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Energy Tidbits

March 14, 2021

Produced by: Dan Tsubouchi

US Iran Sanctions Not Going Quickly? Blinken Commits To Consult With Congress Before Any Lifting

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. US sanctions on Iran likely not going quickly, Secretary of State Blinken commits to consult with House Foreign Relations Committee before lifting Iran sanctions. (Click Here)

2. US sanctions on Nord Stream 2 also likely not going quickly, US admits "*It goes against our interests in the region as well*". (Click Here)

3. Not a good sign, US Dept of Interior calls its federal lands review a "fossil fuels" not an "oil and gas" review. (Click Here)

4. Michigan's Friday night release of its propane plan to replace Line 5 bets on storage, rail and "aggressively identifying other sources" of propane. (Click Here)

5. John Kerry's BBC interview makes it clear US will commit to Net Zero before the US Apr 22 climate summit. (Click Here)

6. Please follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.

7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK].

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Table of Contents

Natural Gas – Natural gas draw of 52 bcf, storage now -257 bcf YoY deficit 5

Figure 1: US Natural Gas Storage 5

Natural Gas – Feb was 19th coldest, but DJF was 28th warmest 5

Figure 2: US Statewide Average Temperature Ranks Feb 2021 5

Figure 3: US Statewide Average Temperature Ranks Feb 2021 6

Natural Gas – 90% probability for La Nina/Neutral in key hurricane ASO season 6

Figure 4: Early-February NOAA El Nino/La Nina Outlook 6

Natural Gas – EIA forecasts US gas production to return to growth in 2022 7

Figure 5: EIA STEO US Natural Gas Supply Forecasts By Forecast Month 7

Figure 6: EIA STEO US Natural Gas Supply Forecasts By Forecast Month 7

Natural Gas – US net natural gas supply forecast -5 bcf/d YoY in Q1/21 7

Figure 7: Actuals Plus EIA STEO Estimates For YoY Net US Natural Gas Supply 8

Natural Gas – Texas cold freeze led to Feb LNG exports drop 2.3 bcf/d MoM 8

Natural Gas – Japan's increasing push to buy carbon neutral LNG 8

Natural Gas – Cheniere's cargo emissions data will push back on producers 9

Natural Gas – No major surprises from Chevron's Gorgon & Wheatstone LNG updates 9

Natural Gas – Japan contract-based Jan spot LNG prices still high in Feb 9

Figure 8: Japan LNG Contract Base Spot Price $/mmbtu 10

Natural Gas – US says Nord Stream 2 goes against their interests in the region as well 10

Natural Gas – LNG flows to NW Europe at ~7 bcf/d 10

Figure 9: Net LNG Flows to NW Europe 11

Natural Gas – Europe storage 32.84% full vs 5 year average of 37.61% 11

Figure 10: Europe Gas Storage Level 11

Figure 11: Europe Gas Storage Utilization Comparison to Mar 11 11

Oil – US oil rigs down 1 to 309 oil rigs 11

Figure 12: Baker Hughes Total US Oil Rigs 12

Oil – Frac spreads +17 to 182 for week ending March 12 12

Figure 13: Active Frac Spreads for Week of March 12, 2021 12

Oil – Total Cdn rigs down 25 to 116 total rigs and down 34% YoY 13

Figure 14: Baker Hughes Total Canadian Oil Rigs 13

Oil – EIA STEO forecast modest US oil production growth through 2022 13

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Figure 15: Estimated US Crude Oil Production By Forecast Month 14
Figure 16: Estimated US Crude Oil Production By Forecast Month 14
Oil – North Dakota Dec oil production down MoM, lowest since July 14
Figure 17: North Dakota Oil Production By Month 14
North Dakota gas-oil ratio increases as Bakken matures 15
Figure 18: North Dakota Gas-Oil Ratio 15
Rule of thumb, North Dakota needs ~70 completions & 35 rigs to stay flat 15
Figure 19: Monthly Completion Scenarios – Oil 16
Weather hit North Dakota Jan oil production by ~50,000 b/d 16
Oil – North Dakota crude by rail up slightly MoM in January to ~193,000 b/d 16
Figure 20: Estimated North Dakota Rail Export Volumes 17
Oil – Biden admin outlines next steps in “fossil fuels” review on federal lands 17
Dallas Fed estimated worse case Biden federal lands hits Permian -0.5 mmb/d 17
Figure 21: Permian Production Under Varying Degrees of Federal Restrictions 18
Oil – Michigan’s plan to ensure propane supply if it can shut down Line 5 18
Figure 22: Enbridge Line 5 19
Oil – Potential for US to add 9₵/b excise tax on Cdn “tar sands” 19
Will Trudeau pass on fighting on this so he can focus on agreement items 19
Democrats are pretty good at messaging a scarier picture 20
Oil – Increased shipping tolls on Trans Mountain from social pressures on insurers 20
Trans Mountain has had a pretty good track record of safe operations 21
Oil – Refiners begin to recover, up +2.407 mmb/d YoY to 12.310 mmb/d 21
Figure 23: US Refinery Crude Oil Inputs (thousands b/d) 21
Figure 24: US Motor Gasoline Supplied (mmb/d) 21
Oil – BP Australia Kwinana refinery on track for decommissioning by end of March 21
Oil – US “net” oil imports down 0.918 mmb/d to 3.022 mmb/d 22
Figure 25: US Weekly Preliminary Oil Imports By Major Countries 22
Oil – OPEC MOMR increases 2021 demand by 140,000 b/d vs last month 22
Oil – Blinken commits to consult with congress before lifting Iran sanctions 23
Oil – Kpler estimates China imports of Iran oil to reach 856,000 b/d in March 23
Figure 26: Iran Tanker Tracker March 2, 2021 24
Oil – Saudi Aramco’s Ras Tanura terminal attacked by drone, but no damage 24
Figure 27: Saudi Arabia Oil and Natural Gas Infrastructure 24

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Figure 28: Ras Tanura 25

Oil – Is someone positioning for post Houthi war by building on Perim Island? 25

Bab el Mandeb is a major oil/products chokepoint 25

Figure 29: Red Sea and Bab el-Mandeb 26

Oil – Kuwait reminds of $90 breakeven crude price 26

Oil – Libya NOC Chair aiming for production of 1.45 mmb/d by year end 2021 27

Oil – EIA STEO decreases forecast for global inventory draw downs in 2022 27

Figure 30: EIA STEO Oil Demand/Supply Balance 27

Oil – Vortexa floating storage +8.4% WoW, Braemar shows an increase in tankers 28

Figure 31: Vortexa Global Floating Storage Level 28

Oil – Bloomberg Oil Demand Monitor, UK road fuel demand improving 28

Figure 32: Vehicle miles traveled in U.S. versus same week of 2019 29

Oil – European air traffic on March 10 still only 36% of 2019 levels 29

Figure 33: Eurocontrol: Traffic Scenarios/Actual vs 2019 29

Oil – US intermodal volumes driving YoY rail traffic strength 29

Figure 34: US Rail Traffic Data – Week Ended Mar 6, 2021 30

Energy Transition – Net Zero market focus to step up if US commits to it before Apr 22 30

Figure 35: Natural Gas Lost Consumption If Biden is 25% or 50% Successful 31

Energy Transition – BMO to report on its 2030 targets to get to loan book to Net Zero 31

Energy Transition – BP provides $50mm for RNG facilities development and construction 32

Energy Transition – Volkswagen says no to hydrogen cars 32

Capital Markets – TSX composite index changes 32

Figure 36: Changes To TSX Composite Index For March 22, 2021 32

Governance – Shell Moves to 50/50 gender split on board 33

Governance – Canadian companies still a long way to go on gender diversity 33

Twitter – Look for our first comments on energy items on Twitter every day 33

LinkedIn – Look for quick energy items from me on LinkedIn 33

Misc Facts and Figures 33

Figure 37: Back to the Future II (1989) Mr. Fusion Powering Flux Capacitor 34

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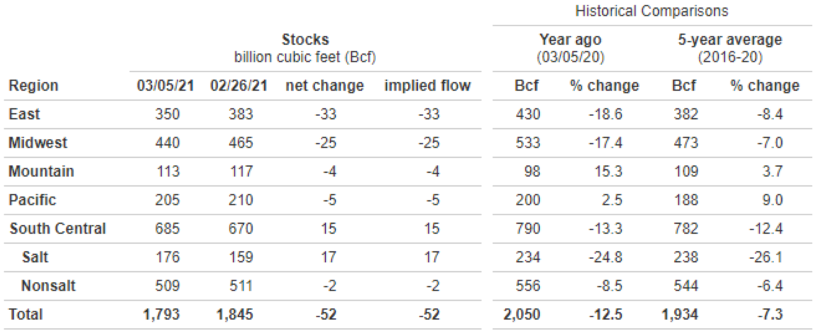
Natural Gas – Natural gas draw of 52 bcf, storage now -257 bcf YoY deficit

The EIA reported a 52 bcf draw (vs -65 bcf expectations) for the March 5 week, which was well below the 5-yr average draw of 89 bcf and above last year's draw of 48 bcf. Storage is 1.793 tcf as of Mar 5, decreasing the YoY deficit to 257 bcf from 277 bcf last week and storage is now 141 bcf below the 5 yr average. Below is the EIA's storage table from its Weekly Natural Gas Storage Report. [LINK]

YoY storage at -257 bcf YoY deficit

Figure 1: US Natural Gas Storage



	Stocks billion cubic feet (Bcf)				Historical Comparisons Year ago (03/05/20)		5-year average (2016-20)	
Region	03/05/21	02/26/21	net change	implied flow	Bcf	% change	Bcf	% change
East	350	383	-33	-33	430	-18.6	382	-8.4
Midwest	440	465	-25	-25	533	-17.4	473	-7.0
Mountain	113	117	-4	-4	98	15.3	109	3.7
Pacific	205	210	-5	-5	200	2.5	188	9.0
South Central	685	670	15	15	790	-13.3	782	-12.4
Salt	176	159	17	17	234	-24.8	238	-26.1
Nonsalt	509	511	-2	-2	556	-8.5	544	-6.4
Total	**1,793**	**1,845**	**-52**	**-52**	**2,050**	**-12.5**	**1,934**	**-7.3**

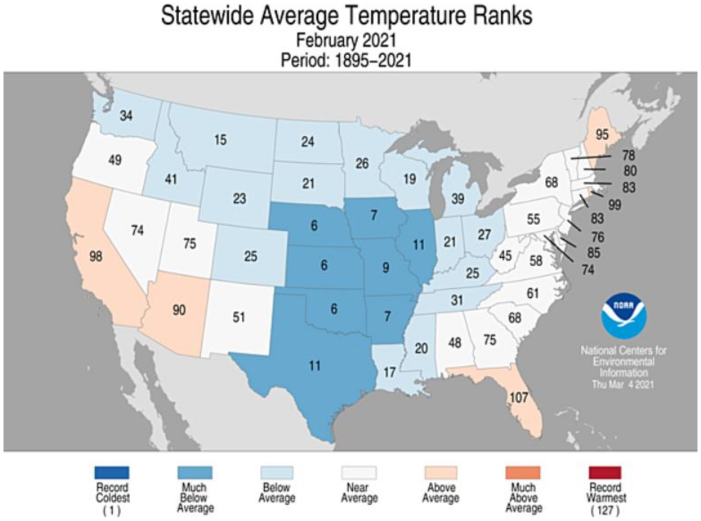
Source: EIA

Natural Gas – Feb was 19th coldest, but DJF was 28th warmest

As expected, significantly lower YoY US natural gas production and higher YoY led to a big correction in gas storage and HH prices. Storage started the winter +~200 bcf YoY and is now -257 bcf YoY. This is despite very warm Dec/Jan that has been offset by a colder Feb. This week, NOAA posted it climate recap for Feb, which, on a national wide basis, was the 19th coldest in the last 127 years. It may have been cold on an overall US basis, it was actually warm in key regions like the NE US. Despite the cold Feb, for the peak winter months of Dec/Jan/Feb, it was the 28th hottest of the last 126 years. Below is the NOAA's statewide average temperature map for Feb 2021 [LINK] and for D/J/F [LINK].

NOAA Jan temperature recap

Figure 2: US Statewide Average Temperature Ranks Feb 2021



Statewide Average Temperature Ranks
February 2021
Period: 1895–2021
34
15
24
95
49
26
78
80
83
41
21
19
68
23
39
99
6
7
55
83
74
75
11
21
27
76
98
25
45
58
85
6
9
25
74
31
61
90
51
6
7
68
20
48
75
11
17
107
NOAA
National Centers for Environmental Information
Thu Mar 4 2021
Record Coldest (1)
Much Below Average
Below Average
Near Average
Above Average
Much Above Average
Record Warmest (127)

Source: NOAA

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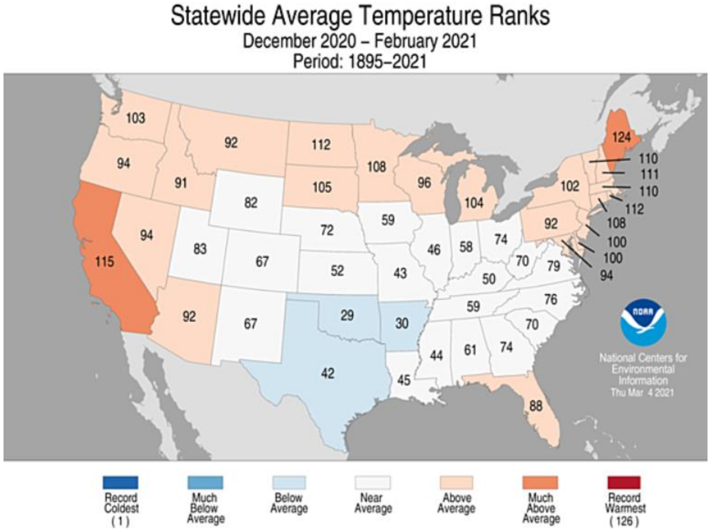
Figure 3: US Statewide Average Temperature Ranks Feb 2021


Statewide Average Temperature Ranks
December 2020 – February 2021
Period: 1895–2021
103
94
92
112
108
124
110
111
110
112
108
100
100
94
91
105
96
104
102
82
72
59
92
94
83
67
52
43
46
58
74
70
79
115
50
76
92
67
29
30
59
70
44
61
74
42
45
88
National Centers for Environmental Information Thu Mar 4 2021
Record Coldest (1)
Much Below Average
Below Average
Near Average
Above Average
Much Above Average
Record Warmest (126)

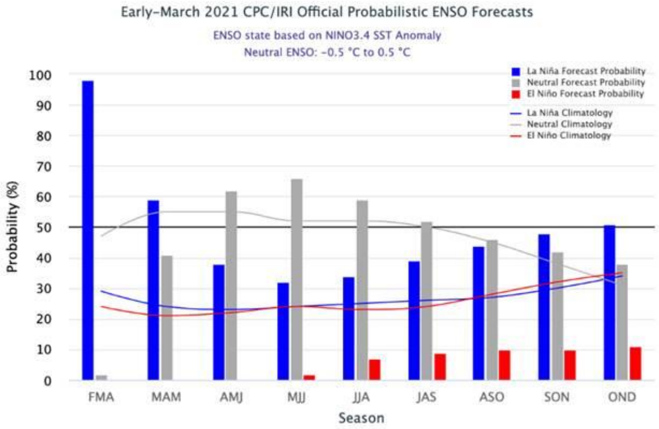
Source: NOAA

Natural Gas – 90% probability for La Nina/Neutral in key hurricane ASO season

La Nina/El Nino focus to turn to summer

The CPC/IRI released its updated monthly El Nino/La Nina outlook is issued on the 2nd Thurs of every month [LINK]. The focus for La Nina/El Nino now moves to the summer and hurricane season. NOAA said *"There is a ~60% chance of a transition from La Niña to ENSO-Neutral during the Northern Hemisphere spring 2021 (April-June)"*. The trends are the same as last month. A La Nina winter changes to ENSO Neutral thru Q2, and the shifts to more balanced La Nina/Neutral for peak hurricane season, which is Aug/Sep/Oct. The forecast for ASO is 44% La Nina, 46% Neutral and only 10% for El Nino conditions. Again, weather is never 100% the same, but El Nino summers are normally associated with low Atlantic hurricane seasons, whereas La Nina/Neutral conditions are more likely normal hurricane seasons.

Figure 4: Early-February NOAA El Nino/La Nina Outlook



Source: CPC/IRI

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

The EIA released its monthly Short Term Energy Outlook March 2021 [LINK] on Tues. (i) The EIA forecast continues to show US natural gas not returning anywhere near the Q4/19 peak of 96.58 bcf/d, with Q4/22 US natural gas of 93.90 bcf/d (down 2.68 bcf/d from peak). (ii) The new full year 2020 forecast is 91.34 bcf/d, up 0.05 bcf/d from the January STEO and down 3.94 bcf/d from the Mar STEO. This puts 2020 at -1.72 bcf/d YoY from 93.06 bcf/d in 2019. (iii) For 2021, the EIA made upward revisions to all quarters except Q1 which had been revised down due to the freeze-offs. EIA decreased its Q1/21 forecast by 0.33 bcf/d to 90.88 bcf/d. 2021 US natural gas production is forecast to average 91.35 bcf/d (up from 90.50 bcf/d previously). (iv) US natural gas production is expected to average 92.83 bcf/d in 2022 (90.96 bcf/d previously), up 1.48 bcf/d YoY. (iv) US natural gas production is expected to average 92.83 bcf/d in 2022 (90.96 bcf/d previously), up 1.48 bcf/d YoY. (v) The EIA did not provide basin specific explanations of projections but did write *"The higher forecast largely reflects higher forecast crude oil prices, which EIA expects will contribute to more associated natural gas production".* (vii) The EIA expects lower end of winter 2021 US natural gas storage, but still down big YoY. Start of winter (Oct 31) storage was 3.93 tcf, and the big positive is end of winter March 31/21 storage is forecast to be down to 1.59 tcf (was 1.77 tcf) which is down big YoY vs 2.03 tcf at March 31/20. Our Supplemental Documents package includes excerpts from the EIA STEO.

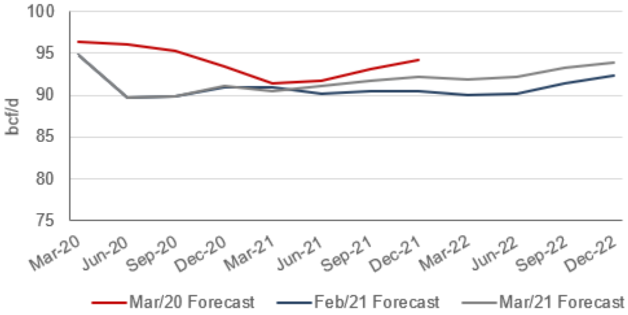
EIA forecasts US gas production +1.48 bcf/d YoY in 2022

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

bcf/d	Q1/19	Q2/19	Q3/19	Q4/19	2019	Q1/20	Q2/20	Q3/20	Q4/20	2020	Q1/21	Q2/21	Q3/21	Q4/21	2021	Q1/22	Q2/22	Q3/22	Q4/22	2022
Mar 2021	90.01	91.57	94.00	96.58	93.06	94.79	89.68	89.82	91.08	91.34	90.50	91.04	91.71	92.13	91.35	91.87	92.25	93.28	93.90	92.83
Feb 2021	90.01	91.57	94.00	96.58	93.06	94.79	89.68	89.82	90.89	91.29	90.88	90.17	90.40	90.54	90.50	89.95	90.18	91.41	92.26	90.96
Jan 2021	90.01	91.57	94.00	96.58	93.06	94.79	89.67	89.87	88.73	90.76	87.48	87.54	88.54	89.11	88.17	88.54	88.86	90.17	91.02	89.66
Dec 2020	90.01	91.57	94.00	96.58	93.06	94.79	89.67	89.72	89.36	90.88	87.65	87.25	88.13	88.61	87.91					
Nov 2020	90.01	91.57	94.00	96.58	93.06	94.85	89.73	90.14	89.29	90.99	87.50	87.10	88.16	88.86	87.91					
Oct 2020	90.01	91.57	94.00	96.58	93.06	94.48	89.44	89.81	88.86	90.64	86.56	86.02	87.04	87.58	86.81					
Sept 2020	89.32	90.50	92.98	95.97	92.21	94.48	89.50	88.44	87.14	89.88	85.67	85.87	87.07	87.73	86.59					
Aug 2020	89.32	90.50	92.98	95.97	92.21	94.48	89.20	86.27	84.73	88.65	83.21	82.93	84.35	85.55	84.02					
July 2020	89.32	90.50	92.89	95.97	92.21	94.50	89.91	87.27	85.37	89.24	83.48	83.25	84.53	85.63	84.23					
June 2020	89.32	90.50	92.98	95.97	92.21	94.47	90.60	87.95	85.66	89.65	83.96	84.44	85.75	87.34	85.39					
May 2020	89.32	90.50	92.98	95.97	92.21	94.28	91.08	88.03	86.05	89.84	84.21	84.09	85.03	86.22	84.89					
Apr 2020	89.32	90.50	92.98	95.88	92.19	94.47	93.24	90.71	88.43	91.70	86.18	86.49	87.95	89.26	87.48					
Mar 2020	89.32	90.50	92.98	96.08	92.24	96.41	96.07	95.29	93.36	95.28	91.42	91.74	93.11	94.15	92.61					
Feb 2020	89.32	90.50	92.98	95.70	92.15	95.15	94.34	93.98	93.17	94.16	91.85	92.16	92.99	93.27	92.57					

Source: EIA, SAF

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



Source: EIA, SAF

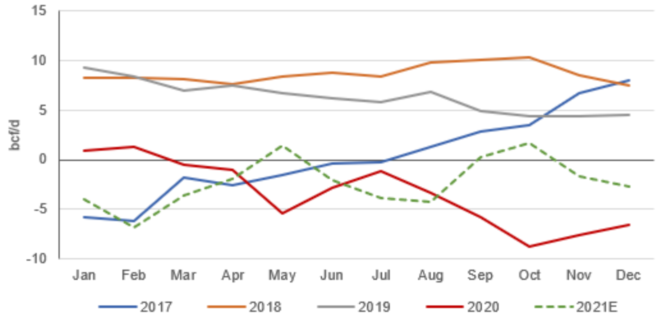
Natural Gas – US net natural gas supply forecast -5 bcf/d YoY in Q1/21

Overall winter 2020-2021 had been a very warm season with Nov-Dec being the 123rd warmest in the last 126 years. Fortunately, there has been and continues to be good downside protection to HH gas prices with significantly lower YoY US net natural gas supply. However, US natural gas production has been running higher than previously expected. The

US net natural gas supply down ~5 bcf/d YoY for Q1/21

new EIA STEO forecasts lower YoY US natural gas supply (YoY lower production + YoY higher LNG net exports + YoY higher pipeline net exports) with Q1/21 lower ~5 bcf/d YoY. However, the net deficit levels off towards exit 2021 as the YoY change flattens out, particularly in US LNG exports, but the key reminder is the big Q1/21 YoY net change provides downside protection from warmer temperatures. Below is the graph showing the YoY change in net US natural gas supply.

Figure 7: Actuals Plus EIA STEO Estimates For YoY Net US Natural Gas Supply



Source: EIA

Natural Gas – Texas cold freeze led to Feb LNG exports drop 2.3 bcf/d MoM

US LNG exports drop in Feb

The other downside support for US HH gas prices this winter is higher YoY US LNG exports. US LNG exports declined MoM to 7.50 bcf/d in February, down from the record of 9.80 bcf/d in January. This is due to suspending of piloting services for several days due to cold freeze that also led to US LNG plants reducing or pausing operations. The EIA wrote *"In addition, several U.S. LNG export facilities (including Freeport, Cameron, and Corpus Christi) experienced lower natural gas feedstock supply in mid-February following declines in natural gas production because of extremely cold weather. EIA expects U.S. LNG exports to continue their seasonal decline from March through May, averaging 7.8 Bcf/d in this period"*.

Natural Gas – Japan's increasing push to buy carbon neutral LNG

Carbon neutral LNG

One of the building megatrends in 2021 is that that more major LNG buyers will be pushing LNG suppliers to provided carbon neutral LNG. We expect this trend to accelerate in the run up to COP-26 in Glasgow. And with the trend increasing, we should see some move to carbon neutral LNG receiving higher prices than regular emissions LNG. Regardless, it means that LNG suppliers will be pushed harder into carbon neutral LNG so CCS, also using renewable electricity where possible, and we think more potential for mini nukes for big operations. This week, Tokyo Gas announced it had formed the Tokyo Gas forms Carbon Neutral LNG ("CNL") Buyers Alliance. And said "*The Alliance was established through the concerted efforts of Tokyo Gas, which procures and supplies CNL, and the remaining companies, which purchase CNL, with the aim of spreading the use of CNL and increasing its utility value toward the achievement of a sustainable society. Choosing carbon neutral energy is an important solution that will contribute toward tackling climate change and the SDGs, as well as directly lead to ESG management. The companies participating in the Alliance will work to increase the recognition of CNL in society and carry out initiatives to improve its evaluation by investment institutions and establish its position within the various systems in Japan with the aim of contributing toward Japan's achievement of a carbon neutral society by 2050*". Our Supplemental Documents package includes the Tokyo Gas announcement. [LINK]

Natural Gas – Cheniere's cargo emissions data will push back on producers

Cheniere to provide emissions data

One of the items we didn't get to a couple weeks ago was the Cheniere Feb 24 announcement that it will be providing LNG cargo emissions data to LNG customers beginning in 2022. The challenge is how to reduce emissions or get carbon neutral LNG cargoes from the US GoM. The other challenge is when can they do so. To get to carbon neutral, there will be a big push for CCS in and around the Gulf of Mexico. That is what is needed. But that will take time. Similarly, we think there could be a mini nuke potential but that will also take time. So the question becomes if US LNG wants to be carbon neutral or just lower emissions, what can they realistically do in 2021 and 2022 to provide evidence to the buyers they are serious. They can add some renewable power. They can blend in some renewable natural gas. But the one that jumps out is they will work to reduce methane emissions and to push all the producers and natural gas plant operators that supply natural gas for Cheniere to reduce methane emissions and also gas flaring. Methane emissions reductions will be a huge push in 2021 and 2022. This will also fit with Cheniere's view to go back to the wellhead and also to incorporate data from "value chain participants" ie. producers. Cheniere wrote "*The Cargo Emissions Tags ("CE Tags") are designed to enhance environmental transparency by quantifying the estimated GHG emissions of LNG cargoes from the wellhead to the cargo delivery point, and are expected to be provided to customers beginning in 2022."* And that the CE Tags "*he CE Tags will be calculated utilizing Cheniere's proprietary lifecycle analysis ("LCA") model, which has been built incorporating the accounting frameworks from LCAs created by the U.S. Department of Energy's National Energy Technology Laboratory, and will utilize publicly available data from value chain participants, as well as operational data from both the Sabine Pass and Corpus Christi liquefaction facilities."* Our Supplemental Documents package includes the Cheniere release. [LINK]

Natural Gas – No major surprises from Chevron's Gorgon & Wheatstone LNG updates

Gorgon & Wheatstone LNG updates

We didn't get a chance this weekend to write up more on Chevron's Investor Day on Tues. Chevron posted transcripts of the mgmt comments and Q&A. But we wanted to provide an update from the investor day on their two LNG projects that have been hit by unplanned interruptions – Gorgon and Wheatstone. (i) Gorgon. No surprise on the heat exchanger defects. Repairs completed on Train 1 and 2. Initial indications are defects were from the manufacturing process and not operational issues. Train 3 to go down in Q2 to inspect and repair if necessary the heat exchangers therein. (ii) Wheatstone. Chevron didn't give any details, but said "*the offshore facility is also now back to full capacity".* (iii) Increased capacity at both Chevron and Gorgon. Note they noted it was capacity and not necessarily production volumes but higher capacity would allow higher production volumes. Mgmt said "*We continue to systematically increase the capacity of the LNG plants with the Gorgon Trains now 5 percent and the Wheatstone trains 9 percent above their original design capacity."*

Natural Gas – Japan contract-based Jan spot LNG prices still high in Feb

Japan contract based spot LNG prices were $12.70

January had record Asian LNG prices with the cold weather, multiple LNG supply interruptions and some nuclear outages in Japan. This week, the Japan Ministry of Economy, Trade, and Industry reported [LINK] Japan contract-based spot LNG price for February was $12.70, which was down MoM from the record $18.50 in January. February's price, though a big MoM decline is the second highest on record going back to Nov 2014. As a reminder, the Japan contract spot-based price is not JKM price, as they define this price as *"Spot-LNG" refers to LNG that are traded on a cargo to cargo basis, and does not mean term contracts of LNG (so-called long, medium, short-term contracts). In addition, for spot- LNG, the price of which is linked to a particular price index (for example the Henry Hub link, and the JKM link) is excluded from these statistics"*. Below is our table of monthly Japan LNG import prices.

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Figure 8: Japan LNG Contract Base Spot Price $/mmbtu

	2014	2015	2016	2017	2018	2018/2017	2019	2019/2018	2020	2020/2019	2021	2021/2020
Jan		$10.20	$7.10	$8.40	$11.00	31.0%	$8.30	-24.5%	$5.90	-28.9%	$18.50	213.6%
Feb		$7.60	$6.50	$8.50	$10.60	24.7%	$7.50	-29.2%	$3.40	-54.7%	$12.70	273.5%
Mar	$18.30	$8.00	n/a	$6.30	$8.80	39.7%	$6.40	-27.3%	$3.40	-46.9%		
Apr	$16.00	$7.60	$4.20	$5.70	$9.10	59.6%	$5.20	-42.9%	$2.40	-53.8%		
May	$14.80	n/a	$4.10	$5.70	$8.20	43.9%	$5.40	-34.1%	$2.20	-59.3%		
June	$13.80	$7.60	n/a	n/a	$9.30	n/a	$5.50	-40.9%	$3.80	-30.9%		
July	$11.80	$7.90	$5.80	$5.60	$10.00	78.6%	$4.70	-53.0%	$4.20	-10.6%		
Aug	$11.40	$8.10	n/a	$5.80	$10.70	84.5%	$5.30	-50.5%	$3.40	-35.8%		
Sept	$13.20	$7.40	$5.70	$6.90	$10.60	53.6%	$5.40	-49.1%	$4.50	-16.7%		
Oct	$15.30	$7.60	$6.10	$8.20	$10.70	30.5%	$5.50	-48.6%	$6.00	9.1%		
Nov	$14.40	$7.40	$7.00	$9.00	$10.80	20.0%	n/a	n/a	$6.80	n/a		
Dec	$11.60	$7.40	$8.00	$10.20	$9.20	-9.8%	$6.40	-30.4%	$7.40	15.6%		

Source: Japan Ministry of Economy, Trade and Industry

Natural Gas – US says Nord Stream 2 goes against their interests in the region as well

Nord Stream 2 against US interests

One of our concerns has been that US lifts sanctions on Nord Stream 2 in time for the Gazprom pipeline to begin deliveries to Europe this summer to help refill low Europe gas storage levels. On Friday, we tweeted [LINK] on comments from US State Dept spokesman Ned Price on Thursday that seemed like a slip of the tongue to reveal another reason why the US has concerns on Nord Stream 2 and why it hasn't removed its sanctions thereon. To date, the US messaging has been consistent on how Biden thinks it a bad deal that goes against Europe's energy and security goals. It always seemed like the Biden administration was standing up to Russia for Europe. But it looks like Price may have revealed that the US wasn't just standing up for Europe, but also for itself. Price said "*All that notwithstanding, the president of the United States, Secretary Blinken, others in this government have made this administration's view avowedly, ambiguously clear that Nord Stream 2 is a bad idea, it goes against the own -- Europe's own stated energy interests. It goes against our interests in the region as well".* It was interesting as Price was supposedly just repeating Blinken's comments from Wed. But Blinken did not say this added reason. Its not that everyone doesn't know that its in the US interests to not have Nord Stream 2 deliver gas to the key US LNG market. Its just that the Biden administration has putting forward the rationale for the sanctions is to make sure it doesn't violate Europe's energy and security goals. Its why we have been seeing the chance for these to be removed in time for H2/21. Germany has been pushing hard for the sanctions removal and that the natural gas is need for Germany's energy outlook. However, Price's slip of the tongue or reminder that its also against US interests adds perhaps the biggest reason why these sanctions may be in place long enough for Nord Stream 2 to not be a big negative for US LNG during Europe's storage refill season. Our Supplemental Documents package includes Price's comments, Blinken's comments and Jen Psaki's comments on Nord Stream 2.

Natural Gas – LNG flows to NW Europe at ~7 bcf/d

LNG flows to NW Europe continuing to increase

Europe is the key market for US LNG due to its close proximity. As noted above, if the US doesn't remove Nord Stream 2 sanctions too quickly, it will be a positive to US LNG exports in the summer. And with low Europe gas storage this winter, US LNG exports to Europe have been ramping up. LNG flows into northwest Europe reached recent peaks at ~5 bcf/d in late November to early December before declining rather quickly through December to mid January where imports reached a low of 0.90 bcf/d on January 17. Since, LNG flows to Europe have been increasing, reaching 6.98 bcf/d on March 10 and are just 0.12 bcf/d above the YoY level of 6.86 bcf/d.

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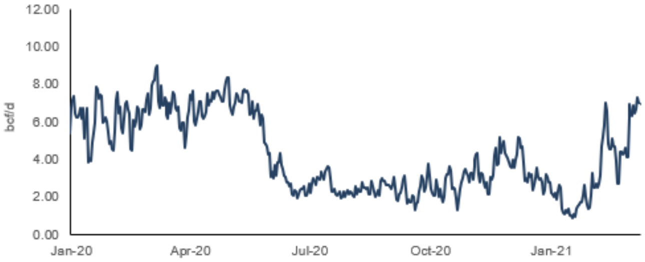
Figure 9: Net LNG Flows to NW Europe



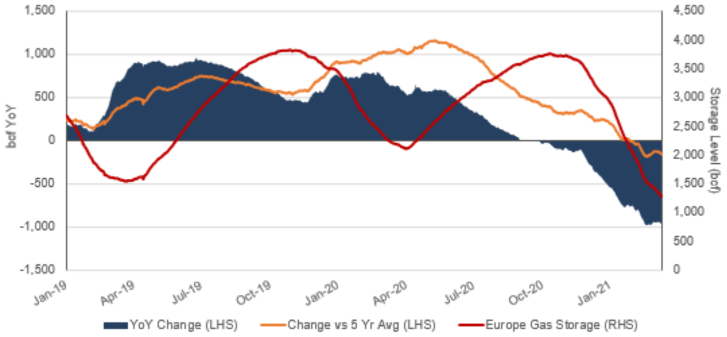
Source: Bloomberg

Natural Gas – Europe storage 32.84% full vs 5 year average of 37.61%

Europe gas storage 32.84% full

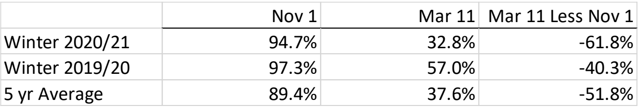
Winter is coming to an end in Europe and our focus for Europe gas storage will be turning to how quickly it fills off the low point this winter. Its been cold to start March and this has delayed the refill push. This winter has been another good reminder that Europe gas storage is the key indicator for the near term strength of global LNG markets. The big draw in Europe gas storage this winter was the indicator that it has been a good winter for LNG prices. Europe gas storage started the winter (Nov 1) at basically full levels at 94.66% and has dropped by 61.82% to be 32.84% at Mar 11. This 61.82% decline since Nov 1 compares to the 5 yr average that would be down 51.77% in the same period or to last winter that was only down 40.33% in the same period. Storage at Mar 11 of 32.84% is 24.15% less than last year and 4.77% less than the 5 yr average. 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 Europe gas storage utilization and our graph of YoY change in net LNG flows to NW Europe.

Figure 10: Europe Gas Storage Level



Source: Bloomberg

Figure 11: Europe Gas Storage Utilization Comparison to Mar 11



	Nov 1	Mar 11	Mar 11 Less Nov 1
Winter 2020/21	94.7%	32.8%	-61.8%
Winter 2019/20	97.3%	57.0%	-40.3%
5 yr Average	89.4%	37.6%	-51.8%

Source: Bloomberg

Oil – US oil rigs down 1 to 309 oil rigs

US oil rigs down 1 this week

Baker Hughes reported its weekly rig data on Friday. US oil rigs were down 1 to 309 oil rigs as of Mar 12. The increases were in the Cana Woodford +2 and Permian +1 and decreases were in Others -3 and Williston -1. Oil rigs are +137 off the bottom of 172 in the Aug 14 week. US oil rigs have been modestly increasing, but the key will be the next several weeks

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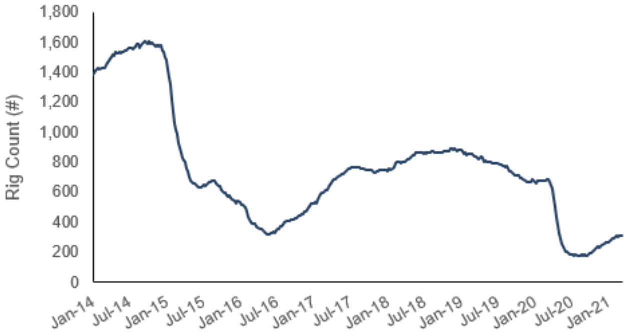
to see if there is stronger increases in rigs now that WTI has been over $60 for almost a month. The rise has been quick with WTI below $50 to end Dec, hitting $55 in early Feb, and then over $60 in mid Feb. We doubt that any companies went into their Feb board meetings to discuss year end results assuming WTI would be over $60 before the end of Feb. Its why we think companies are now figuring out what they do with higher oil prices. And we expect to see privates and some publics move to higher drilling 2021 budgets. Its why we expect to see US oil rigs increase at modestly higher rates. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by 374 to 309 oil rigs (-54.8%). Below is our graph of Baker Hughes US oil rigs.

Figure 12: Baker Hughes Total US Oil Rigs



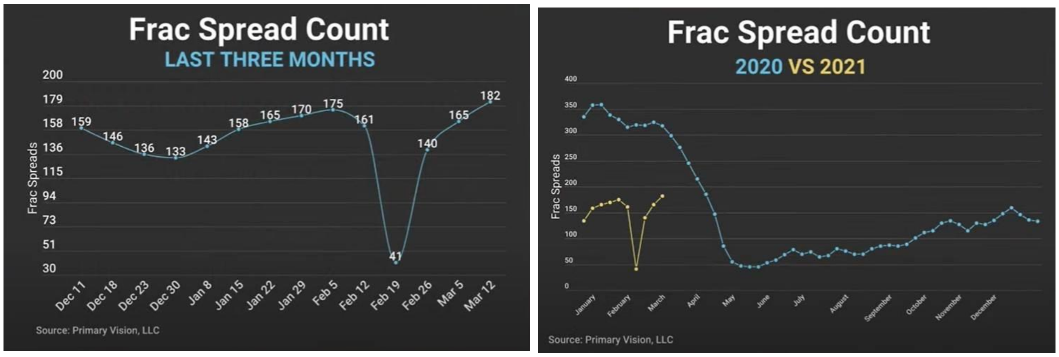
Source: Baker Hughes

Oil – Frac spreads +17 to 182 for week ending March 12

Frac spreads +17 to 182

Every week, Mark Rossano posts a YouTube recap of frac spreads for the week on the Primary Vision Network [LINK].   For the March 12 week, US frac spreads were +17 to 182. The impact from the Texas freeze is basically over apart from 1 or 2 spreads. Rossano highlighted Permian frac spreads were back to 100 now. There were also some increase in some of the smaller basins, which is expected with the higher oil prices. Looking forward, he sees pretty steady increase, expecting hit 200 frac spreads in April. He noted that, with 200 spreads, should see some growth from the 10.9 to 11 mmb/d, not big growth but some growth. and that as approach 200 to 230 frac spreads, he thinks 11.3 mmb/d is pretty doable and sustainable. Below are his two key frac spread graphs.

Figure 13: Active Frac Spreads for Week of March 12, 2021



Source: Primary Vision

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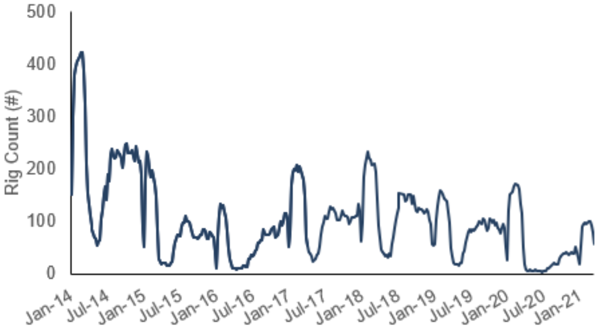
Oil – Total Cdn rigs down 25 to 116 total rigs and down 34% YoY

Baker Hughes reported total Cdn rigs were down 25 this week to 116 total rigs. The big decline this week was expected and will likely continue next week with breakup and the end of winter drilling. Cdn oil rigs were down 22 to 58 rigs. Cdn gas rigs were down 3 to 58 gas rigs. Total rigs are now +120 since the June 26 all-time low. Cdn drilling is still down big vs prior years - Cdn rigs are down 34% YoY and down 28% vs two years ago. While Cdn drilling has recovered, a year ago Cdn oil rigs were 115 and Cdn gas rigs were 60 for a total Cdn rigs of 175, meaning total Cdn rigs are -59 YoY. Below is our graph of Baker Hughes Cdn oil rigs.

Cdn rigs -25 this week

Figure 14: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

Oil – EIA STEO forecast modest US oil production growth through 2022

The EIA STEO forecast for higher US oil production is based on a model but the logic for the model is sound. Its why, on Wed, we tweeted [LINK] "*@EIAgov may not have individual E&P co models to roll up, but hard to disagree with their forecast model concept: oil prices up = capex up = wells up = revised higher US #Oil production forecast. EIA raised WTI +$7.03 in 2021 to $57.24, +$3.19 in 2022 to $54.75. #OOTT*". (i) The EIA forecast continues to show QoQ US crude growth thru 2021, though still not returning anywhere near the Q4/19 peak of 12.78 mmb/d, with Q4/21 US crude of 11.46 mmb/d (down 1.32 mmb/d from peak). But Q4/21 of 11.46 mmb/d is +0.59 mmb/d YoY vs Q4/20. Full year 2020 US oil production is at 11.31 mmb/d, which puts 2020 down 0.94 mmb/d YoY from 12.25 mmb/d in 2019. (ii) Full year 2021 of 11.15 is +0.13 mmb/d vs Feb STEO at 11.02 mmb/d, which is down 0.16 mmb/d YoY from 2020. (iv) The EIA forecasts a shift back to YoY growth in 2022 with production averaging 12.02 mmb/d, +0.87 mmb/d YoY, with Q4/22 production of 12.41 mmb/d, ie still down 0.37 mmb/d from Q4/19. (iii) On the freeze-offs, the EIA wrote *"EIA estimates that U.S. crude oil production averaged 10.4 million b/d in February, which is down 0.5 million b/d from estimated January production. Most of the decline reflects the cold temperatures that affected much of the country, particularly Texas"*. And *"Following the freeze-offs, EIA forecasts crude oil production will rise to almost 11.0 million b/d in March"*.

EIA forecasts US oil exit in 2021 at 11.46 mmb/d

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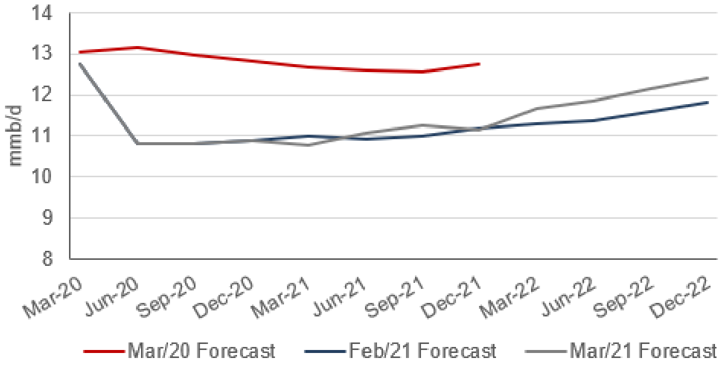
Figure 15: Estimated US Crude Oil Production By Forecast Month

(million b/d)	Q1/19	Q2/19	Q3/19	Q4/19	2019	Q1/20	Q2/20	Q3/20	Q4/20	2020	Q1/21	Q2/21	Q3/21	Q4/21	2021	Q1/22	Q2/22	Q3/22	Q4/22	2022
Mar 2021	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.81	10.87	11.31	10.79	11.06	11.27	11.46	11.15	11.67	11.84	12.16	12.41	12.02
Feb 2021	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.81	10.89	11.31	10.98	10.91	11.00	11.18	11.02	11.30	11.38	11.61	11.83	11.53
Jan 2021	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.81	10.81	11.29	11.06	11.03	11.07	11.25	11.10	11.32	11.37	11.52	11.74	11.49
Dec 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.80	10.99	11.34	11.02	11.00	11.09	11.29	11.10					
Nov 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.93	11.07	11.39	11.06	10.97	11.08	11.28	11.10					
Oct 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.82	11.02	11.22	11.45	11.07	11.00	11.05	11.22	11.09					
Sept 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.81	10.91	11.08	11.38	10.96	10.97	11.08	11.32	11.08					
Aug 2020	11.83	12.13	12.24	12.78	12.25	12.75	10.57	10.79	10.96	11.26	11.00	10.99	11.16	11.40	11.14					
July 2020	11.81	12.1	12.23	12.78	12.23	12.74	11.41	11.29	11.10	11.63	11.02	10.93	10.97	11.13	11.01					
June 2020	11.81	12.10	12.23	12.78	12.23	12.74	11.65	11.13	10.74	11.56	10.71	10.83	10.80	11.02	10.84					
May 2020	11.81	12.10	12.23	12.78	12.23	12.81	11.78	11.23	10.93	11.69	10.81	10.89	10.83	11.07	10.90					
Apr 2020	11.81	12.10	12.23	12.78	12.23	12.73	11.98	11.29	11.04	11.76	10.96	11.08	11.00	11.08	11.03					
Mar 2020	11.81	12.10	12.23	12.77	12.23	13.04	13.16	12.96	12.81	12.99	12.67	12.61	12.58	12.76	12.66					
Feb 2020	11.81	12.10	12.23	12.82	12.24	13.16	13.25	13.17	13.22	13.20	13.32	13.46	13.57	13.86	13.56					

Source: EIA, SAF

Figure 16: Estimated US Crude Oil Production By Forecast Month



Source: EIA, SAF

Oil – North Dakota Dec oil production down MoM, lowest since July

North Dakota January oil production down MoM

On Thurs, the North Dakota Industrial Commission posted its Director's Cut, which includes January oil and natural gas production data [LINK]. North Dakota Jan oil production was down 3.7% MoM to 1.147 mmb/d from 1.191 mmb/d in Dec, and is down 19.8% YoY. It looks like the MoM decline was primarily due to power outages from wind. The NDIC estimates the power outages hurt North Dakota oil production by about 50,000 b/d. This is the lowest level for production since July of 1.165 mmb/d. But we had also expected a small decline has been expected given monthly completions for the most part have been below the levels assumed needed to keep production flat. Our Supplemental Documents package includes excerpts from the NDIC Director's Cut.

Figure 17: North Dakota Oil Production By Month

(b/d)	2014	2015	2016	2017	2018	2019	2020	2020/2019	2021	2021/2020
Jan	935,126	1,191,198	1,122,462	981,380	1,179,564	1,403,808	1,430,511	1.9%	1,147,374	-19.8%
Feb	952,055	1,178,082	1,119,092	1,034,248	1,175,316	1,335,591	1,451,681	8.7%		
Mar	977,178	1,190,502	1,111,421	1,025,690	1,162,134	1,391,760	1,430,107	2.8%		
Apr	1,003,256	1,169,045	1,041,981	1,050,476	1,225,391	1,392,485	1,221,019	-12.3%		
May	1,040,469	1,202,615	1,047,003	1,040,995	1,246,355	1,394,648	859,362	-38.4%		
June	1,092,519	1,211,328	1,027,131	1,032,873	1,227,320	1,425,230	893,591	-37.3%		
July	1,114,421	1,206,996	1,029,734	1,048,099	1,269,290	1,445,934	1,042,081	-27.9%		
Aug	1,132,241	1,187,631	982,011	1,089,318	1,292,505	1,480,475	1,165,371	-21.3%		
Sept	1,186,228	1,162,159	971,760	1,107,345	1,359,282	1,443,980	1,223,107	-15.3%		
Oct	1,183,515	1,171,119	1,043,693	1,183,810	1,392,369	1,517,936	1,231,048	-18.9%		
Nov	1,188,258	1,181,787	1,034,484	1,194,920	1,375,803	1,519,037	1,227,138	-19.2%		
Dec	1,227,483	1,152,696	942,322	1,182,836	1,402,741	1,476,777	1,191,429	-19.3%		

Source: NDIC, NDPA

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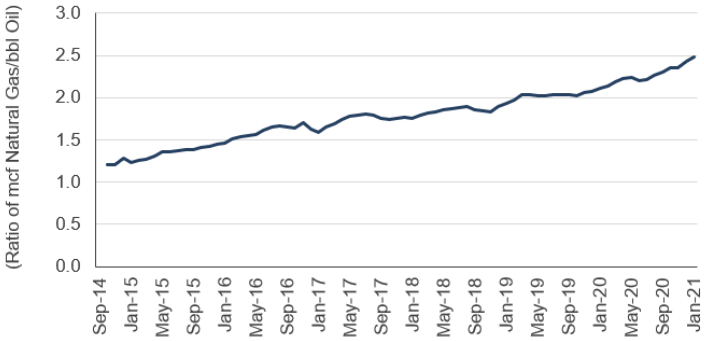
North Dakota gas-oil ratio increases as Bakken matures

One of the long term trends that we have been highlighting for all of the US tight/shale oil plays that produce associated natural gas and NGLs is that, over time, the percentage of natural gas increases in the production. We see this clearly in North Dakota where the gas-oil ratio continues to increase have having slowing down in 2017-2019 when natural gas flaring increased. But now with North Dakota reducing gas flaring, we are seeing the ramp up in gas-oil ratio. North Dakota January natural gas production was down marginally MoM to 2.848 bcf/d from 2.889 bcf/d in Dec, and down 5.7% YoY vs 3.020 bcf/d. It makes sense that North Dakota natural gas production was down less YoY as less gas was flared and Bakken oil wells produce associated natural gas and the natural gas % of boe production increase as Bakken oil wells mature. Below is our running graph of North Dakota gas-oil ratio updated for the new NDIC January production data

Figure 18: North Dakota Gas-Oil Ratio

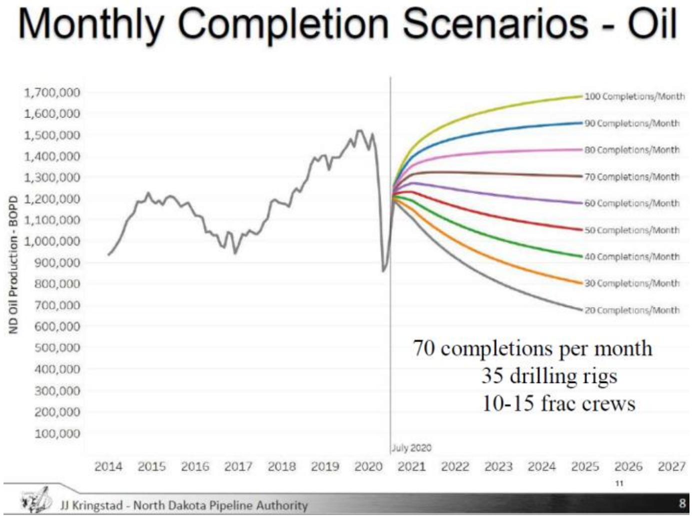


Source: NDIC, NDPA

Rule of thumb, North Dakota needs ~70 completions & 35 rigs to stay flat

It will be interesting to see how higher oil prices drive North Dakota drilling and completion activity. But until there is consistent increase, the level of rigs and completions is mostly below the level estimated by North Dakota Pipeline Authority as the level needed to keep North Dakota oil production flat. Dec completions were 44, Jan completions were 59, and Feb preliminary completions were 32. So on balance, well completions from Aug thru Nov are generally close to the rule of thumb needed to keep North Dakota oil production fairly flat. But Dec/Feb completions, are at lowest level since the recovery and Jan completions are not much better. At Dec/Jan/Feb levels, it will point to North Dakota oil production declining. The issue will soon become that will need to increase rig count to build up inventory of wells for completions. As a reminder there is a rule of thumb of ~70 completions per month and 35 drilling rigs to maintain production fairly flat post return of flush production. And rig counts remain extremely low with the current count at 15. This is up 3 from the 12 seen in Jan and down big from 52 in March. The rule of thumb comes from an Oct 8 North Dakota presentation by the North Dakota Pipeline Authority (JJ Kringstad) [LINK]. It shows the projection of North Dakota oil production based on a sustained # of completions per month and drilling rigs per month. We assume this is based on a post return of shut in volumes. Completions drive production, but need to have sustained drilling rigs to add to completion inventory. As a rule of thumb, North Dakota estimates each drilling rig drills ~1.8 wells per month. At 15 drilling rigs currently, this would add ~27 wells per month. This is well below the level of new wells being drilled to add to inventory for completions to sustain production increases

Figure 19: Monthly Completion Scenarios – Oil



Source: North Dakota Pipeline Authority

Weather hit North Dakota Jan oil production by ~50,000 b/d

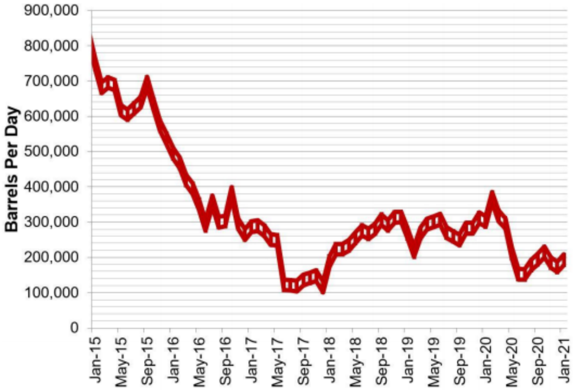
Every month, we look to the Bismarck Tribune’s monthly story on the press conference releasing the Director’s Cut as there is always extra color or insight from quotes from NDIC Director Lynn Helms. This month’s story was titled was titled “*Weather woes cause Bakken oil production to fall*” [LINK]. (i) The NDIC estimates winds knocked out power in areas to the oil patch for ~10 days, reducing production by 50,000 b/d. And the Bismarck Tribune also noted weather likely to be a factor again in Feb production data. The Tribune wrote *“North Dakota Pipeline Authority Director Justin Kringstad said February could be “another tough month”.* (ii) Interesting reminder from Helms on how US federal lands restrictions could hit private lands in the Bakken. Helms also noted that production in North Dakota would be significantly affected due to the distribution of federal lands within private lands. The Tribune wrote *“Those comments likely will focus on the checkerboard nature of mineral ownership in the state, and how prohibiting drilling through federal minerals could prevent the development of private minerals and state-owned minerals in the surrounding area, even where a tract of federal minerals is small, he said”.* Our Supplemental Documents package includes the Bismarck Tribune Story.

Oil – North Dakota crude by rail up slightly MoM in January to ~193,000 b/d

North Dakota CBR up in January

The North Dakota Pipeline Authority also posted its monthly update “January 2020 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 January was a low of 178,137 b/d to a high of 208,137 b/d for an average of ~193,137 b/d. This is down from Dec low of 157,673 b/d to high of 187,673 b/d for an average of ~172,673 b/d. The MoM incline in CBR volumes is likely due to the CBR share of total transportation increasing 2% MoM to 16% of total volumes in January from 14% in December. Below is a chart from the NDPA monthly update showing the crude by rail volumes since 2013. Our Supplemental Documents package includes the NDPA monthly update.

Figure 20: Estimated North Dakota Rail Export Volumes



Source: North Dakota Pipeline Authority

Biden's "fossil fuels" federal lands review

Oil – Biden admin outlines next steps in "fossil fuels" review on federal lands

On Tues, we tweeted [LINK] on the Interior Dept's release for its next steps on reviewing oil and natural gas operations on US federal lands. This is the big risk that everyone is watching is what restrictions will Biden put on federal lands as it will have a big impact on the Permian and all the other major US oil and gas basins including the Gulf of Mexico. The reason we tweeted was because there seemed like a clear indicator of how the Biden administration wants this review to end up – the release was titled "*Interior Department Outlines Next Steps in Fossil Fuels Program Review*". The DOI made a point of using fossil fuels instead of oil and natural gas. Its why our tweet said "*Should assume @DallasFed worst case est #Permian impact @POTUS federal lands risk ie. 0.5 mmb/d less growth. How can #Oil #NatGas be optimistic, @Interior outlines next steps in "fossil fuels" review. Emphasizing fossil fuels can't be good. #OOTT".* We recognize that this is only the outline of the review process, but, clearly the Biden administration is setting the stage for a tough review process. Our Supplemental Documents package includes the DOI announcement. [LINK]

Dallas Fed estimated worse case Biden federal lands hits Permian -0.5 mmb/d

Our tweet on the Biden fossil fuels review referenced the Dallas Fed estimates. Last week's (March 7, 2021) Energy Tidbits highlighted the Dallas Fed estimate on how Biden's federal lands policies could affect Permian production, on the New Mexico and Texas side, out to 2025 [LINK]. Our tweet referenced the Dallas Fed Restrictive Case that could hurt Permian by 0.5 mmb/d. Remember this is just the impact on the Permian and does not include the impact on other shale basins (ie, Bakken) or the Gulf of Mexico. The Dallas Fed wrote "*Restrictive Case: No new federal permits or extensions are granted starting in 2023. This is when the most-recently issued permits will expire. The existing permitting freeze adversely affects production in the near-term due to a lack of approvals of permit modifications and pipeline rights-of-way. As in the Hybrid Case, companies shift their focus to nonfederal acreage. Permian production climbs to 4.8 mb/d in 2025, or 0.5 mb/d below the Reference Case. New Mexico's output drops to 0.7 mb/d, or 0.8 mb/d less than the Reference Case*." Our Supplemental Documents package includes the Dallas Fed blog.

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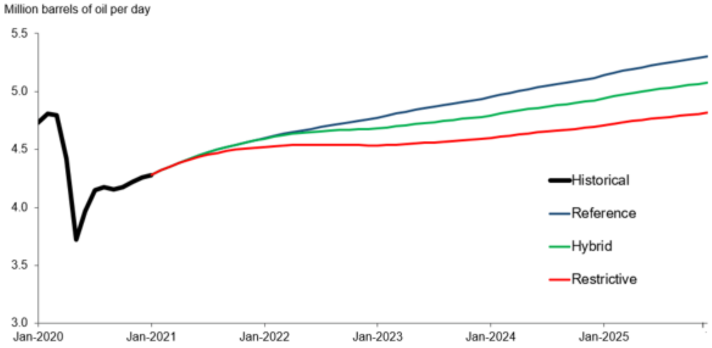
Figure 21: Permian Production Under Varying Degrees of Federal Restrictions



Source: Federal Reserve Bank of Dallas

Oil – Michigan's plan to ensure propane supply if it can shut down Line 5

Michigan's propane supply plan

Michigan released its propane supply plan on Friday night. We think the takeaway from the plan is that the best case scenario for Michigan is that, if they shut down Line 5, this propane supply plan can meet needs, then it will just cost more for the same amount of propane. But as to the big picture, will it work and provide enough propane, we believe the lack of specifics in the plan suggests there is huge risk to it working. And don't forget winter is only 8 months away. We are always surprised when governments or companies issue press releases after markets on Fridays because everyone knows that press releases at that time often include negative items hoping to get overlooked over the weekend. Yesterday, we tweeted [LINK] "*ICYMI, MI's Fri night special for propane supply plan if $ENB #Line5 is shut down. Alternate transport (ie. rail), efficiency, more #Propane in storage & confidence building "aggressively identifying other sources". MI will need repeat DJF 23rd hottest in last 126 yrs. #OOTT*". This is the Michigan plan promised by Gov Whitmer on how Michigan would ensure security of propane supply if Michigan is successful and forces an immediate shut down of Enbridge's Line 5. We don't think its unfair to say that the plan won't install a lot of confidence. The key elements of the plan would see the Line 5 supply be replaced with some alternative transportation of propane into Michigan (via rail, truck, other pipelines?), promoting efficiency, and increasing propane storage volumes. The part that is probably that won't install much confidence for Michigan is that Michigan *"is aggressively identifying other sources for propane beyond Line 5*." We were quite surprised by this statement as we would have assumed they would have already identified alternative propane sources before they decided to try to shut down Line 5. The propane plan is short on specifics but worth a read. Our Supplemental Documents package includes the release. [LINK]

If Line 5 is shut down, Michigan will be hoping for another really hot winter

Gov Whitmer called a propane supply emergency with the cold Feb. It was cold, but it wasn't a bitterly cold Feb. NOAA ranked Feb as the 39th coldest Feb in the last 127 years. Overall for the peak winter months of Dec/Jan/Feb, NOAA ranked DJF as the 23rd hottest in the last 126 years. It was extremely warm for most of the winter. Dec was the 17th hottest in the last 126 years. Jan was the 12th hottest in the last 127 years. Our Supplemental Documents package includes the NOAA temperature maps for Dec/Jan/Feb.

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

The Imperial warning on shortages should not surprise anyone who follows Line 5, especially as Enbridge provides a good recap of what happens if Line 5 is shut. On June 19, our Line 5 tweet [LINK] started "*A weekend must read, Enbridge "impact of*

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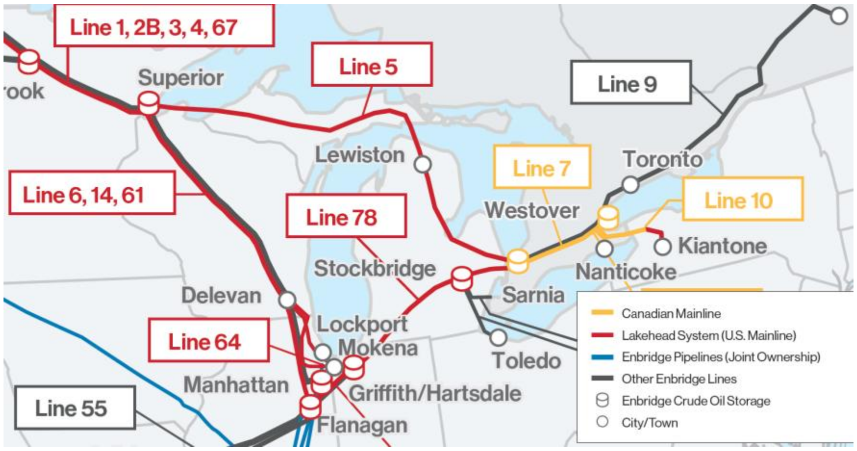
a Line 5 shutdown" is excellent recap of who, where, what gets hit by Line 5 shut down." It includes tidbits such as "*Line 5 supplies 65% of propane demand in Michigan's Upper Peninsula, and 55% of Michigan's statewide propane needs*." There would also be a big impact on refineries to the east "*Refineries 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 Doc1uments package includes the "impact of a line 5 shutdown" brief. [LINK]

Figure 22: Enbridge Line 5



Source: Enbridge

Oil – Potential for US to add 9₵/b excise tax on Cdn "tar sands"

We believe there is a good chance for all oil sands exports to the US to be hit by an excise tax. On Friday, we tweeted [LINK] on a US bill introduced this week by Rep Blumenauer and Sen Markey and supported by Sen Warren, Sanders, and other Dems because we believe it has a good chance of being ultimately passed into law. We tweeted "*Two social/Dems hot buttons covered in well written Bill title "The Tar Sands Tax Loophole Elimination Act". If so, bitumen not exempt from 9¢/b excise tax. Not huge, but another hit to netback. Unless @JustinTrudeau steps in for #OilSands. #OOTT".* Blumenauer wrote "*The Tar Sands Tax Loophole Elimination Act, reintroduced today in both chambers of Congress, would close the tax loophole by adding oil derived from tar sands and oil shale to the definition of crude oil, thereby restoring original congressional intent and requiring oil companies pay the full excise tax into the trust fund. The Oil Spill Liability Trust Fund's revenue source is a nine cents per barrel excise tax on crude oil and petroleum products."* Its hard to believe that in a Democrat controlled House and Senate, the bill won't ultimately get approved. The reality is that 9 cents a barrel isn't material, but its just another added cost and added costs means reduced netbacks. Our Supplemental Documents package includes the Blumenauer release [LINK] and Bill.

Likely 9 cent/b excise tax on tar sands

Will Trudeau pass on fighting on this so he can focus on agreement items

We put in our tweet that the adding the excise tax looks like it will be done with the caveat that unless Trudeau steps in to fight for the oil sands. We certainly that is the case, but we doubt many in the oil patch expects him to do so. We don't need to put words in Trudeau's mouth, rather he has made it clear that he didn't fight on

Keystone XL because Biden wanted to pull the permit. And that his approach with the US isn't to fight back on items they disagree, rather he would focus on items that the US and Canada see a common benefit. Now we think the caveat assuming the dispute item isn't something that will impact Quebec or Ontario, which are the two critical provinces for any chance of a majority government. Last week's (March 7) Energy Tidbits noted Trudeau's Feb 28 NBC Meet the Press interview. NBC posted a transcript of the interview [LINK] including "*Does this mean you're done asking for -- are you going to stop advocating for it here? Do you feel as if the Keystone Pipeline is now dead? PRIME MINISTER JUSTIN TRUDEAU: I think it's fairly clear that the U.S. administration has made its decision on that, and we're much more interested in ensuring that we're moving forward in ways that are good for both of our countries. I think there's so much we can do together that I don't spend too much time worrying about the tension points. It'll always come up in our relationship, but we'll work through them, particularly given the alignment on so many things that we're able to bring with this new administration."*

Democrats are pretty good at messaging a scarier picture

Whether its for public opinion, or to get lawmakers on the margin to agree, the Democrats are showing they are very good a messaging the scariest possible picture when it comes to oil and natural gas. Our tweet on this likely excise tax said it was a well written title that included two social/democrat hot button items "tar sands" and "tax loophole". Blumenauer's release titled the bill "The Tar Sands Tax Loophole Elimination Act". There is no question using tar sands gives a much better sales job for the Dems than calling it oil sands. We are just surprised they didn't sneak in the word hazardous somewhere. This is no different than how the Biden Administration messaged their review of federal lands for oil and natural gas. They didn't call it a review for oil and gas, they called it a review on "*fossil fuels*". Its why, on Tues, we tweeted [LINK] "*Should assume @DallasFed worst case est #Permian impact @POTUS federal lands risk ie. 0.5 mmb/d less growth. How can #Oil #NatGas be optimistic, @Interior outlines next steps in "fossil fuels" review. Emphasizing fossil fuels can't be good. #OOTT".*

Oil – Increased shipping tolls on Trans Mountain from social pressures on insurers

Increased pipeline tolls from insurance

We have to believe that this Trans Mountain issue will be impacting all pipelines. On Thursday, we tweeted [LINK] on a Bloomberg story "*Trans Mountain Wants to Keep Insurers Secret Amid Pipe Pushback' "But Trans Mountain said in a Feb. 22 letter that insurers are facing pressure to stop covering the pipeline, raising costs for both Trans Mountain and its customers. Members of the public can file comments on the request until March 22. "In 2020, Trans Mountain experienced a significant reduction in available insurance capacity," the company said in its petition. "It sought and secured partial replacement policies to compensate for this reduction, but did so at a significantly higher cost.".* This is on the existing Trans Mountain pipeline and not the TMX expansion project. It's a good example of how social pressures are impacting those who help 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. And, unfortunately for the oil and natural gas producers, this type of trend on one pipeline will spread to other pipelines ie an industry wide impact. Its why we tweeted "*Social pressures for insurers to stop covering existing Trans Mountain pipeline = "significantly higher" insurance cost = increased tolls to ship oil. May not be huge by itself, but ESG factors keep adding up costs to #Oil #NatGas. Thx @roberttuttle #OOTT"."* Our Supplemental Documents package includes the Bloomberg report.

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Trans Mountain has had a pretty good track record of safe operations

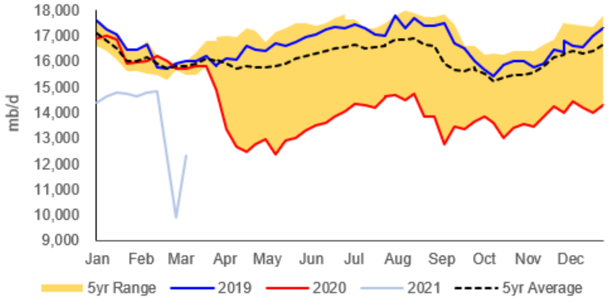
Perhaps there is more environmental push against Trans Mountain because it goes thru BC and, without Trans Mountain, there wouldn't be a TMX, but we still expect this to be an industry wide trend. The social attack against Trans Mountain, in theory, should be less against them as an operator as Trans Mountain has a pretty good track record for safe operations. Trans Mountain posted a full listing of all spills at [LINK]

Oil – Refiners begin to recover, up +2.407 mmb/d YoY to 12.310 mmb/d

Refineries recover post freeze

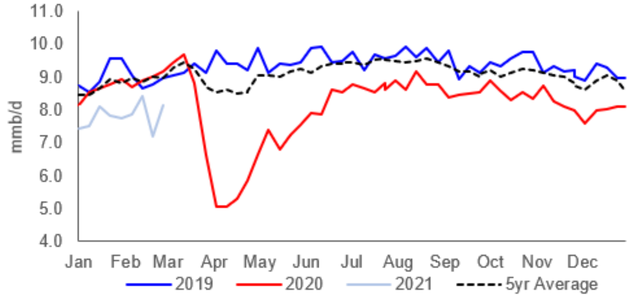
As expected, we saw crude oil inputs to refineries ramp up with the return of more refineries to normal operations. Crude inputs to refineries increased this week and were +2.407 mmb/d to 12.310 mmb/d, up from the all-time low last week, and are -3.392 mmb/d YoY. Refinery utilization increased this week, being +13.0% to 69.0%, which is -17.40% YoY. Total products supplied (ie demand) decreased slightly this week and was -0.088 mmb/d to 18.672 mmb/d for the Mar 5 week, and motor gasoline demand increased, being +0.578 mmb/d to 8.726 mmb/d. Below is our graph of crude inputs to US refineries, along with a graph of US motor gasoline supplied.

Figure 23: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA, SAF

Figure 24: US Motor Gasoline Supplied (mmb/d)



Source: EIA, SAF

Oil – BP Australia Kwinana refinery on track for decommissioning by end of March

Australia refining capacity dwindling

This week, BP has stopped imports to its 146,000 b/d Kwinana refinery just outside of Perth which will be decommissioned by the end of March and converted into an import terminal [LINK]. We had first noted the conversion plans in our Feb 7, 2021 Energy Tidbits as mgmt. had commented on it in their q4 call. The following week, we noted that Exxon announced plans [LINK] to convert their 90,000 b/d Altona refinery near Melbourne into an import terminal as well. Viva Energy has been the only of four currently operating refineries in

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Australia that has committed to staying open for the time being, accepting the short-term government payments to subsidize fuel production before the government announces a longer term solution to incentive refiners in Australia. Additionally, Ampol's has yet to reach a decision on the future of their 109,000 b/d Lytton refinery in Queensland.

Oil – US "net" oil imports down 0.918 mmb/d to 3.022 mmb/d

US "net" oil imports -0.918 mmb/d WoW

US "NET" imports were down 0.918 mmb/d to 3.022 mmb/d for the Mar 5 week. US imports were down 0.636 mmb/d to 5.655 mmb/d and US exports were up slightly, being +0.282 mmb/d to 2.633 mmb/d. The WoW decrease in US oil imports was driven by decreases from Saudi Arabia and Mexico. Some items to note on the by country data. (i) Canada basically flat this week, and was -0.013 mmb/d to 3.635 mmb/d for the Mar 5 week, which is now ~65,000 b/d below the average levels in Jan/Feb of 2020. Also note that PADD 2 imports were also down, being +280,000 b/d and Canada is almost all of this market. (ii) Saudi Arabia was down 0.117 mmb/d to 0.251 mmb/d this week. (iii) Colombia was flat at 286,000 b/d. (iv) Ecuador decreased and was -55,000 b/d to 59,000 b/d. (v) Iraq was up 73,000 to 141,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico decreased 240,000 b/d to 0.362 mmb/d.

Figure 25: US Weekly Preliminary Oil Imports By Major Countries

	Jan 8/21	Jan 15/21	Jan 22/21	Jan 29/21	Feb 5/21	Feb 12/21	Feb 19/21	Feb 26/21	Mar 5/21	WoW
Canada	3,958	3,890	3,115	4,238	3,730	3,681	2,831	3,648	3,635	-13
Saudi Arabia	328	135	206	180	282	237	143	368	251	-117
Venezuela	0	0	0	0	0	0	0	0	0	0
Mexico	600	710	463	723	446	471	355	602	362	-240
Colombia	0	358	73	305	336	346	200	285	286	1
Iraq	91	97	115	90	114	227	0	68	141	73
Ecuador	168	144	258	100	105	186	55	114	59	-55
Nigeria	195	49	116	175	0	70	50	89	0	-89
Kuwait	0	0	0	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0	0	0	0
Top 10	5,340	5,383	4,346	5,811	5,013	5,218	3,634	5,174	4,734	-440
Others	899	662	718	696	844	680	965	1,118	921	-197
Total US	6,239	6,045	5,064	6,507	5,857	5,898	4,599	6,292	5,655	-637

Source: EIA, SAF

Oil – OPEC MOMR increases 2021 demand by 140,000 b/d vs last month

Slight increase to OPEC 2021 demand forecast

OPEC released its Monthly Oil Market Report on Thurs. The overall takeaway from the new Mar OPEC forecast should be basically neutral. The positive is stronger demand growth to end 2021. OPEC reduces near term Q1, Q2 demand but increases stronger demand to end 2021, but still below pre Covid levels. But also increase non-OPEC supply so the net impact is a slight decrease to call on OPEC in 2021. (i) OPEC's Mar demand forecast vs Feb forecast in brackets. Mar demand for 2020 of 90.39 mmb/d (90.26), Q4/20 revised up slightly to 94.13 (93.89). For 2021, OPEC slightly increased its demand growth to +5.89 mmb/d (5.79). Mar forecast for 2021 demand of 96.27 mmb/d, up slightly from 96.05 mmb/d in the Feb forecast. No surprise, lowered Q1/21 by 0.18 mmb/d along with Q2/21 by 0.31 mmb/d, but revised up Q3/21 +0.41 mmb/d, and Q4/21 +0.97 mmb/d. Biggest QoQ increase is in Q2/21 at +2.57 mmb/d vs Q1/21. Q3/21 is +1.82 mmb/d vs Q2/21. Note 2021 is still -3.71 mmb/d vs 2019. (ii) OPEC Feb production per "secondary sources" in total was down 647,000 b/d to 24.848 mmb/d, which is slightly below the Bloomberg survey which showed production of 24.870 mmb/d. Of note, the decrease was mainly due to the -0.930 mmb/d decrease from Saudi Arabia with their 1 mmb/d voluntary cut. Nigeria was +161,000 b/d, increase was expected following Jan Qua Iboe force majeure and their paying back overcompensated barrels. Note Venezuela was +33,000 b/d and at 521,000 b/d broke 500,000 b/d for the first time in several months. This increase is something we have been expected, no reasons given, but likely linked to Iran equipment, supplies, diluent deliveries. Iran still relatively flat on production at 3.898 mmb/d, the question is level of exports that are

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increasing. (iii) OPEC revised non-OPEC supply up 200,000 b/d for 2020 and up by 500,000 b/d for 2021. OPEC qualified its 2021 forecast by saying "The US liquids supply forecast remains unchanged, with growth of 0.16 mb/d in 2021, although uncertainties persist." They don't have a big different call on the US this month, whereas last month, they revised up 2021 by 71,000 b/d. They don't really explain their uncertainties persist, but it must be related to the risk of higher oil prices driving higher activity. (iv) On stock builds, global stock drawdown decreased in Jan vs Dec. OPEC wrote *"Preliminary January data sees total OECD commercial oil stocks down by 11.3 mb m-o-m. At 3,052 mb, they were 138.7 mb higher than the same time one year ago and 92.2 mb above the latest five-year average. OECD commercial crude stocks fell in January by 17.7 mb to stand at 1,501 mb. This is 104.6 mb higher than the same time a year ago and 46.3 mb above the latest five-year average".* Note, December stocks of 3,063 mmb was a slight downward revision vs preliminary of 3,078 mmb reported last month. So Jan draws vs preliminary is more like 26 mmb. (v) Call on OPEC was decreased for 2020 by 0.1 mmb/d to 22.4 mmb/d, which is 7.2 mmb/d lower than 2019. The call on OPEC for 2021 was also revised down by 0.2 to 27.3 mmb/d, +4.9 mmb/d YoY. Our Supplemental Documents package includes excerpts from the OPEC MOMR.

Oil – Blinken commits to consult with congress before lifting Iran sanctions

Blinken to consult congress before lifting sanctions

We were surprised that Secretary of State Blinken's testimony at the House Foreign Affairs Committee on Wed were overlooked by oil markets. He was asked directly if he would consult with the committee before the US would lift sanctions on Iran, and he directly said yes. Again, this is before the US removes sanctions. And then Blinken goes on to say he will also be consulting with the allies and partners in the region. How does this not significantly reduce the potential for the US to lift Iran sanctions quickly? This is no question a negotiating tactic with Iran to get them to return to compliance first but, even still, its just means that it will take longer before sanctions are removed. Its why earlier this morning we tweeted [LINK] "*1/3. Positive for #Oil. must read (thx @TheTerminal), why tough for @POTUS to lift US sanctions on Iran quickly @SecBlinken asked by @HouseForeign "Sir, will you commit to me and to this Committee that you will formally consult with us before lifting an sanctions on Iran? #OOTT",* [LINK] "*2/3. @SecBlinken "But yes, particularly when it comes to Iran, if there is any movement on this - and thus far there hasn't been, yes we will do so. And by the way, not just - Congress is the first stop, but ... #OOTT #JCPOA"* and [LINK] "3/3 "... also allies, partners - including allies and partners in the region who have their own *concerns and own interests at stake." Iran may be sneaking more oil onto markets, but sanctions keep that down. Hard for @SecBlinken to backtrack on this commitment. #OOTT #JCPOA*". As noted in our tweet, we recognize Iran is sneaking more oil out onto oil markets (see below item), taking longer to remove sanctions will continue to keep more Iran oil from hitting markets. Our Supplemental Documents package includes Blinken's key comments to the committee.

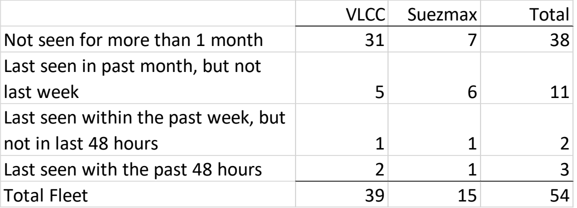
Oil – Kpler estimates China imports of Iran oil to reach 856,000 b/d in March

Kpler: China to get 856,000 b/d Iran oil in March

One of the underappreciated positives to the oil market is that the market is absorbing increasing Iran barrels being snuck onto export markets. No one knows exactly how many more barrels are getting out, but everyone believes the numbers keep going up. Also, no one knows where the barrels are going, but no one will be surprised that it looks like China is the big recipient of Iran barrels being snuck in the market. Last week's (March 7, 2021) Energy Tidbits highlighted the Blomberg Julian Lee story "*Iran Tanker Tracker: Ships Vanish as Diplomatic Strains in Focus"*, which included the below data of the number of Iran tankers that have gone dark. We said if we take the total barrels for all tankers, its 93 million barrels that are in gone dark tankers. On Thurs, the Bloomberg report "*A Surge in Iranian Oil Exports Is Clogging Up Chinese Ports*" that highlighted "*Chinese imports of Iranian crude will rise to*

856,000 barrels a day in March, the most in almost two years and up 129% from last month, according to Kevin Wright, a Singapore-based analyst with Kpler. His estimates include oil that's undergone ship-to-ship transfers in the Middle East or in waters off Singapore, Malaysia and Indonesia to obscure their origin. Below is our table of the Julian Lee data from March 2. Our Supplemental Documents package includes the Bloomberg report.

Figure 26: Iran Tanker Tracker March 2, 2021



	VLCC	Suezmax	Total
Not seen for more than 1 month	31	7	38
Last seen in past month, but not last week	5	6	11
Last seen within the past week, but not in last 48 hours	1	1	2
Last seen with the past 48 hours	2	1	3
Total Fleet	39	15	54

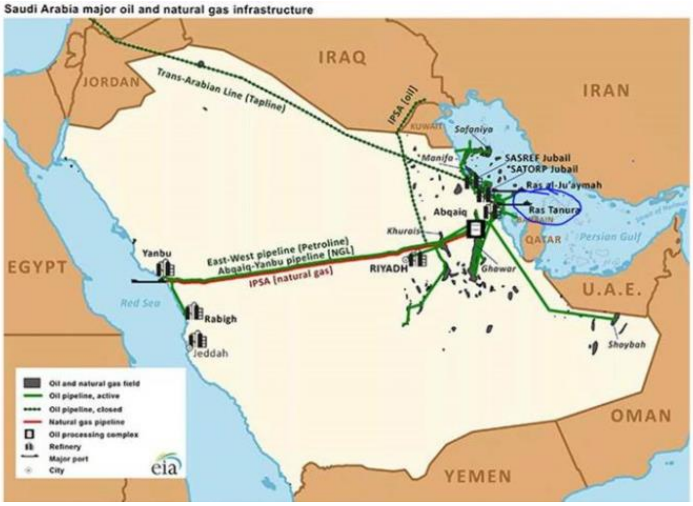
Source: Bloomberg

Oil – Saudi Aramco's Ras Tanura terminal attacked by drone, but no damage

Drone attack at Ras Tanura

It didn't take long for the Houthis to make good on their warning to Saudi Arabia. Last week's (March 7, 2021) Energy Tidbits highlighted the Houthis threatening Saudi Aramco facilities if Saudi Arabia keeps attacking Marib. We have been highlighting the battle for Marib in Yemen as the key battle and one that will likely define any post war settlement. Its why the Houthis warned the Saudis. Our memo has a news cut off of ~7-8am MT. So it wasn't until after our memo that we saw the reports that the Houthis made a major missile attack on Saudi Arabia, including on Saudi Aramco's Ras Tanura in the Persian Gulf, the most important oil export terminal in the world. The reports were that there was no damage at Ras Tanura from the one drone. If the drone had disrupted Ras Tanura operations, oil prices would have spiked. Ras Tanura is Saudi Aramco's major loading terminal with 3.4 mmb/d of loading capacity, 33 mmb storage and also has a 550,000 b/d refinery. It would have been a major blow to Saudi oil exports. The attack is a reminder that no Saudi Aramco facility is off the potential target list. Below is the EIA's map of major Saudi oil and gas infrastructure with Ras Tanura circled and a Google Maps satellite picture of Ras Tanura.

Figure 27: Saudi Arabia Oil and Natural Gas Infrastructure


Saudi Arabia major oil and natural gas infrastructure
IRAQ
IRAN
JORDAN
Trans-Arabian Line (Tapline)
IPSA (oil)
KUWAIT
Safaniya
Manifa
SASREF Jubail
SATORP Jubail
Ras al-Ju'aymah
Ras Tanura
BAHRAIN
Abqaiq
Khurais
QATAR
Persian Gulf
EGYPT
Yanbu
East-West pipeline (Petroline)
Abqaiq-Yanbu pipeline (NGL)
IPSA (natural gas)
RIYADH
Ghawar
U.A.E.
Red Sea
Rabigh
Jeddah
Shaybah
OMAN
YEMEN
Oil and natural gas field
Oil pipeline, active
Oil pipeline, closed
Natural gas pipeline
Oil processing complex
Refinery
Major port
City
eia

Source: EIA

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Figure 28: Ras Tanura

Ras Tanurah Saudi
Aramco Port
Google

Source: Google Maps

Oil – Is someone positioning for post Houthi war by building on Perim Island?

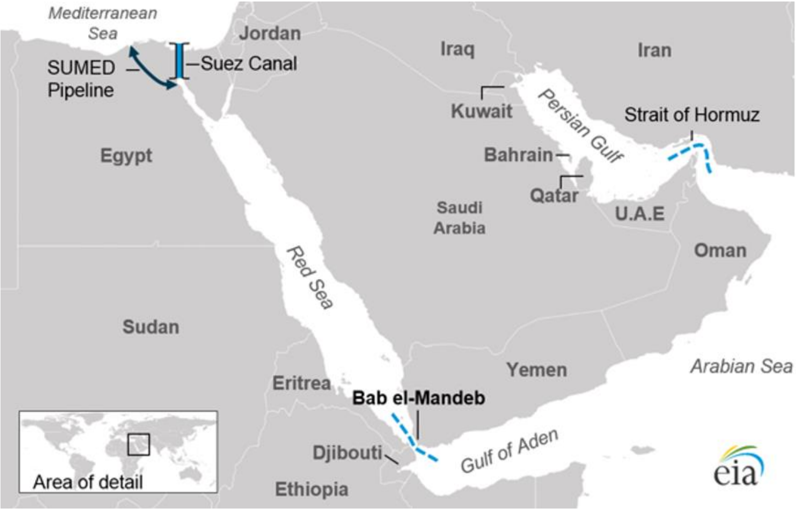
Air strip on Perim Island?

There was an interesting Sputnik (Russian news) story this week "*Photos: Mysterious Airfield Construction Spotted on Yemeni Island Formerly Controlled by UAE"* that makes us wonder if this is a sign that the end of the Houthis/Saudi coalition war is near after more than 6 years. We have been in the camp that the war is likely to end in 2021. Sputnik shows satellite pictures indicating someone is building an air strip on Perim island, which is the most strategically located island at the narrowest section of the Bab el Mandab. Previously, the Houthis in 2017shot rockets at tankers from the island. Sputnik writes "*According to the blog Intel Lab, the new facility is Emirati as well, although it's unclear why exactly they think so."* If this is UAE done, we think it is less done to drive the war against the Houthis. The UAE seemed to have lost their desire to drive out the Houthis over the past year. If it's the UAE, it makes us wonder if this isn't another signal that the Houthi war is nearing its end. We look at this more as a strategic move to control the Bab El Mandab by a South Yemen if Yemen returns to North and South Yemen. And if the UAE does this, it means that their sponsored STC can't be overlooked in any southern Yemen coalition between the Yemen govt sponsored by Saudi and the STC sponsored by UAE. We think this might be smart positioning for negotiating for the future of Yemen. And if these actions are more set for positioning for negotiations, then it's more signs pointing to the likely end of war in the next year. We look at this positioning much like our view on the battle for Marib, its positioning for a post war split into a North and South Yemen. Maybe we are wrong on the positioning for the future and, if so, it points to another big push on the Houthis by the UAE. You never know, but that would be inconsistent with the UAE moves over the past year. Our Supplemental Documents package includes the Sputnik story [LINK].

Bab el Mandeb is a major oil/products chokepoint

Not that we see different spellings of Mandab vs Mandeb. The EIA uses Mandeb. The Bab el Mandeb is a major oil/products chokepoint and saw ~6.2 mmb/d of volumes in 2018. The EIA's 2019 blog "*The Bab el-Mandeb Strait is a strategic route for oil and natural gas shipments*" [LINK] that reminds of the strategic importance to global oil markets of the Bab el-Mandeb, the "*sea route chokepoint between the Horn of Africa and the Middle East, connecting the Red Sea to the Gulf of Aden and Arabian Sea. Most exports of petroleum and natural gas from the Persian Gulf that transit the Suez Canal or the SUMED Pipeline pass through both the Bab el-Mandeb and the Strait of Hormuz." "The Bab el-Mandeb Strait is 18 miles wide at its narrowest point, limiting tanker traffic to two 2-mile-wide channels for inbound and outbound shipments. Closure of the Bab el-Mandeb Strait could keep tankers originating in the Persian Gulf from transiting the Suez Canal or reaching the SUMED Pipeline, forcing them to divert around the southern tip of Africa, which would increase transit time and shipping costs. In 2018, an estimated 6.2 million barrels per day (b/d) of crude oil, condensate, and refined petroleum products flowed through the Bab el-Mandeb Strait toward Europe, the United States, and Asia, an increase from 5.1 million b/d in 2014. Total petroleum flows through the Bab el-Mandeb Strait accounted for about 9% of total seaborne-traded petroleum (crude oil and refined petroleum products) in 2017. About 3.6 million b/d moved north toward Europe; another 2.6 million b/d flowed in the opposite direction mainly to Asian markets such as Singapore, China, and India."*

Figure 29: Red Sea and Bab el-Mandeb



Source: EIA

Oil – Kuwait reminds of $90 breakeven crude price

Kuwait needs $90 oil to avoid budget deficit

This week, the Kuwait finance minister reminded that the recent increase in oil prices is still not enough to reverse their expected budget deficit [LINK]. In our Jan 31, 2021 Energy Tidbits, we noted the new Kuwait budget which featured increased spending, resulting in a $40b expected deficit this year. Kuwait has leaned on the issuance of bonds to pay salaries and subsidies which are >71% of total expenditures in the budget. The Kuwait News Agency wrote *"he also noted that the breakeven price in the 2022/2021 budget is USD 90".* This is another reminder that OPEC+ need high and sustained oil prices to fund their budgets.

Oil – Libya NOC Chair aiming for production of 1.45 mmb/d by year end 2021

The ramp up of Libya production was a major item in Q4/20 with the speed and level surprising to most. However, as we look to the balance of 2021 and 2022, Libya shouldn't be a major negative to oil prices as its growth will be more modest than expected. 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 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. In the Jan 2 forecast, the NOC Chair had not given a timeline to reach 1.6 mmb/d, but his original post-blockade ambition on Nov 1 had been to reach 1.6 mmb/d by the end of 2021, so the new forecast has pushed out this timeline about a year. Our Supplemental Documents package includes the Bloomberg report.

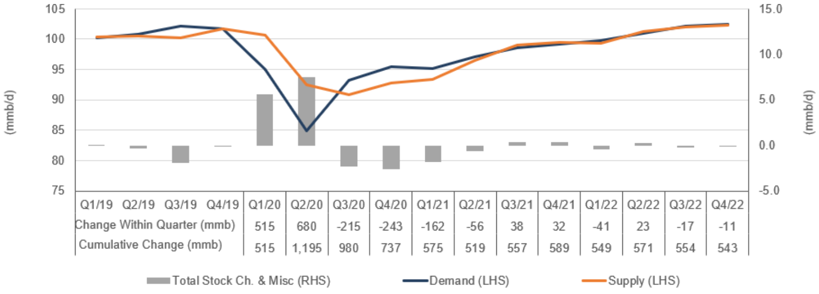
Libya NOC production est 2021 exit 1.45 mb/d

Oil – EIA STEO decreases forecast for global inventory draw downs in 2022

The EIA forecast for inventory draws is slightly worse for 2021 (slight negative for oil) mainly due to the increased global supply. This is due to EIA revising down global consumption further than the global supply reduction. (i) Q1/21 global demand forecast was revised downwards along with a slightly smaller downward revision to global supply, resulting in larger draws. Q2/21 draws are expected to average 0.6 mmb/d (was 0.1 mmb/d previously). (ii) For the monthly stock changes in Q1/21, Jan was +0.32 mmb/d (was +0.06 mmb/d), Feb -3.26 mmb/d (was -3.17 mmb/d), and the big decrease came in March with a draw of 2.19 mmb/d (was 3.07 mmb/d). (iii) Global supply and demand was revised upwards for 2022, with global supply being revised up 0.43 mmb/d and demand up 0.16 mmb/d. Average draws in 2022 of 0.1 mmb/d (was 0.4 mmb/d previously). Also note, the EIA doesn't specifically state it, but it looks like they are assuming cuts remain for all of 2022, though at some lower level. The EIA STEO doesn't spell it out clearly and they don't give the splits for us to consider non-OPEC, but for OPEC, the EIA STEO March forecasts OPEC is off 2.6 mmb/d on average for all of 2022. The OPEC deal is supposed to run thru April 30, 2022, not the full year. In other words, the EIA assumes that OPEC extends the deal thru 2022. Even though EIA doesn't give the non-OPEC split, there would be added volumes for non-OPEC. Below is our graph of the EIA STEO oil demand/supply balance.

EIA decreases forecast for inventory draws

Figure 30: EIA STEO Oil Demand/Supply Balance



	Q1/19	Q2/19	Q3/19	Q4/19	Q1/20	Q2/20	Q3/20	Q4/20	Q1/21	Q2/21	Q3/21	Q4/21	Q1/22	Q2/22	Q3/22	Q4/22
Change Within Quarter (mmb)					515	680	-215	-243	-162	-56	38	32	-41	23	-17	-11
Cumulative Change (mmb)					515	1,195	980	737	575	519	557	589	549	571	554	543

Source: EIA

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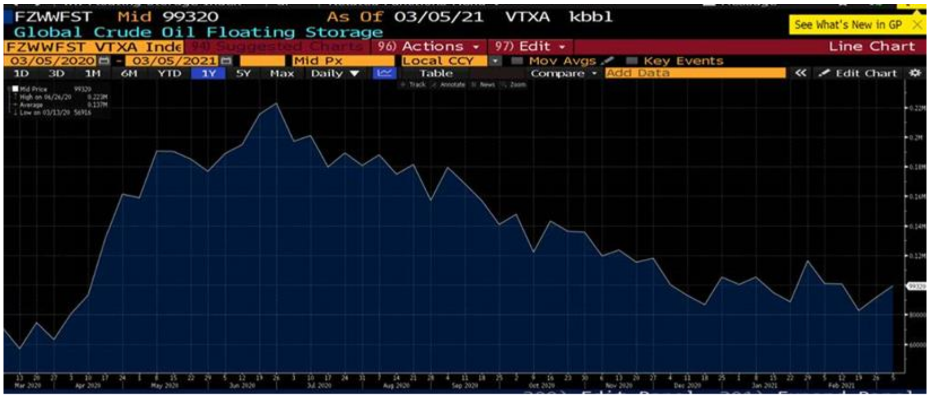
Oil – Vortexa floating storage +8.4% WoW, Braemar shows an increase in tankers

Vortexa and Braemar floating storage estimates

Floating storage data from Vortexa and Braemar have been up and down as of late, with both showing increases this week. (i) Bloomberg reported on Vortexa floating oil data that showed a WoW increase of 7.73 mmb or +8.4% WoW to 99.32 on March 5 from 91.59 mmb on Feb 26. Note, Vortexa had revised the previous weeks data upwards, revising it up from 87.80 mmb to 91.59 mmb this. Floating storage is still down 51.1% since the June 28 peak of 221.3 mmb. The region with the highest level of floating storage, APAC, was up 17% WoW to 74.67 mmb. U.S. Gulf Coast up 120% WoW to 4.48, which is its highest level since July, due to the Texas freeze-off. (ii) Bloomberg later reported on the Braemar data. Braemar doesn't estimate the barrels of oil in floating storage but notes there was an increase of 5 VLCCs in floating storage to 40 as of March 8, which is the highest in more than a month. Total tankers of 218 as of March 8 is +19 WoW. Our Supplemental Documents package include the Bloomberg Vortexa and Braemar stories.

Figure 31: Vortexa Global Floating Storage Level



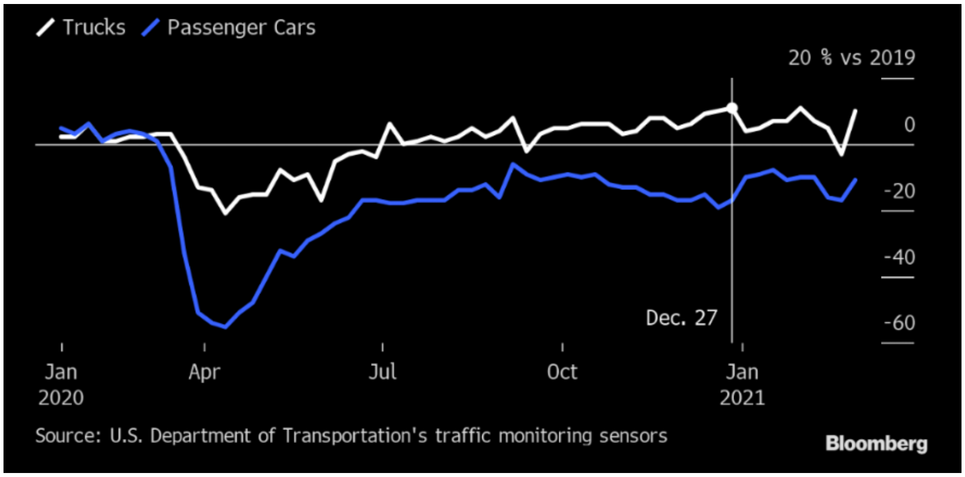
Source: Bloomberg, Vortexa

Oil – Bloomberg Oil Demand Monitor, UK road fuel demand improving

Bloomberg's Oil Demand Monitor

We recommend reading the weekly Bloomberg terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. Mobility has been increasing slightly recently with road fuel consumption starting to climb higher. As the schools resume in the U.K., traffic congestion in London was up 60% WoW, but road fuel sales are still 29% lower than last February. Trucking activity in the US was up in the last week of February and was 10% higher than the last week of February 2019. These numbers were in line with the other peaks seen over the Christmas Holiday and again in late January. Passenger car miles saw a similar uptick to only 11% below the 2019 equivalent. Global commercial flights have begun to pickup since mid-Feb. Bloomberg once again reminded that we are now in the timeframe where YoY comparisons are becoming less useful as many geographies had restrictions in place in March 2020. Global seat capacity is down 39% YoY and down 45% vs 2019. The OAG stated *"Australia, China, Japan, South Africa, South Korea and the U.S. have all seen capacity added in the last week which is a more positive trend than we have seen in recent weeks"*. However, jet fuel demand continues to lag, -25% YoY in the US, -41% YoY in India, and -73% YoY in Spain. China is continuing to show a strong increase in scheduled flights post LNY and is the only major country where airline activity exceeds 2019 levels. On regional basis, OAG estimates show that Asia-Pacific is the closest to normality, while Europe is still the worst affected. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 32: Vehicle miles traveled in U.S. versus same week of 2019



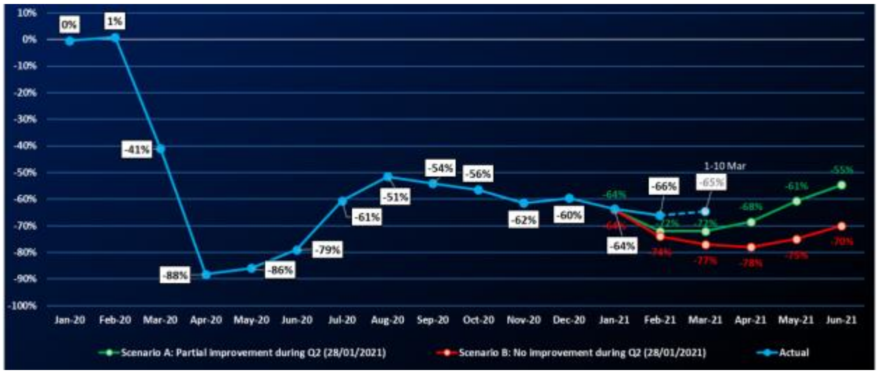
Source: Bloomberg, U.S. Department of Transportation’s traffic monitoring sensors

Oil – European air traffic on March 10 still only 36% of 2019 levels

Eurocontrol air traffic update

Eurocontrol posted its new slide deck “*Covid-19 Eurocontrol Comprehensive Assessment Impact on European Aviation”.* It is an excellent slide deck for a recap of Europe air travel and also some insights on international travel. The key Europe recap data points are “*9,856 flights (36% of 2019 levels) on Wednesday 10 March 2021. March traffic slightly increasing within Network over 2 weeks (+3%, +297 flights. Positive trend since mid February, stabilizing over the last week.”* Eurocontrol the very active cargo traffic +10% from 2019 levels. Also that European airlines are gearing up for a big increase in flights “”note *that a significant proportion of flight operations for some of the largest airlines are actually non-commercial, i.e. training flights and circular flights to maintain pilot ratings”.* Our Supplemental Documents package includes excerpts from the Eurocontrol slide deck. [LINK]

Figure 33: Eurocontrol: Traffic Scenarios/Actual vs 2019



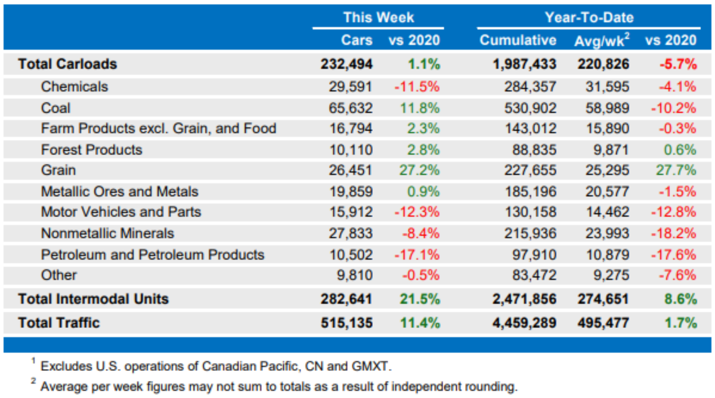
Source: Eurocontrol

Oil – US intermodal volumes driving YoY rail traffic strength

Intermodal YTD volumes +8.6%

There is no change to the US rail volumes posted by the Association of American Railroads weekly data. Rail traffic in the US had a strong start to 2021, mainly driven by intermodal volumes which had been +12.1% YoY in January, bringing total traffic to +5.3% YoY. However, the brutal cold and snow in the US in February caused overall rail traffic to be -4.3% YoY with total carloads in the third week of Feb being the lowest on record going back to 1988, however intermodal was still up 1.8% YoY. For the most recent week ending March 6, 2021, total traffic was +11.4% YoY, driven by intermodal being +21.1% YoY, as last year during this time traffic began to be affected by Covid protocols. Total traffic YTD is up 1.7% YoY with intermodal being up 8.6% YoY.

Figure 34: US Rail Traffic Data – Week Ended Mar 6, 2021



	This Week		Year-To-Date		
	Cars	vs 2020	Cumulative	Avg/wk[2]	vs 2020
Total Carloads	**232,494**	**1.1%**	**1,987,433**	**220,826**	**-5.7%**
Chemicals	29,591	-11.5%	284,357	31,595	-4.1%
Coal	65,632	11.8%	530,902	58,989	-10.2%
Farm Products excl. Grain, and Food	16,794	2.3%	143,012	15,890	-0.3%
Forest Products	10,110	2.8%	88,835	9,871	0.6%
Grain	26,451	27.2%	227,655	25,295	27.7%
Metallic Ores and Metals	19,859	0.9%	185,196	20,577	-1.5%
Motor Vehicles and Parts	15,912	-12.3%	130,158	14,462	-12.8%
Nonmetallic Minerals	27,833	-8.4%	215,936	23,993	-18.2%
Petroleum and Petroleum Products	10,502	-17.1%	97,910	10,879	-17.6%
Other	9,810	-0.5%	83,472	9,275	-7.6%
Total Intermodal Units	**282,641**	**21.5%**	**2,471,856**	**274,651**	**8.6%**
Total Traffic	**515,135**	**11.4%**	**4,459,289**	**495,477**	**1.7%**

[1] Excludes U.S. operations of Canadian Pacific, CN and GMXT.

[2] Average per week figures may not sum to totals as a result of independent rounding.

Source: Association of American Railroads

Energy Transition – Net Zero market focus to step up if US commits to it before Apr 22

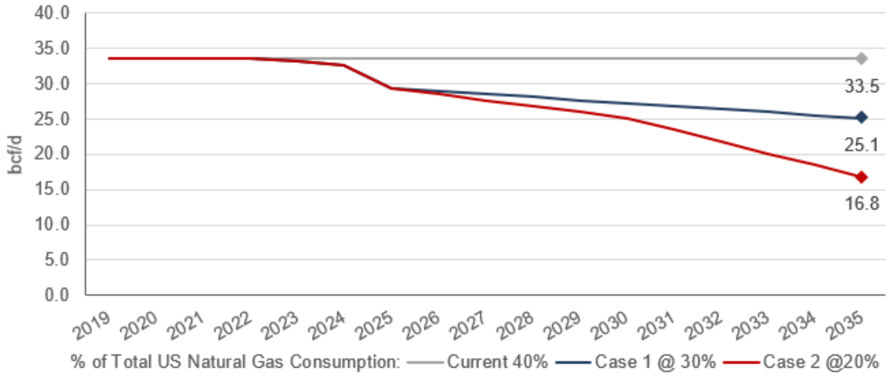
US to join Net Zero pre Apr 22

Markets should expect a big increase in Net Zero focus as the US is expected to commit to Net Zero in the week before the US climate summit on April 22. This is significantly different than committing to the Paris agreement. Committing to Paris didn't lead to many specific near term commitments to stay on track, whereas committing to Net Zero will see commitments to reach interim targets ie. what do they need to do before 2030 such that they are on track to reach Net Zero by 2050. This target to be somewhere by 2030 means action plans now. And this will therefore force more capital providers to reduce capital allocation to oil and natural gas. John Kerry (Special Presidential Envoy for Climate) was interviewed by the BBC on Monday. We created a transcript of his key comments but they were clear that the world has to act in the 2020s to have any chance to hit Net Zero. And he said "*its imperative that the United States step up with a very realistic, and achievable, measurable level of our reductions, and we will. President Biden will make that announcement either on April 22nd at our summit or in the week preceding"*. Yesterday, we tweeted [LINK] "*Expect US commit to #NetZero before Apr 22 US climate summit. Interesting 2020s dichotomy - US leadership will push more capital providers away from #Oil #NatGas, when price outlook for both looks stronger for longer thru 2020s. See SAF transcript @ClimateEnvoy on @BBCNews".* Our Supplemental Documents package includes the transcript we made of the Kerry comments.

Biden's "irreversible path to achieve Net-Zero emissions economy-wide"

We still aren't seeing the Biden administration highlight a very important item from the Biden election platform on climate change. Its not just that Biden wants to commit the US to Net Zero, he wants to put it on an irreversible path to achieve Net Zero. We highlighted this in our SAF Group July 28, 2020 blog "*Biden To Put US On "Irreversible Path to Achieve Net-Zero Emissions, Economy-Wide" Is a Major Negative To US Natural Gas in 2020s*" [LINK]. One of our key concerns Biden's climate change plan is that he still plans to have all US electricity be "carbon pollution-free" by 2035. After we released that blog, we had a number of calls on the blog and it seems like Biden's new clean energy plan was not read or discounted because the targets seem impossible. We agreed this target is impossible given fossil fuels currently provide ~60% of total US electricity and we don't see anyway that can go to zero in 15 years. But we warn that Biden is not just making this an aspirational goal, he states clearly climate change is a Day 1 action, and most importantly, he states he plans to put the US on an "*irreversible path*" to his goals. So we agree it is impossible, but our blog reminds that even if he is only 25% or 50% successful, it would be a massive hit to future US natural gas consumption. Electricity currently represents ~40% or ~33.5 bcf/d of total US natural gas consumption. If Biden is 50% successful, it will knock of 16.8 bcf/d or 20% of total US natural gas consumption. If he is 25% successful, it will knock of 8.4 bcf/d or 10% of total US natural gas consumption. If markets see Biden is serious about making this happen, it will very quickly impact the long term value of US natural gas and that some investors will soon look to avoid US natural gas ie. not consider it investible for the mid/long term. Its why we believe Biden's carbon-pollution free electricity plan will be a major negative to US natural gas in the 2020s. There is much more in the 5-page blog. Our Supplemental Documents package includes our July 28, 2020 blog.

Figure 35: Natural Gas Lost Consumption If Biden is 25% or 50% Successful



Source: SAF Group

Energy Transition – BMO to report on its 2030 targets to get to loan book to Net Zero

BMO's Net Zero ambition

We can't stress enough that the big change in the Net Zero ambitions is that it involves setting targets to an interim period (most will be using 2030) to ensure they will be on track to get to Net Zero by 2050 and having specific actions in the 2020s to get to that interim target. The biggest surprise in 2021 is no longer that the world is committing to Net Zero, but it will be the action plans for the 2020s to get be on track. And that the timing for these reveals will likely be no later than the end of Sept ie. before COP-26 in Glasgow. On Wed, BMO announced its Net Zero Ambition. One of the key parts to highlight, in particular for oil and gas companies, is "*Targeting net zero financed emissions in our lending by 2050 and committing to establishing intermediate (2030) and longer-term (2050) targets for financed emission reduction in partnership with our clients. BMO will report on progress annually beginning in 2021*." Its not just that BMO is moving its loan book to net zero financed emissions by 2050, they will be establishing their 2030 targets to do so, which to us means they have to be revealing or moving on some sort of action plan right away. We don't expect them to abandon oil and gas overnight, but the fact is that joining the Net Zero club provides a clear direction of path, just not the speed to get there. But we would expect to see one of the first requests will be to see the Net Zero plans for their loan book companies. The other reality is that as lenders announce they are moving to their loan books to Net Zero, it will mean less capital providers to oil and gas and that means higher cost of capital. Our Supplemental Documents includes the BMO announcement. [LINK]

Energy Transition – BP provides $50mm for RNG facilities development and construction

BP provides $50mm to RNG facilities

This week, BP and Clean Energy Fuels announced a partnership to develop, own, and operate new renewable natural gas facilities at dairies with bp to provide $50mm for the development and construction [LINK]. Throughout 2020, governments and companies have begun to realize that the energy transition is far behind schedule, resulting in increasing spending on transition projects, while removing capital for oil and gas. This contributes to a good post Covid oil outlook as less capital leads to less future oil and gas production potential. While this $50mm cheque is small vs their 2021 capex of $13b, with $2b earmarked for low carbon, it still is illustrative of a large and significant capital shift occurring. It's a zero-sum game, which means less for traditional oil and natural gas.

Energy Transition – Volkswagen says no to hydrogen cars

Volkswagen says no to hydrogen cars

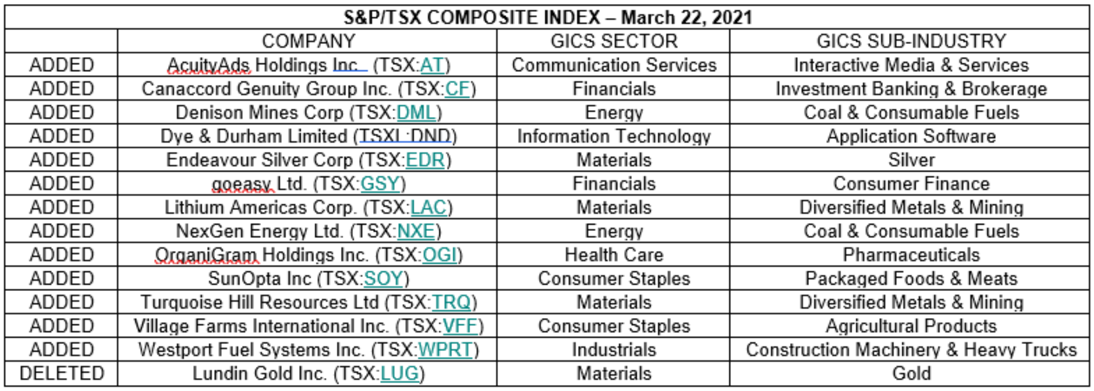
Many people believe that hydrogen powered cars are the future, however, Herbert Diess, chairman of the board of Volkswagen thinks differently [LINK]. Diess stated *"You won't see any hydrogen usage in cars. Not even in 10 years, because the physics behind it are so unreasonable".* There are a number of conversions that need to happen to convert hydrogen to electricity, resulting in full cycle efficiency of a fuel cell being less than 50%, which is only a marginal improvement from the fuel efficiency rating of a gas-powered car. While some executives in the industry are considering hydrogen as a zero-emissions fuel for heavy trucks travelling over 300km (the point of inefficiency for batter-powered trucks), Diess does not share that view. Volkswagen stopped all development work on fuel cells for its trucks last month, while GM is continuing to promote it. Our Supplemental Documents package includes the Volkswagen Chairman comments.

Capital Markets – TSX composite index changes

TSX Composite changes

On Friday after the close, S&P Dow Jones Indices announced [LINK] the results of its quarterly review and the resultant changes to the S&P/TSX Composite Index effective prior to the open of trading on Monday March 22. There were a number of mining companies additions and also the addition of Canaccord Genuity to the TSX Composite Index.

Figure 36: Changes To TSX Composite Index For March 22, 2021



S&P/TSX COMPOSITE INDEX – March 22, 2021			
	COMPANY	GICS SECTOR	GICS SUB-INDUSTRY
ADDED	AcuityAds Holdings Inc. (TSX:AT)	Communication Services	Interactive Media & Services
ADDED	Canaccord Genuity Group Inc. (TSX:CF)	Financials	Investment Banking & Brokerage
ADDED	Denison Mines Corp (TSX:DML)	Energy	Coal & Consumable Fuels
ADDED	Dye & Durham Limited (TSXI :DND)	Information Technology	Application Software
ADDED	Endeavour Silver Corp (TSX:EDR)	Materials	Silver
ADDED	goeasy Ltd. (TSX:GSY)	Financials	Consumer Finance
ADDED	Lithium Americas Corp. (TSX:LAC)	Materials	Diversified Metals & Mining
ADDED	NexGen Energy Ltd. (TSX:NXE)	Energy	Coal & Consumable Fuels
ADDED	OrganiGram Holdings Inc. (TSX:OGI)	Health Care	Pharmaceuticals
ADDED	SunOpta Inc (TSX:SOY)	Consumer Staples	Packaged Foods & Meats
ADDED	Turquoise Hill Resources Ltd (TSX:TRQ)	Materials	Diversified Metals & Mining
ADDED	Village Farms International Inc. (TSX:VFF)	Consumer Staples	Agricultural Products
ADDED	Westport Fuel Systems Inc. (TSX:WPRT)	Industrials	Construction Machinery & Heavy Trucks
DELETED	Lundin Gold Inc. (TSX:LUG)	Materials	Gold

Source: S&P Dow Jones

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Governance – Shell Moves to 50/50 gender split on board

Shell moves to 50/50 gender split on board

On Thursday, Shell announced its intention to propose that Jane Lute be appointed a Non-executive Director of the Company [LINK]. This would come into effect May 19, 2021. If the proposal is approved by shareholders at the Annual General Meeting, Shell's Board of Directors will officially consist of an even proportion of men and women. The push for gender diversity will be accelerating, not because of Shell now moving to 50/50, but because it's the way of the world – changes happen quicker and will continue to be pushed heavily by investors. Exxon currently has 27% female BoD, and Chevron and BP are nearing equal representation, with 5/12 members being female. We would expect to see Exxon to increase the number of women on the board.

Governance – Canadian companies still a long way to go on gender diversity

Canadian companies behind on push for board diversity

The Canadian Securities Administrators released a report on Wednesday [LINK], outlining trends of female representation on boards and in executive officer positions. The CSA data showed that the percentage of board seats held by women increases with the market capitalization of the issuer. For issuers with a market capitalization of <$1B, 15% of board seats were held by women, where as representation is much better market capitalization of >$10B, 31% of board seats were held by women. Only 6% of chairs of the board were women. Another key insight was that gender diversity on boards varied greatly by industry. Biotechnology, mining, and oil & gas industries had the lowest percentage of women on their board; for example, 93% of Manufacturing companies had at least one woman on their board, whereas in Biotechnology only 59% had at least one woman on their board. While board representation is progressing, there were still 127 issuers (21%) who had no women on their board. When it comes to executive officers, only 15% of issuers had a female CFO and only 5% had a female CEO. The same industry-based variation in representation exists with respect to executive officer positions. Our Supplemental Documents package includes excerpts from the CSA report.

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

@Energy_Tidbits on Twitter

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

LinkedIn – Look for quick energy items from me on LinkedIn

Look for energy items on LinkedIn

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

Misc Facts and Figures.

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

Waiting for supermajor oil co's next renewable investment to be Mr. Fusion

Every time, we see another supermajor oil company invest in some sort of renewable natural gas, we can't help think of Back to the Future II in 1989 and how Doc Brown, coming back from the future, had changed the power from plutonium in part I to

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power the flux capacitor to Mr. Fusion that used food and drink garbage. One thing that surprises us is that there doesn’t seem to be a MrFusion.com taken.

Figure 37: Back to the Future II (1989) Mr. Fusion Powering Flux Capacitor

Source: The Green Head

Vince Lombardi’s classic speech on leadership

Saw a short promo on NFL network on Peyton Manning’s sit down with former Kansas City Chiefs tight end Tony Gonzales and how his motivation for turning around a bad sophomore season was a Vince Lombardi motivational book give to him by his brother. We have highlighted Lombardi’s motivational speeches to his teams and to business leaders in our Energy Tidbits memos. Lombardi’s most famous quote is ““*Winning isn’t everything – It’s the only thing.*” But he has many great quotes on leadership and winning teams.. Business is different than when I started in the late 70’s, and the big thing in the 80s were management skills development. So inevitably this famous Lombardi leadership speech would be played in many of these management skills seminars. Lombardi’s last public speech was June 22, 1970 in Dayton on leadership. We couldn’t find a video clip, but its worth a read as it is still a classic on leadership. As an NFL aside, this is the first big week for NFL fans with tomorrow being the start of legal tampering for free agents, and official free agent signings on Wed. Our Supplemental Documents package includes the transcript for the Lombardi speech.

Port Arthur (Thunder Bay) was 1st city to implement Daylight Savings

Have to give a shout out to Port Arthur and Fort William, a beautiful area on Lake Superior. Most everyone turned their clocks forward this morning for Daylight Savings, which may be an old idea that will have longer than anticipated shelf life with the need for massive electric grid expansion in the move to renewable energy. Afterall, the concept was to extend afternoon daylight to save power consumption in the peak energy times. Germany is widely (and correctly) credited as being the first country to implement Daylight Savings in 1916. But overlooked in the history of Daylight Savings was how cities in Canada were the first to implement starting with Port Arthur (now under Thunder Bay after combining with Fort William) in 1908, and then Orillia in 1912. Not all of Canada observes Daylight savings. Most know that almost all of Saskatchewan does not, but oil and gas sector knows some key British Columbia energy cities like Fort St. John and Fort Nelson also don’t use Daylight Savings.

Tomorrow, March 15 is the Ides of March

I have no idea what they do for high school English classes, but baby boomers will remember that mandatory reading was Shakespeare, in particular his Julius Caesar. Even if you haven't read Shakespeare, you have probably know the famous line from the soothsayer "Beware the Ides of March". The ides of March is the day in the ancient Roman calendar that corresponds to March 15. But the reason why the Ides of March became famous is that is the day Julius Caesar was assassinated in 44 BC. Caesar's assassination is also why Brutus, one of the conspirators, became a well known name.