

# Energy Tidbits

May 2, 2021

Produced by: Dan Tsubouchi

## Momentum Building on Biden to Do a JCPOA Deal In May or Go Away

**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. Positive indicators from 3<sup>rd</sup> JCPOA sessions and Iran reminding Biden that a deal deadline is the upcoming Iran June elections. ([Click Here](#))
2. A big change in LNG outlook with a much wider and sooner LNG supply gap with 5 bcf/d of Mozambique LNG delays means new brownfield LNG FIDs required for 2022 capex budgets. ([Click Here](#))
3. Only 10 days until May 12, Michigan Gov Whitmer's shutdown date for Enbridge Line 5. ([Click Here](#))
4. MBS offers to "provide economic support and everything they need as long as Houthis agree to a ceasefire and sitting on the negotiating table". ([Click Here](#))
5. Will EV charging deficiencies be what holds back pace of adoption being assumed by Biden, Trudeau, etc? ([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](#).

**Dan Tsubouchi**  
Principal, Chief Market Strategist  
dtsubouchi@safgroup.ca

**Ryan Dunfield**  
Principal, CEO  
rdunfield@safgroup.ca

**Aaron Bunting**  
Principal, COO, CFO  
abunting@safgroup.ca

**Ryan Haughn**  
Principal, Energy  
rhaughn@safgroup.ca

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**Natural Gas – Natural gas injection of 15 bcf, storage now -302 bcf YoY deficit**

The EIA reported a 15 bcf injection (vs 11 bcf injection expectations) for the April 23 week, which was well below the 5-yr average injection of 67 bcf, and below last year’s injection of 70 bcf. Storage is 1.898 tcf as of Apr 23, increasing the YoY deficit to 302 bcf from 251 bcf last week and storage is now 40 bcf below the 5 year average vs 12 bcf above last week. The significant YoY deficit along with the forecasted very hot summer will help support natural gas prices during the injection season. Below is the EIA’s storage table from its Weekly Natural Gas Storage Report. [LINK](#)

**YoY storage at -302 bcf YoY deficit**

Figure 1: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf)				Historical Comparisons			
	04/23/21	04/16/21	net change	implied flow	Year ago (04/23/20)		5-year average (2016-20)	
					Bcf	% change	Bcf	% change
East	319	325	-6	-6	404	-21.0	326	-2.1
Midwest	427	421	6	6	504	-15.3	412	3.6
Mountain	119	118	1	1	102	16.7	113	5.3
Pacific	217	210	7	7	217	0.0	210	3.3
South Central	816	810	6	6	974	-16.2	877	-7.0
Salt	258	256	2	2	312	-17.3	278	-7.2
Nonsalt	558	554	4	4	661	-15.6	599	-6.8
Total	1,898	1,883	15	15	2,200	-13.7	1,938	-2.1

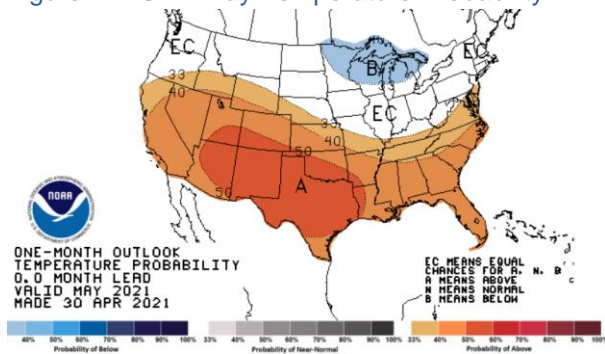
Source: EIA

**Natural Gas – Looks like fairly neutral temps in May for natural gas demand**

It looks like a fairly neutral outlook for US natural gas demand based on weather. On Friday, NOAA posted its 30-day outlook for May [LINK](#) and it calls for normal to below normal in the northern US and warmer than normal in the southern half. These types of temps normally mean perfect temp to leave the windows open in the northern half, but air conditioning start in the southern half.

**NOAA’s 30 day temp outlook**

Figure 2: NOAA May Temperature Probability



Source: NOAA

**Natural Gas – AccuWeather forecasts above normal hurricane season**

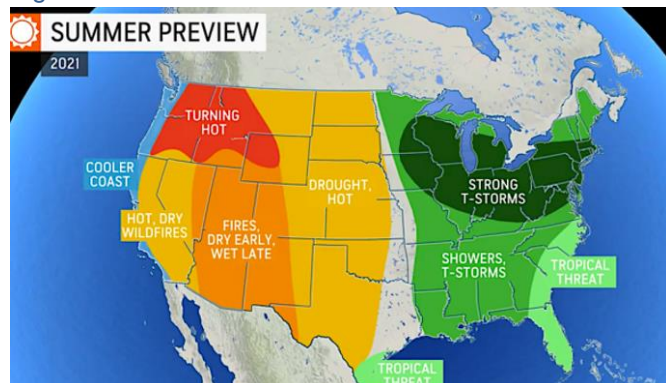
AccuWeather posted its US summer forecast on Wed [LINK](#), which included its forecasts for another above-average Atlantic hurricane season, but not as active as the very active 2020 hurricane season. “AccuWeather is predicting 16 to 20 named storms, 7 to 10 hurricanes and three to five direct hits on the U.S. A typical season features 14 named storms, seven hurricanes and three or four U.S. landfalls. “Our biggest concern is the fact that water temperatures across the Atlantic are already warmer than normal over a larger part of the

**Above normal hurricane activity**

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basin,” said AccuWeather Hurricane Expert Dan Kottlowski, who has been forecasting the tropics for 45 years.” It was interesting to note AccuWeather is calling for less hurricane activity in Louisiana this summer. “Louisiana was pummeled by a record-setting five storms, the most ever to hit the Pelican State in one hurricane season. This region of the Gulf Coast may get a much-needed break from the tropical weather this year as the highest threat for tropical strikes is likely to focus on other areas of the coast.” The AccuWeather map puts those higher at risk hurricane areas as being Florida and the southern Texas Gulf Coast. Our Supplemental Documents package includes the AccuWeather forecast.

Figure 3: Summer Preview



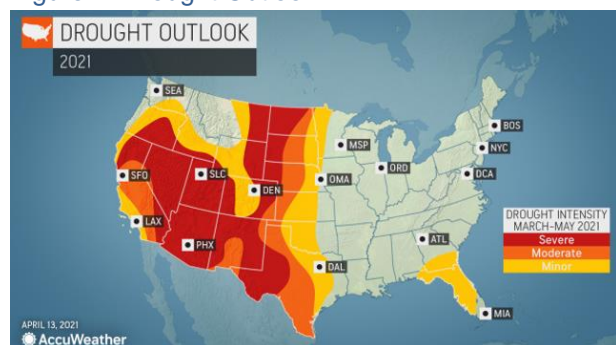
Source: AccuWeather

**Natural Gas – Severe drought, wildfires risk and low hydro generation in California**

It looks like it could be another bad summer in California with the setup of drought conditions. AccuWeather noted “California experienced its third-driest winter in history which has left water reservoir levels well below normal, and with minimal snowpack across the mountains, there will not be much snowmelt to feed the reservoirs throughout the summer” ie. setting up for low hydro generation. And the scary part, as always for Californians in the summer, is the drought conditions set up high wildfire risk again this summer. Everyone remembers last summer’s wildfires that led to the blackouts.

**Severe drought conditions in west**

Figure 4: Drought Outlook



Source: AccuWeather

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**Natural Gas – US Feb gas production down 8.4 bcf/d YoY, -6.0 bcf/d MoM**

There are no takeaways from the EIA’s actual for Feb natural gas production as Feb is distorted by the Texas freeze that caused massive shut-ins. EIA released its Natural Gas Monthly on Friday [\[LINK\]](#), which includes its estimates for “actuals” for February gas production. US gas production in Feb was 86.3 bcf/d, down 6.0 bcf/d MoM from January of 92.3 bcf/d. We do not know how much of this MoM decline was due to the forced shut-ins. But Jan 2021 was basically flat to Dec 2020. We have been highlighting YoY declines, but the Feb shut-ins make the YoY comparison irrelevant. The YoY declines have been getting less with Jan 2021 being down 2.8 bcf/d YoY, which compares vs an average of -4.7 bcf/d YoY in Q4/20. Below is our running table of US dry natural gas production along with our graph of US dry gas production by year. Our Supplemental Documents package include excerpts from the EIA Natural Gas Monthly.

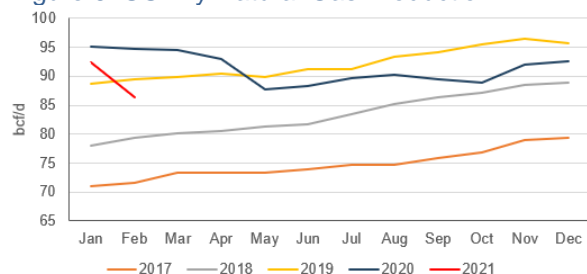
**US Feb gas production down 8.4 bcf/d YoY**

Figure 5: US Dry Natural Gas Production

bcf/d	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Jan	56.0	60.0	65.9	65.3	67.8	72.6	73.8	71.0	77.9	88.6	95.1	92.3
Feb	57.3	58.8	65.2	65.9	67.5	73.7	74.7	71.6	79.4	89.4	94.7	86.3
March	57.3	61.5	65.1	65.4	68.2	74.1	74.0	73.3	80.2	89.9	94.6	
Apr	57.6	62.3	65.4	66.0	68.6	75.0	73.8	73.4	80.4	90.4	92.9	
May	58.0	62.4	65.6	66.3	69.5	74.2	73.5	73.3	81.3	89.9	87.8	
June	57.2	62.1	65.4	66.3	69.8	74.3	72.5	73.8	81.8	91.2	88.4	
July	58.3	62.5	65.8	67.0	70.6	74.3	73.1	74.7	83.4	91.3	89.8	
Aug	58.9	63.2	65.4	67.0	71.6	74.3	72.3	74.7	85.2	93.3	90.2	
Sept	59.1	63.1	66.2	67.2	71.7	75.0	71.9	75.8	86.4	94.2	89.5	
Oct	60.1	65.1	66.5	67.6	72.2	74.1	71.4	76.9	87.2	95.4	88.9	
Nov	60.1	65.9	66.6	68.6	73.1	74.1	72.1	79.0	88.6	96.4	92.0	
Dec	61.0	65.6	65.8	66.6	74.7	74.0	71.2	79.5	88.9	95.6	92.5	
Average	58.4	62.7	65.7	66.7	70.4	74.1	72.8	74.8	83.4	92.2	91.4	

Source: EIA

Figure 6: US Dry Natural Gas Production



Source: EIA

**Natural Gas – US LNG exports fall 2.2 bcf/d MoM to 7.6 bcf/d in Feb**

There are no takeaways from US LNG exports in Feb, which were also impacted by the Texas freeze. The EIA Natural Gas Monthly also reported “actuals” for US LNG exports, which were 7.6 bcf/d in February, which is -0.2 bcf/d YoY and was down 2.2 bcf/d from January of 9.8 bcf/d. Note our table rounds to one decimal and the actual is 7.562 bcf/d for Feb. The drop off was expected with the Feb freeze shutting down export terminals, and with feedgas flows averaging 8.3 bcf/d in Feb vs 10.4 in January. March will show a recovery with flows to LNG facilities averaging 11.1 bcf/d and continue in April with flows to April 30 averaging 11.4 bcf/d. Below is our table of EIA’s monthly LNG exports.

**US Feb LNG exports -0.2 bcf/d YoY**

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Figure 7: US LNG Exports (bcf/d)

(bcf/d)	2016	2017	2018	2019	2020	2021
Jan	0.0	1.7	2.3	4.1	8.1	9.8
Feb	0.1	1.9	2.6	3.7	7.8	7.6
March	0.3	1.4	3.0	4.2	7.9	
Apr	0.3	1.7	2.9	4.2	7.0	
May	0.3	2.0	3.1	4.7	5.9	
June	0.5	1.7	2.5	4.7	3.6	
July	0.5	1.7	3.2	5.1	2.7	
Aug	0.9	1.5	3.0	4.5	3.6	
Sept	0.6	1.8	2.7	5.4	5.0	
Oct	0.1	2.6	2.9	5.7	7.2	
Nov	1.1	2.7	3.6	6.3	9.4	
Dec	1.3	2.7	4.0	7.1	9.8	
Full Year	0.5	1.9	3.0	5.0	6.5	
Full Year bcf	186	708	1,084	1,817	2,390	

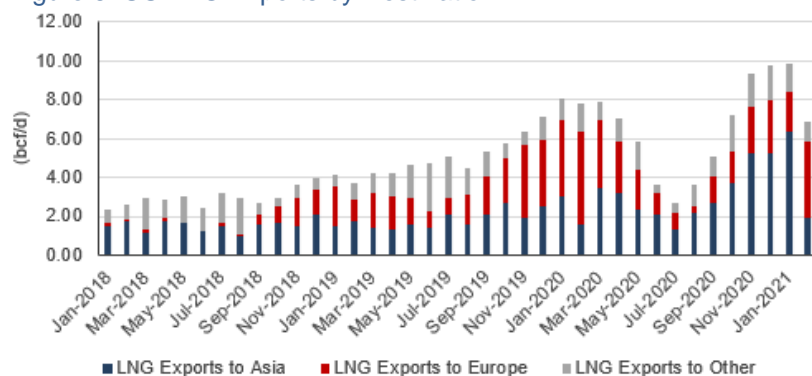
Source: EIA

**Natural Gas – US Feb LNG exports top destinations were UK and Netherlands**

The US Dept of Energy also posts a DOE LNG Monthly report that has more details on LNG exports by cargo. Increasing US LNG exports has been a significant driver of HH strength in Dec and Jan with exports reaching record highs. The DOE reported a similar decline in US LNG exports to 7.6 bcf/d in Feb, -6% or -0.3 bcf/d YoY vs 7.3 bcf/d in Jan 2020. Jan and Dec had featured record export volumes of 9.8 bcf/d. US deliveries to Europe were strong, with the top two export destinations being 1.225 bcf/d to the UK and 0.814 bcf/d to the Netherlands. Overall LNG exports to Europe increased 1.93 bcf/d MoM while exports to Asia dropped 4.45 bcf/d MoM. The EIA is part of the DOE and the monthly data is always within rounding. Our Supplemental Documents package includes excerpts from the DOE LNG Monthly.

**Lower MoM US LNG exports to Asia in Feb**

Figure 8: US LNG Exports by Destination



Source: EIA

**Natural Gas – US pipeline exports to Mexico -1.2 bcf/d MoM to 4.4 bcf/d in Feb**

There is also no takeaway from the US pipeline exports to Mexico in Feb due to the impact of the Texas freeze. The EIA Natural Gas Monthly also provides its “actuals” for gas pipeline exports to Mexico, which were 4.4 bcf/d in February, -0.8 bcf/d YoY and down 1.2 bcf/d MoM from 5.6 bcf/d in January. We continue to see the set up for increasing US pipeline exports to Mexico post the Texas big freeze impact. Mexico natural gas production remains stuck below 5 bcf/d and the completion of new pipeline infrastructure such as the Wahalajara system [\[LINK\]](#) increases US penetration further into Mexico. Below is our table of the EIA’s monthly gas exports to Mexico.

**US Feb pipeline exports to Mexico -1.2 bcf/d MoM**

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Figure 9: US Pipeline Gas Exports To Mexico (bcf/d)

bcf/d	2014	2015	2016	2017	2018	2019	2020	2021
Jan	1.7	2.2	3.2	3.9	4.4	4.9	5.2	5.6
Feb	1.8	2.3	3.4	4.1	4.5	4.8	5.2	4.4
March	1.9	2.4	3.3	4.2	4.3	4.8	5.4	
Apr	1.9	2.6	3.5	3.9	4.4	4.7	4.6	
May	2.0	2.8	3.7	4.2	4.4	5.0	4.7	
June	2.2	3.0	3.9	4.5	4.6	5.2	5.4	
July	2.2	3.3	4.0	4.4	4.9	5.4	5.8	
Aug	2.1	3.3	4.3	4.4	5.0	5.4	6.0	
Sept	2.2	3.3	4.1	4.2	5.0	5.4	6.0	
Oct	1.9	3.2	4.2	4.3	4.9	5.5	6.0	
Nov	1.9	3.0	4.0	4.5	4.7	5.3	5.5	
Dec	2.1	3.2	3.7	4.4	4.5	4.9	5.3	
Full Year	2.0	2.9	3.8	4.2	4.6	5.1	5.4	

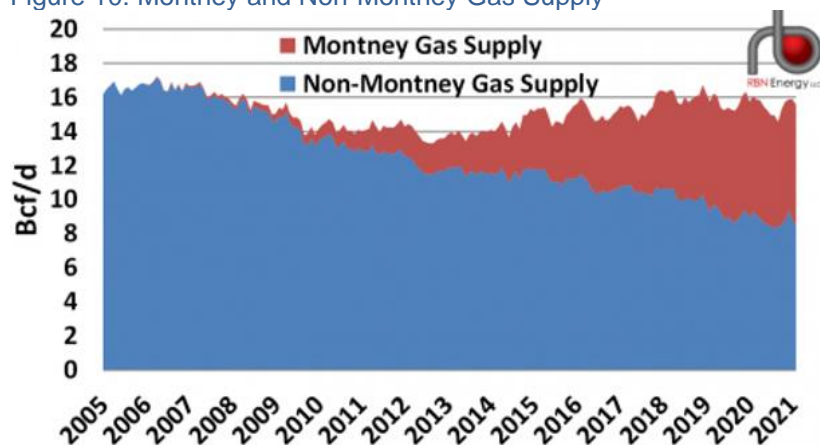
Source: EIA

**Natural Gas – Increasing importance of the Montney for Cdn gas production**

RBN Energy (Marty King, former FirstEnergy analyst) put out a good reference blog on Thursday, detailing the massive importance of the Montney for western Canadian natural gas production [\[LINK\]](#). The Montney is characterized mainly as an unconventional gas formation, with dry gas mainly on the northwestern BC side and shifting to more liquids rich gas on the eastern side. Reserves in the Montney are massive compared to other major basins in North America at 567 tcf (342 tcf in BC; 224 tcf in AB), more than twice the combined Marcellus and Utica formations of 214 tcf. Production in the Montney has grown massively within the last 16 years, from zero in 2005 to 7.1 bcf/d in Feb 2021, mainly due to the shift to horizontal and multi-stage hydraulic fracturing in the 2010s. This makes up 46% of the 15.6 bcf/d of western Cdn natural gas production in February, up huge from <7% in 2010 and 24% in 2015. Production from the Montney is also the only basin with increasing production since 2008, and it responsible for all production growth since 2013 mainly due to *“the Montney’s incredible thickness that has lent itself to the development of multiple horizons within the formation, rising well performance, and the Montney’s role in increasing gas production in Western Canada”*. Our Supplemental Documents package includes the RBN blog.

**46% of Feb 2021 gas production from the Montney**

Figure 10: Montney and Non-Montney Gas Supply



Source: RBN

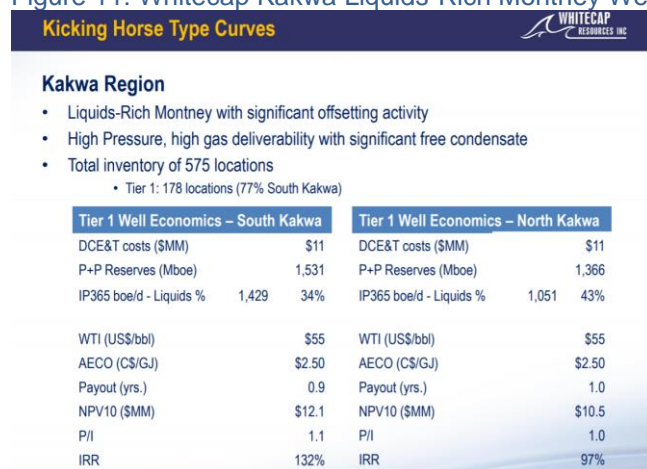
**Reminder liquids rich Montney gas has best economics in US/Can**

There is one other key Montney natural gas reminder and that is the Montney gas play with associated condensate, the liquids rich section, has the best economics of

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any play, oil or natural gas, in the US and Canada. Our April 11, 2021 Energy Tidbits noted Whitecap’s new update following its then just announced Kicking Horse acquisition. We referenced our April 5, 2021 tweet [\[LINK\]](#) “Overlooked. Cdn #Montney #NatGas wells with associated liquids, if condensate, are likely the best economics of any US/CAN play. No wonder \$WCP latest acquisition generates big free cash flow, wells have ~1 yr payout. Payout is the key factor for a free cash flow model. #OOTT”. We don’t think there are many plays that have 1 year payout wells over a broad areal extent. This is the most overlooked aspect of the Montney natural gas play.

Figure 11: Whitecap Kakwa Liquids-Rich Montney Well Type Curves



Source: Whitecap

**Natural Gas – Mexico’s natural gas production still stuck below 5 bcf/d, -2.2% YoY**

Pemex reported its March oil and gas data on Friday afternoon. One of the key Mexican energy themes for the past 3 years has been that Mexico has been unable to grow domestic natural gas production, which means the continued opportunity for increase exports of US natural gas to Mexico. Mexico natural gas production has been stuck at or below 5.0 bcf/d since Aug 2017. We believe Pemex is still in the natural gas production is stuck phase below 5 bcf/d as it has since Sept 2017. Pemex reported Mar natural gas production of 4.84 bcf/d, which was down 2.2% YoY and flat MoM. Pemex does not provide any commentary along with its production data. Below is our ongoing table of Pemex reported monthly natural gas production.

**Mexico natural gas stuck below 5 bcf/d**

Figure 12: Mexico Natural Gas Production (bcf/d)

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

Source: Pemex

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### Natural Gas – A new LNG supply gap with delay of 5 bcf/d of Mozambique LNG

We believe there has been a major change to the outlook for LNG supply in the 2020s and one that is still being overlooked – there is a big new LNG supply gap starting around 2025 that is hitting faster and bigger than anyone expects. It is being overlooked because markets are focused on Total's Tuesday announcement of force majeure at its Mozambique Phase 1 LNG of 1.7 bcf/d, but aren't focused on the fact that this situation backs up an additional 3.3 bcf/d of LNG supply that is also being counted on in all LNG supply forecasts. Total's Phase 2 of 1.3 bcf/d was to follow, and Exxon's Rozuma Phase 1 of 2.0 bcf/d was originally expected to go FID in 2019 but is now not expected to have a FID decision until 2022. Mozambique is considered a premium LNG supply region for Asia and is in LNG supply forecasts. Total's original in service for Phase 1 is 2024. We have been warning on Mozambique has a major LNG market impact and its why, on Wed, we posted our new 7-pg blog "*Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?*" [\[LINK\]](#) Recall that Total stopped development in Dec due to the security/violence, resumed development on Wed March 24, 3 days of violence ensued, Total then stopped development again on Sat March 27, declared force majeure on Mon April 26, and announced at least a year delay on Thurs April 29. We posted a blog a day before Total's Thursday Q1 call, but saw nothing to change our view that the likely delay is at least 2 years. On the call, Total said they expect at least a year delay. Our blog reminds that even if Total makes a restart development decision in 12 months, it will take months just to get back to where they left off including rehiring services so any return to where they were in the construction process is at least more likely 18 months at a minimum. This is going to create a bigger and sooner LNG supply gap and the reality is that the only projects that can step up in any reasonable time frame will be brownfield LNG projects. Its why we also said what about LNG Canada Phase 2. There is much more in the 7-pg blog. Our Supplemental Documents package includes our blog.

**LNG supply gap to be sooner and bigger**

### Total is faced with a tough decisions on Mozambique over the next year

We think this force majeure year delay period will be one that is more than just evaluating the security/safety situation in Mozambique. Rather, we have to believe Total will be evaluating Mozambique, what happens if they restart and have to start again, how they maintain/maximize value from this world class LNG asset. We had a lot of feedback on the blog with the common view being they didn't realize it wasn't just Total Phase 1 that would be impacted. Our blog was written before the Total Q1 call where they said it would be at least a year delay. The two common questions we had were why didn't we think Total would restart sooner than our assumption and a somewhat linked question, what do we think Total does? We qualified our comments saying we assumed that Mozambique doesn't go in and wipe out any sniff of insurgents permanently. If no, we just didn't see how Total could risk going back in 2021 and have a replay of March. Because if so, they would likely have no chance but to exit and they would be seen as forced sellers. We also said that our betting choice would be that, during this year force majeure period, others will approach Total on a potential transaction on Mozambique. Mozambique LNG is considered one of the best in class LNG areas and this is not a walk away asset. Rather it is potentially a great asset. But we said isn't Total and its board in a bit of a Catch 22. We can't believe Total wants to risk having to walk away entirely on this asset or to not get value for this world class asset. If so, do they have any choice but to sell down or sell out in this force majeure period? If they sold down, they could probably structure a deal to maintain trading/marketing on the sold interests much like they do on a sell down/farmout of wind interests. We recognize that no one is talking about these questions but surely this will be something Total and its board will be figuring

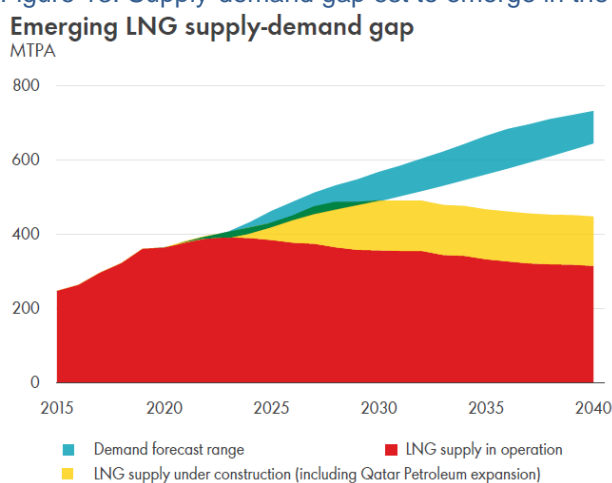
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out in this force majeure period. Its not a perfect analogy but it reminds us of 25 years ago when Talisman Energy bought small cap Arakis interest in Sudan, but then continued Sudan unrest led to Talisman selling five years later to Indian interests.

### Shell's Feb 25, 2021 long term outlook for LNG

We recognize there are many different forecasts for LNG, but are referencing Shell' LNG Outlook 2021 from Feb 25, 2021 for a few reasons. (i) Shell's view on LNG is the key view for when and what decision will be made for LNG Canada Phase 2. (ii) Shell is one of the global leaders in LNG supply and trading. (iii) Shell provides on the record LNG outlooks every year so there is the ability to compare and make sure the outlook fits the story. It does. (iv) Shell, like other supermajors, has had to make big capex cuts post pandemic and that certainly wouldn't put any bias to the need for more capex. Shell did not provide the detailed numbers in their Feb 25, 2021 LNG forecast. We would assume they would have reflected some delay, perhaps 1 year, at Mozambique but would be surprised if they put a 2-3 year delay in for the 5 bcf/d from Total Phase 1 +2 and Exxon Rozuma Phase 1. Their long term LNG demand for 2040 is ~700 mm tonnes (92 bcf/d) vs 360 mm tonnes (47 bcf/d) in 2020. In the 2021 outlook, Shell highlighted that the pandemic delayed project construction timelines and that the "lasting impact expected on LNG supply not demand". And that Shell sees a LNG "supply-demand gap estimated to emerge in the middle of the current decade as demand rebounds". This is why we believe a 2 to 3 year delay in the 5 bcf/d of Mozambique LNG supply will bring a bigger and sooner LNG supply gap. Total's 1.7 bcf/d Phase 1 Mozambique was to be in-service in 2024.

Figure 13: Supply-demand gap est to emerge in the middle of the current decade



Source: Shell's Feb 25, 2021 LNG Outlook 2021

### Natural Gas – Too much risk to skip over natural gas as the transition fuel

We also wanted to address the issue of skipping over natural gas as the transition fuel in our April 27, 2021 blog "Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?" [\[LINK\]](#). We basically included items from last week's (April 25, 2021) Energy Tidbits on leader's warnings at the Biden climate summit. Apart from the US and Canada, we haven't seen a sea shift to eliminating natural gas for power generation, especially from energy import dependent countries. There is a strong belief that hydrogen and battery storage will one day be able to

**Hard to skip natural gas as the transition fuel**

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scale up at a competitive cost to lead to the acceleration away from fossil fuels. But that time isn't yet here, at least not for energy import dependent countries. One of the key themes from last week's leader's speeches at the Biden global climate summit – to get to Net Zero, the world is assuming there will be technological advances/discoveries that aren't here today and that have the potential to immediately ramp up in scale. IEA Executive Director Faith Birol was blunt in his message [\[LINK\]](#) saying “*Right now, the data does not match the rhetoric – and the gap is getting wider.*” And “*IEA analysis shows that about half the reductions to get to net zero emissions in 2050 will need to come from technologies that are not yet ready for market. This calls for massive leaps in innovation. Innovation across batteries, hydrogen, synthetic fuels, carbon capture and many other technologies.*” US Special Envoy for Climate John Kerry said a similar point that half of the emissions reductions will have to come from technologies that we don't yet have at scale. UK PM Johnson [\[LINK\]](#) didn't say it specifically, but points to this same issue saying “*To do these things we've got to be constantly original and optimistic about new technology and new solutions whether that's crops that are super-resistant to drought or more accurate weather forecasts like those we hope to see from the UK's new Met Office 1.2bn supercomputer that we're investing in.*” It may well be that the US and other self sufficient energy countries are comfortable going on the basis of assuming technology developments will occur on a timely basis. But, its clear that countries like China, India, South Korea and others are not prepared to do so. And not prepared to have the confidence to rid themselves of coal power generation. This is why there hasn't been any material change in the LNG demand outlook and why leader's see too much risk in skipping over natural gas as the transition fuel.

#### **Putin: abandoning natural gas may put humans back in caves**

We couldn't help remind of Putin's classic comments from Nov 2019. On Nov 20, 2019, we tweeted [\[LINK\]](#) “*How could i not note Putin's comments “discarding the purest hydrocarbon like gas seems utterly bizarre”, re the complete abandonment of hydrocarbons “it seems to me that the human race may find itself again in caves”. Hope not!*” Putin had a lengthy Q&A at the Russian Investment Forum on Nov 20 [\[LINK\]](#). And he jumped in on the potential abandonment of natural gas. Putin said “*In this sense, neglecting a pure hydrocarbon such as natural gas is, in my opinion, uncalled for, because it is the purest hydrocarbon out there. When ideas like this are promoted, it sounds like humanity will once again end up in caves, but this time because it will consume nothing, if all energy is reduced to zero, or if we rely solely on solar energy or wind energy or tidal energy. Today's technology is such that without hydrocarbons, nuclear energy or hydropower, humanity will not be able to survive or preserve its civilisation. This must be taken seriously or, as people say, in an adult-like manner.*”

#### **Natural Gas – Equinor's 0.63 bcf/d Melkøya LNG restart now March 31, 2022**

Last week, we noted the Petroleum Safety Authority Norway report on the underlying cause of the Sept 28, 2020 fire that led to Equinor's 0.63 bcf/d Melkøya LNG facility being shut down for 1 year. On Monday, Equinor released “*Revised start-up date for Hammerfest LNG*” [\[LINK\]](#). This is referencing the 0.63 bcf/d Melkøya LNG facility. The original restart date was Oct 1, 2021 (ie. a 12 month shut down), but Equinor said “*Due to the comprehensive scope of work and Covid-19 restrictions, the revised estimated start-up date is set to 31 March 2022*”. When we read the release, it seemed like Equinor was almost setting the stage for another potential delay in the restart date. Equinor had two qualifiers to this March 31, 2022 restart date. Equinor said “*there is still some uncertainty related to the scope of the work*” and “*Operational measures to handle the Covid-19 situation have affected the follow-up progress after the fire. The project for planning and carrying out repairs of the Hammerfest LNG plant*

**Equinor  
Melkøya LNG  
restart Mar 31/22**

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must always comply with applicable guidelines for handling the infection situation in society. The project has already introduced several measures that allow us to have fewer workers on site at the same time than previously expected. There is still uncertainty related to how the Covid-19 development will impact the project progress.” Our Supplemental Documents package includes the Equinor release.

**Natural Gas – Korea not a factor for LNG demand growth, only 0.8 bcf/d to 2034**

On Tuesday, we tweeted [LINK](#) “Doesn't look like #NatGas for power and #LNG imports will be a big winners in KR reducing #Coal for power. @HEESU\_LEE reports KR energy ministry fcsts LNG demand growth 1.09%/yr from 41.69 tons in 2021 to 47.97 tons in 2034. That's only +0.8 bcf/d LNG over 13 years.” Bloomberg’s story “(BFW) South Korea Sees LNG Demand Growing by 1.09% a Year Through 2034” “South Korean LNG demand will grow at an average annual rate of 1.09% through 2034, rising to 47.97m tons by then from 41.69m tons in 2021, according to the country’s energy ministry.” Under this forecast, South Korea will not be a big LNG growth area as this is growth from 5.5 bcf/d in 2021 to only 6.3 bcf/d in 2034. Our Supplemental Documents package includes the Bloomberg report.

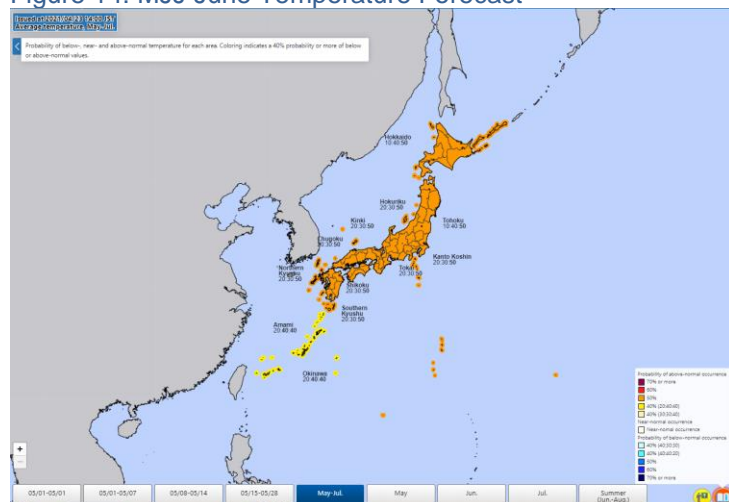
**Korea not a LNG demand growth factor**

**Natural Gas – Japan sees a warm start to summer**

We missed including the new Japan Meteorological Agency updated their temperature forecasts for May/June/July that was posted on Friday April 23 [LINK](#) and not on the normal Thursday posting. We typically only check for updated JMA forecasts on Thursdays. The JMA still calls for a warmer start to summer temperatures. Last year, May and June were above normal temps but July was below normal. Below is the current JMA forecast for MJJ temperatures.

**Japan expecting a warm start to summer**

Figure 14: MJJ June Temperature Forecast



Source: Japan Meteorological Agency

**Natural Gas – Europe storage 29.78% full vs 5 year average of 39.16%**

It was cold through March and now into April which had delayed the refill push in Europe and this is setting up support for summer prices. There was a big draw in Europe gas storage this winter so no surprise it was a good winter for LNG prices. Additionally, the significant YoY deficit in Europe gas storage at the end of winter indicates that there will be strong demand for European LNG imports during the refill push especially since Russia looks like it only plans to ship contract volumes via Ukraine to Europe ie. not sending above contract levels.

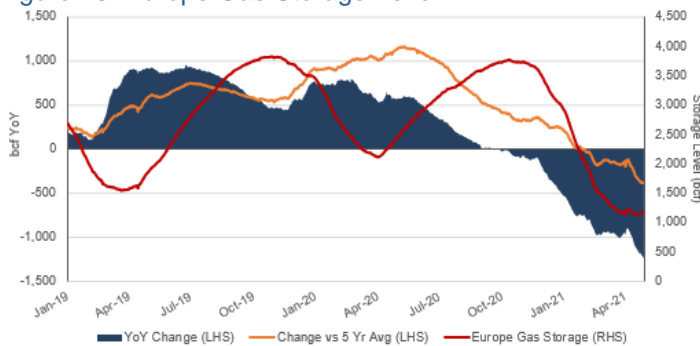
**Europe gas storage 29.78% full**

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This is a big positive indicator for US LNG exports this summer. Europe gas storage started the winter (Nov 1) at basically full levels at 94.66% and has dropped by 65.77% to be 28.89% at Apr 1. This 65.77% decline since Nov 1 compares to the 5 yr average that would be down 53.99% in the same period or to last winter that was only down 43.29% in the same period. So massive draw vs last year and the last 5 years. Storage at Apr 1 of 28.90% had looked to be the bottom for withdrawal season as the storage level subsequently increased 2.06% to 30.96% on April 6. However, cold weather continuing into the second half of April has further delayed the refill push as flows switch from injections between April 1-6, to draws once again. This has resulted in the longest withdrawals season in history, supporting Europe LNG cargo prices. We are now seeing storage starting to slightly build, with storage as of April 28 being up 0.79% since April 21. Storage as of Apr 28 is 29.78%, 31.9% less than last year of 61.68% and 9.38% below the 5 yr average of 39.16%. Europe storage levels this summer will be the key item to watch for indications on LNG markets going into the winter. Below is our graph of YoY change in net LNG flows to NW Europe.

Figure 15: Europe Gas Storage Level



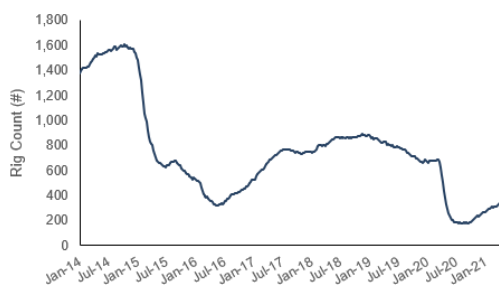
Source: Bloomberg

**Oil – US oil rigs down 1 to 342 oil rigs**

Baker Hughes reported its weekly rig data on Friday. US oil rigs were down 1 rig at 342 oil rigs as of Apr 23. There were 2 increases this week, +1 at Eagle Ford and +1 at Others. There was one decrease on 3 rigs at the Permian. Oil rigs have been on a strong recovery path and are +170 off the bottom of 172 in the Aug 14 week. Companies are seeing high oil prices and we expect privates to increase drilling. Additionally, the recent rise in oil prices to ~\$60 has led to increasing rig activity in secondary basins, “Other” basins oil rigs are +9 oil rigs in the last month. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by 341 to 342 oil rigs (-49.9%). Below is our graph of Baker Hughes US oil rigs.

**US oil rigs -1 this week**

Figure 16: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

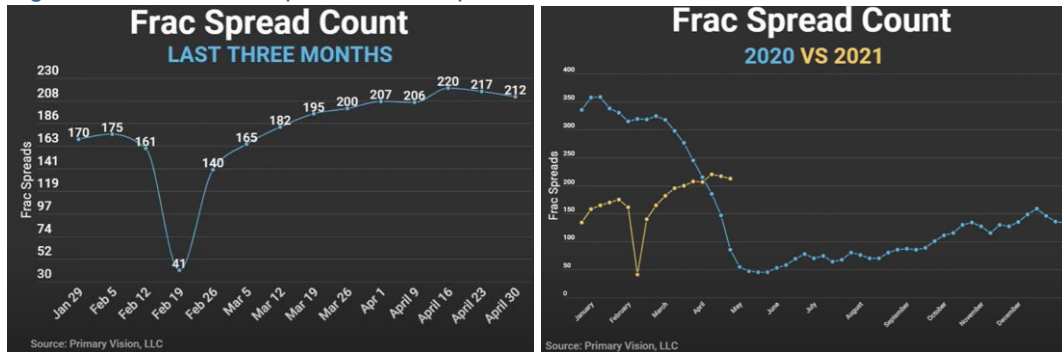
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**Oil – Frac spreads -5 to 212 for week ending April 30**

Every week, Mark Rossano (C6 Capital Holdings) posts a YouTube recap of frac spreads for the week on the Primary Vision Network [\[LINK\]](#). He reported US frac spreads were -5 to 212 for the week ending April 30. He noted Denver and Permian both backed off a little bit. He also reminded that his frac spreads are active spreads. The Permian was down 3 this week but this was because the frac spreads were moving to other locations ie. not active. This small decline is in line with his expectation for 220 frac spreads being around a near term top for now. He is not expecting any big decreases, rather he expects a move back to 220 in May and continuing to increase to the seasonal peak that normally happens in July. Below are his two key frac spread graphs.

**Frac spreads -5 to 212**

Figure 17 Active Frac Spreads as of April 30, 2021



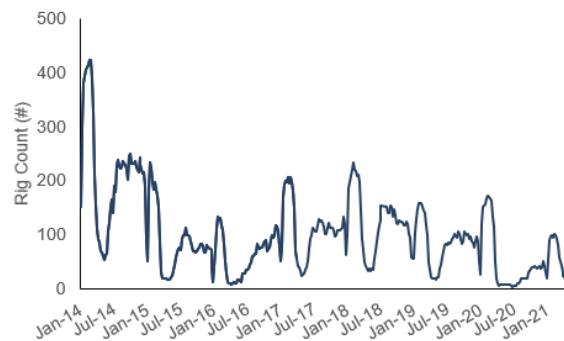
Source: Primary Vision

**Oil – Total Cdn rigs down 4 to 51 total rigs and up 24 YoY**

Baker Hughes reported total Cdn rigs were down 4 this week to 51 total rigs. As we are around the spring break up trough, going forward we expect any further declines to be relatively modest. Typically the bottom for Cdn rigs is around the 1<sup>st</sup> week in May. Cdn oil rigs were up 3 at 20 rigs. Cdn gas rigs were down 7 to 31 gas rigs this week. Total rigs are now +38 since the June 26 all-time low. Cdn drilling has recovered YoY, a year ago Cdn oil rigs were 7 and Cdn gas rigs were 20 for a total Cdn rigs of 27, meaning total Cdn rigs are +24 YoY and total rigs are down 10 vs 2019. Below is our graph of Baker Hughes Cdn oil rigs.

**Cdn rigs -4 this week**

Figure 18: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

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US oil production -0.1 mmb/d

**Oil – US weekly oil production down 0.1 mmb/d to 10.9 mmb/d**

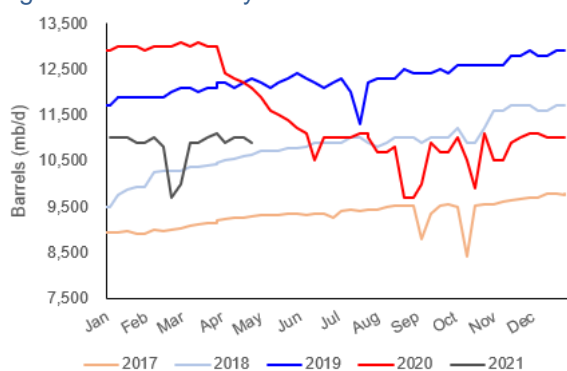
US oil production was down 0.1 mmb/d to 10.9 mmb/d for the Apr 16 week. Lower 48 down 0.1 mmb/d to 10.5 mmb/d. This puts US oil production down 1.2 mmb/d YoY, and is down 2.2 mmb/d since the 2020 peak of 13.1 mmb/d on March 13. The EIA April STEO revised down US oil production for the remainder of 2021 by 0.11 mmb/d to 11.04 mmb/d, down 1.74 from Q4/19 peak of 12.78 mmb/d. YoY growth returns in 2022 with average production of 11.86 mmb/d, +0.82 mmb/d YoY with Q4/22 production of 12.18, down 0.6 mmb/d vs Q4/19. This reduction was mainly due to lower than expected activity levels outside of the Permian. The EIA DPR has the expectation of slight MoM increases in April and May. The EIA forecasts May at 7.612 mmb/d which is +12,000 b/d MoM. The EIA Form 914 actuals for December came in 38,000 b/d higher than the EIA weekly estimates for December, much closer than the 246,000 b/d over estimate in the actuals for November which had been due to hurricane activity in early Nov.

Figure 19: EIA’s Estimated Weekly US Oil Production

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

Source: EIA

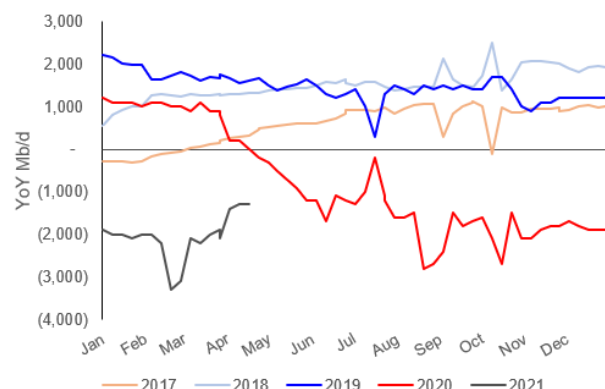
Figure 20: US Weekly Oil Production



Source: EIA, SAF

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Figure 21: YoY Change in US Weekly Oil Production



Source: EIA, SAF

**Oil – EIA Form 914 Feb actuals 563,000 b/d lower than weekly production estimates**

The EIA released its Form 914 data [\[LINK\]](#) on Friday, which is the EIA’s “actuals” for February US oil and natural gas production. (i) There are no significant takeaways from February actuals as the brutal cold and snow in Feb brought on a massive drop in oil production and did so abruptly. It is not surprising the weekly estimates are so different than the Form 914 actuals. (ii) February was down 1.197 mmb/d MoM to 9.862 mmb/d which is the lowest monthly production since Oct 2017. This puts February down 2.8 mmb/d from YoY and down 2.998 mmb/d from the Nov/19 peak of 12.860 mmb/d. Note January volumes were revised downward by 21,000 b/d from 11.080 mmb/d previously. (iii) The actuals came in 563,000 b/d lower than the average of the weekly estimates vs Jan monthly which was 130,000 b/d higher than the average weekly estimates. The large disparity in the Feb data is not surprising given the extremely quick changes that happen during the freeze causing the weekly estimates to underestimate the magnitude and duration of production outages. (iv) In the Apr STEO, the EIA has Feb US oil production at 10.276 mmb/d, which is 414,000 b/d above the Feb actuals. Therefore, we should likely see a downward revision to Q1/21 US oil production in the EIA STEO for May. (v) Not surprisingly, Texas had the largest MoM decline and was -836,000 MoM to 3.832 mmb/d due to big freeze off in Feb. New Mexico also declined 105,000 b/d MoM to 0.981 mmb/d. North Dakota was -82,000 MoM to 1.019 mmb/d, which is slightly lower than the North Dakota Industrial Commission having North Dakota at 1.083 mmb/d in Feb. However note completions were only 32 in Feb and 43 March, below the ~48 completions and 17 rigs needed to keep ND production flat at ~1 mmb/d meaning North Dakota oil production should continue to slightly decline. Below is the EIA Form 914 data for oil, and our graph of EIA actuals oil production data vs the weekly estimates.

EIA Form 914 February

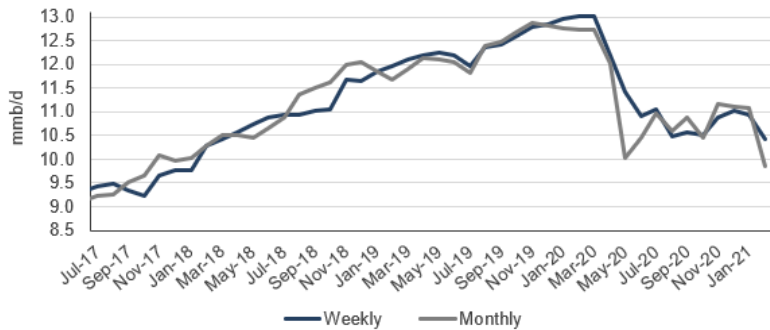
Figure 22: EIA Form 914 US Oil Production

thousand barrels per day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	11,059	9,862										
2020	12,755	12,746	12,737	12,010	10,019	10,442	10,973	10,584	10,870	10,439	11,168	11,088
2019	11,865	11,679	11,937	12,135	12,163	12,088	11,819	12,425	12,495	12,673	12,860	12,802
2018	9,998	10,261	10,489	10,496	10,457	10,605	10,903	11,384	11,463	11,554	11,907	12,004
2017	8,874	9,108	9,192	9,115	9,208	9,134	9,266	9,264	9,534	9,668	10,088	9,993
2016	9,203	9,065	9,089	8,871	8,834	8,671	8,664	8,686	8,544	8,841	8,906	8,846
2015	9,388	9,510	9,585	9,661	9,481	9,362	9,447	9,416	9,491	9,406	9,337	9,281

Source: EIA

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Figure 23: EIA Form 914 US Oil Production vs Weekly Estimates



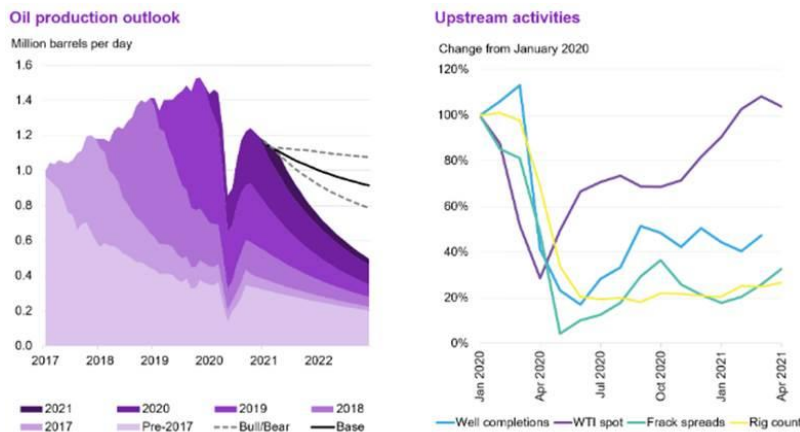
Source: EIA

**Oil – BloombergNEF expects Bakken oil production to decline**

The NDIC monthly North Dakota oil production data has shown MoM declines for the last three months to the end of Feb as muted drilling and completion activity. Continental Resources and Whiting Petroleum have indicated that they intend to keep oil production flat for the 2021 year, but the recent low pace of activity will make that challenging for the overall basin. As we noted in our April 28, 2020 Energy Tidbits, to keep North Dakota production flat at ~1 mmb/d requires 17 rigs and ~48 completions which is about the current level of activity in the Bakken. But this would put production down vs 2020 average of 1.197 mmb/d. In order to prevent Bakken oil production declines, well completions and fracking will need substantially improve. BloombergNEF anticipates that Bakken production will average 1.0 mmb/d for 2021, which is a 197,000 b/d decline YoY. Our Supplemental Documents package includes the BloombergNEF report.

**Bakken production expected to be -0.197 mmb/d YoY**

Figure 24: Bakken Oil Production and Upstream Activities



Source: Bloomberg

**Oil – BNSF says it can handle DAPL crude**

We are still waiting to hear what the Judge decides on DAPL, but this week, Reuters reported that BNSF said it “is prepared to handle any increase in rail traffic if the Dakota Access oil pipeline (DAPL) is shut due to an ongoing legal dispute”. DAPL has a 570,000 b/d capacity. Reuters also wrote “We are confident in our ability to handle additional volume across our Northern Corridor, whether it comes from more agricultural products, consumer goods or

**BNSF can rail DAPL volumes**

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industrial products, including energy," spokeswoman Lena Kent said in a statement late Thursday." Our Supplemental Documents package includes the Reuters report.

### Current North Dakota crude by rail is ~137,000 b/d

Our April 18, 2021 Energy Tidbits noted the North Dakota Pipeline Authority monthly update "February 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 February was a low of 122,297 b/d to a high of 152,297 b/d for an average of ~137,297 b/d. This is down from Jan low of 178,617 b/d to high of 208,617 b/d for an average of ~193,617 b/d. The MoM decrease in CBR volumes is likely due to the CBR share of total transportation decreasing 4% MoM to 12% of total volumes in February from 16% in January along with the decreased production likely mainly due to cold weather in Feb and pushback from shut refineries in the USGC. Below is a chart from the NDPA monthly update showing the crude by rail volumes since 2013.

Figure 25: Estimated North Dakota Rail Export Volumes



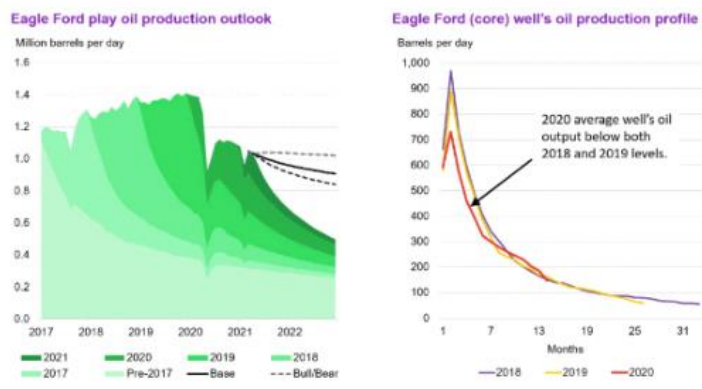
Source: North Dakota Pipeline Authority

### Oil – BloombergNEF also forecasts Eagle Ford oil output to decline

Another basin expected to see a significant oil production decline is the Eagle Ford. Bloomberg NEF expects oil production from the Eagle Ford to see another year of decline over 2021 due to declining well productivities and declining capital allocation. The core of the Eagle Ford play is well drilled, Bloomberg wrote "*Schlumberger estimates 70% of Eagle Ford's new drilled wells in 2017 were in-fill wells, or wells drilled in areas with existing wells*". Resulting in weaker production rates. Eagle Ford's production from 2020 wells were on average 14% below 2018 levels. Consequently, producers are directing capital elsewhere with EOG favouring the Permian and Powder River. As basins like the Eagle Ford or Bakken become more drilled out and wells age, the gas to oil ratio increases resulting in lower oil production. BNEF estimates that production at Eagle Ford will be 965,000 b/d by the end of 2021, down 16% from 2020. Our Supplemental Documents package includes the BloombergNEF view.

Another  
expected YoY  
basin decline

Figure 26: Eagle Ford Oil Production Outlook and Profile



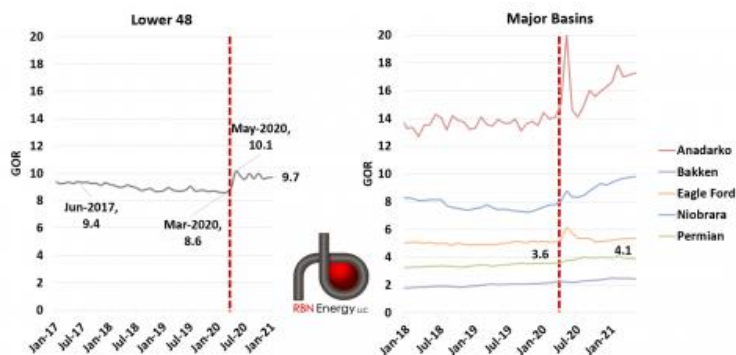
Source: Bloomberg

### Oil – RBN reminds gas/oil ratio increases with time

There was a good reminder this week from RBN on a fundamental for tight/shale oil plays that have associated NGLs and natural gas – the natural gas to oil ratio increases as wells mature. We have been highlighting this, in particular over the past 12 months, as increasing gas to oil ratios (GOR) have led to US natural gas production outperforming US crude oil production. There is one other factor leading to the outperformance and that is reducing gas flaring. Last Sunday night, RBN posted a good reference blog “*Don't Stop Me Now - How Natural Gas Production Has Continued To Outpace Crude Since COVID Hit*” [\[LINK\]](#), which reminds of the GOR changes focusing detail on the Permian. The GOR for the L48 had been 9.4 in June 2017, falling to 8.4 in March 2020 as crude production in the US ramped up significantly during this time. But as prices fell and shut-ins came in, the L48 GOR increased to 10.1 in May 2020, and 18% increase from March. Notably, the Permian GOR increased from 3.6 in April 2020 to 4.1 in August 2020, a 14% increase. Part of this is due to the usual increase in the GOR as a well ages, but also due to the weighted average age of wells in the Permian increasing as new drilling slowed with the average age of oil-weighted wells increasing from 3.2 before the crash to 3.7 currently, resulting in an increasing share of production coming from the older, higher GOR wells. Additionally, with the shut-in of some larger more productive wells, this would have created more space on gas gathering lines that may have otherwise been full, resulting in flaring of the gas. But with this additional open capacity along with an overall move to reduce flaring for emissions reductions, that meant that more gas than would have been anticipated with the lowered level of crude production would make it to processing plants. The RBN blog contains much more notable data. Our Supplemental Documents package includes the RBN blog.

**Increasing GOR  
in US  
shale/tight oil**

Figure 27: US and Basin Gas to Oil Ratios



Source: RBN

### Oil – Federal Court of Appeals rules in favour of Alberta for Bill 12

At least Alberta will know it can turn off the oil taps to BC if it ever gets into another dispute with BC. On Tuesday, the Federal Court of Appeal ruled in favor of Alberta on the turn off the taps dispute [\[LINK\]](#). The court had ruled that Alberta has the right to control the amount and destination of oil and refined products that flows through its pipelines. The bill was passed in 2018 as the Alberta and BC governments were fighting over the construction of TMX and BCs attempt to regulate the flow of Alberta heavy crude through BC. The original ruling in 2019 had temporarily suspended the Bill until the validity of it was determined. The court of appeals overturned this as without actual regulations and a legislation scheme in place it cannot rule on the validity of the law and if it allows for discrimination in fuel supply to BC. The ruling also ordered BC to pay Alberta's legal costs.

**Alberta can turn off the oil taps**

### Oil – Hummingbird nest causes TMX construction issue, but no project delays

We should say up front that there is no impact to TMX estimated completion date in Dec 2022 from this item but we couldn't help note the Trans Mountain construction update that indicated it had to stop work on a small section of the TMX pipeline in the Brunette River area of Burnaby BC because of hummingbirds. Trans Mountain's release [\[LINK\]](#) "Trans Mountain was issued a compliance order by Environment and Climate Change Canada (ECCC) after an inspector was alerted to a hummingbird nest found nearby construction activity in the Brunette River area of Burnaby, BC." And "The Order applies to the specific "work package," which is an area covering approximately 1,000 metres of private land between the Trans-Canada Highway and a rail corridor and restricts certain construction activities. Trans Mountain will proceed with any work within the 1,000-metre area not subject to restrictions of the Order". Some initial reports had stated that this was going to cause a full 4 month work stoppage until the end of the nesting season, but Trans Mountain stated that was false. This stoppage does not have an effect on the anticipated completion date, which is still expected to be Dec 2022. Our Supplemental Documents package includes the Trans Mountain update.

**Temporary work stoppage near Burnaby**

### Oil – Trans Mountain not required to reveal insurers names

On Thursday, Trans Mountain received a favourable decision from the CER for their request to keep insurers names private for the existing Trans Mountain Pipeline [\[LINK\]](#). Insurers had been facing increased pressure from environmental groups to stop covering the pipeline, resulting in a reduction in available insurance capacity causing Trans Mountain to secure replacement policies at higher costs. We had noted this in our March 11, 2021 Energy Tidbits, writing "It's a good example of how social pressures are impacting those who help

**CER rules in favor of Trans Mountain**

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fund, in this case insure, the oil and gas sector. Less capital, in this case less insurers, means higher cost of capital or cost of insurance to the oil patch". The CER wrote in this weeks decision "Sharing the names of Trans Mountain's insurers could reasonably be expected to make it harder for Trans Mountain to get insurance at a reasonable price and prejudice its competitive position". The bigger issue with the pressure on insurers for Trans Mountain is that it is not an isolated event, as in it would be true for all pipelines meaning increased tolls across the space and for producers.

### Oil – 10 days countdown to Michigan Gov ordered shut down of Enbridge Line 5

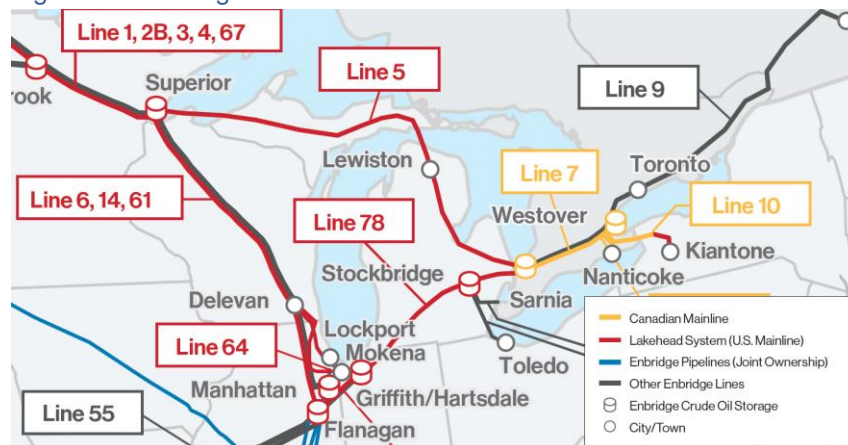
Earlier this morning, we tweeted [\[LINK\]](#) "#Line5. 10 days until May 12 Line 5 shut down date ordered by MI @GovWhitmer. Not just ONT/QC refineries get hit, MI residents hope next winter isn't cold as \$ENB Line 5 supplies 55% of MI statewide propane needs. Thx @a\_coletta for reminder. #OOTT." We were reminded of the 10 day clock with the Washington Post story this morning "Looming showdown as Michigan governor orders Canadian pipeline shut down" [\[LINK\]](#). When we saw the headline, we wondered if a new order had just been issued, but the story was referring to the previously announced May 12 date. We have highlighted this order on multiple times including what we saw was a surprising lack of detail in Michigan's plan to ensure propane supply if it can shut down Line 5, see our March 14, 2021 Energy Tidbits. Our Supplemental Documents package includes the Washington Post report.

May 12 is fast approaching

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

We also tweeted out the reminder on who gets hit by a Line 5 shut down. We first tweeted on June 19, 2020 [\[LINK\]](#) on the impact "A weekend must read, Enbridge "impact of a Line 5 shutdown" is excellent recap of who, where, what gets hit by Line 5 shut down." It includes tidbits such as "Line 5 supplies 65% of propane demand in Michigan's Upper Peninsula, and 55% of Michigan's statewide propane needs." There would also be a big impact on refineries to the east "Refineries served by Enbridge in Michigan, Ohio, Pennsylvania, Ontario and Quebec would receive approximately 45% less crude from Enbridge than their current demand." There was a good map that shows how Line 5 fits into other Enbridge pipelines delivering oil to places like Imperial's Sarnia and Nanticoke refineries in Ontario. Our Supplemental Documents package includes the "impact of a line 5 shutdown" brief. [\[LINK\]](#)

Figure 28: Enbridge Line 5



Source: Enbridge

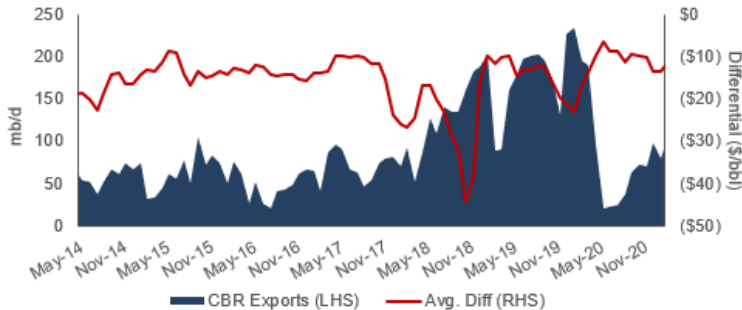
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**Oil – Cdn crude by rail imports to Gulf Coast down 88,000 b/d YoY in Feb to 108,000 b/d**

The EIA posted its monthly “U.S. Movements of Crude Oil by Rail” [LINK](#) on Friday, which also had good insights on Cdn crude by rail. Canadian CBR volumes to PADD 3 (Gulf Coast) were 108,000 b/d in February, which is up 29,000 b/d MoM from January, however is still down big YoY being -88,000 b/d vs Feb 2020. Tighter YoY WCS to WTI differentials were the key factor in the low crude by rail volumes in Dec/Jan/Feb. Below is our graph of Cdn CBR exports to the Gulf Coast.

**Cdn crude by rail imports to Gulf Coast**

Figure 29: Canada CBR Exports to US Gulf Coast vs WCS Differential



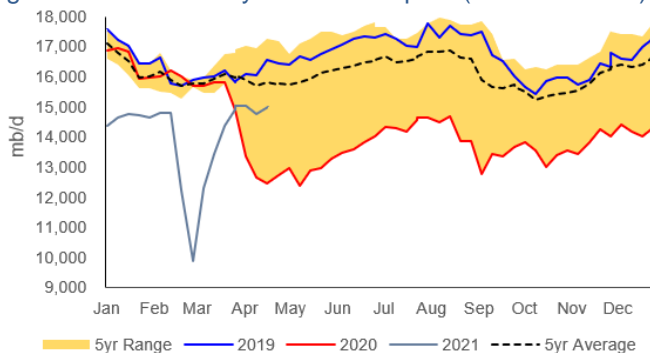
Source: EIA

**Oil – Refinery inputs +0.253 mmb/d YoY to 15.018 mmb/d**

Crude inputs to refineries were up this week and were +0.253 mmb/d to 15.018 mmb/d, and are +2.258 mmb/d YoY, but still below pre Covid levels. Refinery utilization was up 0.4% this week, being 85.4%, which is +15.8% YoY, and the highest since the start of the pandemic. Fuel-makers are gearing up to meet gasoline demand from the summer driving season. Total products supplied (ie demand) increased this week and was +1.633 mmb/d to 20.395 mmb/d for the Apr 23 week, and motor gasoline demand decreased, being -0.227 mmb/d to 8.877 mmb/d. Gasoline consumption in the US is expected to rise, with the EIA 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. We forecast that 2021 summertime gasoline consumption will average almost 8.8 million b/d, a 1.0 million b/d (13%) increase from 2020 but a 0.7 million b/d (7%) decrease from summer 2019”. Below is our graph of crude inputs to US refineries and our graph of US motor gasoline supplied.

**Refinery crude oil input still below 5 yr avg**

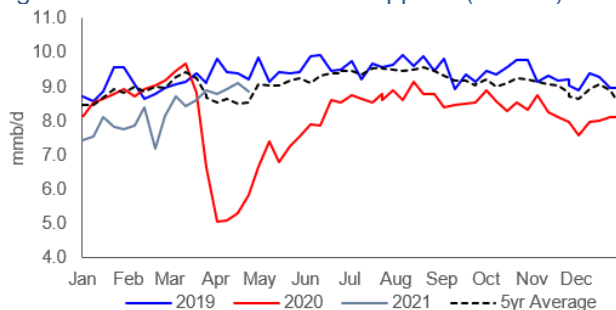
Figure 30: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA, SAF

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Figure 31: US Motor Gasoline Supplied (mmb/d)



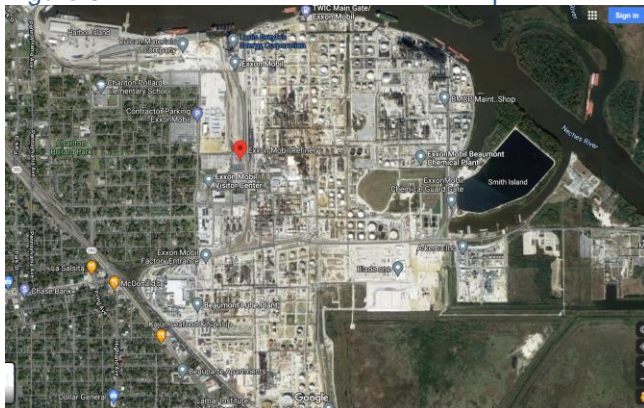
Source: EIA, SAF

**Oil – Exxon locks out employees at 366,000 b/d Beaumont refinery**

As of our 7am MT news cut off, we aren't seeing any changes to yesterday's reports that Exxon started the lockout of employees at its 366,000 b/d Beaumont refinery in Texas. The refinery has a workforce of ~550 employees. The lockout followed Friday's reports that Exxon rejected the latest United Steelworkers offer and had already begun hiring replacement workers. There is no question that refineries can operate with replacement workers, but we have to believe that there has to be some impact on volumes. Recall last year Coop's Regina refinery was able to operate at reasonable (not capacity levels during a 4 month lockout. Our June 21, 2020 Energy Tidbits noted that pre Covid, the refinery was operating at 110-120,000 b/d vs 130,000 b/d capacity during the lockout. Exxon's Beaumont complex in Texas is more than a refinery, it also includes a chemical plant and a lubricants plant, but the reports are that the lockout refers to the refinery. The below Google Maps highlights the refinery, the chemical plant is on the east part of the complex and the lubricants plant on the south part. Our Supplemental Documents package includes Exxon's fact sheets on the refinery, chemical plant and lubricants plant.

**Exxon locks out  
Beaumont  
refinery  
employees**

Figure 32: Exxon's Beaumont Texas complex



Source: Google Maps

**Oil – US “net” oil imports up 1.218 mmb/d to 4.075 mmb/d**

US “NET” imports were up 1.218 mmb/d to 4.075 mmb/d for the Apr 23 week. US imports were up 1.211 mmb/d to 6.616 mmb/d, the highest they have been since July 2020. US exports were down slightly, being -0.007 mmb/d to 2.541 mmb/d. The WoW decrease in US oil imports was driven by increases from Canada, Iraq and Columbia. Some items to note on the by country data. (i) Canada was up this week, and was +0.591 mmb/d to 3.492 mmb/d

**US “net” oil  
imports  
+1.218 mmb/d  
WoW**

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for the Apr 23 week, which is now ~0.200 mmb/d below the average levels in Jan/Feb of 2020. Also note that PADD 2 imports were also up, being +0.460 mmb/d and Canada is almost all of this market. (ii) Saudi Arabia was up 0.122 mmb/d to 0.480 mmb/d this week. (iii) Colombia up 183,000 b/d to 294,000 b/d this week. (iv) Ecuador was up 53,000 b/d to 225,000 b/d. (v) Iraq was up 236,000 b/d to 270,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico increased 157,000 b/d to 0.608 mmb/d.

Figure 33: US Weekly Preliminary Oil Imports By Major Countries

	Feb 26/21	Mar 5/21	Mar 12/21	Mar 19/21	Mar 26/21	Apr 02/21	Apr 09/21	Apr 16/21	Apr 23/21	WoW
Canada	3,648	3,635	3,448	3,418	3,666	3,414	3,367	2,901	3,492	591
Saudi Arabia	368	251	308	280	345	258	181	358	480	122
Venezuela	0	0	0	0	0	0	0	0	0	0
Mexico	602	362	278	618	494	635	739	451	608	157
Colombia	285	286	0	92	122	258	209	111	294	183
Iraq	68	141	165	105	88	245	223	34	270	236
Ecuador	114	59	127	132	247	284	295	172	225	53
Nigeria	89	0	44	161	86	161	129	71	119	48
Kuwait	0	0	0	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0	0	0	0
Top 10	5,174	4,734	4,370	4,806	5,048	5,255	5,143	4,098	5,488	1,390
Others	1,118	921	953	816	1,097	1,009	709	1,307	-83	5,226
Total US	6,292	5,655	5,323	5,622	6,145	6,264	5,852	5,405	5,405	6,616

Source: EIA, SAF

### Oil – Mexico Mar production of 1.697 mmb/d, down 2.8% YoY, nowhere near forecast

Mexico's oil production continues to look to have no chance of reaching their 2021 forecast, but it looks to be stable, just not growing. On Friday, Pemex reported its crude oil production for Feb was 1.697 mmb/d, up slightly MoM from 1.669 mmb/d in Jan. However, our Dec 20, 2020 Energy Tidbits noted Pemex's then new corporate presentation. The presentation did not make any changes to their 2021 forecast of 1.944 mmb/d, which is +230,000 b/d YoY. However, Mexico's finance ministry seemed to admit the production forecast for 2021 was too high, forecasting on Mar 31, 2021 for 2021 production of 1.794 mmb/d. Though this seems too high still. Pemex hasn't hit its forecasts and, based on Mar actuals, looks like that will happen again in 2021.

**Pemex Feb  
production  
down 3.5% YoY**

Figure 34: Pemex Mexico Oil Production

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

Source: Pemex

### Oil – Mexico Mar oil exports -19.1% YoY to 0.925 mmb/d

Pemex also reported its Mar crude oil exports on Friday afternoon. Mexico oil exports in Mar were 0.925 mmb/d, which is -19.1% YoY, down 0.081 mmb/d from Feb of 1.006 mmb/d. Exports will be an important item to watch in 2021 given one of Pemex and AMLO's big pushes is for a rapid increase in domestic refining volumes, leading to a drop in exports. We noted in our Mar 7, 2021 Energy Tidbits that Pemex stated at CERAWEEK that there was no need to reduce exports currently, but we have to wonder if that is because refinery inputs are vastly below targets. Pemex has not updated their refinery input forecasts since Oct 5 which

**Mexico oil  
exports -19.1%  
YoY in Feb**

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was for 2020 of 681,000 b/d and 2021 of 1.114 mmb/d and 2020 was well below forecast at 591,000 b/d. Mexico crude oil exports in 2020 ranged from 0.908 mmb/d to 1.260 mmb/d, with an average of 1.126 mmb/d. Below is our table of the Pemex oil export data.

Figure 35: Mexico Crude Oil Exports

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

Source: Pemex

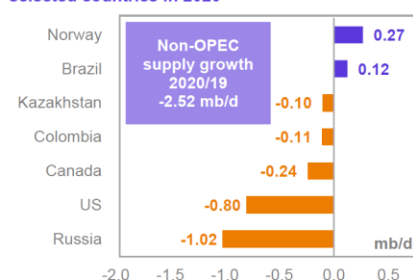
**Oil – Petrobras Q1/21 production down 5.3% YoY**

No one should be surprised to see Petrobras Q1 production results on Wednesday [LINK] showed crude and NGL production at 2.196 mmb/d, down 5.3% or 124,000 b/d YoY but is up 2.9% or 61,000 b/d QoQ. Petrobras wrote “When compared to 1Q20, production decreased by 5%, mainly due to the divestments concluded throughout 2020 and early 2021 and to the natural decline in production, which was, on average, 11% in the projects that have already reached their peak production and entered the decline phase”. We were surprised that there was no specific mention of an impact of Covid on operations give the high Covid cases in Brazil. We also don’t expect Petrobras to suggest in any way that their plan execution by the chaos and forced change at the board level by Bolsonaro. However, we still believe this has to have some impact on plan execution – changing out people at the top always leads to some pause or interruption. Its early in the year, but starting out down YoY is never good when growth is expected. It’s a positive to oil markets as Brazil is expected to be one of the key 2021 non-OPEC oil growth areas. Below are two of the OPEC MOMR April graphs on non-OPEC oil growth. Our recent Feb 22, 2021 tweet [LINK] included the below graph from Petrobras Day Strategic Plan on Dec 1, 2020 [LINK]. Our Supplemental Documents package includes the Petrobras release.

**Petrbras Q1/21 production down 124,000 b/d YoY**

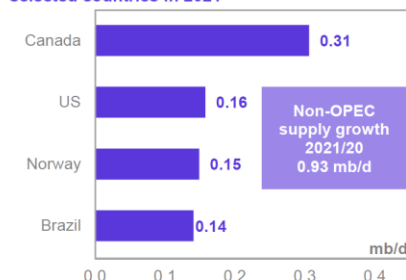
Figure 36: Key non-OPEC YoY Changes for 2021

Graph 5 - 3: Annual liquids production changes for selected countries in 2020\*



Note: \* 2020 = Estimate. Source: OPEC.

Graph 5 - 4: Annual liquids production changes for selected countries in 2021\*

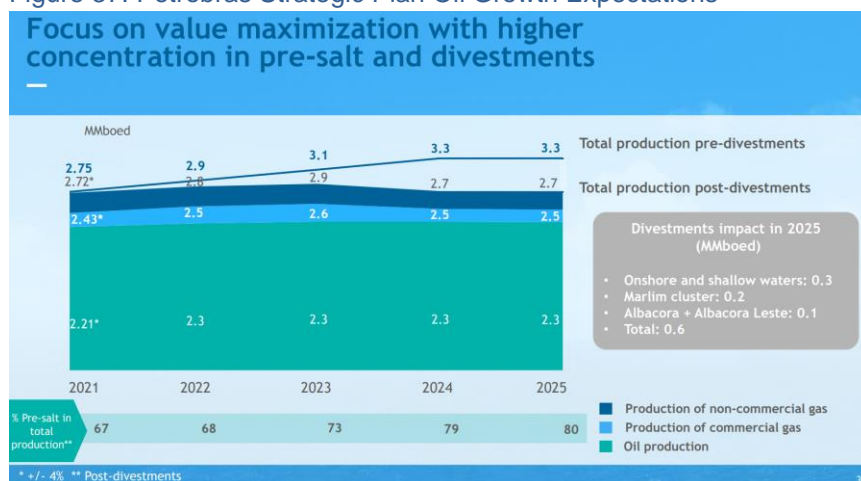


Note: \* 2021 = Forecast. Source: OPEC.

Source: OPEC Monthly Oil Market Report April 2021

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Figure 37: Petrobras Strategic Plan Oil Growth Expectations



Source: Petrobras Day Strategic Plan Dec 1, 2020

**Oil – No change to OPEC+ cut schedule**

OPEC held its Ministerial Meeting on Wednesday [\[LINK\]](#), deciding to not change the current cut schedule as agreed to last month. Like many others, OPEC is expecting that the demand recovery will speed up in H2/21, while the near term demand recovery is fragile as cases continue to rise in some major demand centers despite the vaccination effort. The OPEC release also noted that the conformity to the cuts in March was 115%, or 1.23 mmb/d. However, OPEC also wrote “However, some Participating Countries have yet to achieve the minimum expectation of 100% conformity and to compensate for overproduced volumes”. The compensation period runs to the end of September 2021. Below is the current OPEC+ cut schedule. Our Supplemental Documents package includes the OPEC release.

**No change to OPEC+ plans**

Figure 38: OPEC+ Cut Schedule

	Reference Level	Production May-July 2020	Aug-Dec 2020	Jan 2021	Feb 2021	March 2021	April 2021	May 2021	June 2021	July 2021	Jan/21 - Apr/22 per Apr/20 Agreement
<b>OPEC (mmb/d)</b>											
Algeria	1,057	816	864	876	876	876	876	887	898	912	912
Angola	1,528	1,179	1,249	1,267	1,267	1,267	1,267	1,283	1,298	1,319	1,318
Congo	325	251	266	269	269	269	269	273	276	281	281
Equatorial G.	127	98	104	105	105	105	105	107	108	110	110
Gabon	187	144	153	155	155	155	155	157	159	161	161
Iran	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Iraq	4,653	3,592	3,804	3,857	3,857	3,857	3,857	3,905	3,954	4,016	4,016
Kuwait	2,809	2,168	2,297	2,329	2,329	2,329	2,329	2,358	2,387	2,425	2,424
Libya	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nigeria	1,829	1,412	1,495	1,516	1,516	1,516	1,516	1,535	1,554	1,579	1,579
Saudi Arabia*	11,000	8,492	8,993	9,119	8,119	8,119	8,119	9,232	9,347	9,495	9,495
UAE	3,168	2,446	2,590	2,626	2,626	2,626	2,626	2,659	2,692	2,735	2,735
Venezuela	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
<b>Total OPEC</b>	<b>26,683</b>	<b>20,598</b>	<b>21,815</b>	<b>22,119</b>	<b>21,119</b>	<b>21,119</b>	<b>21,119</b>	<b>22,396</b>	<b>22,673</b>	<b>23,033</b>	<b>23,031</b>
<b>OPEC vs. ref.</b>	<b>0</b>	<b>-6,085</b>	<b>-4,868</b>	<b>-4,564</b>	<b>-5,564</b>	<b>-5,564</b>	<b>-5,564</b>	<b>-4,287</b>	<b>-4,010</b>	<b>-3,650</b>	<b>-3,652</b>
*Saudi Arabia quota for Feb-Apr 2021 includes voluntary 1mmb/d cut; May-July includes wind down of voluntary cut											
	Reference Level	Production May-July 2020	Aug-Dec 2020	Jan 2021	Feb 2021	March 2021	April 2021	May 2021	June 2021	July 2021	Jan/21 - Apr/22 per Apr/22 Agreement
<b>Non-OPEC</b>											
Russia	11,000	8,600	8,993	9,119	9,184	9,249	9,379	9,418	9,457	9,495	9,495
Kazakhstan	1,709	1,319	1,397	1,417	1,427	1,437	1,457	1,463	1,469	1,475	1,475
Oman	883	682	722	732	732	732	732	741	750	762	762
Azerbaijan	718	554	587	595	595	595	595	603	610	620	620
Malaysia	595	459	486	493	493	493	493	499	506	514	513
Bahrain	205	158	168	170	170	170	170	172	174	177	177
Sudan	75	58	61	62	62	62	62	63	64	65	65
South Sudan	130	100	106	108	108	108	108	109	110	112	112
Brunei	102	79	83	85	85	85	85	86	87	88	88
<b>Total Non-OPEC</b>	<b>15,417</b>	<b>12,009</b>	<b>12,603</b>	<b>12,781</b>	<b>12,856</b>	<b>12,931</b>	<b>13,081</b>	<b>13,154</b>	<b>13,227</b>	<b>13,308</b>	<b>13,307</b>
<b>Non-OPEC vs. ref.</b>	<b>0</b>	<b>-3,408</b>	<b>-2,814</b>	<b>-2,636</b>	<b>-2,561</b>	<b>-2,486</b>	<b>-2,336</b>	<b>-2,263</b>	<b>-2,190</b>	<b>-2,109</b>	<b>-2,110</b>
<b>Total OPEC+</b>	<b>42,100</b>	<b>32,607</b>	<b>34,418</b>	<b>34,900</b>	<b>33,975</b>	<b>34,050</b>	<b>34,200</b>	<b>35,550</b>	<b>35,900</b>	<b>36,341</b>	<b>36,338</b>
<b>OPEC+ vs. ref.</b>	<b>0</b>	<b>-9,493</b>	<b>-7,682</b>	<b>-7,200</b>	<b>-8,125</b>	<b>-8,050</b>	<b>-7,900</b>	<b>-6,550</b>	<b>-6,200</b>	<b>-5,759</b>	<b>-5,762</b>

Source: Bloomberg

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### Oil – Next OPEC+ meeting is Tuesday June 1

The OPEC announcement also included notice that the next OPEC+ Joint Ministerial Monitoring Committee (JMMC) meeting and next OPEC and non-OPEC Ministerial Meeting will take place on June 1, 2021. We would note that it is likely that these meetings will be split into two days, just not clear if its May 31 and June 1, or June 1 and June 2.

**OPEC+ meeting  
June 1**

### Oil – MBS offers “economic support and everything they need” to the Houthis

We recommend reading the transcript of the lengthy MBS interview posted by Arab News [\[LINK\]](#). There were many insights. (i) Later in the memo, we note the MBS comments on oil decline rates, selling 1% of Aramco, and planting trees. (ii) Iran – want “a good and positive relationship”. But they still note their issues on support of other groups and their ballistic missile program. “CP: At the end of the day, Iran is a neighboring country. All what we ask for is to have a good and distinguished relationship with Iran. We do not want the situation with Iran to be difficult.” “The problem that we have lies with certain negative behaviors they have, whether in terms of their nuclear program, their support of illegal militias in some countries in the region, or their ballistic missile program. We are working now with our partners in the region and the world to find solutions for these problems. We really hope we would overcome them and build a good and positive relationship with Iran that would benefit all parties.” (ii) Houthis. Interesting comment. We have been saying that that one of the end results to any peace deal will Saudis paying reparations to the Houthis in one way or another. We don’t recall the Saudi’s saying something this direct that supports that or what looks to be an offer. MBS said “We really hope that the Houthis will sit with all other Yemeni parties at the negotiations table to reach solutions that guarantee everyone’s rights, and to also safeguard the interests of all the countries in the region. We still have our offer open to ceasefire and provide economic support and everything they need as long as Houthis agree to a ceasefire and sitting on the negotiating table.” (iii) Another indirect reminder of why they need Other People’s Money. MBS “We were very rich in the seventies and eighties when he had smaller population and a lot of oil. But now, we have 20 million and we are growing quickly. If we do not maintain our savings and distribute our tools every day, we will be transformed into a poorer country, but we need to overcome this impasse after the number of use and sustainable prosperity”. Also the 1% sale of Aramco is another way to get OPM. (iv) Reminder that all power is centrally located and under MBS. MBS said “So, we started establishing strategic strategies and commissions under my chair to translate the Vision and place it in strategies for every sector – housing, energy, industry, quality of life etc. and other strategies and problems that we established for the Vision”. (v) the Public Investment Fund is going to be the driver of the future of Saudi Arabia. This theme came up in multiple times, how the PIW will be the growth engine for Saudi. And it will be the way that Saudi Arabia gets other people’s money into Saudi businesses/opportunities, especially those that are mature. (vi) Saudi targets >10% for international returns. CP: *The 6 to 7 percent will be in favor of the development of Saudi Arabia. For our investments abroad we target above 10 per cent but within Saudi we would accept 5 to 7 and sometimes even 4 percent on some projects.*” Our Supplemental Documents package include the MBS transcript.

**MBS makes offer  
to Houthis**

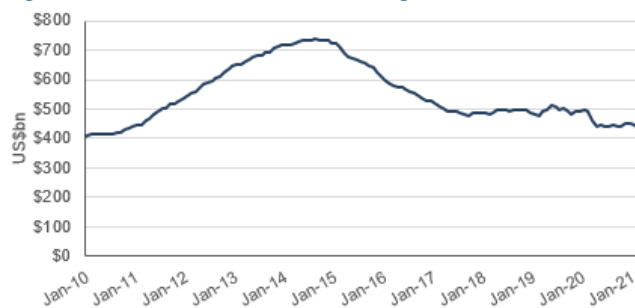
### Oil – Saudi nest egg, its net foreign assets +7.9b MoM in March, back off 11 yr bottom

We look at Net Foreign Assets for someone like Saudi Arabia as their nest egg to help them thru the Energy Transition. Saudi is far from going broke, but the data supports that their nest egg has been depleted at a faster rate than most expect, which is why we continue to believe a primary focus for Saudi Arabia is getting Other People’s Money to fund as much as possible. Saudi Arabia saw a significant decline in their net foreign assets in 2020, but also since the peak in 2014. The decline in 2020 was fueled by low oil prices a long with higher spending. This a driving factor for the Saudi’s want/need for higher oil prices and, perhaps

**Saudi net foreign  
assets back off 11  
year low**

just as significantly, the increasing of OPM in funding the future of Saudi Arabia. March and April saw Brent average over \$65 and this has helped stabilize Saudi Net Foreign Assets. Saudi net foreign assets were \$444.6b at March 31, up from \$436.7b as of Feb 2021 and back in above \$440b. Feb was the 11 year low, so this is a relief to Saudi Arabia. the decline in net foreign assets has not just occurred in 2020. The peak was in Aug 2014 at \$737.0b, which means the decline to March 31, 2021 was \$292.4b or \$3.7b on average per month. Declining reserves is one reason Saudi Arabia has been such a driving force in OPEC+ cuts/discipline, but also why we expect a step up in infrastructure sales and additional Aramco equity/debt issuances. Plans for Vision 2030 will require a significant amount of spend, meaning foreign assets will need to be elevated to pay for it, along with increased foreign investment. Below is our graph of Saudi Arabia net foreign assets.

Figure 40: Saudi Arabia Net Foreign Assets



Source: Bloomberg

### Oil – JCPOA, will Biden do a deal in May or go away?

It looks like a positive week for the chance of a JCPOA and one that is done in May. Its why we tweeted [\[LINK\]](#) earlier today “Will Biden do a deal in May or go away?” (i) The JCPOA messaging took a big change yesterday morning and that was the indication for a specific timeline to get to a deal ie. next 3 weeks. We recognize this is from Russia, but they have been good so far in pointing to where the JCPOA discussions are going. Yesterday morning, we retweeted two of Mikhail Ulyanov tweets. He is Russia’s Permanent Representative to International Organizations in Vienna. His second tweet at 9am MT [\[LINK\]](#) was “At which stage the Vienna talks on #JCPOA restoration are? It’s to early to be excited, but we have reasons for cautious and growing optimism. There is no deadline, but participants aim at successful completion of the talks in approximately 3 weeks. Is it realistic? We will see.” This followed his earlier tweet that said “The #JCPOA participants noted today the indisputable progress made at the Vienna talks on restoration of the nuclear deal.” This is the first time we have seen an indication of a potential date. Prior to his second tweet, we retweeted [\[LINK\]](#) “#JCPOA. Seems like May is a make or break month, and still pointing to a make month. JCPOA is one of Biden’s moon shots and he likes to announce progress prior to meetings. He is UK for G7 summit on June 11-13? #OOTT”. (ii) Our tweet this morning was “Will #Biden do a deal in May or go away? Heat being turned up on US. Iran @IrnaEnglish warns US must do a deal before Iran June election. Also agreement on lifting THE key sanction #Oil, will US shoot this down and effectively kill chance for deal? #OOTT #JCPOA.” IRNA is the official news agency for Iran. They posted two stories this morning. IRNA [\[LINK\]](#) warned clearly that “time is very important in this round of talks” because President Rouhani administration is “spending its last months” and “The change of power in Iran’s presidential office will not translate into that the next administration will not be able to hold talks on the nuclear issue”. Also sounds like a prediction Rouhani will be replaced by a hardliner. IRNA also reported [\[LINK\]](#) that its chief negotiator said there was agreement on the US lifting

Potential  
JCPOA deal in  
May?



sanctions on the key sanctions such as energy. This was the big story that was out last night by most media. It will also be interesting to see if foreign minister Zarif gets directly involved as suggested by IRNA. Everyone will agree that if the foreign ministers get directly involved, it is a big sign. (iii) On Wed, Biden made his address to congress and the focus was on his spending and new taxes, but he also addressed Iran. We tweeted [LINK](#) “#JCPOA. *Reminder @POTUS wants to get back in JCPOA as one of his 2021 moon shots. #BidenAddress says will be working closing with our allies to address threats through diplomacy and stern deterrence. if so, all the allies want US back in JCPOA. Iran #Oil will be back. #OOTT*” We think it will kind of hard to work closely with the allies on Iran other than to return to the JCPOA. Biden said “*On Iran and North Korea’s nuclear programs that present a serious threat to America’s security and world security – we will be working closely with our allies to address the threats posed by both of these countries through diplomacy and stern deterrence.*” There is no question JCPOA is one of Biden’s moon shots for 2021. Plus Biden seems to like to announce accomplishments before a meeting/event, just like he did for his climate summit. One way or another, we believe the key timeline for JCPOA and also Nord Stream 2 will be in the run up to Biden’s upcoming June 11-13 G7 summit in the UK, June 14 NATO summit in Brussels, and then we suspect likely Putin summit thereafter. And of course the Iran June 18 presidential election. Our Supplemental Documents package includes the IRNA reports this morning.

#### **Oil – Was Zarif leaked audio meant to remind Biden who calls the shots in Iran**

The consensus is that talks for a return to the JCPOA continue to be positive and items are being resolved with a return to the agreement possibly before Biden’s trip to Europe in mid June. One of the interesting JCPOA side stories was the leaked audio file with comments from Iran’s Foreign Minister Mohammed Zarif which detailed the generally overruling power of the Revolutionary Guards Corps [LINK](#). What isn’t clear is who and why it was leaked now, but we don’t believe it was accidental. Its why we tweeted on Monday [LINK](#) on one possible reason – Zarif wanted to remind Biden who calls the shots and that there isn’t much wiggle room in the deal. We tweeted “*#JCPOA. Why @JZarif interview leaked now? isn’t it a reminder to @POTUS that deal time is now, before Iran June 18 elections and risk to lose the diplomats who want to return to JCPOA? Thx @farnazfassihi for report. #OOTT*”. The New York Times wrote “*On it, Mr. Zarif confirms what many have long suspected: that his role as the representative of the Islamic Republic on the world stage is severely constricted. Decisions, he said, are dictated by the supreme leader or, frequently, the Revolutionary Guards Corps*”. Parts of the tape noted that General Suleimani had worked with Russia against reaching the original nuclear deal. It is unclear what the ultimate implications of this leak will be, but some within Iran have called for his resignation. Our Supplemental Documents package includes the NY Times report.

**Iran’s  
Revolutionary  
Guard holds  
power in Iran**

#### **Oil – Libya targeting 1.5 mmb/d exit**

In 2021, the struggle for Libya has moved away from conflict to how to rebuild their economy, their oil exports/production and, perhaps most of all, how to allocate the oil dollars. And the Libya National Oil Corporation is also involved in fighting for the dollars needed to restore and grow oil production. On Thursday, Reuters reported [LINK](#) Libya’s oil minister stated that they are seeking approval of a budget to reach a 1.5 mmb/d exit rate for 2021. This exit target is basically unchanged from the Libya NOC Chairman comments in March. Our March 14, 2021 Energy Tidbits wrote “*This week, Bloomberg TV interviewed Libya National Oil Company Chair Mustafa Sanalla “The aim is to raise daily output to 1.45 million barrels by the end of 2021, to 1.6 million within two years and to 2.1 million within four years, Sanalla said. Reaching those goals will depend on peace holding and the NOC getting a big enough budget from the government to repair energy infrastructure, he said”*. On Jan 2, the NOC

**Libya est 1.5  
mmb/d at yr end  
2021**

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Chair said they were aiming for 1.2 mmb/d in 2021, while in the interview this week he did not state on an average basis, but just an exit rate of 1.45 mmb/d so the average would likely be ~1.3 mmb/d, which is roughly flat to current production of ~1.3 mmb/d according to Bloomberg". The spending shortfall was the cause of the force majeure at the Hariga port as noted above. Our Supplemental Documents package includes the Reuters report.

### Oil – Indian oil imports to decline by more than 1.0 mmb/d over next few weeks

The oil risk that worries most is the explosion of Covid cases in India, how it will impact India's economy and oil consumption, and is there any new mutation risk for the rest of the world. On Friday, Bloomberg reported on Kpler estimates India's "oil imports may decline by more than 1m b/d, and possibly more than 3m b/d, in the coming weeks as surging Covid-19 infections hit demand, consultant wrote Friday in a report." There was also a good reminder that this will likely impact floating oil storage in the coming weeks as India has little room to store additional oil. Bloomberg also reported Kpler estimates India's Covid issue could reduce global oil demand by 200,000 b/d. Our Supplemental Documents package includes the Bloomberg report.

**India oil imports  
being hit by Covid**

### Oil – MBS extreme oil decline views were understandably mostly ignored by markets

It was unfortunate, but understandable, why to the most part MBS comments on global oil declines were ignored by markets. Unfortunately, his numbers and comments were so extreme that most ignored the message. We looked beyond his numbers and to the message that the world is challenged by oil declines. This has been our concern since pre-Covid days, in particular when we highlighted this in our June 20, 2019 blog "Exxon's Math Calls For Overall Global Oil Decline Rate of ~7%, A Very Bullish Argument For Post 2020 Oil Prices". [LINK](#). Covid put a 18 months or so delay to this thesis, which is why we are very bullish on what we call post-Covid post 2022 oil. We just wish MBS hadn't been so extreme in his examples on oil declines. MBS said "If you look at it from the other way, we're now talking about the demand for oil, if we're talking about the others in terms of the supply, you find that the supply is lost more quickly, or it declines more quickly than the reduced demand for oil. The US for example will not be an oil-producing country in 10 years. Today it produces like 10 million barrels, after 10 years it will barely produce 2 million barrels. In China they're producing 4 billion barrels. In 2030 it will reach zero barrels or very insignificant. Russia is producing about 11 million barrels after 19 or 20 years it will only produce 1 million more or less barrels. So, the supply is declining much quicker than the decline of the demand for oil and the demand will increase as expected but the supply will reduce gradually, will be reduced gradually after five years. In Saudi later on the future it will increase its production to cover the need for oil."

**MBS sees  
massive oil  
declines for  
others**

### Oil – Are oil decline supply concerns why an oil company buy 1% of Saudi Aramco?

One of the headline grabbers from the MBS interview (see below) was that Saudi is in discussions to sell 1% of Saudi Aramco to an oil company. MBS didn't say an oil company but said "that will be a great deal to enhance the sales of Aramco in the country where this company, I cannot mention the name but it's a huge company, if it will obtain 1 percent it will reinforce the industries of Aramco and it will promote that." Selling to a company that enhances the sales of Aramco sounds like an oil company. Dan Pickering (CEO of Pickering Energy) raised the question [LINK](#) on everyone's minds "#EFT / Someone help me understand what a major oil company gets by buying 1% of Aramco. A strategic relationship? The right to overpay for other Aramco assets? ~\$19B could buy a lot windmills, even at today's inflated prices. Is it even a good beta call on crude? I don't get it." We tweeted [LINK](#)

**"huge company"  
buying 1% in  
Aramco**

*"Maybe? China wants LT supply priority. doesn't see #PeakOilDemand soon. Covid demand crash masked challenge of increasing global oil declines so #PeakOilSupply coming in late 2020s & now sooner as #Oil capex shifts to renewables? or just a bad deal. enjoy @pickeringenergy work."*

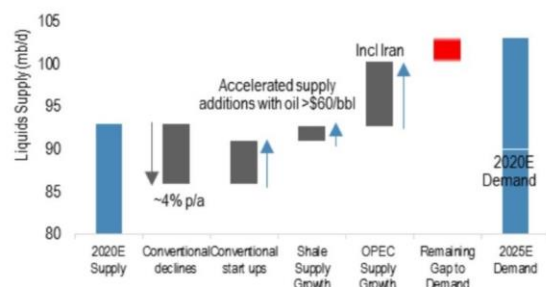
### Oil – JP Morgan reportedly sees 3 mmb/d liquids deficit in 2025 using a 4% decline rate

We don't have access to JP Morgan research but portions of their commodity call this week were included in a number of tweets. One tweet [\[LINK\]](#) included the below graph for their oil and liquids forecast to 2025 that said "Supply Path to 2025 – Inclusive of >7 mb/d OPEC+ growth we see risk of an ~3 mb/d shortfall vs demand unless capex increases". We think the key risk to their assumptions is their forecast for global liquids conventional decline rate of ~4% p/d. There is no way of knowing what the global decline rate will be and this especially so following the changing capital allocation including more capital being allocated away from oil and gas to renewables by supermajors. A ~4% decline rate means that there will be close to 4 mmb/d of declines in 2021 that have been added by new oil production additions just to keep oil production flat.

**JP Morgan sees 4% global decline**

Figure 41: Global Liquids Supply Path to 2025

Figure 21: Supply Path to 2025 - Inclusive of >7mb/d OPEC+ growth we see risk of an ~3mb/d shortfall vs demand unless capex increases



Source: J.P. Morgan Estimates.

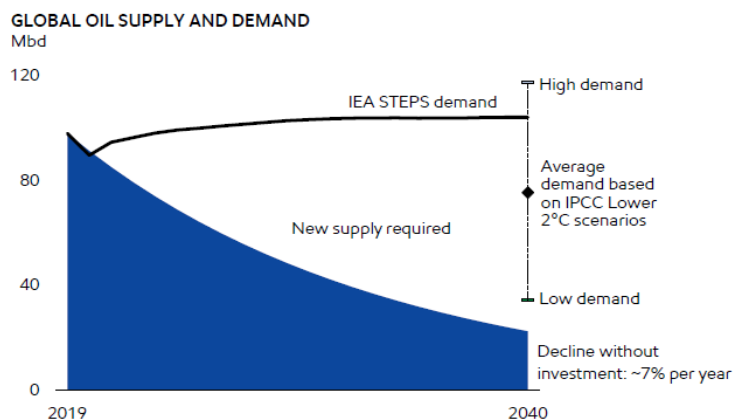
Source: JP Morgan

### Exxon's new about 5-7% decline is less than its >7% in Oct but make sense

As noted above, JP Morgan assumes ~4% conventional decline. Remember every 1% change in decline rate means there is another ~1 mmb/d of new oil production that has to be added just to stay flat. Our March 7, 2021 Energy Tidbits highlighted Exxon's new view for global oil declines to be "about 5-7%" per year. No one has really cared about global oil declines during the Covid period with OPEC+ having to take millions of barrel of supply off the market when demand collapsed. But we continue to believe it remains the overlooked factor for post Covid and why we believe oil is for a higher for longer period. No surprise, Exxon highlighted their views on global oil declines. As soon as the slide deck was public, we tweeted [\[LINK\]](#) "Bullish to post Covid oil. \$XOM CEO just said global oil decline of "about 5 to 7%" per year. a little lower than his below Oct comment, but just as bullish considering even more capital is moving from #Oil to renewable." At 5 to 7% decline, it means that global oil supply declines approx. 5 to 7 mmb/d per year. And as our tweet noted, that is especially bullish considering how the outlook for global oil investment is much less today than a year ago as supermajors spend less on oil and shift more capital to renewables.

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Figure 42: Oil and gas investment needed to meet demand

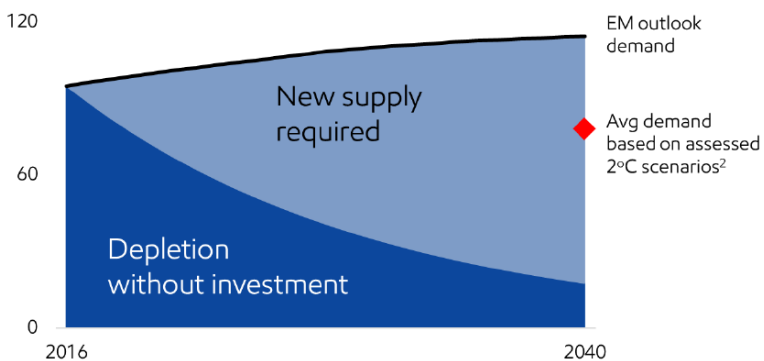


Source: Exxon Investor Day March 3, 2021

**Exxon’s view on decline rates is not new**

It is important to note that Exxon didn’t just come up with this view of global oil decline rates in 2020 or 2021 because capital has moved away from oil or to counter criticism they aren’t moving as quickly on energy transition as the European supermajors. Rather, we first noticed their global oil decline rate views in June 2019 and we posted our June 20, 2019 blog “Exxon’s math calls for overall global oil decline rate of ~7%, a very bullish argument for post 2020 oil prices”. In looking at that blog from 21 months ago and if we knew that Covid would hammer demand in 2020 and continue to impact 2021, the only change we would make to the title is to say post 2022 and not post 2020. The Covid impact on demand pushed back the time for when we see this decline rate noticeably impacting the challenge for oil markets to replace declines. Even though Covid has impacted the timeline, it doesn’t change the thesis. If the world has to replace 5 to 7 mmb/d every year to stay flat, it will be bullish for oil. If anything, Covid makes it an even tougher challenge as oil and gas investment is expected to be even less going forward. Below is the Exxon June 2019 graph that was in our blog. Our Supplemental Documents package includes out June 20, 2019 blog. [LINK](#)

Figure 43: Oil Supply/Demand (moebd)



Source: Exxon US Sellside Conference Presentation June 18, 2019

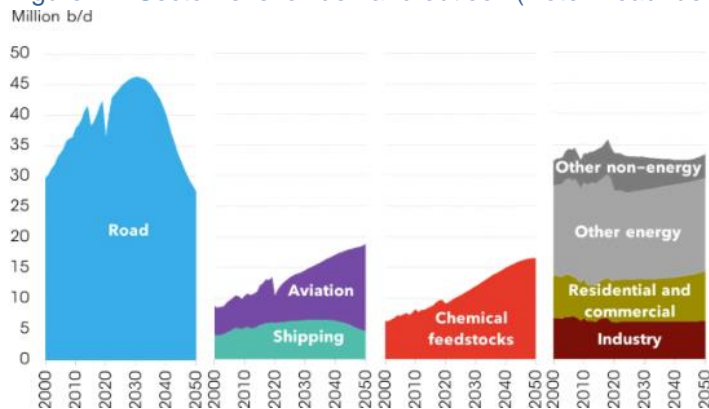
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**Oil – BloombergNEF forecasts oil demand to peak in 2035**

There was a good reminder from BloombergNEF that peak oil demand depends on more than EVs adoption rate and that various uses of oil are far from peaking. On Monday, we tweeted [LINK](#) “#PeakOil demand. No question cars are the #1 #Oil demand factor and EVs are going to hurt. But the demise of oil isn't soon. Great reminder from @rchattertonBNEF that other sector level demand is why @BloombergNEF doesn't see peak oil demand until 2035 at 107 mmb/d. #OOTT “. BloombergNEF estimates Global oil demand will peak in 2035 at around 107 million barrels per day (m b/d), projects BloombergNEF's oil demand outlook. However, the shape of the outlook is starkly different across key sectors. Demand for road fuels is set to increase for another decade before peaking in 2031. The uptake of alternative drive trains, most importantly electric vehicles (EVs), subsequently erodes 19m b/d of oil demand by 2050, but the rate of displacement begins to fade as the increase in the penetration of EVs slows. As road fuel demand peaks and declines, aviation fuels and petrochemical feedstocks become the focal point for long-term growth in oil demand. Continued growth in passenger air travel, and the absence of economically viable and scalable low-carbon aviation fuels, causes jet fuel demand to increase out to 2050. Similarly, demand for plastics and petrochemicals is expected to significantly increase, but we expect consumption to peak in the late 2040s as circular economy trends eat into demand for primary petrochemical feedstocks.” Our Supplemental Documents package includes the Bloomberg report.

**Peak oil demand in 2035**

Figure 44: Sector-level oil demand outlook (Note: Road fuels includes liquid biofuels)



Source: BloombergNEF

**Oil – Vortexa floating storage -13.0% WoW, down 55% from June 2020 peak**

Earlier we noted that we could see some impact on floating oil storage in the coming weeks from India's Covid breakout. Bloomberg reported on Vortexa floating oil data that showed a WoW decrease of 14.62 mmb or -13.0% WoW to 97.45 mmb on April 23 from 112.07 mmb on April 16. There was no revisions to the previous weeks data. Floating storage is down 54.96% since the June 19, 2020 peak of 216.38 mmb. The U.S. Gulf Coast was up 20% WoW to 1.43 mmb, while West Africa was down 50% WoW to 3.09 mmb. Bloomberg did not report on the Braemar data this week. Our Supplemental Documents package include the Bloomberg Vortexa report.

**Vortexa and Braemar floating storage**

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Figure 45: Vortexa Global Floating Storage Level (5yr)



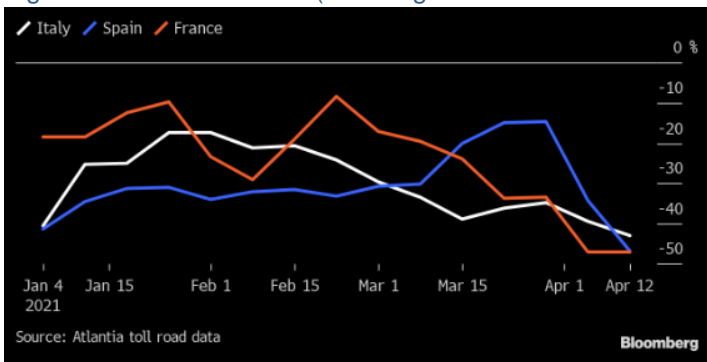
Source: Bloomberg, Vortexa

**Oil – Bloomberg Oil Demand Monitor, India fuel demand dropping in April**

We recommend reading the weekly Bloomberg terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. In the first half of April, gasoline sales in India were down 5% MoM, and recent comments from Indian refinery officials indicated that the full month’s combined diesel and gasoline consumption is set to decrease by as much as 20% MoM from March. Lockdowns and movement restrictions continue to keep drivers off the road. Survey data for May shows expectations of Indian oil product demand falling by at least 350,000 b/d for the month. On the other hand, North America continues to outpace European recovery. US interstate highways saw just 4% less miles traveled than pre-pandemic figures last week, and airline seat capacity data shows the country down 32% versus the equivalent 2019 week. However, European oil demand continues to show a divergent trend from recovery. Toll-road volumes in Italy, Spain and France have shrunk significantly to below half the normal pre-pandemic amount. Jet fuel consumption was not any better, with airplane seat capacity for Spain, France and Germany all down between 75-82%, and the UK down 90%. The UK is one of the only bright spots in the European road fuel demand picture, with traffic in London last Monday up 46% MoM and 16% more congestion than its 2019 equivalent week. Conversely, Paris was notably weaker, experiencing 47% less congestion than 2019 levels. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

**Bloomberg oil demand monitor**

Figure 46: Toll road traffic (% change vs same week in 2019)



Source: Atlantia toll road data, Bloomberg

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**Oil – Potential US gasoline shortages in areas as US faces tank truck driver shortage****Not enough tank truck drivers**

An aging pool of truck drivers is an issue facing all heavy duty trucking including oil and gas. It is not a new issue. Rather, our Apr 12, 2020 Energy Tidbits noted the issue that the Canadian truck drivers employment pool is aging significantly and that the upper age range makes up a significant portion of drivers. The aging truck driver pool issue has been exacerbated by Covid, as the older truck drivers see more significant risks associated with covid. This week we saw a good example of the lack of truck drivers in the US with CNN reporting on data from the National Tank Truck Carriers which estimates that 20-25% of tank trucks are sitting idle due to lack of drivers vs 10% in same time in 2019. Which could result in a gasoline shortage for filling stations across the US. CNN wrote *“We’ve been dealing with a driver shortage for a while, but the pandemic took that issue and metastasized it,” said Ryan Streblov, the executive vice president of the NTTCC. “It certainly has grown exponentially”*. The main reasons should not be a surprise, with many leaving as gasoline demand plummeted along with older drivers but there were some other contributing factors. One included the lack of new drivers coming into the space as driving schools were shutdown during the lockdowns in addition to a new federal clearinghouse that began in Jan 2020 *“to identify truck drivers with prior drug or alcohol violations or failed drug tests, which knocked about 40,000 to 60,000 total drivers out of the national employment pool”*. This driver shortage will result in higher pay for the drivers, increasing overall trucking costs. Our Supplemental Documents package includes the CNN report. [\[LINK\]](#)

**Oil – Won’t increased car sales translate into more driving/gasoline demand?****Car sales up**

This week, there were a number of high profile US companies announce it is time to come back to the office. We think the reality is that most people will eventually return to mass transit in great part due to cost and no other real choice. And there is the reality that a lot of people around the world can’t have a car, its impractical. Think of people who live in European, or Asian cities, or New York City, or even Cdn cities like downtown Vancouver. However, Bloomberg report noted *“Daimler AG, BMW AG and Toyota Motor Corp. all started the year with sales at records, and things are so hot that used car prices in the U.S. are soaring to all-time highs. The jump in vehicle sales is a strong sign that this is more than just a passing fad. Like the ubiquitous face mask, the car renaissance could be the latest example of how Covid-19 makes a lasting impact on our lives. The change could usher in an era of heavier traffic jams and longer commutes. All the extra driving will send gasoline consumption soaring, but with that also comes a rise in pollution.”* There is a point here that makes sense. If car sales are so big, doesn’t that mean that, post pandemic, at least some are going to shift to more driving? Buying a car is normally the second biggest debt item for an individual after buying a house. Its not like the pandemic pet owners who went to the SPCA. This is a lasting purchase. It may only be on the margin, but more people are buying cars will mean people will be driving. There is no question driving will get a burst this year as Covid restrictions end and people with cabin fever, but won’t we see some incremental drivers in 2022 and beyond? Our Supplemental Documents package includes the Bloomberg report.

**Oil – Caixin General Manufacturing PMI up to four-month high in April****Caixin PMI hits 4-month high**

The big positive for oil in 2020 (aside from vaccine news) was the strong and timely recovery out of Covid in China and its related recovery in oil/products demand. The China growth story is showing accelerated recovery in manufacturing in 2021 with the PMI showing the largest improvement since December 2020. The Caixin China General Manufacturing PMI data for April [\[LINK\]](#) shows a MoM increase, and the index continues to be in expansionary territory. We recommend reading the short release as opposed to just seeing the headlines as there is more color on China. On Thursday, we tweeted [\[LINK\]](#) *“China Caixin*

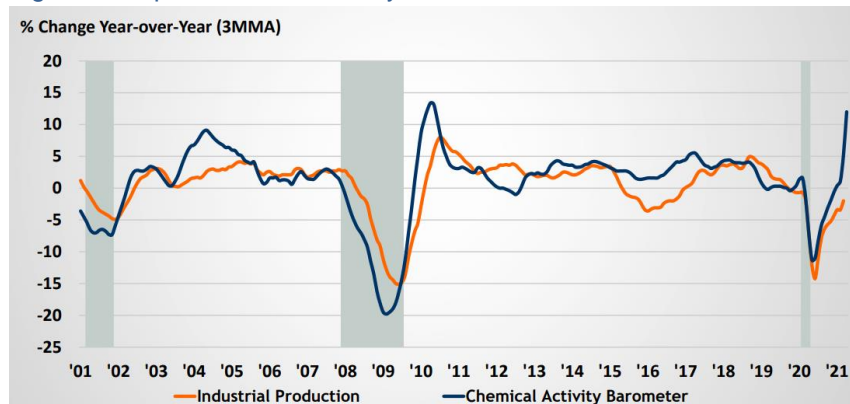
manufacturing PMI in Apr 51.9 vs 50.8 estimate and 50.6 in Mar. Highest in 2021, indicated accelerated recovery in manufacturing. Worth a read for good China recap. Thx @IHSMakitPMI #OOTT.” A Sr. Economist at Caixin stated “To sum up, manufacturing demand and supply expanded significantly in April. Overseas demand remained solid and the job market recovered. Manufacturing growth remained strong as the post-epidemic economic recovery kept its momentum. Manufacturers stayed confident about the economic recovery and keeping Covid-19 under control as the gauge for future output expectations was still higher than the long-term average. In the future, the focus will be on inflation as the price gauges have maintained an upward trend for several months.” Our Supplemental Documents package includes the Caixin release.

**Oil – ACC Chemical Activity Barometer rose 12.0% YoY in April**

US manufacturing and industrial activity had recovered well and quickly and was one of the first positive indicators for the US economy in early/mid 2020. And it continues to remain positive. We always look at an excellent forward indicator on this from the monthly American Chemistry Council’s April “Chemical Activity Barometer” (CAB) [LINK](#) for the indicators on industrial and manufacturing in the US. The CAB has had a pretty good track record as a leading indicator of a recession in the US economy with an average lead time of 8 months as a prior indicator, but lead time ranging from 2 to 14 months. The April reading continues to show a strong trend, rounding out one year of consecutive increases. The April CAB “rose 0.7% in April on a three-month moving average (3MMA) basis following a 1.1% increase in March and a 0.9% gain in February. On a year-over-year (Y/Y) basis, the barometer rose 12.0% in April (3MMA). The unadjusted data show a 0.3% increase in April following a 1.4% gain in March. The diffusion index reached 100% in April. The diffusion index marks the number of positive contributors relative to the total number of indicators monitored. The CAB reading for March was revised downward by 0.35 points and the reading for February was revised downward by 0.58 points.”

**ACC Chemical Activity Barometer**

Figure 47: April Chemical Activity Barometer vs Industrial Production



Source: American Chemistry Council

**Oil – Total US rail traffic higher than pre Covid levels**

Rail traffic in the US has had a very strong start to 2021, apart from the massive but brief decline in mid Feb due to the brutal cold and snow which brought down carloads during the third week of Feb to the lowest level since 1988. And significantly, it has generally been above pre Covid 2019 levels for the past two months. Strength in rail traffic has been mainly driven by intermodal, which bodes well as an indicator for the consumer economy. On Wednesday, the Association of American Railroads released its Weekly Railroad Traffic

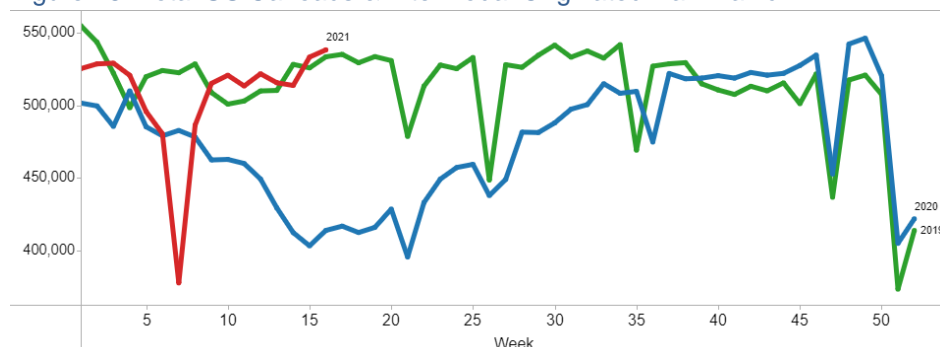
**Weekly US rail data**

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report [\[LINK\]](#). For the week ended April 24, 2021, total US weekly rail traffic (carloads and intermodal units) was up 25% YoY, and was up vs 2019. Total traffic was up 30% YoY and is up 9.4% YTD while intermodal volume was up 34.3% YoY for the week and is up 16.8% YTD. All 10 of the carload commodity groups saw an increase compared with the same week in 2020. With petroleum and petroleum product carloads being +17.1% YoY for the week, but are still down 10.9% YoY. Below is a graph of total rail traffic in the US.

Figure 48: Total US Carloads & Intermodal Originated Rail Traffic



Source: Association of American Railroads

#### Oil and Natural Gas – Reminder G&A costs will catch up in 2021

As we have noted previously, one trend we are expecting for 2021 is increasing G&A costs for producers after a steep cost cutting efforts in 2020. Our Feb 28, 2021 Energy Tidbits noted the Weatherford Q4/20 call and mgmt's comment on bringing back salaries and benefits that were put on temporary hold. And the general consensus from our discussions with Cdn producers seemed to echo the Weatherford expectation. The Dallas Feb business outlook survey was released on Monday [\[LINK\]](#) and, while it is not oil and gas focused, it is a reminder that Texas wages on an overall basis are going up and hiring will go up in 2021 in Texas. Businesses expect wages to increase by 4.7% in 2021, but 48.6% of firms surveyed have reported a reduced headcount with the reduction vs Feb 2020 levels averaging 26.4%. Though, 60.1% of firms are currently trying to recall workers so the headcount reduction is likely to improve over the next few months. The rehiring process seems to be difficult with 66.7% seeing a lack of available or no applicants, while 47.7% believe part of the issues has to do with generous unemployment benefits.

**Reminder G&A costs will catch up in 2021**

#### Oil and Natural Gas – Q1 earnings what to do, and when, with higher cash flows?

We ran out of time this weekend to write up the several Q1 earnings calls we have reviewed, but, on a big picture, there has been one consistent theme across every oil and gas Q1 earnings call so this reporting season – cash flows were very strong in Q1 with higher prices. It's the same theme from the supermajors to Cdn oil producers. The challenge for all oil companies, especially the supermajors and US oil producers, is that they all had to come up with plans for investors on their new capital discipline ie. pay down debt, implement returns to shareholders via dividends/buybacks, etc. Basically commit to everything but plow the surplus cash flow back in the ground for E&P. Saudi led OPEC+ back to a major oil price correction and the big sellside oil analysts are now calling for \$70 oil. In the Q1 calls, mgmt teams are being careful to maintain their new capital discipline, but we expect to see that loosened, albeit gradually, with continued strong prices. What this means is that we are only likely to see smaller increases in E&P in 2021. However, we expect that we will see stronger E&P capex increases as companies look to 2022 budgets in the fall. This stronger view on

**Q1 oil cash flows are up**

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oil and gas prices is also a reason we noted in our LNG blog as to why we expect to see brownfield LNG FIDs being looked at for approval going into the 2022 capex budgets.

### Energy Transition – Lundin pledges every barrel produced to be carbon neutral

We still remember the Vancouver presentation when Lukas Lundin announced his Norway oil discovery and what that could mean to Lundin Energy. He had a long term vision then and that oil discovery turned out to be Lundin's share of the massive Johan Sverdrup oil field. So we aren't surprised to see the Lundin Energy on Monday announce [LINK](#) that it had sold the world's first ever certified carbon neutrally produced oil. It is important to note that these barrels are carbon neutral, and not just barrels that are carbon neutral due to carbon offsets, like we have been seeing pick up in LNG cargos in to Asia. The oil was produced at its Edvard Grieg field, offshore of Norway, which is certified as a low-carbon field at 3.8 kg of CO2. The residual emissions from these barrels of 2,302 tonnes CO2 was captured and stored. Lundin supplied 600,000 barrels of Edvard Grieg crude to Saras' refinery in Sardinia. That was the headline from the announcement, but what caught our attention and what should get the attention of any institutional investor is that "Lundin is pledging that from 2025 onward, every barrel produced by them would be produced as carbon neutral." We aren't aware of any other oil company that has or could make this commitment. Our Supplemental Documents package includes the Lundin release.

**Lundin all barrels produced to be carbon neutral**

### Energy Transition – Will EV charging stations build out hold back EV broad adoption?

Apologies for repeating this for the hundredth time but I am trying to reduce comments from climate change readers that I am not accepting the energy transition. I have said for years, much to the chagrin of my oil friends, that the energy transition is happening. And if the massive financial crisis from Covid didn't stop it, nothing will. But I have every time said that it won't happen as quickly, as smoothly, or as cost effectively as assumed by the climate side. And unfortunately, governments and companies setting goals that have zero chance of success also increase the risk for major energy shortage/disruptions and cost escalation. And governments openly acknowledge that having a chance at success is going to require technologies that aren't available and hope to be invented. The big theme in the US and Canada has been a major acceleration of their emissions reduction targets. On Friday, we saw a good food for thought Bloomberg report "EV-Charging Industry Is Doing Everything Except Showing a Profit" and we tweeted [LINK](#) "#EVs. @DavidBakerSF raises a key detail ignored in govt aggressive #EnergyTransition timing. Drivers want convenience of EV charging like gas stations before broad adoption. But insufficient returns on capital to set up charging stations. #EnergyTransition to take longer. #OTT". Baker notes that the returns on charging stations are low, they aren't profitable, which brings up the issue who will put up the capital to build the EV charging stations that drivers want before a broad EV adoption. Baker also reminds on some of the other inefficiencies of charging stations ie. someone plugs their EV in for overnight in an apartment building means only one EV is charged that night. Right now it may be okay in an apartment building that only has a handful of charging spots as the EV penetration is still small. Baker's article is worth a read. Our Supplemental Documents package includes the Bloomberg report.

**EV charging stations**

### Energy Transition – Why EV owners go back to ICE, key reason home charging

Looks like lack of home charging convenience is leading to EV owners to go back to ICE vehicles. Electrek [LINK](#) and others reported on the study posted in Nature Energy "Understanding discontinuance among California's electric vehicle owners". The full paper is not publicly available, only the abstract [LINK](#). Electrek reported that ~18% of electric owners go back to ICE vehicles and "The main problem appears to be access to level 2 charging at home, which is the most obvious reason and a problem that the industry has

**Why EV owners go back to ICE**

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been trying to address. Arguably the biggest consumer advantage to all-electric vehicles for consumers is the potential of always having “a full tank” overnight without having to go to the gas station. If you can’t charge at home for whatever reason, like not having a parking spot or no parking with access to charging, which is often the case for apartment dwellers, it really hinders the EV ownership experience. Those EV owners have to rely on public charging stations, which is not as smooth of an experience, but charging networks are trying to add more capacity in urban areas to address the issue.” Our Supplemental Documents package includes the Electrek report.

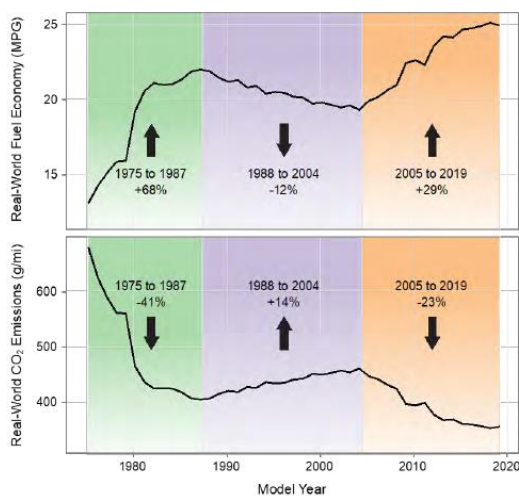
**Energy Transition – What’s taken Biden so long to focus on vehicle fuel economy?**

We have noted our surprise that Biden hasn’t placed a priority on conservation and efficiency items like fuel economy in vehicles and were reminded of this when, on Thursday, Argus Media reported [\[LINK\]](#) “US readies ‘very aggressive’ fuel-economy targets” “President Joe Biden’s administration is preparing to pursue fuel-economy standards for cars and trucks that are ambitious enough to offset the effects of recent regulatory rollbacks, according to a top government official.” Fuel economy in vehicles should have been a no brainer for Biden’. We tweeted [\[LINK\]](#) “know its easier to go after #Oil #NatGas Co’s, but why wasn’t this play 1 in #Biden emissions reduction playbook? He knew Carter & Obama fuel economy push = big emissions reduction. @ArgusMedia US readies ‘very aggressive’ fuel-economy targets #OOTT #ClimateChange Thx @ArgusMedia.” For someone who wants to reduce emissions, we previously said its kind of annoying that Biden didn’t go back to the Obama playbook and the Carter playbook and put a priority on restoring increasing fuel economy limits for cars/trucks because its clear that increasing fuel economy can materially reduce emissions. Looks like Biden will finally get at fuel economy. The EPA did a big repot in Jan “The 2020 EPA Automotive Trends Report: Greenhouse Gas Emissions, Fuel Economy, and Technology since 1975”. 75”. [\[LINK\]](#) The EPA graphs are pasted below and shows how it all started with post Jimmy Carter election in 1976. If you look at the numbers behind the graphs. Obama did well also. If you look at the data. Obama elected in 2008. From 2007 thru 2016, he reduced CO2 by ~17%, and fuel economy increased by 20%. Gains under Trump were small.

**Fuel economy is a no brainer lower emissions**

Figure 49: Fuel economy vs CO2 emissions

Figure 2.2. Trends in Fuel Economy and CO<sub>2</sub> Emissions Since Model Year 1975



Source: EPA

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### Why Carter pushed fuel economy, the Arab Oil Embargo Oct 19, 1973

Biden is much older than me, which it shocks me it has taken him so long to get to fuel economy. Anyone who was living in the US in the early 70's should remember why Carter pushed on fuel economy. Here is what we have included in prior Energy Tidbits going back over the years/decades. *"We normally include a reminder of the 1973-1974 Arab Oil Embargo because it was "THE" game changer to oil markets. Most weren't born or too young or not in the US to remember the 1973/1974 Arab oil embargo that hammered the US economy and moved oil prices from ~\$3 to ~\$12. It forced the US and other western countries to have their first real look at oil security. There is no question that having an immediate cut off of oil forced change. Change always happens when something is cut off rather than just becomes more expensive. It was "THE" game changer to the oil and gas industry that led to lasting trends such as the 1976 election of Jimmy Carter (who introduced the first tax credits to kickstart the US shale gas/oil revolution), the creation of Strategic Petroleum Reserves, the International Energy Agency, the push to find oil outside the Middle East in regions, the US govt push to begin to import LNG, etc . It was also a game changer for consumers and led to the move to fuel efficient cars like the Honda Civic (don't forget made in Japan wasn't a good brand in the 60's). The big reason for this was that the Arab Oil Embargo led to an immediate rationing of gasoline in many parts of the US – it was immediate. And to the famous multi block long lineups to buy gasoline. I was in college in St. Louis (Missouri) at the time and the pictures, like the one below, were reality of line ups for gasoline. In St. Louis, it immediately had restrictions on how many gallons of gasoline on day 1, and by day 2 they had switched to only allowed restricted volumes of gasoline to be purchased on odd days if your license plate ended in odd number and vice versa for even days. Don't forget there was no self service gas stations so you couldn't fill up in violation of the restrictions. In areas like St. Louis that had poor access to gasoline, it was common to line up for an hour for gasoline with your car in neutral and turned off, and taking turns with your friends to push your car to the gas station. The end of the oil embargo was on March 13, 1974."*

Figure 50: Gas Station Line Up During Arab Oil Embargo 1973-74



Source: Time

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### Climate Change – New Zealand going after methane from cow, sheep, etc

Its interesting to finally see a country announce they are taking action on methane from cows, sheep, etc. Last week's (April 25, 2021) Energy Tidbits highlighted several of the leader's short speeches at Biden's climate summit. We noted that we ran out of time to get to all of the leaders and one was New Zealand PM Jacinda Ardern, who spoke in the April 22 morning leader's session. We could not find a transcript but made a transcript of her key comments. She said *"New Zealand has been pricing carbon since our emissions trading scheme was introduced in 2008 and, in a world's first, we will begin pricing agricultural emissions from 2025"*. This is something that most countries dance around or try to avoid – emissions from agriculture including methane from cows, sheep, etc. No one in western countries wants to be leader that force people to stop eating beef. We have to assume she is including these methane sources. Methane from agricultural sector is huge in New Zealand at 17% of total greenhouse gas emissions. New Zealand Agricultural Greenhouse Gas Research Centre [\[LINK\]](#) writes *"The agriculture sector contributed 48 percent of New Zealand's gross emissions in 2014. Methane accounts for 43 percent of all emissions (from all sources). More than 80 percent of New Zealand's total methane comes from ruminant farm animals – cattle, sheep, goats and deer – mainly as a result of enteric fermentation. The great majority of that comes from the rumen, the enlarged modified foregut of ruminant animals. Only about three percent comes from animal manure."*

**New Zealand going after cow methane**

### UK won't go near trying to cut beef consumption to reduce methane emissions

Its always amazing that governments have zero hesitation in forcing less consumer use of oil in the fight to reduce emissions but, governments will not want to touch certain major emissions problems. The UK is a perfect example as they do not want to touch this with a ten foot pole. The UK government has backed away from including any beef restrictions in its climate fight. The FT's April 20, 2021 story *"How can Boris Johnson hit his ambitious new carbon-cutting target?"* [\[LINK\]](#) noted *"One particularly controversial subject is food. Much of the agricultural sector's emissions are generated by the farming of cattle for beef, and the CCC has recommended the UK's meat and dairy consumption should fall about 35 per cent by 2050. The government said it would meet the new target through "investing and capitalising on new green technologies and innovation, whilst maintaining people's freedom of choice, including on their diet". Turner highlighted a likely increase in the availability of meats produced in labs. But Andrea Leadsom, former business secretary, said policymakers would have to be "very careful not to lose members of the public" by introducing harsh new food policies. Telling consumers that they "can't have a pint of milk or a roast beef on a Sunday" would be "a very dangerous path to go down as a politician", she said."* Our Dec 13, 2020 Energy Tidbits highlighted that week's UK Climate Change Committee recommendations that feature cows in the UK's new tougher right on emissions. We tweeted [\[LINK\]](#) that week *"Tidbit why @theCCCuk 6th carbon budget highlights "Diets change, reducing our consumption of high-carbon meat and dairy products by 20% by 2030, with further reductions in later years." Cows in Canada, have huge methane emissions."* The Climate Change Committee [\[LINK\]](#) wrote *"Reducing demand for carbon-intensive activities. The UK wastes fewer resources and reduces its reliance on high-carbon goods. Buildings lose less energy through a national programme to improve insulation across the UK. Diets change, reducing our consumption of high-carbon meat and dairy products by 20% by 2030, with further reductions in later years. There are fewer car miles travelled and demand for flights grows more slowly. These changes bring striking positive benefits for health and well-being."*

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### 90% of cow methane emissions are from belching

Cow methane emissions are a large issue in Alberta. Alberta cows account for 4% of Alberta's emissions vs transportation at 11%. Here is the background on cows and methane that we included in our March 15, 2020 Energy Tidbits. This is an item we have noted a few times before. Anyone who follows cow methane would have also noted the one item that jumped right out at us from the project review and news story was that their focus was on cow manure and not belching as belching has the biggest share of cow methane emissions. TED ideas (Sept 27, 2018 story [\[LINK\]](#)) noted that *"But in reality, cow burps are much more problematic: 90 to 95 percent of the methane released by cows comes out of their mouths, while 5 to 10 percent is released in the form of manure and flatulence."* We would have thought the cow methane focus would be on attacking 90% of the problem and not the 10%. But it is likely due to incentives as we suspect there aren't likely incentives for changing cow feed. Cow feed may not sound as forward thinking, but there are examples around the world about how changing feed and diet materially releases methane emissions from cow farts.

### Cows generate 4% of Alberta's total emissions vs 11% from transportation

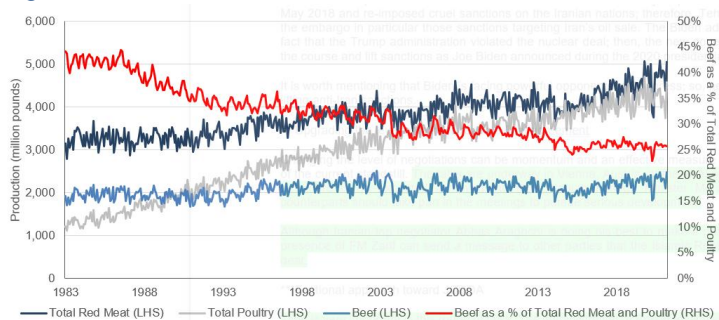
This is an item we have noted a few times before. Cows are a major source of Alberta's emissions and an area that we have highlighted for the past several years. In the prior Notley Alberta govt, there was a some good statistics that, as of 2015, estimated cows generate 4% of Alberta's total methane emissions vs 11% from transportation. Our Aug 23, 2015 Energy Tidbits noted the data from Alberta's climate change discussion document. We wrote *"So we couldn't help note the significance of cow methane emissions in the Alberta data. For cows, the Alberta discussion document notes that "In Alberta, emissions from agriculture were 22 megatonnes or 8% of provincial emissions", and "In Alberta, methane (from digestion by livestock, predominantly cattle) accounts for just under 50%, and nitrous oxide accounts for approximately 30% of total agricultural emissions." So simple math is that cows are 4% of total provincial emissions. This compares to 11% from transportation, 6% from natural gas cogeneration plants and natural gas power plants, 5.6% from production of petrochemicals and fertilizers, and 1.8% from refineries."* Note, the link to that 2015 Alberta climate change discussion document is no longer active. We aren't surprised given it was a then Notley NDP govt discussion document for climate change positions.

### Climate Change – No surprise, reducing beef hasn't got traction with Biden admin

There are two items common to all politicians who were just elected – take advantage of the honeymoon phase to move on items and avoid, if possible, that will annoy large percentage of the electorate. Biden is clearly moving aggressively on his moon shots. But is also avoiding annoying issues such as moving to cut back on beef directly or indirectly like New Zealand is doing. Its also why the UK has backed off any forced beef restrictions. Everyone knows and says people are eating more chicken and that is true and that has reduced the % of beef in diets. The trend is clear on a % of total meat. But, on an absolute basis, US beef production is increasing and total red meat is up significantly in the last several years. Below is a graph based on the current USDA stats.

**US hasn't gone after beef**

Figure 51: USDA Beef Production and Beef as % of Total Red Meat + Poultry



Source: USDA

### Climate Change – Putin s protecting existing forests how COP26 gets Russia onside?

No one should have been surprised that Putin’s speech at the Biden climate speech [LINK](#) highlighted forests absorbing emissions and methane. (i) Good reminder on why attack methane – reducing methane makes more of a dent than reducing CO<sub>2</sub>. Putin said “*For example, methane accounts for 20 percent of anthropogenic emissions. The greenhouse effect of each tonne of methane is 25–28 times greater than a tonne of CO<sub>2</sub>. Experts believe that if we could halve methane emissions in the next 30 years, global temperatures would decrease by 0.18 degrees by 2050*”, (ii) Forests absorbing CO<sub>2</sub> will be a Russia messaging for COP-26 Glasgow in Nov. Putin’s comments reinforced the views from our March 28, 2021 Energy Tidbits that the way Russia (and others) will be saying they have cut emissions is from CO<sub>2</sub> absorption by forests and not just planting trees but from protecting existing forests. On March 26, 2021, we tweeted [LINK](#) “*Is this how @COP26 gets RUS, CN, BR, etc onside with #NetZero? A new #ClimateChange debate for 2021/22. Planting trees gets #Carbon offsets, but will RUS get offsets for protecting an existing massive forest? thx @d\_khrennikova @LauraMillanL @world\_reporter.*” In his speech, Putin said “*First. Carbon dioxide has been in the atmosphere for hundreds of years. Therefore, it is not enough to talk just about new amounts of emissions. It is important to absorb the carbon dioxide that has already accumulated in the atmosphere. It is no exaggeration to say that Russia is making an enormous contribution to the absorption of global emissions, both our own and those of others, owing to the absorbing capacity of our ecosystems, which is estimated at 2.5 billion tonnes of carbon dioxide equivalent a year*”. This ties to the Bloomberg report that led to our tweet that the emissions value is more than note the normal planting trees, its protecting what is there. We don’t recall seeing this before where someone is looking at “protecting” the existing forest as a way to justify carbon offsets. It is an interesting concept and, if supported by “data”, could be used by any laggards on emissions or by any countries that are interested in minimizing the cost of emissions. Everyone on the climate side talks about deforestation, so they can’t disagree with protecting the forest. This could well be one of the big climate change debates for 2021/2022 – does protecting an existing forest get carbon offset credits like planting new trees? Our Supplemental Documents package includes the Bloomberg March report.

Protecting forests  
the next debate

### Protecting forests would help other countries ie. Brazil, China, India, etc

Our March 26, 2021 tweet also included a mapsoftheworld.com map “top 10 countries with largest forest areas” [LINK](#) that noted the top 10 being: Russia at #1, followed by Canada, Brazil, US, China, Australia, Democratic Republic of Congo, Argentina, Indonesia, and then India at #10. The majority of these are considered climate change laggards. And clearly if its takes allowing offsets for Russia

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protecting its forests to get them onside for some sort of COP26 agreement, surely these other countries will want to get similar credit.

Figure 52: Back to the Future II (1989) Mr. Fusion Powering Flux Capacitor



Source: mapsoftheworld.com

### Climate Change – Saudi Arabia can plant trees to withstand climate

Saudi King Salman spoke at Biden’s climate summit [\[LINK\]](#) and noted Saudi Arabia’s tree planting initiatives saying “*RH the Crown Prince announced recently two new initiatives: the Saudi Green Initiative and the Middle East Green Initiative, which aim at reducing carbon emissions in the region by more than 10% of global contribution. They also aim at planting 50 billion trees in the region in addition to a number of unique initiatives.*” Most shake their head when they think of tree planting in Saudi’s climate/environment. NASA estimates Saudi Arabia is 95% desert. But the MBS interview shed some light on how this massive tree planting could work in this climate. MBS said “*These updates exposed experiences that connect different parts of the Kingdom such as Royal Commission for Riyadh’s experience in growing some wild trees. That cost less than 70 Riyal for each tree and they are irrigated only for the first three years. Once a month for the first year, once a quarter for the second year, and twice a year during the third. And then they can just live-in nature. This has created a new ambition, that if we are to set a certain amount every year*”. A Saudi Riyal is worth US\$0.27.

**Saudi Arabia tree planting**

### Climate Change – Epicurious est 9% of greenhouse gas emissions are from livestock

It was interesting to see the food magazine Epicurious “*After Beef: The Planet on the Plate: Why Epicurious Left Beef Behind: In an effort to encourage more sustainable cooking, we won’t be publishing new beef recipes on Epicurious.*” [\[LINK\]](#) Epicurious announced on Monday that it would no longer post any new beef recipes as their way to help making cooking more environmentally friendly to help reduce emissions. Epicurious estimates that 9% of global greenhouse gas emissions come from livestock. Epicurious writes “*For any person—or publication—wanting to envision a more sustainable way to cook, cutting out beef is a worthwhile first step. Almost 15 percent of greenhouse gas emissions globally come from livestock (and everything involved in raising it); 61 percent of those emissions can be traced back to beef. Cows are 20 times less efficient to raise than beans and roughly three times less efficient than poultry and pork. It might not feel like much, but cutting out just a single ingredient—beef—can have an outsize impact on making a person’s cooking more*

**More shading on beef**

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*environmentally friendly.*” Our Supplemental Documents package includes the Epicurious announcement.

#### **Recipe focus should be crispy chicken sandwich based on Macdonald’s Q1**

Here is a tip for Epicurious, focus on crispy chicken sandwich recipes now so they have them in their inventory before they go after poultry and pork, and have to focus on beans. Macdonald’s held its Q1 call on Thurs and one of the highlights is the chicken sandwich. Macdonald’s posted the Q1 call transcript and highlighted the chicken sandwich food category saying *“While the category is very competitive, we are so far exceeding our projections. We are selling substantially more chicken sandwiches compared to our previous chicken sandwich line and seeing strong unit movement, especially after 4:00 PM”*. And called the introduction of these new Crispy Chicken Sandwich as being *“the beginning of our multiyear chicken journey.”*

#### **Capital Markets – Biden’s proposed tax plan would double capital gains tax**

It looks like the chatter on Biden’s proposed tax plan was more or less right. On Wednesday, the Biden administration released the details of their tax reforms to fund the American Families Plan [\[LINK\]](#). The reform is mainly hitting inherited wealth with increased capital gains and estate taxes along with stepped up income taxes. (i) The plan features a crackdown on misreporting of various income streams. The Whitehouse wrote *“It would require financial institutions to report information on account flows so that earnings from investments and business activity are subject to reporting more like wages already are”*. (ii) Bump up the top tax rate back to 39.6% from 37% as per the 2017 reform. (iii) Increased capital gains tax. The release wrote *“Households making over \$1 million—the top 0.3 percent of all households—will pay the same 39.6 percent rate on all their income, equalizing the rate paid on investment returns and wages”*. This would be an increase of nearly 2x from the previous 20%, but still does not effect holdings in a tax sheltered account. Total capital gains tax for the applicable households under this proposal would equate to 43.4% with the 3.8% net investment income tax also included. In addition to the stepped up capital gains rate of 43.4%, capital gains inherited at the time of death would also be subject to a 40% estate take above an exemption of \$11.7 million per person. That Tax Foundation put out a very good illustrative calculation [\[LINK\]](#) on what the proposed tax regime would look like, and it is not looking favourable as the all in tax rate would amount to 61.1%. The tax foundation wrote *“for an asset worth \$100 million (all of which is a capital gain for the sake of simplicity), the two changes would mean an immediate capital gains tax liability of \$42.9 million at the time of death. Upon paying the capital gains tax at death, the value of the \$100 million asset falls to \$57 million for the purposes of the estate tax. After subtracting the \$11.7 million exemption, the 40 percent estate tax rate is levied on the remaining \$45.3 million in assets to produce an estate tax bill of about \$18.1 million”*. The Tax Foundations illustrative calculation is pasted below. (iv) Also proposed is a plan to increase the tax rate on carried interest. This would increase the tax rate to equal that of income tax. More harshly *“While equalizing tax rates on wages and capital gains will address this disparity, permanently eliminating carried interest is an important structural change that is necessary to ensure that we have a tax code that treats all workers fairly”*. (v) Additionally included is an increased enforcement for a 3.8% Medicare tax to be paid by those making more than \$400,000 as loopholes currently exist to avoid this.

#### **Biden’s proposed tax plan**

Figure 53 Tax Foundation Calculations of Biden's Proposal

*(All dollar figures in millions)*

Value of Original Asset (\$100 million)	\$100.00
Value of asset after \$1 million step-up in basis repeal exemption	\$99.00
Capital gains taxed at ordinary rates 39.6% + 3.8% NIIT = 43.4%	43.4%
Capital gains tax owed	\$42.96
Value of remaining assets in the estate	\$57.04
Biden's estate tax exemption (\$11.7 million)	\$11.70
Taxable estate	\$45.34
Estate tax rate (40%)	40%
Taxes owed on the estate	\$18.13
Total taxes paid on \$100 million asset =	\$61.10
Effective tax rate	61.1%

Source: Tax Foundation

### Capital Markets – Cdn Mutual funds and ETF assets +1.9% in March

Last Tuesday, the IFIC (Investment Funds Institute of Canada) reported [LINK](#) mutual funds and ETF sales for March. IFIC does not provide any commentary on the numbers, but given the strong market performance through Mar, it is not surprising to see a further increase. For March, the IFIC reported “Mutual fund assets totalled \$1.85 trillion at the end of March 2021. Assets increased by \$35.1 billion or 1.9% compared to February 2021. Mutual funds recorded net sales of \$13.0 billion in March 2021. ETF assets totalled \$278.0 billion at the end of March 2021. Assets increased by \$8.7 billion or 3.2% compared to February 2021. ETFs recorded net sales of \$4.7 billion in March 2021.” Our Supplemental Documents package includes the IFIC release.

**Mutual Fund & ETF assets increase MoM**

### Capital Markets – Volkswagen’s “Volkswagen” April Fools joke may have backfired

One of the big market stories on the eve of April 1 was the report that a press release had been briefly posted on Volkswagen US website announcing a brand name change in the US to “Volkswagen”. Apparently Volkswagen went along with this for a bit. On Friday, CNBC reporters were talking about how their Volkswagen US contacts had confirmed the story to them letting the ruse play on. It was subsequently announced that it was an April Fools joke. It looks like it was a good April Fools joke because it led to the stock up, and Bloomberg terminal noted it had been up as high as 12.5% at one point on the day trading. But then fell back down after the joke was revealed. It looks like the April Fools joke may have backfired. On Thurs, Der Spiegel reported that the US SEC “Commission is now investigating whether the group has influenced the stock market price. The feigned renaming of the VW group in the USA to “Volkswagen” could have legal consequences. The Securities and Exchange Commission SEC checks whether Volkswagen possibly the share price influenced by the PR stunt. The investigations are at an early stage, at the beginning of April the authorities requested information from the Wolfsburg-based company. When asked, the group confirmed that the SEC had requested information from the US subsidiary Volkswagen Group of America. VW cooperates with the responsible authorities”. Our Supplemental Documents package includes the Der Spiegel report. [LINK](#)

**Volkswagen’s April Fools joke**

### Capital Markets – Pioneer \$691mm hedge loss only released via SEC filing

We recognize that press released are issued and SEC filings are done in accordance with disclosure and filing requirements, but we do find it annoying when we see US reporters file with the SEC but don’t issue press releases on major events/developments. Q1 reporting is ramping up so we are starting to see the producers acknowledge hedge losses. Our April 18m, 2021 Energy Tidbits noted the Bloomberg estimated the hedge losses would be approx. \$9b thru 2022. On Tuesday, Pioneer filed with the SEC [LINK](#) that its Q1 results will be hit

**Pioneer \$691 mm hedge loss**

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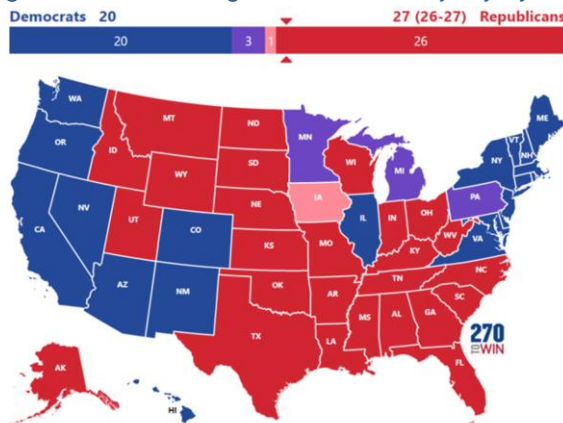
by \$691 mm loss on oil and gas derivatives. We checked Pioneer’s website through the week and there was no press release on this hedge loss.

**Demographics – Republicans should win in House of Reps seat apportionment**

Republicans should be a net winner for future House of Representatives seat apportionment and, if so, it would put the next election even closer. The US Census released the 2020 Census Apportionment results on Monday which indicated that the resident population of the United States at April 1, 2020 was 333,449,281 [\[LINK\]](#). The US resident population increased by 22.7mm, or 7.4% from 308.7mm in 2010. The most populous state was California, with 39.5mm people, while the state that gained the most population since the 2010 Census was Texas (up 3.09mm to 29.1mm). This is significant as the count is used as the basis for apportioning seats in the House of Representatives and it looks like Republicans will be the net winter. The below map shows the partisan majority by state. Note this is not # of seats in the House, but, for each state, are there more Republicans or Democrats reps. Texas will be gaining two seats with 5 others (Colorado, Florida, Montana, North Carolina, and Oregon) each gaining one, while seven states will be losing one seat (California, Illinois, Michigan, New York, Ohio, Pennsylvania, and West Virginia). Comparatively, in Q4 2020 in Canada, the estimated population was 38,008,005 [\[LINK\]](#). That means, for every 1 person living in Canada, there are ~8 people in the United States.

**US population growth favors Republicans**

Figure 54: 117<sup>th</sup> Congress Partisan Majority by State, Not



Source: 270toWin

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

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

**@Energy\_Tidbits on Twitter**

**LinkedIn – Look for quick energy items from me on LinkedIn**

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

**Look for energy items on LinkedIn**

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### 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

#### NFL drafts 4 Canadians incl 3 who played high school football in Canada

Big shout out to the Canadians drafted by the NFL. They are a big inspiration for young Canadian athletes especially as they played Canadian high school football before moving to the US. The NFL draft ended last night and there were 4 Canadians drafted and this included 3 who played high school or CEGEP football in Canada. Benjamin St-Juste at #74 to Washington Football Team attended CEGEP in Montreal before moving to University of Michigan and then to University of Minnesota. Josh Palmer at #77 to San Diego Chargers attended high school in Brampton before transferring to a Florida high school and then at Tennessee. Chuba Hubbard at #126 to Carolina Panthers attended high school in Sherwood Park (sorry Edmonton but my friends in Sherwood Park would have been unhappy if I said Edmonton) before Oklahoma State University. Jevon Holland at #36 to Miami Dolphins was born in Port Coquitlam while his dad John coached for the BC Lions but moved back to California at a young age.

#### Oklahoma overtakes Florida as US lightning capital

Accuweather reported on Tuesday [LINK](#) that Oklahoma has overtaken Florida for the most Lightning Density per km<sup>2</sup>/year. From 2016-2020, 83.4 lightning events per square kilometers were recorded in Oklahoma, while Florida saw 82.8 lightning events. The numbers have some nuances, however. In Oklahoma, there are a lot more in-cloud lightning events, whereas Floridian lightning events are typically more cloud-to-ground, which is the more dangerous type. The reason Oklahoma has recently overtaken Florida is that detection systems previously had trouble recording in-cloud lightning. At least they can't blame this one on oil and gas fracking or waste water wells like has happened with the increasing earthquakes in Oklahoma.

#### Mullet hairdo of the week – former UK PM Tony Blair

How could I not note the return of the mullet hairdo from the early 70s. The Mirror (UK) story [LINK](#) “*Viewers in shock as Tony Blair unveils mullet-style hair do in latest TV appearance*” that showed former UK PM Tony Blair's new hairdo. And it certainly reminds of the very common hairdo for men in the early 70s. And probably what he had when he was in his late teens. Blair is 67 and anyone close to that age will remember this was also a North America fad.

Figure 55: Volkswagen ID.4



Source: The Mirror (UK)

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