing opportunity for Saudi crude because there is less capital and mid term supply from supermajors, etc. This is especially so given they stressed it takes several years for them to add the additional new productivity capacity of 1 mmb/d. Mgmt was very clear in their capital priorities saying "*No, thank you for the question. Like I said, this 5% to 15% is not a hard target for us. It's a good indicative target that is cross cycle. We make the decisions or our Board makes the decisions on the dividend based on the dividend policy that I outlined earlier. The sustaining capital, ordinary dividends, followed by growth, and then a combination of distribution and leveraging.*" And in the results and Q&A, mgmt stressed its plan to increase productive capacity by 1 mmb/d ie. its growth objective. And they noted a couple of times that it takes years to add that much productive capacity. And they see the opportunity because of lack of spending by others. Mgmt said "*And we are capitalizing on the opportunity by first increasing our MSC, maximum sustain capacity, from 12 million to 13 million barrels and we are currently working on the front end engineering. But this is an opportunity and, of course, we are trying to benefit out of the lack of investment by major players in the market by putting investment in this sector.*" Saudi Aramco is clearly putting growth ahead of special shareholder dividends/distributions. Our Supplemental Documents package includes excerpts from the Saudi Aramco call transcript.

Oil – Iran puts experienced oil people as Foreign & Oil minister

Iran's Foreign & Oil Ministers

We have to believe the Biden administration regrets not taking advantage of the window they had while Rouhani was still in power and his administration was considered moderate. And that Biden, at least for now, looks to have lost the moderate window to get to a return to the JCPOA. But from an oil markets perspective, its looks like Raisi has put some experienced oil people in key roles as Oil Minister and as Foreign Affairs Minister. Raisi has appointed

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Amirabdollahian as Foreign Minister and Javad Owji as Oil Minister. Amirabdollahian has previously been deputy foreign minister for Arab and African Affairs and is a former ambassador to Bahrain. An Iranian nuclear negotiator who asked not to be maned said *"Amirabdollahian is a hardline diplomat…If the foreign ministry remains in charge of Iran's nuclear dossier, then obviously Tehran will adopt a very tough line in the talks"* [LINK]. He is also believed to have close ties with Iran's Revolutionary Guards and the Hezbollah movement. As for Owji, he has held senior positions at oil, gas and petrochemical companies, as well as had a 4 year stint as Managing Director of the National Iranian Gas Co. He has never previously held a ministerial position but has also held top positions in two subsidiaries of the Setad, one of the most powerful organizations of Iran [LINK].

Oil – Libya oil production down 60-70,000 b/d due to pipeline leak

Libya oil pipeline leak

Libya is hitting another snag in its targets to produce 1.45 mmb/d in 2021. The National Oil Corporation of Libya [LINK] reported on Monday that its pipeline from the Gallo to the Al-Waha field had sprung a leak. Consequently, it is expected that oil production at the Gallo field will have to drop by as much as 70,000 b/d. We don't expect too long of an interruption once they find the leak as pipeline repairs/replacements tend to be quick fixes. Platts is forecasting Libya's oil output in H2 2021 at around 1.1 mmb/d [LINK], however as we highlighted in last week's August 8 Tidbits, many risks loom over their potential, including the potential for the December elections to trigger renewed violence and/or unrest. Our Supplemental Documents includes the Google Translated version NOC's release.

Oil – China's oil imports -0.6% MoM in July to 9.75 mmb/d

China oil imports

China is the near term look ahead oil story with the increasing Delta impact over the next few months. On a look back basis, Bloomberg reported that China's customs data showed July imports were 9.75 mmb/d, down -0.6% MoM from 9.81 mmb/d in June, representing a YoY decrease of ~19%. China imports were previously expected to rise over Q3, to approximately 10-10.3 mmb/d, and rise further in Q4 to over 10.5 mmb/d in Q4. This increase was expected due to the start up of new refineries and the need to replenish inventories after the recent 5-6 months of drawdowns. However, due to Typoon In-Fa, the major shipping harbour of Zhousan had to halt operations. This harbour has some of the country's largest oil storage tanks and refineries. Shandong, a hub for independent processors, also was forced to suspend work due to the storm. Our Supplemental Documents include the Bloomberg report.

Oil – Delta outbreak is impacting China oil demand

Delta impacting China

There is no question that one of the key reasons for the recent oil price weakness is concerns that the Delta strain is impacting China oil demand. The question is by how much and for how long. But as noted in the following items, it is having an impact. On Thursday, there was additional market focus on Delta and China by Goldman's lowering of China oil demand. Goldman's Farouk Soussa, VP, MENA Economics Research was on Bloomberg Daybreak Middle East [LINK]. At the 1:45 min mark, he notes how Goldman's oil analysts oil analysts had been predicting delta would cut demand by 1 mmb/d for next couple months, but that was pre-China. And that the oil analysts say Delta is having a transient impact on demand, only for next 2 months. He highlighted the only 2 months time frame a couple of times, but it would be by an additional 1 mmbd hit on China so a 2 mmbd in total in next 2 months. But that China impact is being offset by other areas around the world like India. So overall global additional impact of Delta outbreak is down 0.8 mmb/d for next 2 months, Again, he stressed Delta is expected to only have a 2 month transient impact on oil demand

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Oil – Delta outbreak spurs Sinopec to cut plant run-rates

Sinopec to cut run rates by 5-10% in August

It looks like Chinese refiners are starting to reflect this Delta impact. During what is normally a seasonal increase period for run-rates, especially for independent refiners, China's largest oil refiner is scaling back operations in response to Bejing's crack down on movement in an effort to cull the Delta variant's spread. Bloomberg reported on Tuesday that relative to July levels, runs are being cut by 5% to 10% this month. This comes amid fuel demand dipping 30% between July 20 and August 6, and its likely this downward trend will continue. Road traffic across all Chinese cities has dipped to 70% of normal levels for cities affected by the current outbreak. The nation's "Covid-Zero" strategy will have a significant impact on global oil demand as China is the world's largest crude importer. Below is a chart tracking China's independent refiner runs, as we wanted to insure this was not a normal seasonal down period. Our Supplemental Documents Package includes the Bloomberg release.

Figure 24: China Independent Refineries Run Rates

Source: Bloomberg

Oil – Delta causes a big drop in Chinese air travel

Seat capacity in China -32% in one week

Another Delta impact in China is showing up in air travel. Seat capacity in the #2 market in the world for air travel plunged 32% last week, marking the largest drop seen in China since early in the pandemic. Bloomberg reported on Tuesday that China is currently battling its largest outbreak since the virus first emerged in Wuhan in late 2019. As a result, air travel recovery is being seriously stunted in the nation, and China's sheer size is affecting the overall global recovery statistics. In just a week, global airline capacity was reduced by 4%, and now sits at 64% of 2019 capacity. John Grant, chief analyst at aviation specialist, OAG, warned *"The data is beginning to point to a recovery being further away than we had perhaps hoped a few weeks back. In the next few weeks, airlines will begin to look long and hard at their winter 2021/22 programs, and many of the data points would suggest that capacity will not be much better than last winter."* Even in the US market which has not been impacted as badly by the Delta variant, a lack of consumer confidence and remaining international restrictions is causing demand to plateau during what should be the busiest season for travel. Anne Agnew Correa, VP of forecasting and modeling at MBA Aero said, *"A proper recovery will only happen when restrictions are lifted and confidence is restored. Many airlines were able to benefit from confidence domestically this summer, but were still stifled by international*

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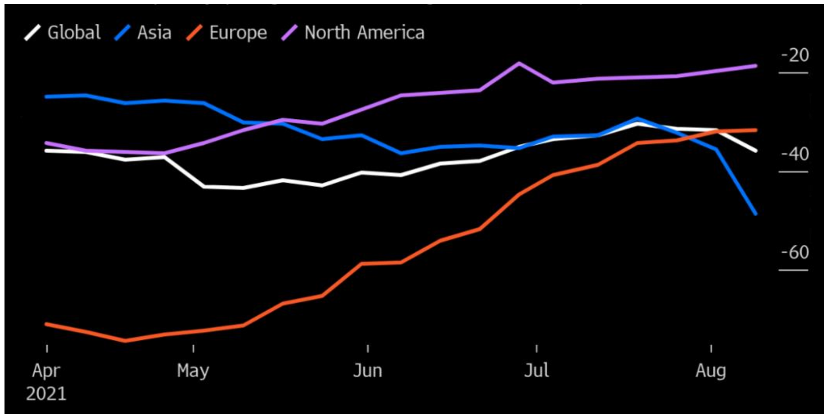
restrictions." Below is a chart demonstrating the impact of recent setbacks on air travel recovery. Our Supplemental Documents package includes the Bloomberg release.

Figure 25: Seat capacity vs 2019 levels (%)



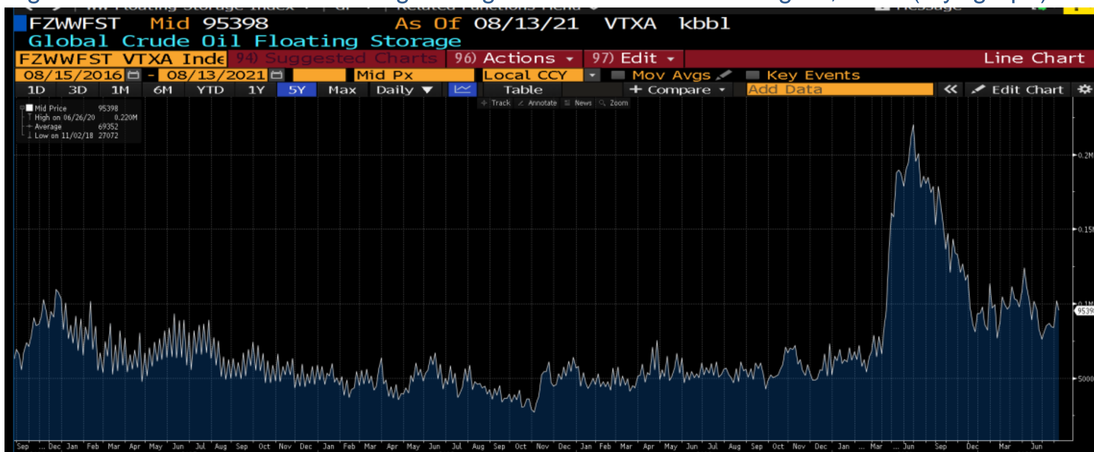
Source: OAG

Oil – Vortexa floating storage est at 95.40 mmb at Aug 13, +19.37 mmb since June 25

Vortexa floating storage

On Saturday, Bloomberg posted the Vortexa crude oil in floating storage as of Aug 13. Bloomberg writes it weekly Vortexa floating oil storage story on Mondays. Vortexa estimated crude oil in floating storage as of Aug 13 is 95.40 mmb, which is down from 101.78 mmb as of Aug 6. However, there was a massive upward revision to Aug 6, it was revised to 101.78 mmb, but was originally estimated at 92.13 mmb. Yesterday, we tweeted [LINK] Increased "*#OPEC+ #Oil not being absorbed by market*" as crude oil in floating storage is now up 19.37 mmb vs the recent trough of 76.11 mmb on June 25. At 95.40 mmb at Aug 13, floating storage is down 57% (down 123.53 mmb) from the June 26, 2020 peak of 219.93 mmb. But still above pre covid of 46.91 mmb on Aug 12, 2019. Below is the Bloomberg terminal Vortexa graph.

Figure 26: Vortexa Global Floating Storage Level Estimated at Aug 13, 2021 (5 yr graph)



Source: Bloomberg, Vortexa

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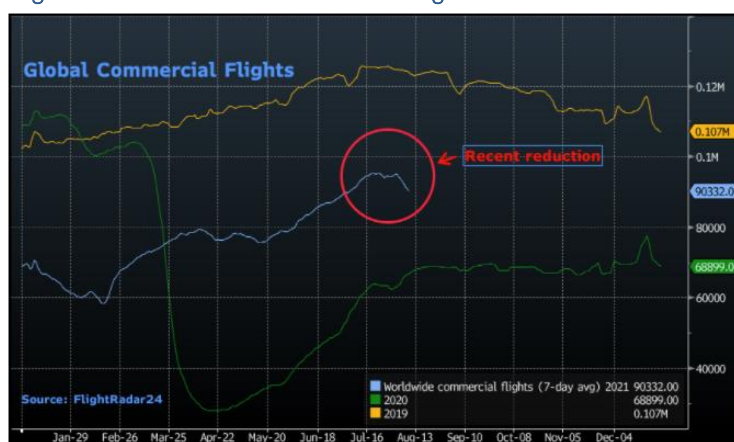
Oil – Bloomberg Oil Demand Monitor, Air traffic and road traffic recovery remain split

Bloomberg's Oil Demand Monitor

We recommend reading the weekly Bloomberg terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. Their update provides insight into oil demand recovery and highlights two sides of the overall coin: jet fuel demand and gasoline demand. As previously mentioned, air travel's recovery has been dragged down by a recent plunge in Chinese airline activity due to Delta-variant concerns. Airline carriers in the nation reduced their seat offerings by 32% this past week to curb the spread of the variant, which single-handedly reduced the global seat capacity estimates figure by 6.5%, as China is the second largest air travel market. This marks the first decrease in global commercial flights since mid May. Nonetheless, air travel remains strong in the #1 largest market for air travel, the United States. A month ago, the number of people passing through US airport turnstiles was down -17% vs 2019. As of Sunday, the deficit is only -6%. Europe continues to lag in recovery, at about -30% vs 2019. Gasoline demand is still recovering nicely, with Brazil, Mexico and Chile all busier than 2019, and Italy and France just 0.9% and 0.3% below respectively. The US saw the same miles travelled as the equivalent 2019 period this past week. While gasoline demand has certainly come back, it will be key to continue to monitor how jet fuel demand plays out as it remains a key missing piece to the overall demand recovery. Below is a chart tracking commercial flights from 2019 until now which highlights the recent reduction due to China. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 27: Worldwide commercial flights from 2019-2021



Source: Bloomberg, FligthRadar24

Oil & Natural Gas– Cdn E&P free cash flow could buy back all equity + debt in <5 yrs

Eye opening Cdn E&P FCF valuation

After reading Marathon Oil's Q2 call comments that their forecast cumulative fre cash flwo thru 2025 would be more than 90% of the company's equity market cap, we reached out to Ninepoint's Eric Nuttall for his graph on Cdn E&P free cash flow and, on Wednesday, we tweeted [LINK] "*Eye opening Cdn E&P free cash flow valuation. @ericnuttall est how many yrs of FCF would it take for an E&P to buy back all outstanding shares and debt. <3 yrs = 1, 3-4 yrs = 5, 4-5 yrs = 7, 5-6 yrs = 4. No wonder he's still long despite his fund being +97% YTD. #NatGas #OOTT*". We don't' recall ever seeing free cash flow being this huge. Its astounding that companies generate enough free cash flow to buy back all the market capitalization and all their debt in 3, or 4 or even 5 years. We recognize that equity investors aren't valuing this free cash flow stream but, if these types of free cash flow valuation continue, believe there wil be others trying to capture the value of these free cash flow

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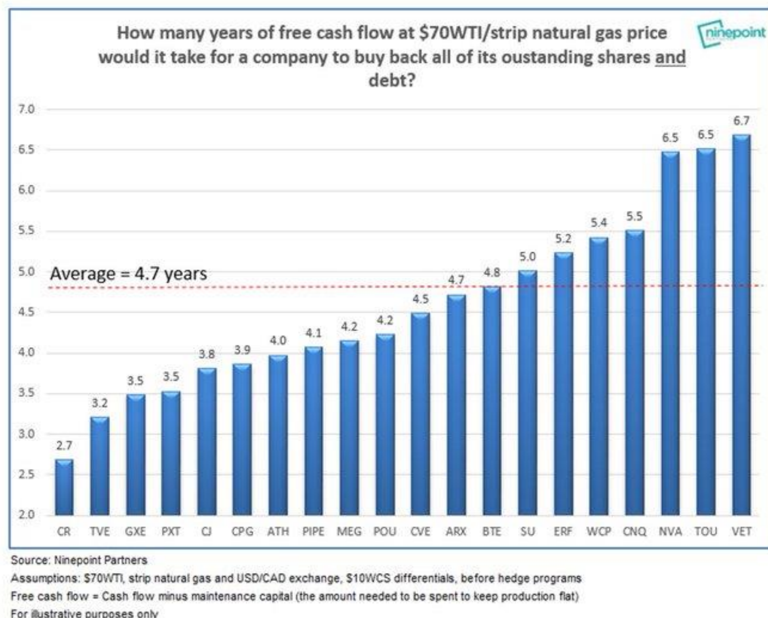
streams. Especially with a stronger mid term outlook for both oil and natural gas. Thanks to Eric Nuttall for his graph.

Figure 28: How many years of FCF to buy back all shares and debt?



Source: Eric Nuttall, Ninepoint Capital Partners

Low Cdn E&P decline rates

Oil & Natural Gas – The big starting advantage to Cdn E&P vs US is low decline rates

EOG held its Q2 call on Thursday and their slide deck reminded of a key advantage of Cdn public E&P vs US E&P – they have a much lower average base decline rate. Our Aug 1, 2021 Energy Tidbits noted our view that the reason Canadian public E&P are able to do more with the O&G price increase is they are not fighting base production declines like their US peers. We tweeted [LINK] "*Low decline rates are key reason why Cdn public E&P are able to take advantage of high #Oil #NatGas prices to increase shareholder distributions* ***and*** *drilling. Less capex was needed in 2020 to fight higher decline rates as in shale. Thx @nationalbank Travis Wood for data #OOTT pic.twitter.com/frGTfi3hwu*". On Thursday, EOG highlighted in its Q2 call that it forecasts it will reduce its base decline rate from 28% to less than 25%. This definitely on the higher end compared to Canadian E&P's as many are below 28% already. Below is the graph of 2022E Production Decline Rate for Cdn E&Ps from National Bank oil analyst, Travis Wood. Also below is the EOG decline rate slide.

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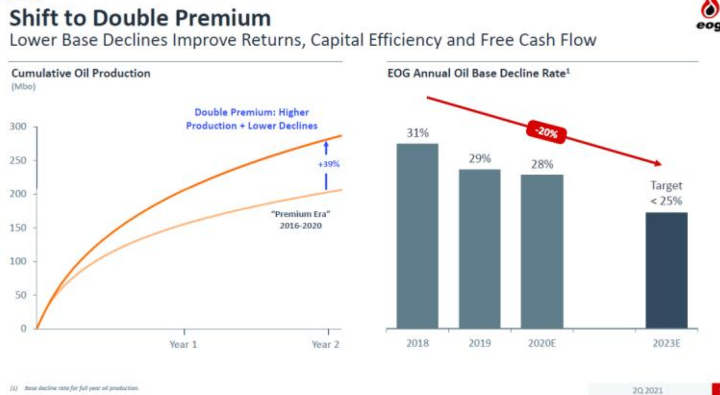
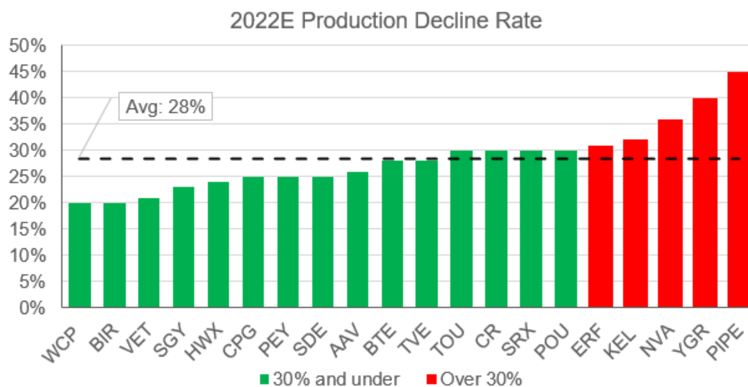
Figure 29: EOG's forecast base-rate decline



Source: EOG Investor Presentation

Figure 30: 2022E Production Decline Rate, Cdn Public E&Ps



Source: National Bank

Oil & Natural Gas – Gas hedging losses approaching oil hedge losses

$8.2bn of gas hedge losses expected in 2022

We have been tracking BloombergNEF's updated estimates of oil hedge losses. Our Juen 20, 2021 Energy Tidbits noted its then estimate that hedging losses (realized and unrealized) had reached $11bn across the 42 producers it tracked. This week, they provided their update, as of August 11, for their tracked firms are now expected to lose $10.5 billion on oil hedges through 2022. BNEF also highlighted how producers increased 2022 oil hedges but not 2021 hedges, writing *"Second quarter filings thus far show many firms bolstering 2022 hedge books, but unwilling to expand 2021 coverage."* Of the 33 firms that have reported, Q2 positions are now hedged for 29% of 2022 output. What was interesting about this week's report was that they provided their estimate of hedge losss for natural gas-centric producers, and their hedge losses are almost as much as oil hedges. Since Henry Hub is surging past $4/MMBtu, it's expected that there will be more than $8.2bn in hedge losses through next year. With respect to gas hedges, firms seems to have take n a similar approach and have left 2021 hedges untouched and layered on coverage for 2022. The average ceiling in 2022 is $2.89/MMbtu, and firms are now hedges for 33% of expected 2022 production. Our Supplemental Documents package includes the BloombergNEF hedge report.

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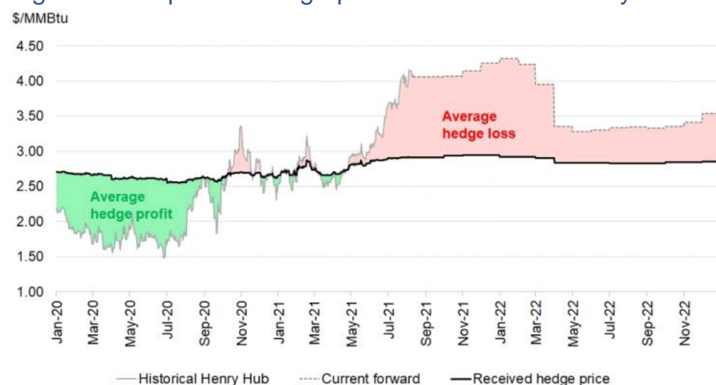
Figure 31: Expected hedge price differential to Henry Hub



Source: BloombergNEF

Oil & Natural Gas – Klotzbach forecasts above average Atlantic hurricane season

Above average hurricane season expected

The well regarded Philip Klotzbach and team at Colorado State University issued their updated Atlantic Hurricane season forecast on last Thursday [LINK]. They reduced their forecast for 2021 but are still calling for another above-normal year. Their July forecast had called for an above-average season, and this month they decreased their forecast slightly. The CSU forecasters wrote *"We have decreased our forecast slightly but continue to call for an above-average 2021 Atlantic hurricane season. Sea surface temperatures averaged across the tropical Atlantic are now warmer than normal, while vertical wind shear anomalies averaged over the past 30 days over the Caribbean and tropical Atlantic are slightly weaker than normal. Current cool neutral ENSO conditions are likely to persist (and perhaps even transition to weak La Niña conditions) by the peak of the Atlantic hurricane season. We continue to anticipate an above-normal probability for major hurricanes making landfall along the continental United States coastline and in the Caribbean"*. The above average forecast isn't surprising give the current El Nino forecast is for Neutral/La Nina conditions, while El Nino summers are usually associated with lower hurricane activity. Our Supplemental Documents package includes excerpts from the Klotzbach forecast.

Figure 32: Aug 5 Klotzbach Atlantic Hurricane Forecast

ATLANTIC BASIN SEASONAL HURRICANE FORECAST FOR 2021

Forecast Parameter and 1991-2020 Average (in parentheses)	Issue Date 8 April 2021	Issue Date 3 June 2021	Issue Date 8 July 2021	Issue Date 5 August 2021	Observed Thru 4 August 2021	Remainder of Season Forecast
Named Storms (NS) (14.4)	17	18	20	18*	5	13
Named Storm Days (NSD) (69.4)	80	80	90	80	13.75	66.25
Hurricanes (H) (7.2)	8	8	9	8	1	7
Hurricane Days (HD) (27.0)	35	35	40	35	1.5	33.5
Major Hurricanes (MH) (3.2)	4	4	4	4	0	4
Major Hurricane Days (MHD) (7.4)	9	9	9	9	0	9
Accumulated Cyclone Energy (ACE) (123)	150	150	160	150	13	137
Net Tropical Cyclone Activity (NTC) (135%)	160	160	170	160	17	143

*Total forecast includes Ana, Bill, Claudette, Danny and Elsa which have formed in the Atlantic as of August 4th.

Source: Colorado State University

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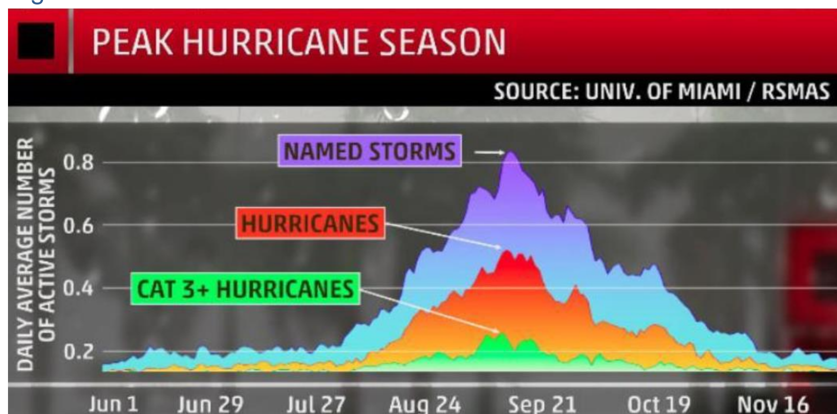
Just moving into peak Atlantic hurricane season now

We remind that we are just now moving into the normal peak of Atlantic hurricane season. Our prior Energy Tidbits have noted before how peak Atlantic hurricane season is in the Aug/Sept/Oct. Below is graphic we first last summer on a Aug 28, 2018 Weather Channel report that had a good graphic (see below) and wrote [LINK] "*Historically speaking, September has recorded the most Atlantic hurricane formations since 1851 with 404. That's an average of two or three forming in the month every year, according to NOAA. August ranks second with 245 hurricanes, and October ranks third with 205. The period between Aug. 20 and Oct. 10 accounts for 60 percent of all Atlantic Basin hurricanes and 75 percent of all major hurricanes (Category 3 or stronger) in that basin, according to Dr. Phil Klotzbach, a tropical scientist at Colorado State University*." We double checked the Weather Channel link this weekend and it still works.

Figure 33: Atlantic Peak Hurricane Season



Source: Weather Channel

Oil & Natural Gas – Fred expected to Tropical Storm but shifting east of New Orleans

Tropical Storm Fred

A must link to bookmark for hurricanes and oil and gas is the EIA "*Energy Infrastructure with Real-Time Storm Information*" [LINK] that provides oil and gas fields and infrastructure relative to a projected tropical storm or hurricane path. It shows how Fred's shifting east will be a big relief to oil and gas. Over the last two days, the projected path for Tropical Storm Fred shifted first to the west to include New Orleans in the cone, and then overnight back to the east and now looking to avoid any major offshore oil and gas fields and the refineries in Mississippi and the major refining row in New Orleans. Fred is expected to return to Tropical Strom strength late today before it makes landfall early Tuesday morning as a Tropical Storm. Below is the latest (5am ET) National Hurricane Center projected path for Fred. Note the movement speed is down to 8 mph and that slow moving storms have more time over an area to drop more water and flooding, moreso than winds, tends to cause more lingering damage.

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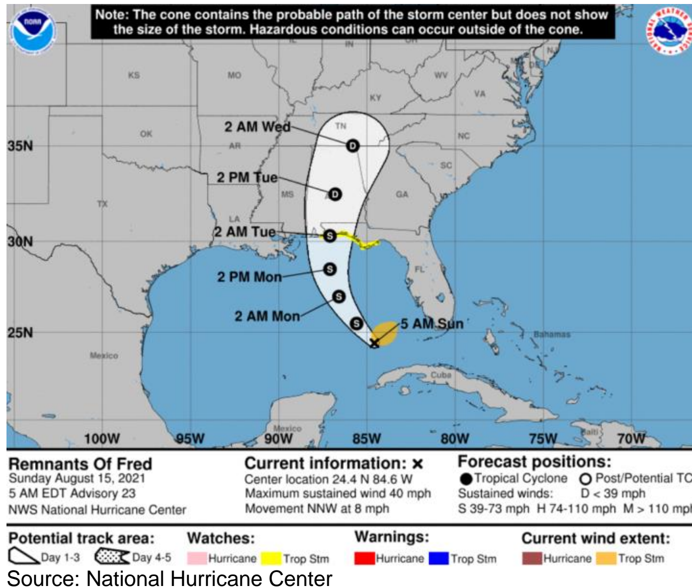
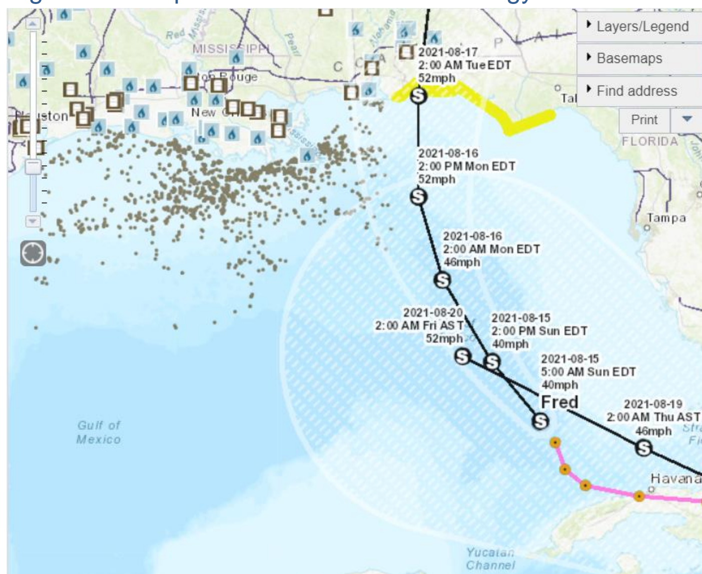
Figure 34: Tropical Storm Fred



Source: National Hurricane Center

Figure 34: Tropical Storm Fred – EIA Energy Infrastructure Map



Source: EIA

EIA's excellent map of oil infrastructure on Louisiana/Mississippi coast

Yesterday morning, we tweeted [LINK] on how the path of Tropical Storm Fred had shifted to now include refineries in Mississippi. Our tweet included maps that we have included over the years during hurricane season – the EIA's map of Louisiana/Mississippi coast showing all the oil infrastructure. We recommend adding this map to reference libraries. Its from their Feb 22, 2016 blog [LINK] but still relevant.

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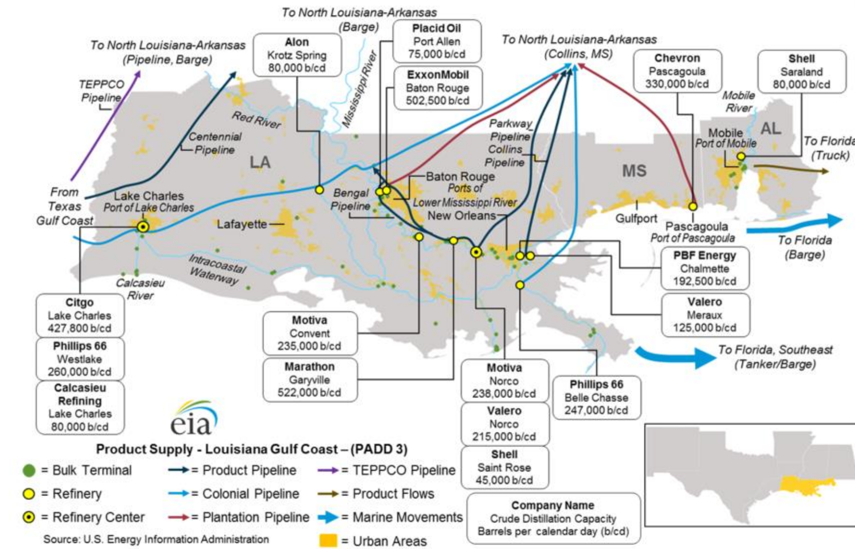
Figure 35: Louisiana/Mississippi Gulf Coast oil infrastructure



Source: EIA

Oil & Natural Gas – Tropical Storm Grace heading for major GoM oil & gas

Tropical Storm Grace

Please reference the above Fred map showing oil and gas infrastructure and remember Tropical Storm Grace is projected to be south and west of Fred. Its still early a week away but Tropical Storm Grace is on a path south of Fred and heading right for the major offshore oil and gas fields and major Gulf Coast refineries and LNG export projects. But hopefully, at least for the oil and gas sector, it will turn to north away as it gets into the Gulf of Mexico. But at least for now, the projected path is almost identical projected to go right over Cuba. Its early, but Grace should be on the watch this week to see if this path changes like Fred did in the last day.

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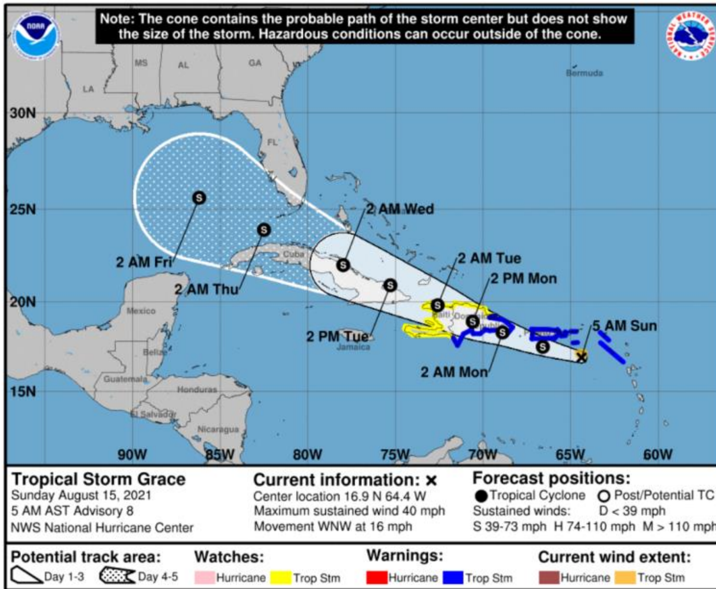
Figure 36: Tropical Storm Grace



Source: National Hurricane Center

Hurricane steering flows

Oil & Natural Gas – Why hurricanes tend to follow similar paths with a period

Yesterday, we tweeted on the Tropical Storm Grace [LINK] with the reminder that its early path is identical to Fred, and also retweeted our Wednesday tweet [LINK] "*Why #TropicalStorms/#Hurricanes tend to follow similar paths - "large scale weather patter often does not change much during the warm seaons" "means the steering flow remains the same or nearly the same for several weeks" Thx @accuweather @Helicityman @z_rosenthal #OOTT #NatGas.*" On Tuesday, AccuWeather posted a good blog "*Does the atmosphere have a 'memory' when it comes to tropical weather?*" [LINK]. AccuWeather notes how the general steering flow for tropical storms/hurricanes doesn't change much during the middle of the warm season, meaning storms tend to follow along the same paths. "*While some circles call it atmospheric memory, AccuWeather's lead hurricane forecaster, Dan Kottlowski begs to differ. He explains "All it refers to is that often the large-scale weather pattern often does not change much during the middle of the warm season. This means the steering flow remains the same or nearly the same for several weeks". We can see this pattern over the 2020 storms – four named storms, made landfall in Louisiana. As for this year, the Bermuda Azores high pressure centre has barely moved which is a critical steering force. As such "any feature that happens to move within this flow pattern will track in a similar way as the previous developed storm system," says Kottlowsk*i." Our Supplemental Documents package includes the AccuWeather blog.

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Figure 37: Potential Tropical Cyclone 6 & Hurricane Elsa's Eye Paths

Source: Accuweather

Sector insights from Q2 calls

Oil and Natural Gas – sector/play/market insights from Q2 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. 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. An overall theme from the calls this week is strong financial results for US shale/tight oil players as a result of the high oil and gas prices – very strong free cash flow, debt being paid down and paying more dividends. There was too much going on this week to get to many Q2 calls.

EOG Resources – Great way of describing net-zero strategy

EOG Resources held its Q2 call on Thursday. (i) EOG is a special dividend payer rather than a share buyback company. (ii) The company highlighted a "very positive macro environment", and in the Q&A mgmt outlined their bullish view for oil markets. *"As we've all seen, well, definitely demand is on a strong recovery. It's a bit lumpy, obviously, due to the virus resurgence in a few areas, but we expect, even with that we expect pre-COVID demand to be reached by early '22. Inventories are already below the five-year average really in the U.S. and in the world, so that has already been checked. And on the supply side, as I said before, we believe that the U.S. will stay disciplined and that there'll be small growth in the U.S. next year, but not much growth. And we see OPEC-plus, they look to be very solid, so they'll continue to bring back on their shut-in volumes and spare capacity as needed gradually. And we see that the spare capacity, if the recovery continues like `we expect, we see spare capacity could be very low by the second quarter or by the*

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middle of next year." (iii) We liked the simple way in which they described their net zero strategy and it can easily play into what oil and gas companies already do or should be doing in their operations. EOG said *"Our net-zero strategy generally falls into three categories, reduce, capture or offset. That is we are focused on directly reducing emissions from our operations, capturing emissions from sources that can be concentrated for storage and offsetting any remaining emissions, reducing emissions intensity from our operations as a direct and immediate path to reducing our carbon footprint. Our approach is to invest with three terms in mind and seek achievable and scalable results."* They also reminded that reducing methane emissions is a no brainer for oil and gas companies. This has been done for several years in Canada and is done with basically off the shelf equipment. EOG said *"As a result, since 2017, we have reduced our GHG intensity rate 20%, our methane emissions percentage by 80% and our flaring intensity rate by more than 50%."* (iv) As with Marathon Oil, they mentioned that steel costs are increasing tubular costs, but noted that they had pre-purchased tubulars. (v) Producers like EOG continue to squeeze oilfield service companies. It will be interesting to see how it plays out for the OFS who are saying they expect to see pricing return to them to some degree. I think they will get some, but EOG also reminds that they are pushing back on costs. Whereas EOG *says "Finally, we have renegotiated several of the expiring higher price contracts for drilling rigs, and expect to see additional savings through remainder of this year and next. We also use the strength of our balance sheet to take advantage of opportunities to reduce future cost in several areas. As an example, last summer, we pre-purchased the tubulars needed for our 2021 drilling program, when prices were at their lowest point. EOG is not immune to the inflationary pressures we're seeing across our industry, but this forward looking approach helps EOG mitigate anticipated cost increases"*. Our Supplemental Documents package includes excerpts from the EOG Resources Q2 Call Transcript.

Marathon Oil – Remaining disciplined with their Capex budget

Marathon Oil held its Q2 call on last Thursday. (i) A big item of focus in Marathon's Q2 call was its free cash flow, which has increased significantly. We noted their comments of spending $1bn in capex in 2021, and yet they generated $1.9 bn of free cash flow. They also said "*At $60 flat WTI and an average reinvestment rate of 40%, we can deliver around $8 billion of cumulative free cash flow through 2025 or more than 90% of our company's current market capitalization*". (ii) On incremental capex, Marathon assured investors that they will not increase their 2021 capex even with this huge free cash flow. *"We remain fully committed to capital discipline and our $1 billion capital program. As I've said many times, our budget is our budget, and we won't raise our spending levels with stronger commodity prices but will simply generate more free cash flow."* (iii) They are likely going to employ share buy backs as opposed to a variable dividend. (iv) Cost inflation. In the Q&A, mgmt said *"We're seeing kind of low single digit inflation this year and it has been driven primarily by OCTG, so steel, the raw material availability and even capacity constraints are kicking in. I think, the positive from our perspective is we have pretty much pre-committed to the majority of our requirements for the remainder of this year. So not really anticipating any further significant pressure in that area. We have seen a little bit of pressure in other areas like fuels, chemicals, transportation-related services tied to WTI. We're seeing some labor challenges we have had from time-to-time."* (v) Marathon anticipates the Bakken to increase in H2/21. In the Q&A, mgmt said "*Speaking prior full-year guidance as you'd probably recall, we were giving 165 to 215 was the range of wells to sales that we were looking at. So midpoint of 190, we*

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do expect that now to be a little bit closer to the 200 range. We're expecting 50 wells to sales in both the Eagle Ford and Bakken over the second half of the year. As I alluded to in my prepared remarks, that is going to be weighted to the third quarter for both assets and with Bakken probably weighted a little bit more to the third quarter." Our Supplemental Documents package includes the Marathon Oil Q2 Call Transcript.

Murphy Oil – Spent way more than 50% of 2021 capex in H1/21

Murphy Oil held its Q2 call on last Thursday. (i) Murphy has spent a fair amount of its 2021 capex as of the end of June. Mgmt said *"CapEx will step down for the remainder of the year with the shift in Eagle Ford Shale spending our 4th quarter CapEx is forecast lower than previously. Approximately 63% has already been spent in the Eagle Ford Shale as of June 30th, and 66% has been spent in the Gulf of Mexico, while 76% of onshore Canada CapEx has been spent by that date".* (ii) They were asked about status of Terra Nova. Mgmt replied *"It's still being executed by all the partners, I can tell you that our Board sanctioned it yesterday in the idea that everyone else will also sanction. So we're going to move forward with it if everyone else does. And when all of that is complete with all of our partners and we will disclose more. It is late 2022 flow back at Terra Nova, very late. So practically in early 2023 would make no difference in that regard. And the way the deal structured, it makes no change to our guided capital of average capital that I just discussed in our remarks and it's a really good project. We're very happy to be in it. And I look forward to work with Suncor and Cenovus long term on that project".* (iii) Tupper continues to be a key asset. In their slide deck, they noted they are in the natural gas leg of the Motney and not the liquids leg. They also noted their expected ultimate recovery per Motney will be 21 bcf. It's important to highlight that Murphy has not benefited from natural gas pricing to the same degree as some other players, due to its hedge book. (iv) They made what looks like a minor tweak up in 2021 full year production guidance, now in the range of 157.5 to 165.5 mboe/d. Previously in their Q4/20 results, the guidance was 155-165 mboe/d. (vi) Highlighted that Eagle Ford economics are very strong. They noted the average payout was now down to 9 months. (v) Murphy oil can be added to the list of those bullish on offshore Brazil potential. Our Supplemental Documents package includes the Murphy Oil Q2 Call Transcript.

Energy Transition – Muddy Waters too much value-destructive de-carbonization capex

1st ever Muddy Waters letter

The Energy Transition is Not Ready for Prime Time is what we call what markets will see in 2021 and 2022 as the pro Net Zero countries push to commit to Net Zero and we see an increasing number of watchers point out that the reality isn't there to meet these aspirations. It all fits our big picture thesis that the Energy Transition is happening, but it will take longer, cost more and be a bumpy road. This week, there was a high profile view that fits this thesis. Muddy Waters Capital's Carson Block wrote his first ever letter to investors. We saw his interview on Squawk Box on Thursday and, then after finding the letter, we tweeted [LINK] "*#EnergyTransition will happen but will cost more, take longer & be bumpy road. @muddywatersre interest rates must stay at ridiculously low levels to de-carbonize, so much of the needed investment will be value-destructive. Demise of #NatGas #Oil will take longer. #OOTT."* We had not heard this concept that central banks will be working to keep interest rates lower for a long time because low interest rates are needed so companies can access capital for the decarbonization because of much of the needed investment will be value destructive. It all ties back to what climate change leaders like John Kerry has to grudgingly

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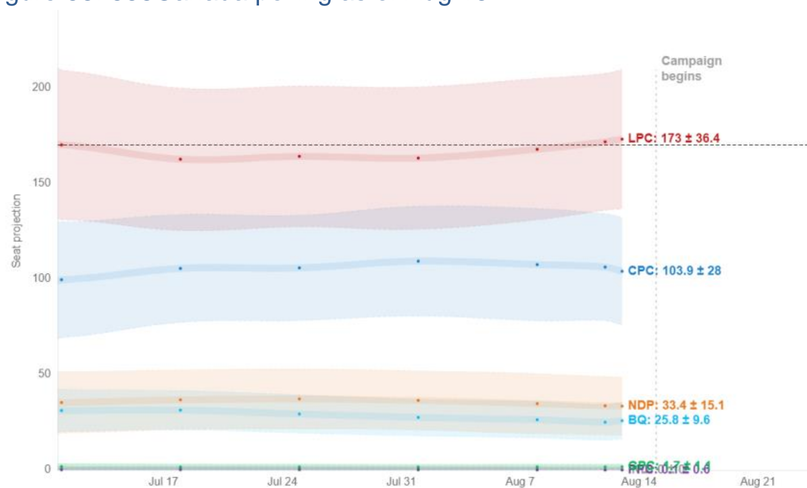
admit – half of the emissions savings to meet reduction targets have to come from technologies that aren't here today. That means there is a lot of money that will be needed to try to find out which technologies can work on a cost effective basis. Block wrote "*Interest rates must stay at ridiculously low levels in order to de-carbonize the economy. I believe that for the coming few decades, interest rates will be at these levels in order to stimulate investment in technologies to de-carbonize. I think that will become the express policy of the ECB, BOJ, and eventually the Fed. To the extent that governments ever had the ability to allocate technology investments well, those days are long gone. I don't believe government-directed spending will be the answer. So much of the needed investment will be value-destructive – as Tesla (absent accounting bullshit, subsidies, and credits) shows. And I'm no environmentalist – my two-driver household is the proud owner of 30 cylinders of ICE collectively producing almost 1,400 horsepower. But seriously, our way of life isn't sustainable.*" Our Supplemental Documents package includes the Block letter. [LINK]

Energy Transition – Looking like a Canada election will be Sept 20

Looks like Canada election on Sept 20

As of our 7am MT news cut off, there is no confirmed federal election call, but all reports continue to be that Trudeau is going to the Governor General today to start the call for a federal election on Sept 20. We had previously noted (see our July 4, 2021 Energy Tidbits) that we didn't expect him to call the election before Labor Day as we didn't think people really want to have politicians door knocking in the last two weeks of summer. But its been clear that there was an election coming soon as we saw items like Environment Minister Catherine McKenna saying she wouldn't be running again. The rumors are that Trudeau will move for the minimum 36-day election period, On Thursday, we tweeted [LINK] "*No surprise, CAN federal election expected Sept 20. #Liberals tracking well in polls. Thx @338Canada. NDP & Bloc know their voters to be courted ie. they can do more in a majority ie. if Moderna site surprisingly gets announced in Quebec. Expect more hits on #OilSands #Oil #OOTT".* Unfortunately for the Cdn oil and gas sector, we continue to expect the Liberals to introduce new items in the platform that are negative to oil and gas, in particular oil sands. Below is the 338Canada tracking poll as of Aug 13 [LINK] and the Liberals are tracking to a majority, and current standings in the House of Parliament, 170 seats are needed to form a majority.

Figure 38: 338Canada polling as of Aug 13



Source: 338Canada

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fff

Figure 39: House of Commons Seats as of Aug 10, 2021

	Lib.	CPC	BQ	NDP	GP	ind	Vacant	Total
Alberta	-	33	-	1	-	-	-	34
British Columbia	11	17	-	11	2	1	-	42
Manitoba	4	7	-	3	-	-	-	14
New Brunswick	7	3	-	-	-	-	-	10
Newfoundland and Labrador	6	-	-	1	-	-	-	7
Northwest Territories	1	-	-	-	-	-	-	1
Nova Scotia	10	1	-	-	-	-	-	11
Nunavut	-	-	-	1	-	-	-	1
Ontario	76	34	-	6	-	4	1	121
Prince Edward Island	4	-	-	-	-	-	-	4
Quebec	35	10	32	1	-	-	-	78
Saskatchewan	-	14	-	-	-	-	-	14
Yukon	1	-	-	-	-	-	-	1
	155	119	32	24	2	5	1	338

Source: House of Commons

Energy Transition – Cenovus urges Liberals to pay 70% of oil sands decarbonization

Cenovus urges Liberals to step up

We have to believe the oil sands will finally get some direct comments on their June 13 Net Zero plan from the Liberals now that it looks Trudeau will be calling an election later today. Last Sunday night, we tweeted [LINK] *"#Cenovus CEO, can solve puzzle to make Cdn #Oil significantly lower #Carbon intensive with #Liberals assistance. But if @JustinTrudeau wouldn't even acknowledge #OilSands #NetZero 06/13 plan, he likely has zero interest in wanting to help solve the puzzle. Thx @derek_brower #OOTT."* FT wrote [LINK] "*Cenovus chief urges Trudeau to pay for greening of Canada's oil sands Alex Pourbaix says government should pay 70% of project to decarbonise key sector. Canada's government should pay for up to 70 per cent of a proposed C$75bn ($60bn) project to decarbonise the country's controversial oil sands and protect a critical engine of the country's economy, one of the proposal's backers said. "If we're able to solve the puzzle of making Canadian oil significantly lower carbon intensive", the oil would be the "cleanest in the world", Alex Pourbaix, chief executive of Cenovus Energy, the country's second-largest oil producer, told the Financial Times.*" The reality is that almost no one expects the Liberals to agree to this ask. Perhaps Pourbaix's real question should have been does the Liberal government want to help solve the puzzle of making Canadian oil significantly less carbon intensive? We believe the answer to this question is No. Unfortunately, we have stated and continue to believe the Liberals actions or better said, lack of action or even acknowledgement of the oil sands ability to significantly reduce emissions has to point to big hits coming against oil sands in the upcoming election. Our Supplemental Documents package includes the FT report.

Trudeau wouldn't even acknowledge the oil sands June 13 Net Zero plan

We have been negative on the potential for the Liberals to help the oil sands and this was reinforced in June by Trudeau. Our June 20, 2021 Energy Tidbits highlighted Trudeau's post G7 press conference. We were surprised that Alberta or the Cdn oil patch didn't at least criticize Trudeau, let alone raise up their arms, after hearing Trudeau's post G7 press conference. Our immediate reaction after hearing Trudeau was that this is not good and it is foretelling bad news to come from the Liberals. On June 13, 2021, we tweeted [LINK] "*#OilSands. Note #Trudeau wouldn't even acknowledge the oil sands pathways to net zero, or say positive move but need to do more or move faster. not a good sign. have to worry it links to prior tweet #G7 May 21 warning re stranded assets risk. #OOTT*" Trudeau was asked point blank on the new oil sands Net Zero by 2050 pathway and is it good enough as a lot it is based on technology not yet available in scale and on sequestration. He gives a lengthy answer that doesn't even acknowledge the oil sands pathway, let alone whether it is

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good enough or realistic. No question he ducked even any acknowledgement that the oil sands plan existed, which seemed to signal that he has no interest in trying to work with that plan in any way. This seems to signal something tougher is coming. Politicians of all stripes never miss an opportunity to take credit for driving change. In reality, this was a lay up question for Trudeau to do so. He could have easily said I am glad the oil sands listened to what I am trying to build for Canada, they have jumped on board committing to a pathway to Net Zero by 2050, it's a good start but they need to move even faster and my government will be working with them to get them to be even more ambitious. But he didn't, rather he refused to even acknowledge any pathway to Net Zero existed. Clearly not a good sign. Our Supplemental Documents package includes the transcript we made of Trudeau's Q&A on this point and the Cdn oil sands pathway to Net Zero release.

Energy Transition – RBN's Sustainable aviation fuel blog is a good one to keep

SAF needs economic incentives to take off

RBN posted a great blog on Tuesday *"Why Sustainable Aviation Fuel Is Taking Flight"* [LINK] which goes into a lot of technical details on sustainable aviation fuel (SAF). This is an excellent blog to add to reference libraries as it goes into a great level of detail on SAF. There should be no surprise to their big picture conclusion "*Considering the "headwinds" faced by SAF relative to RD — regulatory hurdles, narrower specifications, and fewer economic incentives — SAF will likely require more demand "pull" and/or economic incentives to encourage increased SAF production in the coming years.*" This is the reality of the energy transition – pretty well everything needs economic incentive to make it competitive for investment capital. Some of the many detailed insights are: Jet fuel is the third most consumed transportation fuel in the US, it made up 12% of all transportation fuel sold in 2019 (the last normal year for air travel). Many policies aimed at reducing the carbon intensity of transportation fuels do not directly include jet fuel. For example, California's LCFS program exempts jet fuel from the program, but gives credits to produce SAF. The programs that do are mostly voluntary. The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is voluntary but has a credit trading scheme in place for SAF. SAF is still nascent in its technology and production and the policies supporting it are voluntary. As such, commercial volumes are miniscule. In 2019, just over 2.4 million gallons of neat (100%) SAF were produced, which pales in comparison to the 21.5 billion gallons of conventional jet fuel produced in the same year. However, projections for renewable diesel are approaching 500 mmb/d (7.7 bn gallons per year), and half of this could be produced and sold to SAF specifications, 17% of 2019's US jet fuel supply. However, due to the headwinds SAF faces ie: regulatory hurdles, fewer economic incentives, it certainly will need more demand and/or incentives to encourage increased production. Our Supplemental Documents Package includes the RBN blog.

Energy Transition – No surprise, replacing 24/7 baseload with renewable = price spikes

Not Ready for Prime Time

The big Europe summer energy story continues to be very high, often record, electricity prices. On Tuesday, Bloomberg's Javier Blas tweeted [LINK] "*EUROPE'S ENERGY CRUNCH: Germany, UK, Spain and Italy all suffering day-ahead electricity prices >€100 per MWh (in some cases, record highs). France flirting with the triple-digit level. British nat gas prices approaching all time high. And that's before the winter arrives.*" We don't see this as a surprise and we think the reason is simple. Europe has more or less cut back coal and nuclear power and replaced this with wind and solar. We then retweeted [LINK] "*Record/near record #Electricity prices in UK, DE, ES, IT reports @JavierBlas . Replacing reliable baseload 24/7 #Coal #Nuclear with unpredictable #Wind #Solar brings inevitable price spikes/shortage risk when supply/demand is tight. Sign of the times for 2020s #EnergyTransition".* We just believe this is the inevitable outcome of the energy transition replacing 24/7 reliable power

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with unpredictable wind and solar has to lead to price spikes and shortages when supply/demand is tight. Last week's (Aug 8, 2021) Energy Tidbits noted this electricity price spike risk. We wrote " *We believe the "Energy Transition is Not Ready for Prime Time" will be one of the growing Energy Transition themes for 2021 and 2022. It will show up in results, actions, and warnings that the "Energy Transition is not Ready for Prime Time". Some will be direct, but many will be indirect or unsaid examples. The big energy stories in Europe and the US this summer are high electricity prices and warnings to watch power usage. The big blame, especially in Europe, is given to high natural gas prices. No question, high natural gas prices are an important factor. But we think the reason is simple. On Friday, we tweeted [LINK] "Positive to #NatGas #LNG in 2020s. OECD's steady replacement of 24/7 #Coal #Nuclear baseload with variable #Renewable means OECD #Electricity prices spike/shortage risk when supply/demand gets tight. China/India just increase coal. #Electricity will cost more in #EnergyTransition". The reality is that the OECD countries are leading in the push to Net Zero, whereas China, India and others are still a long way away from reaching their peak in carbon emissions. Over the last decade, the bp data shows that the OECD countries policy push to reduce coal and nuclear power has worked, and their policy push to increase renewables has also worked. As a results, over the last decade, the reduction in electricity generated in OECD from traditional baseload 24/7 coal and nuclear electricity generation has basically been offset by increase in unpredictable and not 24/7 electricity generation from wind and solar. Taking 24/7 baseload power out means that whenever supply/demand is tight, the swings are huge and that is what we are seeing this summer. Our Supplemental Documents package includes the detailed bp table showing electricity generation by fuel by region and is worth a look."*

Energy Transition – Switzerland says a ban on fossil fuels in 40 yrs is unrealistic

Switzerland rejects fossil fuels ban

Anyone who has lived in Switzerland knows the Swiss have a deserved reputation for being practical and level headed. We continue to believe one of the growing Energy Transition themes in 2021 and 2022 will be the increasing number who now note the reality of energy transition is nowhere near able to meet the aspirations. From a country basis, it seems like the ones that are raising this are the ones who have the general type of reputation as being practical and realistic, whether it be China or India and, this week, Switzerland. Switzerland is rejecting the idea of a ban on fossil fuels beyond 2050, not after 2030, but after 2050. They are saying a ban on fossil fuels in 40 years is unrealistic. On Thursday, Argus reported [LINK] "*Switzerland's federal government yesterday called for climate policy to be "realistic" and "socially responsible", and rejected a ban on fossil fuels beyond 2050, in its official reply to a referendum initiative. The government suggested toning down the demands made in an environmentalists' petition for referendum, the so-called glacier initiative. The initiative calls for a ban on marketing fossil fuels in the country after 2050 to be enshrined in Switzerland's constitution, and for carbon storage counting towards Switzerland's climate target to be restricted to its domestic territory. The government said that while it "fundamentally" supports the glacier initiative, it also believes the initiative goes too far in "certain points". The government proposed enshrining in Switzerland's constitution that consumption of fossil fuels should be reduced as much as "technically feasible, economically viable, and compatible with the security of the country and the protection of the population".* Our Supplemental Documents package includes the Argus report.

Energy Transition – UN Climate Change 2021 report is almost perfect for Net Zero side

UN Climate Change 2021 report

I start this section noting I am nowhere near reading/scanning all 3,900+ pages of the full UN IPCC "*Climate Change 2021: The Physical Science Basis*" report. I have read the release and the summary, And without reading it all, I will leave my comments, for now, to some big picture comments. But will be writing on the report in the 3 months lead up to COP-26

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Glasgow that starts on Nov 1. (i) The push to Net Zero by the Net Zero side is being accelerated and is given an even greater commitment by the report using terms like "virtually certain" on the causes of climate change. Note the press release did not have the same urgency of need to move on reducing emissions. (ii) My big fear on this report is that its 3,949 pages and no one will read it including the Net Zero side. And I have to wonder if that is purposeful. Make the report so long and it is a very difficult read so people can scan thru to pull out the nuggets that support their view. This is not a 2 or 3 day read. (iii) My biggest concern is that people get into a debate on minutia and details. Over 3,900 pages, there will be plenty of details to debate. My concern is that the non Net Zero side get into a debate on details and the Net Zero side just stick to the big picture themes. The key this is a document that will force policymakers to take action to move quickly on emissions. And the policymakers won't read it and I suspect their staffs won't read it in detail, but they will take the themes and buzzwords and sentences to form policy. The ambition for rate of change won't change if the fight is about minutia and crumbs. (iv) Policymakers will be able to point to this document to get the average person on side. They say look at heat, look wildfires, rising sea levels, etc. this is because we did nothing. . Because the average person won't read it, will hear the headlines, and hear the politicians talk about the end of the world is near. (v) The timing is perfect for the Net Zero side with record July hot temperatures in the world, wildfires in many places etc. It really does force the non Net Zero side into a battle over crumbs/minutia. And fighting over crumbs/minutia won't get a win. (vi) This report is also excellent for the Net Zero side because it doesn't get into the items that give the chance for the non Net Zero side to pitch to the average person for why policymakers need to put in a realistic Energy Transition plan. It doesn't give the basis for them to say there will be power outages, can't fill up/charge your car when you want, electricity bills are going higher, governments can't commit to a maximum electricity price, or gasoline prices, etc. All in all, my picture view is that this is an excellent report for the Net Zero side, whether or not the details in the report are accurate. The file size is massive, but the full report is found at [LINK]. Our Supplemental Documents package includes the press release and headline statements.

Energy Transition – Modi: India "should be a gas based economy"

Musk/Laschet exchange

Earlier in the memo, we noted Petronet's comments as well as the recent statements by PM Modi to increase natural gas share of India's energy mix from 6% to 15% by 2030. Earlier today, Modi made his 75th anniversary of India independence speech. India posted the transcript at [LINK]. (i) This is a big picture speech about the future for India and Modi's tries to set a vision for the next 25 years to the 100th anniversary. It's a general speech but it is also good reminder to people in the west that India still has a long way to go to catch up. (ii) Modi notes how they *"have made authentic efforts to construct toilets in 100% households*". Modi has a very bold energy goal – he wants to make India energy independent in 25 years. We suspect no one believes this is remotely possible. (ii) Modi doesn't come anywhere near committing India to a Net Zero or carbon neutral. And, like politicians is a little sneaky by talking about specific companies "*the work on 100% electrification of Railways is also progressing at a fast pace. Indian Railways has set a target of becoming Net Zero Carbon Emitter by 2030*." (ii) Doesn't say it directly but basically acknowledges they can't get to environmental targets until they cut energy imports. Modis notes the priority of "*environmental security*" and says "*India's efforts in environment are giving results today. Increase in forest cover, number of national parks, increase in number of tigers and Asiatic lions are a matter of happiness for the countrymen. Among all these successes one truth needs to be understood. India is not yet energy independent*." (iii) India should be a gas based economy but targets to be energy independent in 25 years. Modi didn't get into his policy to increase natural gas share of the energy mix from 6% to 15% by 2030 and only gave gas a glancing mention, but the mention is significant – India "should be a gas based economy". And he notes what looks

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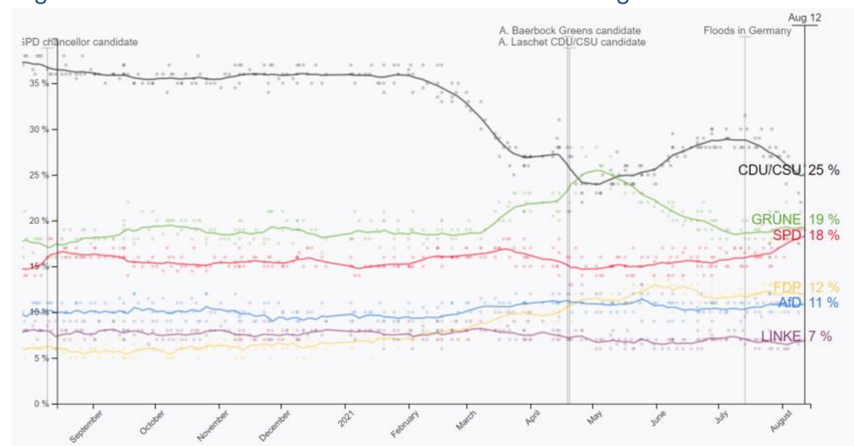
to be an unrealistic target of energy independence in 25 years. We think this is there to provide the ability to say to COP-26, India has a bold vision and that will allow it to reduce emissions. Modi said " *India today spends more than 12 lakh crore rupees annually for importing energy. For India's progress and to build a self-reliant India, India's energy independence is the need of the hour! Therefore today, India has to make a resolution to make India energy independent before the completion of 100 years of independence and our roadmap is very clear for the same. It should be a gas based economy."* (iv) Hydrogen is key to the energy independence. Earlier we noted the Petronet comments that hydrogen isn't really a factor for the 2020s and we said they probably didn't talk long term as they knew what Modi is saying. Obviously Petronet CEO has more tact than Elon Musk did to Laschet (see following item). But Modi stress the importance of green hydrogen to get to India energy independence. Our Supplemental Documents package includes the Modi speech.

Energy Transition – Musk to Laschet "hydrogen is a waste of time, obviously"

Musk/Laschet exchange

Unfortunately, Merkel's party successor, Armin Laschet, continues to struggle in the campaign for the Sept 26 election. This week, he got international coverage and ridicule for his question to Elon Musk at a live TV event as the Tesla's new factory outside Berlin. Laschet is a supporter of the push for hydrogen, so asks Musk "*what is the future of cars, hydrogen or electric?"* No surprise, Musk replies "*definitely electric, hydrogen is a waste of time, obviously" before he breaks out in laughter*. In Germany, Lashet tries to recovery sayig there is a scientific debate on this. The problem for Laschet is that he is sinking badly in the polls and this video [LINK] was widely played around the world. The polls show the election is now a total crap shoot and, most importantly, its far from clear what coalition will emerge to govern. It's a good thing for Nord Stream 2 that Merkel was able to get Biden to an agreement before she leaves office. And also for electricity prices as Nord Stream 2 should help reduce pricing pressure. Below is the Politico polling as of Aug 12 [LINK], or a day before the Laschet/Musk interchange.

Figure 40: German National Election Polls As of Aug 12



Source: Politico

Energy Transition – BP to acquire Gevo's manure-based RNG to BP

BP and Gevo sign RNG delivery agreement

The big European international oil company theme in 2021 is capturing a wide range of energy transition opportunities. The big ones tend to be offshore wind projects, but they are also doing smaller transactions such as renewable natural gas. On Monday, Gevo announced [LINK] that it signed a definitive agreement with BP for the sale of its NW Iowa

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Renewable Natural Gas production. The project is currently under construction and the RNG it produces is expected to be sold into the California market through BP's agreements with Clean Energy Fuels Corp, the largest fueling infrastructure in the nation for RNG. It's expected that NW Iowa RNG will also benefit from California's Low Carbon Fuel Standard program. CEO Dr. Patrick Gruber said *"RNG is proving to be a key fuel in the energy transition. bp has a value chain that allows RNG to reach the transportation market, and it's a pleasure to work with a company that shares our vision of a low-carbon future. This is an excellent opportunity to meet the growing demand for RNG and to expand our RNG business. We are glad to be working with BP".* Manure-based capacity for RNG increased 14% last year according to BloombergNEF, which will utilize methane that would otherwise escape into the atmosphere. Our Supplemental Documents package includes the Gevo release.

Gevo's NW Iowa RNG project

Gevo's June corporate presentation details the project [LINK]. The facility is expected to produce 0.37 bcf/yr of RNG and is expected to start up in early 2022. As the RNG is manure-based, the facility will have multiple dairy farms, with a combined total of over 20,000 milking cows. The gas upgrading system will be located adjacent to the Northern Natural Gas pipeline. The project is expected to generate a LIRR of over 30%. Note that LIRR includes return based on project financing and assumptions around offtake pricing. It also assumes that at least 50% of the RNG is sold in CA. Our Supplemental Documents package includes the Gevo June slide on the Iowa RNG project.

Capital Markets – New York State pension "evaluating" its 42 shale oil/gas stocks

Less investors for oil and gas

The challenge for oil and gas companies is no longer oil and gas price outlook, rather the challenge will increase as more capital providers move to restrict fossil fuels investments. There was no surprise this week to see the Thursday announcement [LINK] "*The New York State Common Retirement Fund (Fund) is evaluating 42 publicly traded shale oil and gas companies to determine if they are prepared for the transition to a low-carbon economy, New York State Comptroller Thomas P. DiNapoli, trustee of the third largest public pension plan in the country, announced today. The Fund also restricted investments in five more coal producers, adding those companies to the list of 22 that the Fund divested from in 2020".* It was reported that they held $640 mm in these 42 oil and gas stocks. This is likely what they did in April. Our April 18, 2021 Energy Tidbits highlighted their April 12 announcement [LINK] that they will be restricting investments in oil sands companies as part of their target for their portfolio to be net zero by 2040 and will be selling the remaining oil sands holdings. The New York State Comptroller stated *"We have carefully reviewed companies in the oil sands industry and are restricting investments in those that do not have viable plans to adapt to the low-carbon future. Companies responsible for large greenhouse gas emissions like those in this industry, pose significant risks for investors".* The fund is restricting and selling out of holdings in Imperial Oil, CNRL, Husky/Cenovus, MEG, Athabasca, and Japan Petroleum Exploration. This will result in a sell off of the remaining immaterial amount of securities that was disclosed as down to $7 million. Our tweet the [LINK] noted that they did not say how much they have already sold to be down to $7 million. They are a $248 billion fund and there is no way they would have only had $7 million of stocks in 7 oil sands companies. So the question is how much did they sell already? We can't help note one of the reasons for this is that *"The Fund determined the following seven companies failed to show they are transitioning out of oil sands production".* Our Supplemental Documents package include the Aug 12 release.

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Capital Markets – Oxfam suggests one-off 99% billionaires pandemic windfall tax

OXFAM's billionaires tax.

We suspect that many ignored the Oxfam's suggestion "*One-off emergency tax on billionaires' pandemic windfalls could fund COVID-19 jabs for entire world*" [LINK] because it is extreme and therefore not considered realistic. Oxfam calls for a "*one-off 99 percent levy on billionaires' wealth gains during the pandemic".* Clearly, a 99% levy is not realistic, but we believe that somewhere, somehow, there will be added taxes on the wealthy and wouldn't be surprised to see any wealth type tax to be framed, like Oxfam, as a one-off or temporary tax. But then everyone also realizes that one-off taxes tend to stick around. So one-off is a smart concept, the other smart concept is Oxfam linking the one-off tax to funding COVID-19 jabs for the entire world. That is the other reason why we expect to see some hits against the wealthy, governments can frame it as a way to fund some significant social benefit. So Oxfam's 99% levy may not e realistic, but it's a reminder that the wealthy should expect to get hit somehow, someway by governments such as we expect to see from the Liberals. Our Supplemental Documents package includes the Oxfam recommendation.

Capital Markets – WSJ, some people working remotely have two jobs

Some remote workers have 2 jobs

We probably shouldn't be surprised to see the WSJ Friday report "*These People Who Work From Home Have a Secret: They Have Two Jobs. When the pandemic freed employees from having to report to the office, some saw an opportunity to double their salary on the sly. Why be good at one job, they thought, when they could be mediocre at two?* [LINK]. This is 180 degrees from the normal remote worker complaint that they end up working longer hours as they basically reallocate travel, lunch and some meeting time to work more. We don't know many remote workers who take as much time as lunch as is needed when working in the office. But, it doesn't make a difference how, there are always those who will take the time to figure out how to cheat the system. We have to believe these are not high performance organizations as its very difficult to hide in the weeds in a high performance organization, sooner or later poor performers get exposed. Two things jumped out from the report. First, the guy who almost gave himself away. WSJ wrote "*One worker was confused about his compensation and pulled up his pay stub to show his manager the discrepancy. To his horror, the paystub from his other job was listed on the same platform. He quickly stopped sharing his screen, telling his manager he didn't feel comfortable showing his paycheck.*" Second the woman who hired support staff to carry on her ruse. WSJ wrote "*She recently hired a personal assistant, who sits in on calls when she is double-booked and alerts her if she is needed in a meeting. "Am I trying to be, like, a five-star employee?" she says. "Not really. I'm just trying to do the job I need to not get fired*." Our Supplemental Documents package includes the WSJ report.

Demographics – Increasing calories from ultraprocessed foods

Ultraprocessed foods carry the day

No one will be surprised by the results of the study "*Trends in Consumption of Ultraprocessed Foods Among US Youths Aged 2-19 Years, 1999-2018*" [LINK] that, in its study of 33,795 US youths aged 2-19 years, "*the estimated percentage of total energy consumed from ultraprocessed foods increased from 61.4% to 67.0%, whereas the percentage of total energy consumed from unprocessed or minimally processed foods decreased from 28.8% to 23.5%."* Among the subgroups of ultraprocessed foods, the biggest increases were in the group of ready-to-eat and ready-to-heat dishes (including items like frozen pizza, take out burgers, etc) that increased from 2.2% to 11.2% of calories, the next group was "*sweet snacks and sweets*" that increased from 10.6% to 12.9%. We have to believe this trend is not just for youths.

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Demographics – Increasing grocery shopping online, a sustaining trend?

Shift in consumer eating habits since the pandemic

Gallup ran a Consumption Habits survey from July 6-21 [LINK] to see how the pandemic has change the way Americans live – including how they get food. One trend that should continue post pandemic will be online grocery shopping. The first finding was online grocery ordering has risen substantially, with the percentage of US adults who now say they order groceries online at least monthly has doubled from 11% in 2019 to 23% today. For those who do still go to physical stores to shop for groceries, they are reporting visiting the store less frequently. Reports of multiple grocery store visits in a week are down by 6% since 2019. No surprise given the pandemic, dining out has decreased. The greatest shift was in those who reported dining out more than once weak. It declined 7% from 24% in 2019 to 17% in 2021. As for food takeout and delivery, Gallup saw a slight uptick. 74% of US adults said they order food from a restaurant at least once a week. Interestingly enough, the use of meal prep kits has remanded more or less stable over the pandemic. Only 15% of adults say they ever use the kits.

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

@Energy_Tidbits on Twitter

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

LinkedIn – Look for quick energy items from me on LinkedIn

Look for energy items on LinkedIn

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

Misc Facts and Figures.

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

Must watch 9/11 documentary "You Are Here: A Come From Away"

Its only a few weeks away from the 20th anniversary of 9/11. I ran into a former oilpatch coworker from the 80s, who is originally from Newfoundland. He was talking about how visiting home and the hospitality of Newfoundlanders wanting and we got onto the events on Gander on 9/11. He was able to catch the musical "Come From Away" (he said is great), but hadn't seen the documentary "You Are Here: A Come From Away", which is the story of how a town of <10,000 people took in 6,600 passengers who were in the air when 9/11 happened and were forced to land in Gander, Newfoundland as US air space closed. Could you imagine if a city like Calgary had to take in 1 million people overnight for an uncertain period of time? I have seen the documentary >10 time yet, every time I see it, I will put it on in the background. IF you haven't seen, its an amazing story. And as my friends, it's the way Newfoundlanders are, they will take you, they will feed you and make sure you aren't alone. There are so many great deeds in the movie. But most of all, it makes you realize that Newfoundlanders are great people. If you haven't seen it, I highly recommend you watch it.

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The inevitable is happening, KFC UK chicken shortage

We have been watching for running out of chicken signs from Canadian given the chicken shortage. But haven't yet seen the notices that we saw this week in the UK, when KFC UK tweeted [LINK] warning its UK customers that "*there's been some disruption over the last few weeks – so things may be a little different when you next visit us. You might find some items aren't available or our packaging might look a little different…*"

Tyson's reminds why chicken and beef prices are up in grocery stores

Tyson Foods held its Q2 call on Monday and their comments clearly point to why their part of the chicken/beef supply chain is seeing big cost pressures. And if Tyson is seeing cost pressures, it means all of the US is feeling the pinch when they go to the grocery store to buy chicken or to a restaurant to order chicken. And their impact hits Canada. Tyson produces ~20% of the beef, pork and chicken in the US. In the Q2 call, mgmt said "*And then go to labor. Labor is our single biggest issue we face, not only in chicken, but also in our other businesses We've increased wages and created flexible shifts, childcare on site clinics*." For labor, its not just higher wages, it's the reduced efficiency. In the Q&A, mgmt replied "*Let me say this. And I think your view of beef where we had ample cattle supplies and where we had really strong demand, we were constricted in the middle based on a labor availability and I talked about this in chicken earlier, but in our beef business, it essentially takes a six days to get five days' worth of work. So the inefficiency associated with that allowed cattles to back up on the ranch and then feed a lot.*"

Partial Ningbo-Zhoushan port shutdown reminds its only 132 days to Xmas

One of the big China news stories was the shutdown of the Meishan terminal at the Ningbo-Zhoushan port (south of Shanghai). This port is the world's 3rd busiest container port in the world and the Meishan terminal handles over ¼ of the container cargo at the port. We may not understand the concept of zero Covid case tolerance, but the reports were that the terminal was shut down after 1 person tested positive. The concern is that this could cause an extended shutdown of the Meishan terminal. In May/June, there was a several week shutdown of a significant portion of the container capacity at China's Yantian port following a Covid outbreak. The Indian Express reported [LINK] on the Meishan shutdown "*An extended closure of one of the biggest terminals at the third-busiest port in the world could further exacerbate the stress in global trade. Bloomberg reported, quoting Ningbo's Customs Bureau, that the biggest exports through Ningbo port in the first half of this year were electronic goods, textiles and low- and high-end manufactured goods. The top imports included crude oil, electronics, raw chemicals and agricultural products.*" Reminds its time to get your Xmas electronic goods that are in stock now.

One car that won't be going EV – Mercedes S680

Last week, Mercedes rolled out its 2022 680 Guard, which will likely be one of the last, if ever, cars to go the EV route. Road & Track described [LINK] it "*Mercedes-Benz S680 Guard Can Stop Armor-Piercing Assault Rifle Rounds. The latest armored S-Class is a V-12-powered tank on wheels. Are you a tyrannical dictator who fears for your life on a daily basis? Afraid you'll be attacked by heavily armed assailants while traveling to your next meeting? Well, Mercedes now has the car for you. Meet the 2022 Mercedes-Benz S680 Guard. As the name suggests, the S680 Guard is the armored version of the company's flagship S-Class sedan, equipped with an entirely new body with dozens of protective elements designed to withstand*

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all sorts of weaponized assaults. The windows are nearly four inches thick, capable of stopping an armor-piercing round from an assault rifle, according to Mercedes. They're so heavy that they have to be hydraulically operated—a nice throwback to the 600 Grosser and its hydraulically operated systems."

Figure 41: Mercedes Benz S68 Guard

Source: Road & Track

Chicago's new speed ticket practice is more metric than imperial

WGN9 (Chicago news) [LINK] on how Chicago has issued over 300,000 speeding tickets in its new six miles per hour speeding threshold for photo radar instead of its former 10 mph. So why pick a number like 6 mph? There must be some who lived in Canada or maybe some closet Canadians in Chicago who pushed thru the Canadian norm of tickets being issued once the speeder was 10 kilometres per hour above the limit, and 10 kph = 6 mph.

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