Energy Tidbits

March 15, 2020

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Didn’t Russia Message 1 Year Cuts Are Okay But Just Not At Double Existing Cuts?

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo and energy blogs. 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 focusing on day to day trading. Our priority was and still is to not just report on events, but 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/guidance. Our target is to write on 48 to 50 weekends per year and to send out by noon mountain time on Sunday.

This week’s memo highlights:

1. Initial Saudi/Russia positioning are supporting narrative that digging in for long oil war. (Click Here)

2. But Russia comments seemed to message 1 year cuts are okay, but just not a double existing cuts. (Click Here)

3. Novak said Russia could add back its cut 200,000 b/d quickly, but more adds will require investments. (Click Here)

4. Trafigura “*we believe oil demand could soon be contracting by close to 10 million barrels a day, perhaps with more to come*". (Click Here)

5. Trump directs US to fill Strategic Petroleum Reserve saying “*we’re gong to fill it right to the top*”. (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 withdraw of 48 bcf, storage now +796 bcf YoY surplus

YoY storage at 796 bcf YoY surplus

The EIA reported a 48 bcf natural gas draw, which was lower than expectations of a 56 bcf draw, and below the 5-yr average draw of 99 bcf. This brings storage to 2.043 tcf as of Mar 6. This is a widening of the YoY surplus to 796 bcf vs 680 bcf surplus last week, with storage now 227 bcf above the 5 yr average. HH remains weak as the winter period is basically over, and we are moving into shoulder season with higher YoY natural gas production and total gas withdrawals falling below the 5 year average over the withdrawal period. Below is the EIA's storage table from its Weekly Natural Gas Storage Report. [LINK]

Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (03/06/19)		Historical Comparisons: 5-year average (2015-19)	
Region	03/06/20	02/28/20	net change	implied flow	Bcf	% change	Bcf	% change
East	426	451	-25	-25	276	54.3	353	20.7
Midwest	529	558	-29	-29	302	75.2	424	24.8
Mountain	97	101	-4	-4	68	42.6	112	-13.4
Pacific	200	197	3	3	105	90.5	199	0.5
South Central	791	784	7	7	497	59.2	727	8.8
Salt	235	229	6	6	144	63.2	212	10.8
Nonsalt	556	555	1	1	353	57.5	516	7.8
Total	2,043	2,091	-48	-48	1,247	63.8	1,816	12.5

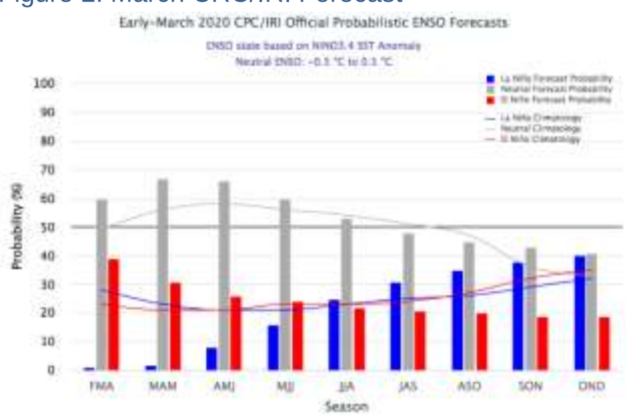
Source: EIA

Natural Gas – Updated El Nino forecast, likely normal conditions in Aug/Sept/Oct

NOAA calling for neutral El Nino this summer

Now that winter is basically over, the main focus from El Nino forecasts is for the key hurricane season months of Aug/Sept/Oct. On Thurs, the NOAA posted its monthly El Nino outlook that comes out the 2nd Thurs of every month [LINK]. The forecast is relatively unchanged from last month and is for 45% chance for neutral conditions, 35% probability for La Nina conditions, and the lowest probability of 20% for El Nino conditions. The correlation isn't perfect, but historically Neutral and La Nina summer conditions tend to have more active Atlantic hurricane seasons, whereas El Nino conditions are normally associated with lower Atlantic hurricane activity. Below is the CPC/IRI official ENSO forecast.

Figure 2: March CRC/IRI Forecast



Source: CRI/IRI

Natural Gas - EIA forecasts US gas supply to decline 4.99 bcf/d over next year

US gas supply lower in 2020

We have to give the EIA credit for working likely non stop for a few days so they could incorporate a view of the Saudi/Russia oil war into their monthly Short Term Energy Outlook Mar 2020 [LINK] releases on Wednesday, instead of the usual Tuesday to incorporate the big changes in oil markets. The main takeaway was a further reduction in the US dry gas production forecasts, which now shows the EIA calling for US natural gas supply to plateau in Q1/20. (i) The new 2020 forecast is 95.28 bcf/d, down from 94.16 bcf/d in the Feb STEO. 2021 is up marginally to 92.61 bcf/d vs 92.57 bcf/d in the Feb STEO. (ii) The EIA forecasts US gas production to peak in Q1/20 at 96.41 bcf/d and then a peak to trough decline of 4.99 bcf/d by declining to a trough of 91.42 bcf/d in Q1/21 before returning to growth. The EIA wrote *"Although EIA forecasts dry natural gas production will average 95.3 Bcf/d in 2020, a 3% increase from 2019, EIA expects monthly production to generally decline through 2020, falling from an estimated 96.5 Bcf/d in February to 92.3 Bcf/d in December. The falling production mostly occurs in the Appalachian and Permian regions. In the Appalachian region, low natural gas prices are discouraging producers from engaging in natural gas-directed drilling, and in the Permian region, low oil prices reduce associated gas output from oil-directed wells. In 2021, EIA forecasts dry natural gas production will rise from December 2020 levels in response to higher prices. Forecast dry natural gas production for 2021 averages 92.6 Bcf/d."* Our Supplemental Documents package includes excerpts from the new STEO.

Figure 3: EIA STEO US Natural Gas Supply Forecasts By Forecast Month

bcf/d	2018	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
Mar 20	83.80	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 20	83.80	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
Jan 20	83.80	89.32	90.50	92.92	95.29	92.03	95.05	94.69	94.82	94.39	94.74	93.39	93.95	94.49	94.59	94.11
Dec 19	83.80	89.32	90.50	92.89	95.42	92.05	95.01	94.94	95.21	95.04	95.05					
Nov 19	83.80	89.29	90.48	93.02	95.66	92.13	94.83	94.91	95.15	94.89	94.95					
Oct 2019	83.39	89.42	90.53	92.32	94.21	91.63	93.35	93.12	93.52	93.99	93.50					
Sept 2019	83.39	89.42	90.60	91.98	93.52	91.39	92.97	92.92	93.54	93.32	93.19					
Aug 2019	83.39	89.42	90.07	91.54	93.04	91.03	91.97	92.00	92.90	93.13	92.50					
July 2019	83.39	89.24	90.62	92.21	93.26	91.35	92.41	92.43	93.13	93.16	92.79					
June 2019	83.40	89.14	90.14	91.17	91.93	90.60	91.80	91.84	91.97	91.54	91.79					
May 2019	83.40	88.92	89.58	90.65	91.88	90.27	92.13	92.26	92.39	91.98	92.19					
Apr 2019	83.39	88.93	90.42	92.06	92.55	91.00	92.51	92.58	92.58	92.21	92.47					
Mar 2019	83.35	89.34	90.52	91.29	91.75	90.73	91.74	92.00	92.22	92.13	92.02					
Feb 2019	83.26	88.48	90.16	90.80	91.18	90.16	91.63	92.11	92.16	92.31	92.05					

Source: EIA, SAF

Natural Gas - EIA forecasts US LNG exports will be shut in this year

Expect US LNG exports shut in

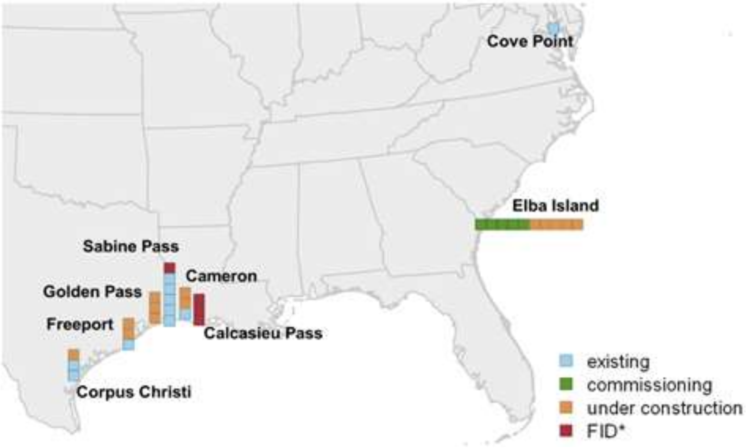
One other tidbit from the new EIA Short Term Energy Outlook March 2020 natural gas forecast is that the EIA assumes US LNG exports are shut in due to global gas markets. This is the first time they have done so and is what we have been expecting for several months. EIA wrote "*EIA forecasts that U.S. liquefied natural gas exports will average 5.3 billion cubic feet per day (Bcf/d) in the second quarter of 2020 and 6.3 Bcf/d in the third quarter of 2020. These forecasts are 0.5 Bcf/d and 0.2 Bcf/d lower, respectively, than forecast in the February STEO because of less expected global demand for natural gas*"

Natural Gas – Freeport LNG begins receiving feedstock gas for train 3

Freeport LNG train 3 receives feedstock gas

One of the big global LNG and natural gas themes for the next few years is the big ramp up in US LNG projects. One of the major US LNG projects is Freeport LNG which is owned by McDermott International along with JV partners Chiyoda International and Zachry Group. When fully completed, the project will have 4 trains with total capacity of 2.63 bcf/d. Train 1 began commercial operations in August, and train 2 followed thereafter with commercial operations beginning in January, and this week, Bloomberg Terminal reported train 3 has reached the final commissioning stage which includes the introduction of feed gas. Train 3 is expected to produce 5 mtpa or 0.66 bcf/d of LNG and is on track to reach initial LNG production in Q1 of this year. According to the Freeport LNG website [LINK], the facility is the *"The first world-scale electric LNG liquefaction (eLNG) plant in North America, with an all-electric compression motor drive solution that fits well into the plot plan and meets emission requirements"*. We could not find an official project map from Freeport, but below we included an EIA map of project status for US LNG export facilities from September 2019.

Figure 4: US LNG Export Facilities



Source: EIA

Natural Gas – Japan Feb spot LNG prices down 54.7% YoY to $3.40

Japan spot LNG prices down 54.7% YoY

The look back to Jan Feb LNG prices will not surprise as everyone knows how weak LNG prices and markets have been this winter with staring the winter in full supply, and then a mild winter in Asia. This week, Japan's Ministry of Economy, Trade and Industry reported [LINK] Japan contract-based spot LNG price for Feb was $3.40, which is down 54.7% YoY from $7.50 in Feb 2019 (note Feb 2018 was $10.60) and also down from $5.90 in Jan and $6.40 in Dec. For the past couple months, we have been highlighting that the problem is that LNG prices in 2020 look to be even weaker than in 2019, and the concern is that when you leave the peak natural gas demand period with oversupply, it generally means its impossible to catch up for the year. The overall story here is unchanged, oversupplied global LNG markets lead to weak LNG prices, and Europe storage (dumping ground for LNG cargoes) getting full early continue to point towards a weaker year for LNG. 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. Below is our table of monthly Japan LNG import prices.

Figure 5: Japan Monthly LNG prices

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

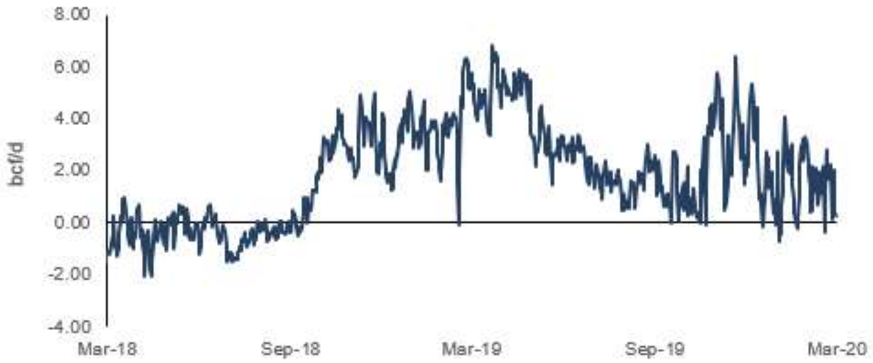
Source: Japan Ministry of Economy, Trade and Industry

Natural Gas - Europe gas storage is still high at 56.86% utilization vs 41.28% last year

Europe gas storage now 56.86% full

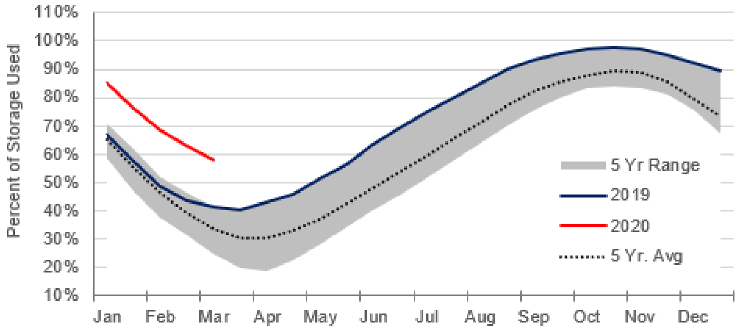
We continue to see clear data to show the oversupplied LNG market to end the peak winter natural gas demand period and why we continue to believe LNG in 2020 will be very weak. The data support is Europe storage utilization, the key indicator for LNG markets over/under supply that we have been highlighting since Sept 2017. We first described this key LNG market indicator 2 and ½ years ago in our Sept 20, 2017 Energy Blog [LINK] titled *"Shell: "Every LNG Cargo That Could Technically Be Produced In This World Has Been Produced And Has Found A Well Paying Customer"* where we defined Europe LNG storage as the dumping ground for surplus LNG. If there is surplus LNG in Asia, it tends to find its way to the dumping ground for LNG – Europe. And as noted in the below graph, LNG net flows to Europe continue to be up YoY. We are now midway thru March and the LNG indicator, Europe storage, is showing storage at 56.86% full, which compares to 41.28% last year. Europe storage didn't reach 56.86% until May 29, 2019. Storage is running 2 to 3 months ahead of last year, which is a huge negative to LNG markets in 2020. Last year, it then took just over 3 months after May 29, to get to 93.5% full on Sept 8, 2019. Our fear is that Europe moves into shoulder season (and its happening the next few weeks), storage will quickly move to the +90% full level months earlier than last summer. It's looking even more clear that Europe storage will be full months earlier than last year. Below is our graph of Europe gas storage utilization, and our graph of net LNG flows to NW Europe.

Figure 6: YoY Change In Net LNG Flows To NW Europe



Source: Bloomberg

Figure 7: Europe Gas Storage Utilization



Source: Bloomberg

Oil – US oil rigs up 1 to 683 oil rigs

US oil rigs were +1 this week

Baker Hughes reported its weekly rig data on Friday which was basically a non event for oil prices, which have been dominated by OPEC+ no deal and the increasingly negative demand outlook with coronavirus. US oil rigs were up 1 to 683 oil rigs vs 833 oil rigs a year ago. Increase were in Permian +3, and Cana Woodford +1. The only decrease was in Others -3. We expect the US oil rigs will be immediately declining with several US producers announcing plans to pull back capex and therefore rigs in 2020. Any modest increases to drilling activity will be gone as US players move to lower capex with no OPEC+ deal. Below is our graph of total US oil rigs.

Figure 8: Baker Hughes Total US Oil Rigs

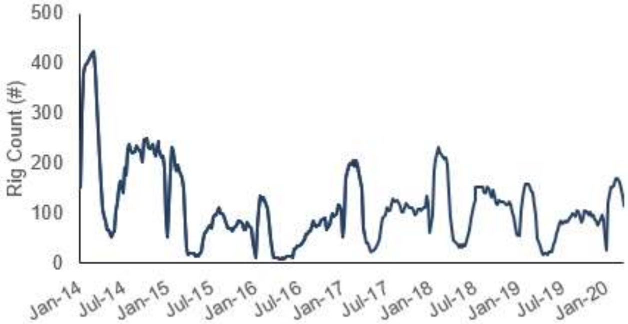
Source: Baker Hughes

Oil – Total Cdn rigs down 28 to 175 total rigs

Total Cdn -28 this week

Baker Hughes reported total Cdn rigs were down 28 to 175 total rigs. Cdn oil rigs were down 19 to 115 oil rigs. Cdn gas rigs were down 9 to 60 gas rigs. We are in the normal seasonal decline period for Cdn rigs, which should accelerating in the next few weeks. Especially with several Cdn producers announcing lower 2020 capex this week. To put in perspective, a year ago, Cdn oil rigs were 98 and Cdn gas rigs were 63 for a total Cdn rigs of 161, meaning total Cdn rigs are +14 YoY. Below is our graph of total Cdn oil rigs.

Figure 9: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

Oil – US oil production down 100,000 b/d to 13.0 mmb/d

US oil production at 13.0 mmb/d

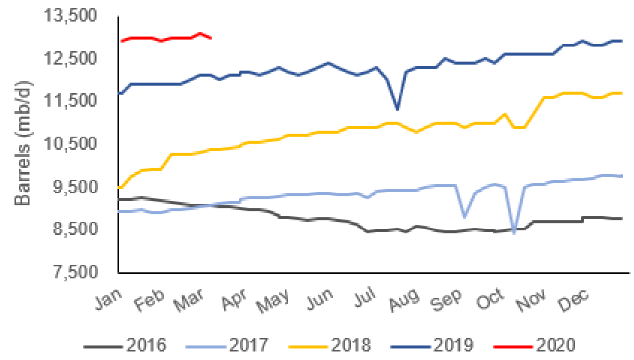
This week, the EIA reported US oil production was down 100,000 b/d to 13.0 mmb/d for the Mar 6 week. Lower 48 was down 100,000 b/d to 12.5 mmb/d. The huge drop in WTI has led to several companies responding with plans to pull back/defer capex and drilling activity, which will inevitably lead to declining US oil production, however the price impact should take a few months to flow through to lower oil production. Below we pasted an excerpt from the EIA weekly oil production data. [LINK]

Figure 10: EIA's Estimated Weekly US Oil Production

Year-Month	Week 1		Week 2		Week 3		Week 4		Week 5	
	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
2018-Jan	01/05	9,492	01/12	9,750	01/19	9,878	01/26	9,919		
2018-Feb	02/02	10,251	02/09	10,271	02/16	10,270	02/23	10,283		
2018-Mar	03/02	10,369	03/09	10,381	03/16	10,407	03/23	10,433	03/30	10,460
2018-Apr	04/06	10,525	04/13	10,540	04/20	10,586	04/27	10,619		
2018-May	05/04	10,703	05/11	10,723	05/18	10,725	05/25	10,769		
2018-Jun	06/01	10,800	06/08	10,900	06/15	10,900	06/22	10,900	06/29	10,900
2018-Jul	07/06	10,900	07/13	11,000	07/20	11,000	07/27	10,900		
2018-Aug	08/03	10,800	08/10	10,900	08/17	11,000	08/24	11,000	08/31	11,000
2018-Sep	09/07	10,900	09/14	11,000	09/21	11,100	09/28	11,100		
2018-Oct	10/05	11,200	10/12	10,900	10/19	10,900	10/26	11,200		
2018-Nov	11/02	11,600	11/09	11,700	11/16	11,700	11/23	11,700	11/30	11,700
2018-Dec	12/07	11,600	12/14	11,600	12/21	11,700	12/28	11,700		
2019-Jan	01/04	11,700	01/11	11,900	01/18	11,900	01/25	11,900		
2019-Feb	02/01	11,900	02/08	11,900	02/15	12,000	02/22	12,100		
2019-Mar	03/01	12,100	03/08	12,000	03/15	12,100	03/22	12,100	03/29	12,200
2019-Apr	04/05	12,200	04/12	12,100	04/19	12,200	04/26	12,300		
2019-May	05/03	12,200	05/10	12,100	05/17	12,200	05/24	12,300	05/31	12,400
2019-Jun	06/07	12,300	06/14	12,200	06/21	12,100	06/28	12,200		
2019-Jul	07/05	12,300	07/12	12,000	07/19	11,300	07/26	12,200		
2019-Aug	08/02	12,300	08/09	12,300	08/16	12,300	08/23	12,500	08/30	12,400
2019-Sep	09/06	12,400	09/13	12,400	09/20	12,500	09/27	12,400		
2019-Oct	10/04	12,600	10/11	12,600	10/18	12,600	10/25	12,600		
2019-Nov	11/01	12,600	11/08	12,800	11/15	12,800	11/22	12,900	11/29	12,900
2019-Dec	12/06	12,800	12/13	12,800	12/20	12,900	12/27	12,900		
2020-Jan	01/03	12,900	01/10	13,000	01/17	13,000	01/24	13,000	01/31	12,900
2020-Feb	02/07	13,000	02/14	13,000	02/21	13,000	02/28	13,100		
2020-Mar	03/06	13,000								

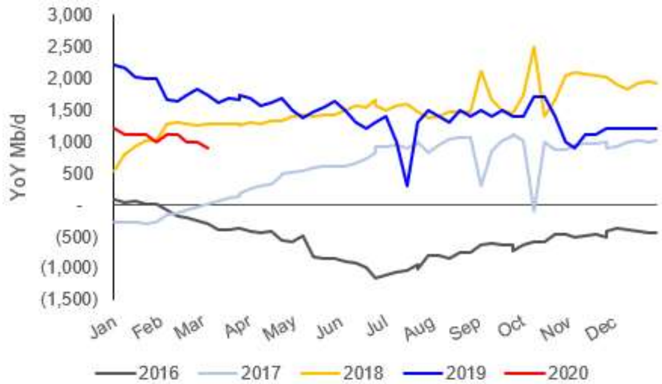
Source: EIA

Figure 11: US Weekly Oil Production



Source: EIA, SAF

Figure 12: YoY Change in US Weekly Oil Production



Source: EIA, SAF

EIA lowers US oil growth

Oil – EIA STEO forecasts US oil peak in Q2/20, then decline of 580,000 b/d to Q3/21

The new EIA STEO incorporated big changes to oil price assumptions for 2020 and 2021, which had major changes to US oil production growth forecasts as US producers are forced to pullback on capex and drilling programs. As expected, there were big changes to forecasts for oil prices, oil demand, and oil production. (i) The way lower assumed oil price for 2020 means the EIA model cranks out lower oil production in 2020, and declining oil production in 2021. EIA forecasts US crude to peak in Q2/20 at 13.16 mmb/d and then a peak to tough decline of 580,000 b/d to a trough of 12.58 mmb/d. The EIA revised down each quarter in 2020, and full year 2020 US oil production is now forecasted at 12.99 mmb/d, which is 210,000 b/d lower than the Feb STEO and still +760,000 b/d YoY. (ii) Declining US oil production continues thru 2021, with 2021 production revised down 900,000 b/d to 12.66 mmb/d which is -330,000 b/d YoY from 2020. (iii) The EIA notes their models show a lag of 6 months between oil prices and production, as they write *"EIA forecasts U.S. crude oil production will average 13.0 million b/d in 2020, up 0.8 million b/d from 2019, but then fall to 12.7 million b/d in 2021. The forecast decline in 2021 is in response to lower oil prices and would mark the first annual U.S. crude oil production decline since 2016. EIA models show oil prices affect production after about a six-month lag. Despite forecast annual average growth of 0.8 million b/d in 2020, EIA expects monthly U.S. crude oil production to begin declining around May, with production falling from 13.2 million b/d in May to 12.8 million b/d in December 2020".* Note, the EIA revised down assumed 2020 WTI price from $55.71 to $38.19, 2020 Brent was revised from $61.25 to $43.30. For 2021 WTI was revised down from $62.03 to $50.36 and Brent was revised down from $67.53 to $55.36. Below is our ongoing table showing the EIA's forecast by forecast month, and the EIA table of price assumptions in the Mar STEO.

Figure 13: Estimated US Crude Oil Production By Forecast Month

(million b/d)	2018	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
Mar 2020	10.99	11.81	12.1	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	10.99	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
Jan 2020	10.99	11.81	12.10	12.23	12.83	12.24	13.20	13.31	13.29	13.41	13.30	13.52	13.64	13.73	13.95	13.71
Dec 2019	10.99	11.81	12.10	12.23	12.87	12.25	13.12	13.22	13.14	13.23	13.18					
Nov 2019	10.99	11.81	12.10	12.24	13.01	12.29	13.23	13.32	13.27	13.35	13.29					
Oct 2019	10.99	11.81	12.11	12.24	12.87	12.26	13.05	13.15	13.19	13.31	13.17					
Sept 2019	10.99	11.81	12.11	12.24	12.78	12.24	13.01	13.19	13.30	13.44	13.23					
Aug 2019	10.99	11.81	12.09	12.29	12.87	12.27	13.00	13.17	13.33	13.53	13.26					
July 2019	10.96	11.82	12.19	12.55	12.86	12.36	12.97	13.17	13.34	13.56	13.26					
June 2019	10.96	11.81	12.20	12.44	12.83	12.32	13.05	13.24	13.32	13.44	13.26					
May 2019	10.96	11.86	12.35	12.58	13.00	12.45	13.27	13.39	13.42	13.45	13.38					
Apr 2019	10.96	11.91	12.36	12.51	12.76	12.39	12.93	13.08	13.07	13.30	13.10					
Mar 2019	10.95	11.98	12.30	11.32	12.58	12.30	12.79	12.99	13.03	13.29	13.03					
Feb 2019	10.96	12.15	12.41	12.42	12.65	12.41	12.97	13.18	13.20	13.45	13.20					
Jan 2019	10.93	11.93	12.07	12.04	12.24	12.07	12.55	12.78	12.89	13.23	12.86					

Source: EIA, SAF

Figure 14: EIA WTI, Brent, HH price assumptions by forecast month

	WTI Spot			Brent Spot			HH Spot $/mcf		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Mar 2020	$57.02	$38.19	$50.36	$64.37	$43.30	$55.36	$2.66	$2.19	$2.60
Feb 2020	$57.02	$55.71	$62.03	$64.37	$61.25	$67.53	$2.66	$2.29	$2.62
Jan 2020	$57.02	$59.25	$62.03	$64.36	$64.83	$67.53	$2.66	$2.42	$2.63
Dec 2019	$56.74	$55.01		$63.93	$60.51		$2.69	$2.55	
Nov 2019	$56.45	$54.60		$63.59	$60.10		$2.71	$2.58	
Oct 2319	$56.26	$54.43		$63.37	$59.93		$2.67	$2.61	
Sept 2019	$56.31	$56.50		$63.39	$62.00		$2.66	$2.64	
Aug 2019	$57.87	$59.50		$65.15	$65.00		$2.64	$2.85	
July 2019	$59.58	$63.00		$66.51	$67.00		$2.72	$2.87	
June 2019	$59.29	$63.00		$66.69	$67.00		$2.88	$2.87	
May 2019	$62.79	$63.00		$69.64	$67.00		$2.89	$2.88	
Apr 2019	$58.80	$58.00		$65.15	$62.00		$2.92	$2.88	
Mar 2019	$56.13	$58.00		$62.78	$62.00		$2.95	$2.91	
Feb 2019	$54.79	$58.00		$61.03	$62.00		$2.93	$2.90	

Source: EIA, SAF

Oil – Trump on Strategic Petroleum Reserve "*we're gong to fill it right to the top*"

Trump to fill SPR "*right to the top*"

We were surprised when we saw Trump's coronavirus press conference was set for 3pm ET and would have thought he would wait until after the market close. We should have expected to have some sort of positive news so he could have the market rally into the weekend. He started after 3:30pm ET. The markets had strengthened slightly with the expectation for him to declare a national emergency and then spiked up around 3:30pm when he did so. But then the surprise was around 3:50pm when he said he instructed commerce to purchase "*large quantities*" for storage of oil for the strategic reserve and that "we're going to fill it right to the top". We were able to tweet before the close at 3:55pm [LINK] "*Trump just said instructed commerce to "purchase large quantities for storage of oil for the strategic reserve. "we're going to fill it right to the top". #OOTT*". And then right after the close [LINK] "*Current strategic petroleum reserves at 635 mmb, vs capacity of 713.5 mmb. Good DOE review of SPR at [LINK] #OOTT*". And then finally after the market close [LINK] "*WTI jumped ~$2/b on the Trump comments that US will purchase "large quantities" for strategic petroleum reserves. "we're going to fill it right to the top". #OOTT*". WTI jumped at 3:50pm with the Trump SPR comment.

An excellent reference report on US Strategic Petroleum Reserve

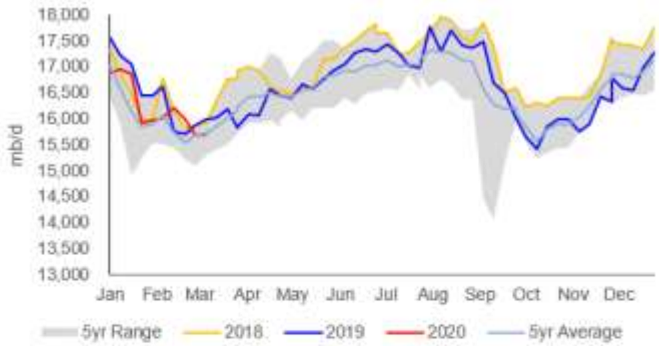
Prior to posted our 2nd tweet, we checked and the link still works for an excellent Aug 2016 109-pg reference report *"Long-Term Strategic Review of the U.S. Strategic Petroleum Reserve"* [LINK]. We last referenced this report in our Aug 25, 2019 Energy Tidbits. The report is over three years old, we flipped thru the report again and it is still an excellent reference report. We still recommend adding this report to reference libraries, as it provides excellent information the SPR including history (pg 4), location/description (pg 10), excellent schematic on drawdown process (pg 13), map of locations (pg 15), Northeast Home Heating Oil Reserve (pg 19), excellent detail on each site (pg 23), infrastructure challenges (pg 36), maximum drawdown rates of 4.1 to 4.3 million b/d for 90 day's (pg 41), distribution system (pg 44), depiction of how the SPR can drawdown 695 million barrels in 180 days (pg 51), example SPR response on a range of scenarios (pg 60), analysis of SPR under 4 scenarios 430, 549, 564, 630 million barrels (pg 77), modernization program (pg 81), and conclusions (pg 102).

Oil – Oil input into refineries up 5,000 b/d to 15.702 mmb/d

Oil input into refineries up 5,000 b/d

For the Mar 6 week, EIA estimates crude oil inputs to refineries were up 5,000 b/d to 15.702 mmb/d, which compares to the Feb 28 week where oil inputs were down 312,000 b/d. Crude inputs have been impacted by the Feb 12 Exxon Baton Rouge fire, but on Monday, Exxon restarted the last CDU that had been offline from the fire, which will be a positive to crude inputs for next week's data. Overall crude inputs are now 318,000 b/d lower YoY, which is decent considering the PES Philadelphia refinery complex closure (335,000 b/d) following the Q2/19 fire. We have been expecting the peak in PADD 3 refinery turnarounds during the first week of March, and therefore we should see increasing crude inputs over the next few weeks. Refinery utilization showed a decrease of 0.5% to 86.4% which is -1.2% YoY. Below is our ongoing graph of US refinery crude inputs.

Figure 15: US Refinery Crude Oil Inputs (thousand b/d)



Source: EIA, SAF

Oil – Co-op refinery awaiting mediator's report, still think it will be a long haul

Waiting for mediator's report

The special mediation process ended this week and both sides are waiting on the mediator's report. This is mediation and not binding arbitration so there is no obligation for either side to accept the findings of the special mediator's report. We are not aware of any specific timeline for the mediator's report or next steps. Absent a major change in position from either the refinery or union, it still seems like this lock-out could last a long time. The Co-op refinery is a 130,000 b/d refinery. There is no formal comment from the refinery as to what capacity the replacement workers are running the refinery. There are a couple reasons supporting the continued view for a long stoppage First, the chatter is that the refinery management has been able to sustain refinery operations not too much below capacity, which is impressive as the operating conditions have been difficult. The other reason is that, even with the continued Union picketing around Co-op facilities such as the grocery stores, there doesn't seem to be an increasing local pressure on the refinery to cut a deal. Our Supplemental Documents package includes CBC's reporting on the mediation. [LINK]

Oil – US "net" oil imports up 918,000 b/d to 3.002 mmb/d

US "net" oil imports +918,000 b/d

US "NET" imports were up 918,000 b/d to 3.002 mmb/d for the Mar 6 week. US imports were up 174,000 b/d to 6.412 mmb/d and US exports were down 744,000 b/d to 3.410 mmb/d. Some items to note on the by country data. (i) Canada was down 20,000 b/d to 3.624 mmb/d for the Mar 6 week. (ii) Saudi Arabia was up 63,000 b/d to 443,000 b/d, which compares to imports from Saudi in Mar/19 of ~660,000 b/d. (iii) Colombia has been following a patten of down big one week and up big the next, as Colombia was +257,000 b/d to 529,000 b/d, whereas the country was -195,000 b/d the week before. (iv) Ecuador reversed the big increase last week, with a 169,000 b/d drop this week to 80,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico was up 63,000 b/d to 443,000 b/d which well below Mar/19 import levels of ~655,000 b/d. Below is our table of the US oil imports by major country.

Figure 16: US Weekly Preliminary Oil Imports By Major Countries

	Jan 10/20	Jan 17/20	Jan 24/20	Jan 31/20	Feb 7/20	Feb 14/20	Feb 21/20	Feb 28/20	Mar 6/20	WoW
Canada	3,837	3,559	3,845	3,825	3,685	3,690	3,603	3,644	3,624	-20
Saudi Arabia	203	360	555	353	494	513	390	380	443	63
Venezuela	0	0	0	0	0	0	0	0	0	0
Mexico	595	481	800	953	894	722	542	554	603	49
Colombia	180	727	338	304	183	128	467	272	529	257
Iraq	537	227	143	400	229	179	336	375	352	-23
Ecuador	334	218	186	167	242	219	134	249	80	-169
Nigeria	131	184	0	1	91	154	32	0	0	0
Kuwait	0	0	0	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0	0	0	0
Top 10	5,817	5,756	5,867	6,003	5,818	5,605	5,504	5,474	5,631	157
Others	735	676	793	612	1,160	942	713	764	781	17
Total US	6,552	6,432	6,660	6,615	6,978	6,547	6,217	6,238	6,412	174

Source: EIA, SAF

Oil – IEA OMR Mar: Base case forecasts demand down 90,000 b/d YoY in 2020

IEA OMR cuts 2020 oil demand forecast

We have to give kudos to the EIA to work all weekend and still publish its monthly Oil Market Report on Mon morning. They only release very limited public info, and Bloomberg did not do their normal IEA market wrap and stories. But they did provide the oil demand/supply tables. The main theme of the report was a big hit to oil demand from coronavirus. (i) IEA cut 2020 base case demand by 1.1 mmb/d to have 2020 down 90,000 b/d YoY. For the quarterly buildout, the IEA called for Q1/20 oil demand down 2.5 mmb/d YoY, Q2/20 flat YoY, Q3/20 +1.3 mmb/d YoY and Q4/20 +0.8 mmb/d YoY. IEA base case assumes "*the outbreak is brought under control in China by the end of the first quarter but spreads across many other countries beyond Iran, Korea, Japan, Singapore, the United States and Europe. Containment measures imposed in North America, Europe and elsewhere are expected to have a smaller impact on oil demand than those in China. However, demand from the aviation sector will continue to suffer from the contraction in global air travel*". The IEA press release and Bloomberg don't have details on the pessimistic case by quarter forecasts, but the IEA provided some commentary. They write "*Our pessimistic low case assumes that countries already affected by the virus recover more slowly while the epidemic spreads further in Europe, Asia, and beyond. It takes longer to control the propagation of the virus,* *and the contraction in Chinese oil demand eases more slowly in March. European demand remains subdued in the third quarter, and demand in the United States grows at a slower pace. In this pessimistic case, global oil demand could decline by 730,000 barrels per day in 2020*". We still see downside risk to the oil demand forecasts, especially to the base case forecast, given the increasing number of countries stopping travel from certain countries, major events cancelling, moving to social distancing, remote working etc. (ii) The IEA forecasts non-OPEC supply growth +2.1 mmb/d YoY in 2020, which includes "Americas" +1.2 mmb/d but we can't believe they had time to fully reflect the impact on US shale from the oil price fallout last Friday, given the IEA report came out early Monday morning. We have to believe their non-OPEC supply growth assumptions are way too high. Our Supplemental Documents package includes the IEA release and the key tables.

Oil – OPEC MOMR: Lowers 2020 demand by 920,000 b/d, but could have been worse

MOMR sees demand down 920,000 b/d

OPEC released its Monthly Oil Market Report on Wed. The main headlines were OPEC cutting its 2020 oil demand forecast by 920,000 b/d due to coronavirus impact. Although this was a huge decrease, we have to believe their demand forecast will be lowered more next month as the last week isn't likely reflected in the demand estimates and coronavirus impact is clearly spreading to the global economy. (i) 2020 oil demand growth forecasts lowered for 2020 by 920,000 b/d to 99.73 mmb/d, which is only +60,000 b/d YoY vs 2019. Although this forecast is way lower, it is likely still to high and we expected it will be revised lower next month. The revisions mostly reflect coronavirus driven impact on transportation and industrial fuels, and then the resulting impact on overall economy, but there is also an impact from the milder winter. For China, OPEC lowered the 2020 oil demand forecast by 350,000 b/d to 12.94 mmb/d, which puts China down 130,000 b/d YoY from 2019 of 13.07 mmb/d. OPEC also lowered OECD down by 390,000 b/d to 47.59 mmb/d, which includes -150,000 b/d for OECD Asia, -110,000 b/d for OECD Europe, and -130,000 b/d for US. (ii) Overall Feb production was down 546,000 b/d to 27.772 mmb/d per "secondary sources" vs 28.318 mmb/d in Jan. As expected, Libya was down big, down 647,000 b/d to 146,000 b/d. The blockades had only impacted a portion of Jan, and note the current production is approx. 115,000 b/d. Ecuador is no longer included as it left OPEC at Dec 31. Iran has been fairly flat for the past several months and was flat in Feb at 2.080 mmb/d. Iraq was +86,000 b/d, which again means its cheating and the country has done pretty well with all the domestic protests to maintain oil production. Nigeria +29,000 b/d to 1.789. Saudi Arabia down 56,000 b/d in Feb to 9.683, which is consistent with what they had indicated around 9.7 mmb/d, but is now thrown out of the water with the start of the oil price/volume war. Venezuela was flat at 760,000 b/d and has been fairly flat for the past year, signaling that it bottomed in early Q4/19. (iii) For non-OPEC supply growth, US "crude oil" supply growth revised down by 490,000 b/d for 2020 to +1.76 mmb/d. For what its worth, OPEC revised up its 2019 estimate by 90,000 b/d to +1.99 mmb/d YoY, and these upward revisions were a range of countries. For 2020, non-OPEC liquids growth revised down by 49,000 b/d to +1.76 mmb/d which is a big revision. US liquids revised down by 362,000 b/d to +0.90 mmb/d and this follows last month's Feb estimate that had it down 170,000 b/d vs the Jan forecast. This month, OPEC wrote *"This revision will be in onshore fields located in the Lower-48 states, of which around 64%, or 0.23 mb/d, will be in tight crude, while NGLs are revised lower by 0.13 mb/d. Therefore, US crude oil production is now forecast to grow by 0.66 mb/d y-o-y to average 12.89 mb/d. Production of NGLs is now expected to rise by 0.23 mb/d, y-o-y to average 5.04 mb/d and finally non-conventional liquids will grow by a minor 0.01 mb/d to average 1.37 mb/d in 2020"*. This month, OPEC calls for US to plateau in 2020 and slightly decline by year end, whereas last month, OPEC called for steady increases thru 2020. For Mexico, OPEC revised down its liquids supply forecast by 62,000 b/d vs last month, and now forecasts 2020 down vs 2019, which is contrary to Pemex forecasting an increase YoY. (iv) OECD commercial oil stocks at Jan 31 still above the 5 yr average, and a reminder this is OECD and does not include China. Jan shouldn't have had any coronavirus impact, as this only started to emerge in China in the last two weeks of Jan. OPEC wrote *"Preliminary data for January showed that total OECD commercial oil stocks rose by 37.8 mb m-o-m to stand at 2,940 mb. This was 56.9 mb higher than the same time one year ago and 12.9 mb above the latest five-year average".* We are a little surprised that Feb isn't showing more of an impact on OECD from coronavirus, but we have to believe March will be a bigger OECD impact. OPEC wrote *"Preliminary data for February showed that US total commercial oil stocks fell by 15.9 mb m-o-m to stand at 1,278.6 mb. This was 25.4 mb above the same period a year ago, and 18.4 mb higher than the latest five-year average. Within components, crude stocks rose by 9.1 mb, while product stocks fell by 25 mb".* (v) Lesser call on OPEC of down 1.1 mmb/d vs last month. We expect this to be revised lower again next month due to an increased coronavirus impact. This would have been worse, but was partially offset by OPEC lowering non-OPEC liquids growth down 490,000 b/d. Our Supplemental Documents package includes excerpts from the OPEC MOMR.

Figure 17: OPEC MOMR Crude Oil Production As Per Secondary Sources

	2018	2019	2Q19	3Q19	4Q19	Dec 19	Jan 20	Feb 20	Feb/Jan
Algeria	1,042	1,022	1,019	1,021	1,022	1,019	1,012	1,007	-5
Angola	1,505	1,401	1,420	1,390	1,350	1,408	1,375	1,390	15
Congo	317	325	332	325	315	319	294	308	14
Equatorial Guinea	125	118	114	119	122	122	125	123	-2
Gabon	187	208	212	204	209	222	192	191	-1
Iran, I.R.	3,553	2,356	2,403	2,189	2,113	2,093	2,082	2,080	-2
Iraq	4,550	4,680	4,699	4,752	4,633	4,568	4,508	4,594	86
Kuwait	2,745	2,687	2,692	2,655	2,688	2,710	2,658	2,662	5
Libya	951	1,097	1,154	1,103	1,163	1,140	793	146	-647
Nigeria	1,718	1,786	1,786	1,842	1,777	1,750	1,760	1,789	29
Saudi Arabia	10,311	9,770	9,769	9,452	9,846	9,671	9,739	9,683	-56
UAE	2,986	3,094	3,076	3,096	3,135	3,117	3,027	3,040	13
Venezuela	1,354	793	776	714	714	735	756	760	4
Total OPEC	**31,344**	**29,336**	**29,452**	**28,862**	**29,087**	**28,872**	**28,318**	**27,772**	**-546**

Notes: Totals may not add up due to independent rounding.

Source: OPEC

Oil – Saudi says no need for OPEC+ June meeting unless there is a deal

Saudi wants a new deal or no June meeting

On Tues, we tweeted [LINK] " *Worth reading Saudi Energy Minister quotes this am. seems to message we will meet in June but only to get a deal done. until then, will make sure everyone knows who can move markets, withstand low prices and deserves better market share*." Abdulaziz was quoted "*I fail to see the wisdom for holding meetings in May-June that would only demonstrate our failure in attending to what we should have done in a crisis like this and taking the necessary measures*,". His other comments seemed like an implied challenge to other countries to see who can be the most competitive under lower oil pries. Abdulazia also said "*In a free market every producer needs to demonstrate its competitiveness, preserve and increase its market share".* Our Supplemental Documents package includes the Reuters reporting. [LINK]

Oil – Saudi and Russia both message going to fight hard and long

No apparent near term end to the oil war in sight

No one should be surprised that the initial actions/words from Saudi and Russia are being viewed as signalling a hard and long oil war. Surely no one thought the parties would back off after a week as if to say they didn't mean it. Here were the headlines this week that fed the narrative of both sides digging in for a long oil war. We look at this period as the first round of a boxing match where each fighter moves into the center of the ring, starts moving and still yacking at each other, then starts to feel each other out, maybe landing a good body blow or head shot, and then they go back to their corner with their manager and try to determine if their pre flight plan looks right. (i) Following last Saturday's move by Aramco to dramatically crash the oil price, Reuters [LINK] and others on Monday reported "*Moscow said on Monday it could withstand oil prices of $25-$30 per barrel for 6-10 years".* (ii) On Tues, Arab News [LINK] reported on an Aramco statement filed with he Tadawul stock exchange that said ""*Saudi Aramco announces that it received a directive from the Ministry of Energy to increase its maximum sustainable capacity from 12 million barrels per day to 13 million*". Adding 1 mmb/d of capacity won't happen quickly and may take billions of dollars in capex. As a reminder, former Saudi energy minister Al-Falih said in 2018 that adding 1 mmb/d of additional capacity would cost more than $20 billion. (iii) Also on Tues, Arab Industry reported [LINK] "*In a statement to Tadawul, Saudi Aramco annouced that it will provide its customers with 12.3 million barrels per day (bpd) of crude in April 2020. This is a 300,000 bpd increase from the company's maximum sustained capacity of 12 mbpd. It is not clear if Saudi Aramco plans to sustain this level of production in the longer term, but wrote in its statement that it "agreed with its customers to provide them with such volumes starting 1 April 2020."* Note this means that Saudi will be drawing from storage as most don't expect them to produce much more than 11 mmb/d for any sustained period. (iv) As noted later in the memo, the Russia has approved a constitutional amendment for an April 22 referendum vote that would allow Putin to potentially stay on as President until 2036. We look at it as another reason supporting the likelihood of no new deal until at least late April.

Did Russia signal an opening?

Oil – Didn't Russia message 1 yr cuts are okay, just not at double existing cuts?

We saw two interesting articles this week that make us see the potential for nearer term back channel or informal talks. And we think this is partly due to our boxing analogy above, where the fighters have gone back to their corner after the first round. We would have called Russia to out body blow Saudi and we still think they can. But we wonder if both sides are surprised by the severity of the impact of their oil war at the same time as an rapidly escalating broader impact of Coronavirus. So it may well be that Russia can out body blow Saudi, but we wonder if they are now believing they are going to some longstanding big injuries. No one knows, but these stories made us wonder. (i) Reuters [LINK] reported Russia confirmed that Saudi wanted Russia to double its cuts. Reuters wrote "*Pavel Sorokin, Russia's deputy energy minister, described that task, which would have doubled Moscow's commitment to 600,000 bpd, as technically challenging*." Re sorokin's comment that it was "*technically challengin*g" to double the cuts, we are not sure what he means at this time of year. Normally the technically challenging issue to make cuts is in the winter time. They don't want to shut off wells in Siberia gong into or during the winter. But at this time of year, it should be okay, other than the fact that the Saudis wanted the additional cuts until Dec 31, 2020 and that would be problematic for Russia to bring wells on in the winter for the same reason. (ii) The more interesting story was Thurs, when Bloomberg reported new disclosure that Russia was prepared to extend to Dec 31. The only thing we recall seeing was that they wold be prepared to extend to June 30. (iii) When we see these two stories, we have to at least wonder if these don't seem to message a prelude to some sort of back channel or informal talks. Isn't Russia effectively saying there is no way we are doubling cuts. but we are prepared to extend the existing cuts to year end. Isn't that inferring Russia will agree to year end but maybe only a little bit more?? Its really hard to believe Russia ministers speak off the cuff and these are coincidental comments. So if they aren't signaling a prelude, why did they make these comments? Our Supplemental Documents package includes these two stories.

Oil – UAE prepared to increase oil production 1 mmb/d to 4 mmb/d in April

UAE increasing oil production in April

The oil price/volume war escalated big this week. The more immediate negative to oil prices were the Wed reports that Abu Dhabi National Oil Co. said it will raise UAE oil production to 4 mmb/d in April, which is +1 mmb/d vs the Bloomberg Feb survey of 3.0 mmb/d for UAE [LINK]. Similar to Saudi, the UAE is also planning to increase their oil capacity by 1 mmb/d, taking total capacity to 5 mmb/d. ADNOC CEO said *"Today, as a result of the steps we've taken over the last four years, ADNOC is far stronger and better positioned to respond to current market conditions. Our focus on driving performance, profitability and efficiency has made us more resilient, agile and responsive to market dynamics. These guiding principles remain unchanged as we move forward with projects across our value chain. In line with our production capacity growth strategy announced by the Supreme Petroleum Council, we are in a position to supply the market with over 4 MMBPD in April. In addition, we will accelerate our planned 5 MMBPD capacity target. In response to market conditions, and to provide better forward visibility to our customers, ADNOC will shortly announce forward prices for the months of March and April 2020. This decision has been made to ensure that our customers have visibility of the price so they can plan accordingly"*. Oil moved lower on the news, and the important comment to note is the ADNOC is set to announce forward selling prices for March and April soon, and we have to believe they will follow Saudi and set much lower selling prices to customers.

Oil – Former Saudi Energy Minister al Falih denies any role in Saudi/Russia fix

Al-Falih says not talking to Russia for Saudi

There was another reason for optimism that there might be the start of some talks to end the Saudi/Russia oil war when the WSJ reported on Tues [LINK] "*Even as the price war escalated with fresh salvos from both sides, former Saudi energy minister Khalid al-Falih, was in talks with Mr. Novak in an attempt to reverse the production hikes and revive the collective OPEC-Russia output curbs, according to Saudi-government advisers and officials. Mr. Falih, who negotiated the initial production cuts in 2016, is now Saudi Arabia's minister of investments. His outreach to Mr. Novak is done with the approval of Saudi authorities, the advisers said. If Mr. Falih's mediation succeeds, the advisers and officials said, OPEC and its allies including Russia would convene an emergency meeting in April."* No question this was a reason to think there might be at least an attempt to try to start to see if there was a way out. Unfortunately, on Thurs, Energy Intelligence reported [LINK] "*Various media reports this week have said that al-Falih, who was recently appointed as Saudi Arabia's investment minister, had been asked to step in to hold talks with Russian officials. But al-Falih told Energy Intelligence that he was "not at all" involved in any matters related to Opec or in any talks with Russian officials on the matter, and further categorically denied another news report saying that he would soon be traveling to Moscow for further mediation efforts. Russian Energy Minister Alexander Novak also said separately in Moscow on Wednesday that he had had no contact with al-Falih".* Our Supplemental Documents package includes the Energy Intelligence story.

Oil – Saudi Aramco cuts $10b from 2020 capex

Aramco cuts $10b capex

Earlier this morning, we tweeted [LINK] on Saudi Aramco's 2019 results release. "*No oil/gas company immune from 2020 capex cuts with lower oil prices f/ Coronavirus. Aramco 2019 results notes 2020 capex cut to $25-30b, was $35-40b in IPO outlook. 2019 was $32.8b. But Aramco is different as capex cut won't impact 2020 production*." It will be interesting to see if analysts ask any tough questions on the conference call tomorrow (6am MT), No question, Saudi Aramco is best positioned to survive low prices, but its hard to believe they are happy about cutting over 25% off their capex. Our Supplemental Documents package includes the Aramco release.

Oil – Novak says Russia can add back already cut 200,000 b/d, but not more right away

Russia can only add ~200,000 b/d in near term

Yesterday morning, we tweeted [LINK] on the TASS story "*Russia's Energy Ministry does not see conditions for new OPEC+ deal right now*" [LINK]. The media coverage was on the story title and how there won't be a quick resolve to the Saudi/Russia oil war. That shouldn't surprise that the war would end in a week. Our bet for a timeline for a deal is that it doesn't happen until late April at the earliest but we hope we are wrong and its earlier. Our tweet was focused on the more significant part of the story – near term Russia oil supply potential, and tweeted *"Novak: Russia can "quite quickly" add back 200 kb/d cut for OPEC+ quota, but "as for additional production, it will take some time to ensure investment expenditures". So much for chatter Russia could add the cut 200 kb/d plus another 200-300 kb/d*". Novak was clear on two key near term Russia oil supply points. First, he said they can "quite quickly" add back the 200,000 b/d of cuts from the existing OPEC+ quota. This makes sense operationally as winter is ending. Second and most significantly, Novak clearly said there isn't a lot of shut in oil production waiting to turn on the taps. This throws cold water on the chatter that Russia has other oil production (over the 200,000 b/d of cut production) that can be brought on stream right away. Novak said "*We can restore production that was reduced due to the OPEC+ agreement against October 2018 quite quickly. As for additional production, it will take some time to ensure investment expenditures*". Our Supplemental Documents package includes the TASS story.

Oil – Excellent OPEC+ Vienna/Riyadh insights from RBC's Helima Croft

Excellent Vienna and Riyadh insights from Helima Croft

On Tuesday, we tweeted [LINK] "*Thx RBC @CroftHelima for many excellent insights in "Aftershocks: The View from Vienna and Riyadh" call this am. ie. for Saudi, its Russia. for Russia, its US shale/foreign policy. hope a deeply painful Apr/May from Saudi flooding oil market leads to a June deal*." There is no question, there is a huge advantage for her being in the room (or at least where the OPEC+ watchers were gathered) at OPEC+ Vienna and in the room in Riyadh. And she shared those insights in this call. We made extensive notes of her comments but readers should reach out to RBC for her more comprehensive comments. Our key takeaway summary points were: (i) Excellent takeaways in particular from Riyadh meetings day after OPEC. (ii) Saudi is very concerned about impact of Coronavirus on demand and within Saudi. (iii) Went into OPEC+ wanting 1.5 mmb/d cut, now think need 2 mmb/d. (iv) No deal, missed changing dynamics in Russia about who has Putin's voice. They all missed it was Rosneft's Sechin, all Novak had were strict marching orders ie. extend only. (v) For Saudi, its about getting Russia back to table and participating in cuts. (vi) For Russia, its about hitting US shale and US foreign policy ie sanctions on companies. (vii) Saudi believes it has better financial strength (ie. access to debt) than Russia. (viii) Saudi knows it will be deeply painful for everyone. But Saudi does not want this to go on for long,. (ix) Saudi does not believe Russia wants it to go on for long. (x) Saudi will show that they can do what they say in flooding the market (production + inventory) in April/May ie. big oversupply. (xi) Trump called MBS today, believe US now wants Saudi/Russia to get a deal done. (xii) OPEC+ joint technical meeting March 18 is first chance for UAE to try to bridge parties. (xiii) Believes UAE is the key to bridging Saudi/Russia, given UAE's strong Russia relationship. (xiv) But OPEC June 9/OPEC+ June 10 will be the key event for this to come together. (xv) There was much behind these brief summary comments.

Oil – Libya oil production now below 100,000 b/d, lost revenue now ~$3.3 billion

Libya lost oil revenues now ~3.3 billion

There is no change to almost all of Libya oil production still being shut in with the Haftar ports blockade. As of our news cut off of 8am MT, the latest Libya National Oil Corporation update is at the end of Wed [LINK]. Production was down slightly over the past week and is now below 100,000 b/d for the first time, at 97,508 b/d, which is down 1,122,492 b/d since the start of the blockade. Most importantly, the lost revenues were $3.09 billion as of Wed night, so are now approx. $3.3 billion. Our Supplemental Documents package includes the NOC production update.

Libya shutting all air, land and sea ports due to Coronavirus

Yesterday we tweeted [LINK] on the breaking Saturday news "*Just what Tripoli needs - shut down of all air, sea and land ports f/ Coronavirus. Oil prod/refineries near zero. Near zero storage of petroleum products in Tripoli. How long can Tripoli hold on vs Haftar's using crude as a weapon?"* The other key part of the Libya NOC March 12 update is the NOC estimates of gasoline, diesel and LPG in NOC storage facilities in Libya. In particular, the NOC estimates Tripoli storage facility has zero days of gasoline, zero days of diesel and 2 days of LPG. And with ports closed, there is no chance of fuel imports for Tripoli. The NOC is already taking austerity measures for their operations due to the continued production shut in. But the bigger picture question remains how long will (can) Tripoli hold out as the lost revenues continue to get higher and higher because the reports this week continue that Haftar isn't letting up on his attacks on the southern parts of Tripoli and fuel is soon running into a shortage. We believe that, as long as Haftar continues to be supported by the UAE, he has the option of continuing to squeeze Tripoli. Three weeks, ago, Tripoli warned that it faces a catastrophic financial event if the blockade continues. So the question remains how long can Tripoli hang on before conceding to Haftar. And our concern for oil markets is that a Tripoli concession will lead to a quick return of Libya oil to oil markets.

Libya's foreign currency reserves down $14b from Nov 1 – May 31

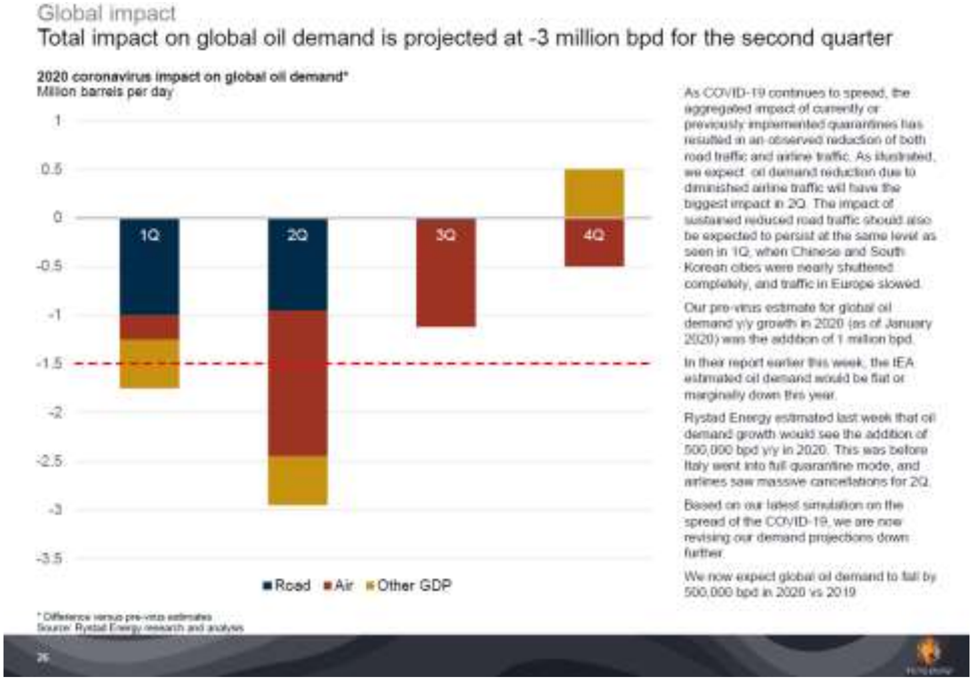
On Monday, we tweeted [LINK] "*Haftar's oil as a weapon forcing LIbya to use foreign currency reserves to fund country, declining f/ $77b at oct 31, est to $63b at may 31 ie. down ~$2b/mth. Haftar's squeeze on Tripoli continues."* The Libya Observer wrote [LINK] "*The Ministry of Finance has said that Libya's foreign currency reserves will continue to diminish from 77 billion dollars in October 2019 to 63 billion dollars if the closure of oil installations and ports continues until next June. The Ministry clarified in its January report that the Libyan reserves may fall to its lowest level of 2016 when they were recorded at 63 billion dollars*." The forecast reminds that the decline in reserves is more than just the lost revenue from the oil blockade. If the reserves are to decrease $14 billion from Nov 1 thru May 31, that's 213 days. A simple average is $66 million a day vs the $55 million daily losses. It just reminds that the squeeze on Tripoli is working. Tripoli can hang on as they are losing about $1.6 billion per month with the blockade, so in theory can continue to grind down reserves for another 3 years before they get to zero. But the squeeze is hurting cash flow and the urgency is increasing. Combine that with the increasing attacks on the outskirts of Tripoli, interruptions to basic services, it still feels like Tripoli is pushed to a point of making concessions to Haftar.

Oil – Good demand data from Rystad's "Covid-19 Report"

Good Rystad Covid-19 Report

It must be extremely tough for global energy research groups to adjust assumptions for their models when the Coronavirus impact is changing so rapidly every day. Rystad issued their Covid-19 Report on Thursday, which is a good report to add to reference libraries. (i) The report and news release have some excellent data points in addition to their estimates. (ii) Rystad made a "groundbreaking revision" of their prior estimates. Now forecast 2020 average oil demand to be down 600,000 b/d YoY down to 99.2 mmb/d in 2020. Rystad says the new forecast included the US Europe travel announcement impact from Wed. This is a big change from their forecast last week. The report said "*Rystad Energy estimated last week that oil demand growth would see the addition of 500,000 bpd y/y in 2020. This was before Italy went into full quarantine mode, and airlines saw massive cancellations for 2Q.*" (iii) The new forecast includes "total impact on global oil demand is projected at ~3 million bpd for the second quarter". Note Q2 is likely a moving target given the rapidly changing Coronavirus impacts since Thurs including Spain's lockdown on Sat. Later in the memo, we note the Trafigura estimate that oil demand could be hit by 10 mmb/d. (iv) Jet fuel. Rystad estimates 2019 global jet fuel was ~7.2 mmb/d and now estimates 2020 will be down 11% or down 780,000 b/d YoY. (v) Road fuel. Rystad estimated 2019 road fuel global road fuel demand was 49.7 mmb/d, not see it only up marginally in 2020 to 49.8 mmb/d. Prior to Coronavirus, Rystad estimated 2020 would be 50.3 mmb/d. (vi) There are a number of excellent charts and data points on China demand. Our Supplemental Documents includes the Rystad release [LINK] and excerpts from the report [LINK]. .

Figure 18: Global Impact



Source: Rystad

Oil – Bloomberg notes China's strategic reserves capacity is 503 mmb

China's SPR is 503 mmb capacity

No one really knows for sure exactly what is China's oil storage capacity and how much is in storage at any point in time. But this week, the Bloomberg story "*China Considers Boosting State Oil Reserves After Crash*" provided some insight into China's oil storage capacity. Bloomberg wrote "*China's state stockpiles are shrouded in mystery. The government generally keeps silent over the size of its hoard, meaning traders have to scrabble for any clues about how much it's got and when it plans to buy. They got one such insight in December, when state-owned China National Petroleum Corp. said in a note on its website that the government intends to boost the capacity of its strategic petroleum reserves to 503 million barrels by the end of this year, an indicator of the maximum amount the government can store. The U.S. currently holds about 635 million barrels in its SPR, according to government data. In September, the head of China's development and planning at the*

National Energy Administration said the country had total oil reserves, including strategic stockpiles, for about 80 days of use". Our Supplemental Documents package includes the Bloomberg story.

Oil – Trafigura: oil demand could soon be contracting by close to 10 mmb/d

Trafigura: demand loss could be 10 mmb/d

We aren't like big sellside research teams or energy research companies or energy agencies with full blown global oil demand forecast models. But when we saw the Bloomberg story on Friday, we couldn't help tweet [LINK] "*Thx @JavierBlas for Trafigura chief economist quote "we believe oil demand could soon be contracting by close to 10 million barrels a day, perhaps with more to come". Don't know if 10 is the #, but think its lot closer to that than than the 3-4 mmbd that many are using. #OOTT".* We believe that big global oil trading firms like Trafigura, Glencore, Vitol and Mercuria have got better networks than most so always look at their market comments with keen interest. Bloomberg quoted Saad Rahim, chief economist at oil trading giant Trafigura Group saying "*"We believe oil demand could soon be contracting by close to 10 million barrels a day, with perhaps more to come," "We haven't seen a demand event like this in history." "People are not moving. They are not driving. They aren't flying,"* and that was not counting "*economic impact of the crisis,"* which will also drive down demand. Our Supplemental Documents package includes the Bloomberg story.

Oil and Natural Gas – Looks like Putin could potentially stay as President until 2036

Putin could stay until 2036

It will be interesting to see how and when the Saudi/Russia oil price war is resolved and one of our timing thoughts has been that it isn't likely to be resolved until late April at the earliest. Part of our timing reason is the April 22 Russia vote on constitutional amendments. Last week's (March 8, 2020) Energy Tidbits noted the different dynamics in Russia that reportedly led to this war – the key role that Putin and Rosneft's Sechin played. It looks like these two could continue to play this big role in oil for a long time to come. Putin's current term as President ends in 2024 and, at least up until April 22, this is his still his 2nd and final term as President. However, this week, Russia's parliament, Duma, voted 383 for, zero against, and 43 abstained, and Russia's upper house Federation Council voted 160 for, 1 against (who was this person?) and 3 abstained to put constitutional amendments to the Russian people for a referendum vote on April 22. The amendments include removing the current limit on two consecutive terms as President, and if approved by the Russian people, could see Putin potentially stay on for 2 more 6 year terms ie. until 2036. Of course everyone assumes Putin will be re-elected as long as he runs. In 2018, he won 77% of the vote.

Energy Transition – Quebec budget highlights focus on Green Economy

Quebec focus is for a Green Economy

Quebec announced it new budget this week and it was interesting to see its key budget theme was "*Building a Green Economy*". (i) Right up front in the budget speech, Quebec says "*The government has chosen to meet the challenges of wealth creation and greenhouse gas emission reduction head on. Fighting climate change provides an opportunity to transform and propel the Québec economy forward so that it can serve tomorrow's markets and transition to a green economy. Through our second budget, we will create more wealth by building a green economy, focusing on electrification. At the same time, we will continue our efforts to provide Quebecers with quality services that meet their needs."* (ii) Quebec is pushing hard for its Green Economy. It will increasingly impact their attitudes towards fossil fuels, in particular oil and coal. They don't say it specifically, but seem to acknowledge there is a role for natural gas. (iii) Not all the details are in the budget because, sometime later in 2020, Quebec will be releasing an "*electrification and climate change framework policy will set out Québec's vision for meeting the reduction target by 2030 and adapting to climate change."* (iv) One item awaiting details is "*Investments planned for implementing the framework policy will have a structuring effect on Québec's economy, particularly by reducing* *our reliance on oil. — They will help improve Québec's trade balance by reducing its hydrocarbon imports, which are expected to drop by more than $1 billion (7% of projected hydrocarbon imports in 2030*)." Simple math is that this is about 50,000 b/d. which means that Quebec wants to reduce its products consumption by about 15%. (v) Continued push to support EVs. "*Through the financial framework, the government is allocating nearly $1.4 billion by March 31, 2026 to the Roulez vert program to continue offering rebates on the acquisition of an electric vehicle. — These investments will make it possible to maintain the rebates for the installation of home, work and multi-unit residential buildings charging stations. This additional funding will make it possible to speed up the pace at which Quebecers replace fossil-fuel vehicles by electric vehicles*." One example is their rebates for buy new and used EVs. (vi) Incentives to convert homes from oil or coal heating to electricity. Note they exclude natural gas. "*Chauffez vert program aims to encourage homeowners who use fossil fuels, other than natural gas, as a source of heating to adopt a system using renewable energy, such as hydroelectricity. It allows homeowners who want to replace a fossil fuel system with a renewable energy system to benefit from financial support of up to: — $1 275 for replacing a space heating system; — $250 for replacing a water heating system."* (vii) We note the renewable natural gas item below in the electricity section of the memo. (viii) There are a number of other items, but these are the main oil themes.

Quebec economy is doing very well

We have to believe that Quebec's strong economy will raise the attention of Alberta and other provinces looking for a fair or even just a fairer deal. Don't forget last Nov, [LINK] Kenney said on statements by Quebec premier Blanchet "*These statements [are] being made a week after Quebec tabled a budget with a $4-billion surplus thanks to a $13-billion equalization payment from Ottawa, which came from the workers that many of you [oil and gas companies] had to lay off*". The Quebec budget speech said "*The initial results for the last year and a half are highly encouraging in this regard. In 2019, Québec's real GDP rose by 2.8%, whereas the GDP for Canada as a whole grew by just 1.6%. Such a gap in Québec's favour has not been seen since 2009. Quebecers have directly benefited from this growth in wealth. In 2019, wages and salaries rose by nearly 6% and Quebecers' standard of living jumped by 1.6%. As a result, the standard of living gap between Québec and Ontario narrowed from 15.5% in 2018 to 13.6% in 2019. Since October 2018, under the leadership of our Premier, we have been caught up to Ontario, we have reduced our reliance on equalization, we are ahead of our debt reduction targets, and we are one of Canada's economic growth engines. That's quite a turnaround we've made."*

Electricity – Quebec to invest $70mm to support Renewable Natural Gas projects

Quebec to invest $70 mm for renewable natural gas

It wasn't a big surprise to see Quebec include $70 mm over 3 years to support Renewable natural gas (RNG) facilities. Budget 2.2.1 [LINK] said "2.2.1 *Supporting the production and distribution of renewable natural gas. Renewable natural gas (RNG) production facilitates Québec's transition to a green, low-carbon economy. To support the development of this emerging industry in Québec, gas distributors will be required to inject a minimum of 5% of RNG in their systems as of 2025. To help achieve this target, the government is investing $70.0 million over three years to support: — RNG production projects; — the connection of RNG production facilities with the natural gas distribution network."* We highlighted RNG in our Jan 12, 2020 Energy Tidbits item "*Electricity – Quebec firm to turn manure into 0.2 mmcf/d of power"*. In that memo, we wrote "*The Daily Commercial News Wed story "New Quebec plant to produce natural gas from manure" "an agricultural cooperative in Quebec says it will build a new biomethanation complex in Warwick, Que. that will produce renewable natural gas from manure and other organic byproducts in the region. The creation of Coop*

Agri-Energie Warwick was announced Dec. 16. The new biomethanation complex will produce 2.3 million cubic metres of renewable natural gas annually. Energir has agreed to purchase all of the cooperative's renewable natural gas production for a period of 20 years and inject it into its gas distribution network. Construction of the complex will begin in spring 2020 for commissioning in the fall of 2020. The project, at a cost of $12 million, will receive financial assistance of $3 million from the Government of Quebec, granted under the Technoclimat program administered by Energy Transition Quebec, and a repayable contribution of $1.7 million granted by Canada Economic Development for Quebec Regions under the Regional Economic Growth through Innovation program." Unfortunately, its not clear what price Energir will pay for the natural gas or if there are other revenue incentives. We recognize that the project is not being done to produce natural gas, rather it is a methane capture projects. Because the volume is equivalent to 0.2 mmcf/d, which makes this a very very expensive project that is so small a volume it can't be even compared to the lowest rate natural gas well in western Canada. We checked the Coop website and confirmed the project was producing natural gas from manure. It did not specifically say cow, but we suspect that is the case given the strength of Quebec's dairy, beef and veal production."

90% of cow methane emissions are from belching

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

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

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

Demographics – Coronavirus to permanently change office vs remote office

We believe the increasing impact of Coronavirus forcing major changes in North America everyday life will lead to permanent changes to everyday life. W think that with people being forced to remote office or telecommute will lead to a material shift in how many people remote office even after the Coronavirus risk is gone. Companies and people will find that many jobs can be done by remote office without any real impact on office and employee efficiency. And then will look at cost savings (less office space, less personal travel costs, etc,) and employee preferences, and this will result in a material increase in remote office work. People and companies are being forced to do without certain things, and in this case, its forced to do without working in a central office space. And what always happens is that when people are forced to do without something, they make changes to behaviour that last or even once the risk is over. Its just the way it is.

Remote officing likely to continue post Coronavirus

Demographics – Pew "circumstances not hard work" for why people are rich or poor

No one should be surprised by the results from the Pew Research survey "*Most Americans Point to Circumstances, Not Work Ethic, for Why People Are Rich or Poor*".[LINK] (i) We think its got to be hard to disagree with the view that "*the main reason a person is rich is because they have more advantages than others has increased 13 percentage points since 2018, while there has a been a comparable decline (12 points) in the share attributing a person's wealth more to hard work. These changes are evident among both Republicans and Democrats".* Just look at the obvious one – education and how many average or below average income families can't afford to send their kids to university. We don't exactly when it changed, but at one time, a university student could make enough money in a summer job to be able to afford tuition and some costs, and could work part time to cover the rest of the costs, albeit while living at home. But that stopped being a possibility and it forced families to have to chip in. No wonder young people leave university with large debt. But it is one obvious example of how average and below average income families are clearly disadvantaged. (ii) The Democrats more negative view of billionaires shouldn't surprise given how Sanders and Warren have hammered billionaires for the past several months. Pew wrote "*By contrast, more Democrats say the fact that some people have fortunes of a billion dollars or more is bad (34%) than good (12%); 53% say it is neither bad nor good. Liberal Democrats, in particular, have a negative view about billionaires. Nearly half (48%) say they are a bad thing for the country, roughly twice the share of conservative and moderate Democrats (23%) who say this".* Our Supplemental Documents package includes the Pew survey.

Pew survey on circumstances vs hard work

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

For new followers to our Twitter, we are trying to tweet on breaking news or early views on energy items, most of which are followed up in detail in the Energy Tidbits memo or in separate blogs. Our Twitter handle is @Energy_Tidbits and can be followed at [LINK]. We wanted to use Energy Tidbits in our name since I have been writing Energy Tidbits memos for over 19 consecutive years. Please take a look thru our tweets and you can see we aren't just retweeting other tweets. Rather we are trying to use Twitter for early views on energy items. Our Supplemental Documents package includes our tweets this week.

@Energy_Tidbits on Twitter

Energy Tidbits – Sign up on our email distribution for tidbits and blogs

For those interested in receiving out Energy Tidbits memos and blogs, please go to our blog sign up. We will be using the blog notification list for Energy Tidbits. The blog sign up is available at [LINK].

Sign up to receive future Energy Tidbits memos

LinkedIn – Look for quick energy items from me on LinkedIn

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

Look for energy items on LinkedIn

Misc Facts and Figures.

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

"*Beware the Ides of March*"

Today is the Ides of March, which brings up Shakespeare's classic line from Julius Caesar "beware the Ides of March" as this is the date that Caesar was assassinated in 44 BC, stabbed to death in a plot of up to 60 conspirators, most famously led by Brutus and Cassius. Shakespeare made it famous by his play where the soothsayer warns Caesar. Shakespeare wrote "*Soothsayer. Caesar! Caesar. Ha! who calls? Casca. Bid every noise be still: peace yet again! Caesar. Who is it in the press that calls on me?100 I hear a tongue, shriller than all the music, Cry 'Caesar!' Speak; Caesar is turn'd to hear. Soothsayer. Beware the ides of March. Caesar. What man is that? Brutus. A soothsayer bids you beware the ides of March.105 Caesar. Set him before me; let me see his face. Cassius. Fellow, come from the throng; look upon Caesar. Caesar. What say'st thou to me now? speak once again. Soothsayer. Beware the ides of March"*

White House wants to deal with Coronavirus like #99 Wayne Gretzky played

Any hockey fan listening to the White House Coronavirus briefing on Tues couldn't help be impressed by Dr. Fauci's using #99 Wayne Gretzky as the model on how the US wants to deal with the growing Coronavirus in the US. We created a transcript of Dr. Fauci's comments (see 1:47 mark [LINK]) ""*We would like the country to realize that, as a nation, we can't be doing the kinds of things we were doing a few months ago. That it doesn't matter if you're in a state that has no cases or one case. You have to start taking seriously what you can do now that if and when the infections will come — and they will come. Sorry to say, sad to say, they will — but when you're dealing with an infectious disease, you know, you always have that metaphor that people talk about. That Wayne Gretzky, you know he doesn't go where the puck is, he's going where the puck is going to be. Well, we want to be where the infection is going to be, as well as where it is.*"

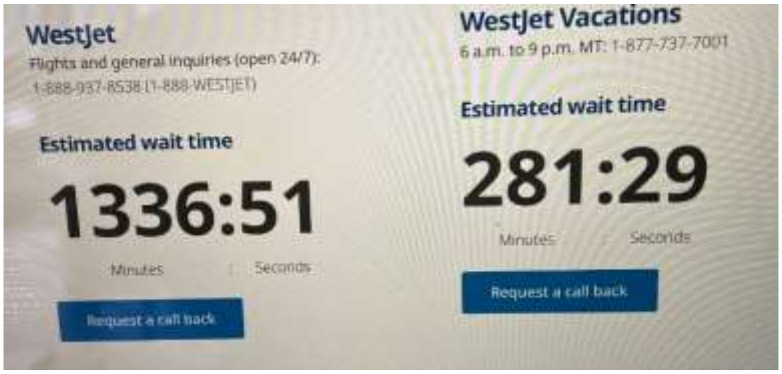
We were surprised no Coronavirus person to person transmission on planes

On Tues, we tweeted [LINK] "*Hadn't heard this until @GeoffreyT_Air on Bloomberg TV tonight that no known coronavirus passed on airplanes. Coincidentally Westjet sent out today "To date, there are no known cases where this virus has been transmitted from one person to another on an aircraft".* We have to believe others likely looked at airplanes and thought recirculated air, confined space with 150+ others has to be have been where Coronavirus was passed. But then we hear Bloomberg TV comment and wondered really? And then it just happened Westjet had sent a customer notice that same message. Later we hard a number of other experts note that the recirculated air on airplanes is actually better than at home because of the more sophisticate filters. We recognize a person to person transmission on a plane is inevitable, but we were surprised by the Westjet comments to date.

Calgary restaurants feeling an impact of Coronavirus
Our March 1, 2020 Energy Tidbits memo noted how Chinese restaurants in Calgary were already being hit by Coronavirus fears. How it started with the first weekend of Chinese new year Jan 25/26 is normally the busiest two days of the year, but volumes were down 50%. And it has gotten worse since then. Open Table posted a good by city table showing the decline in restaurant reservations. Earlier this morning, we tweeted [LINK] ""*Great Open Table by city detail on declining restaurant reservations. Seattle been dealing w/ Coronavirus the longest so its continuing decline points to where the rest the US/Can cities are heading. Real tough for restaurants, also another sign for lower gasoline demand*." Our Supplemental Documents package includes the Open Table by city table.

A 22.5 hour estimated wait time to change/cancel flights via phone
We didn't check the US airline wait times post the Trump Europe travel restrictions, but Canadians have had the Canadian air travel situation thrown into chaos with Alberta on Thursday and then Canada on Friday recommending Albertans and Canadians not leave the country. Canadians scrambled to cancel and change flights. We took the below picture of the wait times for Westjet's phone lines on Sat afternoon – an estimated wait time of 22.5 hours. Wow.

Figure 19: Westjet Phone Customer Wait Times Sat March 14 @130pm MT



Source: Westjet

Guess what was out of stock in Canmore, Alberta?
How could we not add our contribution to all the pictures around the world showing the run on toilet paper. Our picture was from Friday ~noon MT from the Safeway grocery store in beautiful Canmore, Alberta. Canmore is the smaller locals version of nearby Banff, Alberta. Its 15,000 population can double on every weekend with the Friday onslaught of weekenders in particular from Calgary that is 1 hour away. Fridays is typically the day the Canmore grocery stores stock up for the weekenders arrival. Hopefully, the weekenders had enough toilet paper before they arrived at their condos because by late afternoon, we assumed the Kleenexes were also sold out.

Figure 20: Out of Stock Toilet Paper in Canmore, Alberta

Source: SAF