Energy Tidbits

March 8, 2020

Produced by: Dan Tsubouchi

Oil Price/Market Share War Is On, Saudi Slashes Oil Prices And Produce “Significantly Higher” Than 10 mmb/d

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. Shock ending to OPEC+ meeting on Friday, there was no new cuts and no extension to existing cuts that expire at March 31. (Click Here)

2. Surprise yesterday with Saudi making big price cuts to customer for April effectively setting off an oil market share/price war. (Click Here)

3. Reuters sources indicate Saudi to increase production significantly higher than 10 mmb/d, closer to 11 mmb/d. (Click Here)

4. Chevron’s investor day reminded of the challenge for the world to replace declines. (Click Here)

5. Please note our news cut off this morning is 8am MT and the oil story is a fluid oil story today.

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

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

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

Ryan Dunfield
Principal, CEO
rdunfield@safgroup.ca

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

Ryan Haughn
Principal, Energy
rhaughn@safgroup.ca

Table of Contents

Natural Gas – Natural gas withdraw of 109 bcf, storage now +680 bcf YoY surplus

YoY storage at 680 bcf YoY surplus

The EIA reported a 109 bcf natural gas draw, right in line with expectations of a 110 bcf draw, and slightly above the 5-yr average draw of 106 bcf. This brings storage to 2.091 tcf as of Feb 28. This is a widening of the YoY surplus to 680 bcf vs 637 bcf surplus last week, with storage now 176 bcf above the 5 yr average. HH remains very 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 (02/28/19)		Historical Comparisons: 5-year average (2015-19)	
Region	02/28/20	02/21/20	net change	implied flow	Bcf	% change	Bcf	% change
East	451	484	-33	-33	317	42.3	385	17.1
Midwest	558	591	-33	-33	345	61.7	457	22.1
Mountain	101	108	-7	-7	74	36.5	115	-12.2
Pacific	197	196	1	1	113	74.3	204	-3.4
South Central	784	821	-37	-37	563	39.3	753	4.1
Salt	229	244	-15	-15	183	25.1	224	2.2
Nonsalt	555	578	-23	-23	380	46.1	530	4.7
Total	2,091	2,200	-109	-109	1,411	48.2	1,915	9.2

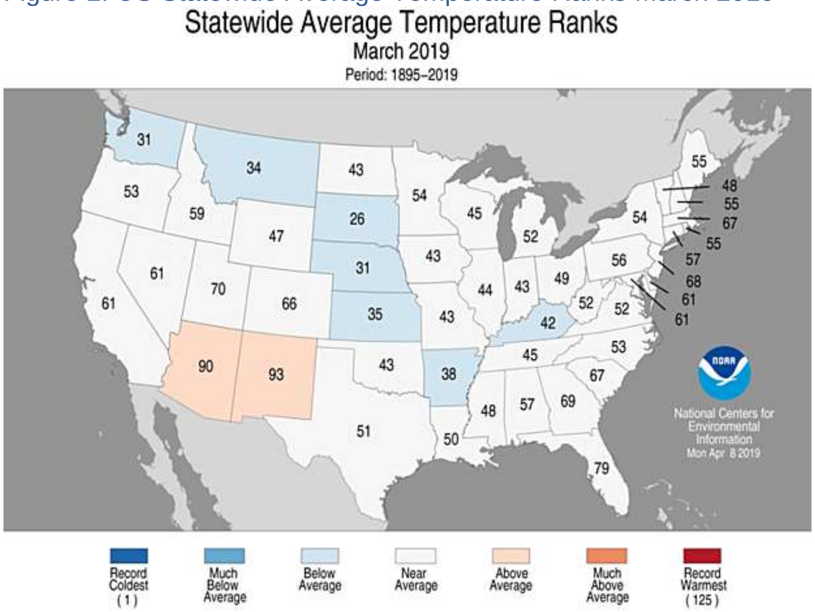
Source: EIA

Natural Gas – YoY storage should widen in March with warm weather

YoY storage to widen in March

We should expect the YoY storage surplus to widen in March, which in theory is the last month of winter. Its supposed to be in the 60's today and even touch 70 in parts of the NE US so warmer than normal. Plus it will be comparing to March 2019, which was mostly a normal temperature in key natural gas regions. Below is NOAA's March 2019 temperature map [LINK] . We could see a swing of 5 to 8 bcf/d swing from weather. Below is our table of AGA heating degree days and EIA residential and commercial gas demand by winter month

Figure 2: US Statewide Average Temperature Ranks March 2019



Source: NOAA

Figure 3: Heating Degree Days, Residential & Commercial Natural Gas Demand By Month

Heating Degree Days By Month													
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	10 Year Average	
	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs				HDDs	%
Oct	339	282	298	308	303	265	257	200	218	306	307	278	7%
Nov	485	572	522	572	623	658	484	459	542	650	636	557	14%
Dec	933	949	768	763	920	763	649	856	873	789	778	826	20%
Jan	987	1,039	811	918	1,019	967	935	843	963	941	806	942	23%
Feb	870	809	713	795	903	955	718	597	699	810		787	19%
Mar	607	677	413	827	831	738	511	618	660	804		669	16%
Oct 1 - Mar 31	4,221	4,328	3,525	4,183	4,599	4,346	3,554	3,573	3,955	4,300	2,527	4,058	100%
Note: Oct includes Sept if applicable. March includes Apr if applicable.													
Source: AGA, SAF													

US Residential & Commercial Demand													
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	10 Year Average	
	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	%
Oct	14.5	12.5	14.2	14.6	13.9	13.4	12.8	12.2	13.1	15.9	14.5	13.7	7%
Nov	20.9	24.5	23.8	26.3	28.8	30.2	23.0	22.0	26.3	32.8	30.2	25.9	13%
Dec	38.5	42.4	35.0	34.2	43.0	36.9	30.4	40.5	42.2	39.5		38.3	19%
Jan	46.2	48.4	40.4	47.0	51.9	47.4	45.0	42.4	49.5	48.7		46.7	24%
Feb	44.2	43.0	36.4	42.3	48.0	50.9	38.4	33.7	39.8	45.7		42.2	21%
Mar	29.6	31.4	21.6	34.3	36.2	33.1	24.4	30.8	34.8	35.9		31.2	16%
Source: EIA, SAF												197.9	100%

Source: AGA, EIA, SAF

Natural Gas – A warm start to March in much of the US

Warm start to March

Yesterday morning, the Weather Channel posted its story *"Is Winter Over? With Springlike Temperatures Ahead, You'd Think So"* [LINK] that noted "*Generally warmer-than-average temperatures are expected in much of the nation through mid-March. Some locations will enjoy their first 60s or 70s of the season this weekend. Early March snow cover is the lowest in the U.S. in at least 16 years."* A key reason is "*Also lingering into mid-March: the jet stream's southward dip in the West. When that happens, the jet stream tends to buckle northward in the central and eastern U.S., allowing relatively warm air to push northward into the Plains, Midwest and East*."

Figure 4: Weather Channel Forecast Highs Sun/Mon/Tues

Source: Weather Channel

Natural Gas – Coastal GasLink back under construction

Coastal GasLink back under construction

Following a series of protests and blockades across Canada throughout Feb, on Sunday, Canadian authorities said they have tentatively reached a deal with the Wet'suwet'en people to address future land disputes, which has resumed construction on the Coastal GasLink pipeline [LINK]. On Monday, Coastal Gas Link President David Pfeiffer issued a statement on the agreement [LINK] and said "*Coastal GasLink appreciates the dialogue that has occurred over the past several days and the fact that significant progress has been made to address the concerns of the Wet'suwet'en Hereditary Chiefs. Coastal GasLink appreciates that a path has been identified to address significant issues of Aboriginal Title and Rights of the Wet'suwet'en people while recognizing that Coastal GasLink is fully permitted and remains on track for a 2023 in-service date. While much has been accomplished, much work remains and we wish all parties success as their work continues and the Wet'suwet'en people consider the proposed arrangement. Coastal GasLink will resume construction activities in the Morice River area on Monday, March 2 following the four-day pause to allow for constructive dialogue between the parties. The agreement took place in Ottawa during three days of negotiations between the Indigenous affairs minister of BC and the federal government. The agreement will be reviewed by the Wet'suwet'en people and should take two weeks before the deal is finalized"*. Coastal GasLink is the new natural gas pipeline that will be delivering natural gas to LNG Canada.

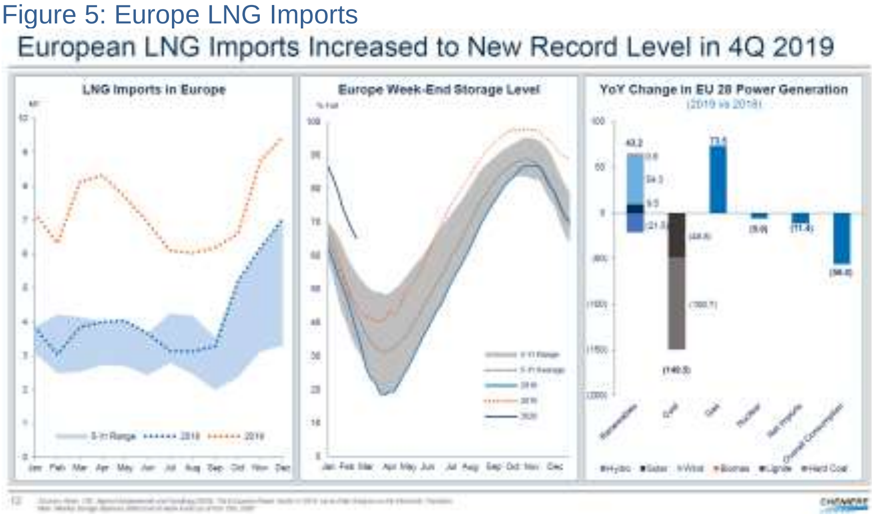
LNG insights from Cheniere's Q4 call

Natural Gas – Excellent LNG market insights from Cheniere's Q4 call last week

We, like others, have spent a lot more time than normal on the massive market, coronavirus and oil events of the last couple weeks so haven't written up very many Q4 call highlights. Lasts Tues Cheniere held its Q4 call and there were many excellent LNG insights. (i) There is a fairly detailed commentary on LNG markets that is worth a read. (ii) See the LNG market in before "*beyond 2025*". Mgmt was asked "How are you thinking about when the LNG market globally comes back into balance meaning. Some folks think that starts to happen in about 2023, other "*Whatever the we know that supply, the supply wave is over now effectively. We have a couple more trains out of the US left to come on and then in 21, 22, 23 the amount of volume coming into the market is less per annum than it has been per quarter since late 2018. So we're in the camp that the market will rebalance much sooner than that, then once you get to the back half of this decade you will have the result of the FIDs these that we saw last year and expect to see this year. So you'll have another supply wave, but we think this very much rhymes with what we saw in the 2010-2011 period where you had the big Qatari push of supply. Coupled with financial crisis and US sale production. You kind of have the same triple whammy playing out now with US and Australian supply wave. Two winters that didn't exhibit strongdemand and of course coronavirus adding on top of that. But we think today the market is, let's say in balance by single-digit millions of tonnes per annum run rate".* (iii) Slightly lower long term LNG demand. In the Q4 call, mgmt. said "when I joined Cheniere to the end of 2019 the LNG market demand has grown by about a 100 million tons. That demand is forecast to grow another 100 million tons by 2025 and a further 100 million tons by 2030". That growth is 13.15 bcf/d for the next five years and then a further 13.15 bcf/d for a total of 26.3 bcf/d for the next 10 years. This compares to their Dec 2019 slide deck that had growth of 30.53 bcf/d (232 mtpa) or 5.23 bcf/d for the extra year. So a little less LNG growth to 2030, which is likely linked to weather than expected 2020 growth as the Dec 2019 slide deck would have been done pre the mild Asian winter and some impact from Coronavirus. (iv) Markets absorbed the big LNG growth in 2019 and it was Europe for the majority of that. Mgmt noted that this was due to storage *"European imports for the total year grew by 74% surpassing 87 million tonnes, and exceeding the previous records of 67 million tonnes that in both 2010 and 2011. The incremental LNG flows into Europe were enabled by a combination of additional gas being placed into underground storage the ground storage, called to gas switching and a reduction in other gas supply sources".* (v) Coronavirus "*What's currently too early to gauge the potential impact of the coronavirus on the near term market balance decreased short-term LNG demand in China is putting additional pressure on the market still working to absorb the ways of incremental supply into the market over the past two years*." (vi) Lots of good commentary on specifics within Europe and Asia natural gas demand. (vii)

Some US LNG may not be lifted this year. Mgmt said "*While much attention is given to the possibility of supply curtailments particularly in the US there are a number of factors, which could help balance the market. Including price elastic demand response, whether, maintenance intervals, changes in supply levels of competing fuels and sources of gas. While we acknowledge that some LNG on the margin may not be lifted from the US this year, we do not view significant or for long curtailment of US LNG production as a likely scenario*." (viii) Reinforced our concern that Europe storage will fill months earlier than last year. "*Yes, we certainly are so the main price elastic demand we still in 2019 as we discussed was Europe, Northwestern, Iberian Peninsula, we're continuing to see that continue to see further penetration of gas into those markets. And again, we think a lot of that is structural, but we're also seeing other tiers of response one of the more active markets over the last couple of months has been India has shown very good appetite at these price levels".* (ix) Seemed to reinforce our concern about LNG service contractor demand the need to be in the queue to have best change for lowest capital costs.   In the Q&A, was asked about potential delays to get the benefits of delveraging. It wasn't direct, but we thought that part of the answer links to the concern about not losing a spot in the service contractor queue. Mgmt replied "*So I mean ideal scenario for us is to commercialize it but, build it as late in the schedule as we can while maintaining, our EPC contract and our cost certainty and all of that. So certainly it has an effect on how quickly move*..." (x) Our Supplemental Documents package includes excerpts from the Cheniere Q4 call transcript and Q4 call slide deck.

Figure 5: Europe LNG Imports



Source: Cheniere

Natural Gas – China Jan/Feb natural gas imports +1.1% YoY vs Jan/Feb 2019

China Jan/Feb natural gas imports +1.1% YoY

China hasn't been the growth engine for LNG imports, but it is up YoY in Jan/Feb so is better than we expected with the startup of the Power of Siberia Russia to China gas pipeline on Dec 1, 2019. Last week, we commented on a very short release from China's National Development and Reform Commission that noted China natural gas imports were down 0.24 bcf/d YoY in Jan 2020 to 15.21 bcf/d vs 15.45 bcf/d in Jan 2019, which is for total natural gas including pipeline and LNG [LINK]. This week, China's General Administration of Customs released its preliminary data for combined Jan/Feb trade data [LINK] and note the data is not split out by month. Total natural gas imports for the Jan/Feb period totaled 14.25 bcf/d which is +1.1% YoY from the Jan/Feb 2019 period of 14.10 bcf/d. Note, our YoY calculation of +1.1% is lower than the +2.8% YoY figure reported by Reuters [LINK] due to the conversion to bcf/d which factors in the one extra day in Feb 2020 vs Feb 2019 due to leap year. Given that China's National Development and Reform Commission reported Jan natural gas imports were down YoY in Jan, we can assume Feb natural gas imports were slightly higher YoY which boosted the total Jan/Feb period to be higher YoY by 1.1%. This makes sense as Jan was impacted by timing difference of Chinese new year, which was Jan 25, 2002 vs last year of Feb 5, 2019. Although the slight YoY increase is somewhat positive given the big coronavirus impact, this growth is way lower than prior years and is nowhere near enough to absorb excess LNG and natural gas. We don't have the split of pipeline natural gas vs LNG, but the China customs should post this detailed data in the next few weeks.

Natural Gas – More China LNG force majeure attempts

More China LNG force majeure attempts

We are a little surprised that we haven't seen any other Chinese LNG force majeure reports n the past month until this week. China may be seeing the start of some economic activity, but China, overall, remains weak relative to pre Coronvirus stepping in. On Thurs, Bloomberg reported "*China National Petroleum Corp. has issued a force majeure on all prompt natural gas imports, according to people with knowledge of the situation, the second Chinese buyer to refuse shipments in a sign that global commodity flows may face a sustained impact from the coronavirus fight. CNPC, the parent of PetroChina Co., is taking the extreme step after initially working with sellers to reschedule shipments, and plans to cancel contracted deliveries of the fuel both as liquefied natural gas and via pipelines in the short-term, said the people, who asked not to be identified as the information isn't public. At least one LNG supplier had been notified, the people said. CNPC declined to comment".* Last month (see our Feb 8, 2020 Energy Tidbits), Bloomberg reported on Total's response to their receiving a force majeure notice rom CNOOC, which Total says was rejected. Our Supplemental Documents package includes the Bloomberg terminal reporting.

Natural Gas – Oil Search potential for Papua LNG if options exhausted on P'nyang

Oil Search on Papua LNG options

Oil Search held its Q4 call last Tues. We recognize that Oil Search is the non-op partner with operators Exxon and Total in their plan to integrate the development of the Total operated (and already PNG approved) Papua LNG development and Exxon operated P'nyang gas development. (i) The big issue for Oil Search, Exxon and Total has been the recent breaking off of discussion between Papua New Guinea govt and Exxon on the terms for P'nyang Gas Agreement because the partners see this gas expansion as integrated to the Papua LNG development, which has already been approved. And without the P'nyang deal, the partners haven't been prepared to move ahead on Papua LNG. And they have held strongly to that position. (ii) The operators are either Exxon or Total, but Oil Search says they are having informal talks with PNG to figure out a way to bridge the gap. In the Q&A, mgmt. was asked about these informal discussions and replied "*Look, it's a good question, and one that we anticipated. The reality is that there's a huge huge amount of value in an integrated three-train project for all parties, and that really has to be the focus of it for the project proponents. So what we're looking to do is to ensure that every avenue of pursuing that project and that integration is pursued, so hence Peter and Beth are up in PNG at the moment. But apart from that, I really going to say very little and you can also see that both Exxon and Total have publicly stated that their intention is to pursue a three-train development. So whilst the formal negotiations were suspended at the end of January, it was clear that there was potential space for the parties to reach an agreement and that's in that space that we're trying to achieve*". (iii) The interesting commentary was Oil Search saying if need be, they will look at going ahead only on Papua LNG. Their comment should give the PNG govt some comfort in knowing they might be able to get the Papua LNG even if they don't reach a deal on P'nyang with Exxon. Oil Search said "*Yes, there's a lot of hypothesis there that we actually don't control there, Dan. Look, the reality is this that all of the parties recognize the value that's* *associated with the three-train expansion for PNG and for the stakeholders. And especially importance of driving costs total -- costs as low as possible in the current economic climate. So at the moment, we're very, very focused on that outcome. Yes clearly, at some stage in the future, if all of those things are exhausted, we'll actually re-look at the Papua LNG. But at the moment, the joint venture is very focused on the three-train outcome. So anything other than that it's hypothetical*". Our Supplemental Documents package has excerpts from the Oil Search Q4 call and slide deck.

Oil – US oil rigs up 4 to 682 oil rigs

US oil rigs were +4 this week

Baker Hughes reported its weekly rig data on Friday which was a non event for oil prices, which were dominated by the news of no OPEC+ deal. US oil rigs were up 4 to 682 oil rigs vs 834 oil rigs a year ago. Increases were in Permian +4, Others +3, and Granite Wash +1. Decreases were in Cana Woodford -3 and Williston -1. We expect the US oil rigs will be declining with the no OPEC+ deal. 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 6: Baker Hughes Total US Oil Rigs

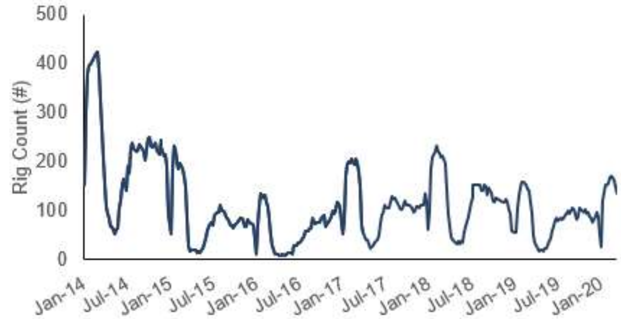
Source: Baker Hughes

Oil – Total Cdn rigs down 37 to 203 total rigs

Total Cdn -37 this week

Baker Hughes reported total Cdn rigs were down 37 to 203 total rigs. Cdn oil rigs were down 29 to 134 oil rigs. Cdn gas rigs were down 8 to 69 gas rigs. This is the normal end of winter drilling decline, and should accelerate over the next two weeks as we enter into spring breakup. To put in perspective, a year ago, Cdn oil rigs were 118 and Cdn gas rigs were 71 for a total Cdn rigs of 189, meaning total Cdn rigs are +14 YoY. Below is our graph of total Cdn oil rigs.

Figure 7: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

Oil – US oil production up 100,000 b/d to new record 13.1 mmb/d

US oil production at 13.1 mmb/d

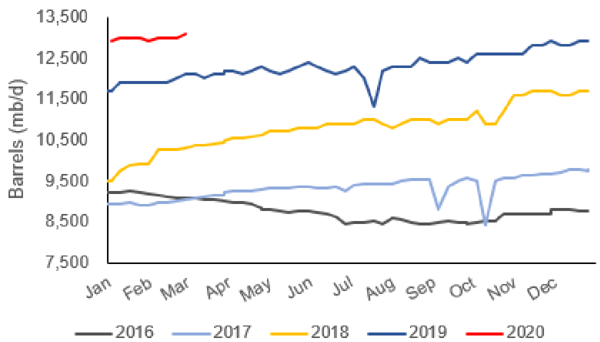
This week, the EIA reported US oil production was up 100,000 b/d to a new all time high of 13.1 mmb/d for the Feb 28 week. Lower 48 was also up 100,000 b/d to a new record high of 12.6 mmb/d. The general expectation is for US oil supply growth to be much less in 2020 vs 2019, which is reflected in slowing MoM US shale/tight oil supply growth which fits the view that US oil production growth is reaching a plateau in H1/2020. Below we pasted an excerpt from the EIA weekly oil production data. [LINK]

Figure 8: EIA's Estimated Weekly US Oil Production

	Week 1		Week 2		Week 3		Week 4		Week 5	
Year-Month	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		

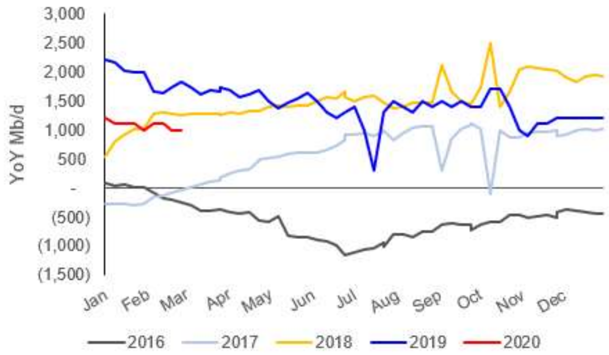
Source: EIA

Figure 9: US Weekly Oil Production



Source: EIA, SAF

Figure 10: YoY Change in US Weekly Oil Production



Source: EIA, SAF

Oil – No surprise, higher cost of capital impacts US oil production growth

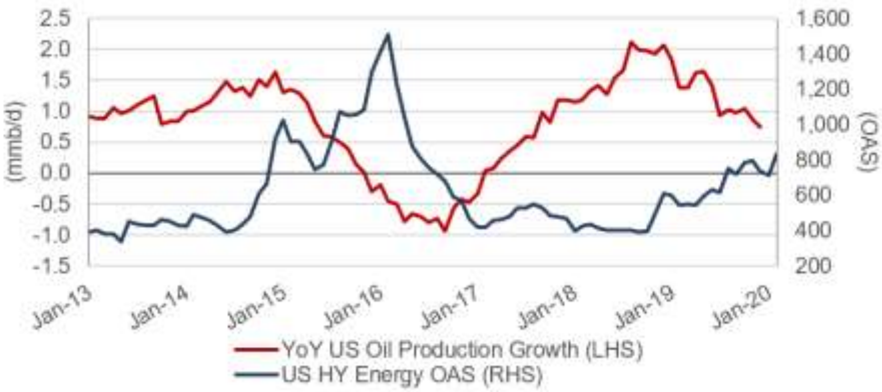
Higher cost of capital vs US oil growth

On Tues, we tweeted [LINK] on a good Goldman Sachs chart from their March 3 comment *"Rate and production cuts won't prevent large inventory builds*". Goldman's chart plotted "*WTI prices vs Option Adjusted Spread of US High Yield Energy Sector"* and noted "*Lower WTI and sharply higher cost of capital will also lead to gradually lower US shale production growth".* Our tweet was *"Thx @GoldmanSachs for great graph highlighting lower WTI + sharply higher cost of capital to lead to lower US shale oil prod. Tweaked their graph to go back to Jan 2013 to show higher cost of capital was a great predictor in declining YoY US oil production. #OOTT"* We wanted to show the higher cost of capital compared to US oil production and to show how that correlation was there for the last time US oil production declined to provide the historical data supports the Goldman look ahead thesis. Below are is our tweak of the Goldman graph to back to Jan 2013 instead of starting at Jan 2016, and our separate graph showing the cost of capital and US oil production. It shows the strong correlation in 2015 to 2016 with cost of capital vs US oil production.

Figure 11: WTI Prices And US HY Energy OAS

Source: Bloomberg

Figure 12: YoY US Oil Production Growth And US HY Energy OAS



Source: Bloomberg

Oil – Australia to lease US Strategic Petroleum Reserve capacity

Australia to lease SPR capacity

Reports from Australia that, on Monday, Australia will be signing a deal with the US to lease capacity in the US Strategic Petroleum Reserve to effectively increase Australia's strategic reserves capacity. There are no details yet on the volume, the price, the terms, etc. The Sydney Morning Herald reported [LINK] "*Australia imports 90 per cent of its liquid fuels but only has enough in storage to last 54 days – well below the 90 days it is obliged to stockpile under an agreement with the International Energy Agency (IEA). The need to bulk up oil supplies has grown increasingly acute recently because of the volatility in key shipping routes such as the Strait of Hormuz off Iran and the South China Sea. The deal, which involves leasing US storage facilities, means the government will not need to spend billions of dollars building expensive new storage facilities in Australia. The oil stored in America will count towards Australia's overall supply, allowing the government to meet its IEA requirements.*" Our Supplemental Documents package includes the Sydney Morning Herald story.

Australia leasing 27 mmb would get it to a 90 day reserve

The current EIA data, as of Feb 28, estimates there are 635.0 mmb in the US Strategic Petroleum Reserve. BP Amoco's estimate for Australia's 2018 oil consumption of 1.094 mmb/d vs production of 0.356 mmb/d for a net import requirement of 0.738 mmb/d. If Australia leases enough SPR to get to its 90 day commitment, it would need to lease ~27 mmb.

Oil – Alberta loans $100mm to Orphan Well Association

Ab gov loans $100mm to OWA

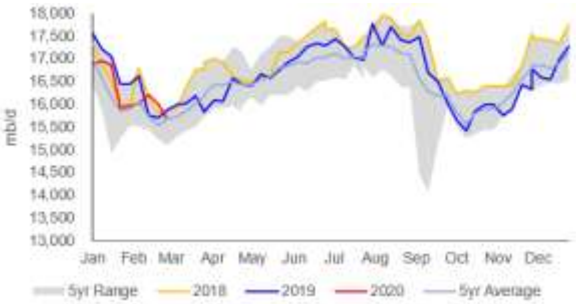
Post Friday's no OPEC+ deal and Saudi starting a price war, it will be even tougher for all oil companies including Cdn oil companies and will likely lead to more oil bankruptcies. The wave of bankruptcies in the Cdn o&g sector since 2014 has created a series of challenges, one of which is the buildup in orphan wells that need remediation but have no owner. In 2017, the Alberta government had to step in and provided the Orphan Well Association a $235mm interest-free loan (currently being repaid by the industry-ran Orphan Fund Levy), and recent o&g bankruptcies including Trident Exploration and Houston Oil & Gas have added to the number of orphan wells. This week, the Alberta gov announced its first step in its "Blueprint for Jobs", which includes extending a loan to the OWA for up to $100mm [LINK]. Specifically, the loan proceeds will be used by the OWA to decommission ~1,000 wells and start over 1,000 environmental site assessments for reclamation, while generating ~500 jobs in the oilfield service industry. Kenney commented on the new loan, saying *"Today's* *investment is part of our Blueprint for Jobs. This taxpayer investment will create good-paying jobs while improving the environment. Actions like this will help to get Alberta back to work"*. The Government and the OWA are currently working to finalize the loan terms and the investment is to be completed before April 1, 2021.

Oil – Oil input into refineries down 312,000 b/d to 15.696 mmb/d

Oil input into refineries down 312,000 b/d

For the Feb 28 week, EIA estimates crude oil inputs to refineries were down 312,000 b/d to 15.696 mmb/d, which compares to the Feb 21 week where oil inputs were down 202,000 b/d. Crude inputs have been impacted by the Feb 12 Exxon Baton Rouge fire, but the refinery is reportedly at 90,000 b/d and aiming to return to normal mid next week. Overall crude inputs are now 294,000 b/d lower YoY, which is decent considering the PES Philadelphia refinery complex closure (335,000 b/d) following the Q2/19 fire. Feb is typically the month when industry starts to come out of the its normal seasonal maintenance, however current refinery turnaround schedules show PADD 3 refinery outages peaking in the first week of March, and tapering off by mid April, meaning we may not see a big ramp up in crude inputs for a few more weeks. Refinery utilization showed a decrease of 1.0% to 86.9% which is -0.4% YoY. Below is our ongoing graph of US refinery crude inputs.

Figure 13: US Refinery Crude Oil Inputs (thousand b/d)



Source: EIA, SAF

Oil – Co-op refinery, only a few days to go in mediation, no hints of a deal

Only a few days to go in mediator process

Its not clear exactly how many more days remain in the Co-op refinery mediation process, but there have been no indications or chatter that the parties are moving to resolving their impasse. If anything, the social posts would seem to point to no movement on either side, but there has been no formal reports. This was a 20 day mediation process and we believe we should be down to only a couple of days. A reminder this is a mediation and not a binding arbitration process as desired by the union. If anything, the releases and chatter seems to indicate no movement on either side and there are no hints of any progress. As a reminder the 130,000 b/d Regina refinery is being operated by replacement workers. We do not have any official reports of the capacity level of operations. Notwithstanding its been 3 month, we still wonder if this strike has the potential to go for a real long time if the mediator isn't successful especially since the coldest part of the winter looks to be over. .

Oil – US "NET" oil imports down 476,000 b/d to 2.084 mmb/d

US NET oil imports down 476,000 b/d

US "NET" imports were down 476,000 b/d to 2.084 mmb/d for the Feb 28 week. US imports were up 21,000 b/d to 6.238 mmb/d and US exports were up 497,000 b/d to 4.154 mmb/d. Some items to note on the by country data. (i) Canada was up 41,000 b/d to 3.644 mmb/d for the Feb 28 week, and PADD 2 imports were down 93,000 b/d as Canada is basically all of this market. (ii) Saudi Arabia was down 10,000 b/d to 380,000 b/d, which compares to imports from Saudi in Feb/19 of ~490,000 b/d. (iii) Colombia reversed the big increase from the prior week, and was down 195,000 b/d to 272,000 b/d. (iv) Ecuador was up 115,000 b/d to 249,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico was basically flat at 554,000 b/d which is in line with Feb/19 import levels. Below is our table of the US oil imports by major country.

Figure 14: US Weekly Preliminary Oil Imports By Major Countries

	Jan 3/19	Jan 10/19	Jan 17/19	Jan 24/19	Jan 31/19	Feb 7/19	Feb 14/19	Feb 21/19	Feb 28/19	WoW
Canada	3,606	3,837	3,559	3,845	3,825	3,685	3,690	3,603	3,644	41
Saudi Arabia	416	203	360	555	353	494	513	390	380	-10
Venezuela	0	0	0	0	0	0	0	0	0	0
Mexico	576	595	481	800	953	894	722	542	554	12
Colombia	396	180	727	338	304	183	128	467	272	-195
Iraq	468	537	227	143	400	229	179	336	375	39
Ecuador	252	334	218	186	167	242	219	134	249	115
Nigeria	150	131	184	0	1	91	154	32	0	-32
Kuwait	0	0	0	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0	0	0	0
Top 10	5,864	5,817	5,756	5,867	6,003	5,818	5,605	5,504	5,474	-30
Others	866	735	676	793	612	1,160	942	713	764	51
Total US	6,730	6,552	6,432	6,660	6,615	6,978	6,547	6,217	6,238	21

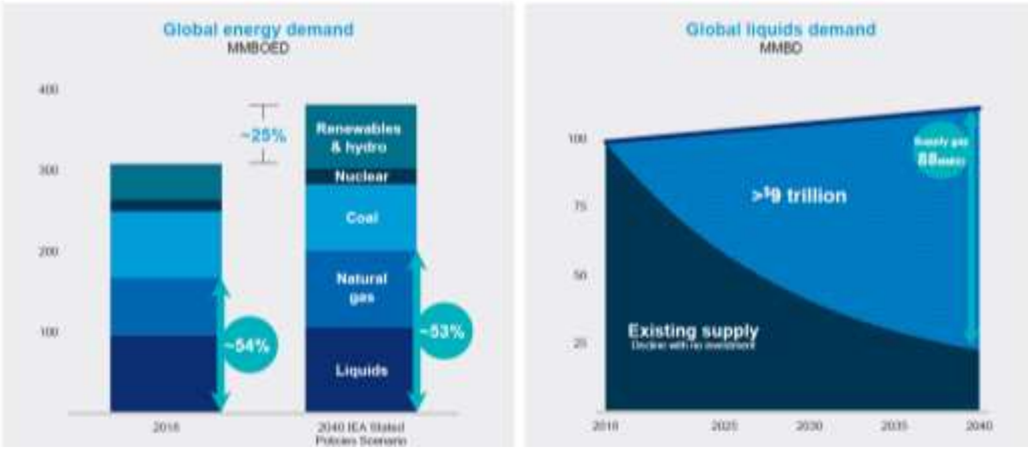
Source: EIA, SAF

Oil – Chevron reminds of the challenge to replace declines

Chevron reminds of challenge to replace declines

Chevron held its analyst day on Tues, and there were several good insights including a reminder on the challenge to replace declines. On Tues, we tweeted [LINK] "*With Brent $51/WTI $47, no one will note Chevron's analyst day warning that "underlying decline in supply requires significant investment to replace 80% of production from existing fields by 2040". Good sign for post 2020/21 oil with high declines from shale kicking in.*" We recognize that the impact of higher declines will take a couple years to work thru the system, so given the current situation with oil in oversupply, no one really cares about a 10 year outlook for oil. However, Chevron included a slide on growing global energy demand and the big investment needed to replace declining production from existing fields. In the prepared comments for this slide, mgmt. said *"The chart on the left shows IEA's stated policy scenario. An independent view of demand that accounts for known and expected changes in both policy and technology. Total energy demand is projected to grow by nearly 25%, and oil and gas by a similar amount, representing roughly the same share of the total energy mix in 2040 as it does today. Even in IEA's sustainable development scenario, which is Paris-aligned, oil and gas is still expected to be about half of total energy demand. And as you see on the right, the underlying decline in supply requires significant investment to replace 80% of production from existing fields by 2040, and also meet the growing demand for liquids"*. Below is the Chevron slide on growing demand and reinvestment needed to offset declines.

Figure 15: Chevron Analyst Day Slide



Source: Chevron

Oil – Reuters OPEC survey for Feb production down 510,000 b/d MoM

Reuters OPEC down 510,000 b/d in Feb

Reuters released it's survey of Feb OPEC production on Monday. (i) For the first time ever, we could not find any disclosure of the production by country despite right until the our news cut off so we could not update our table showing production by country. There were only brief reports such as the [LINK]. (ii) Overall, OPEC was down 510,000 b/d MoM to 27.84 mmb/d in Feb. (iii) It looks like there was no revisions, at least in total to Jan. (iv) The revision was driven by Libya being down 760,000 b/d in Feb to 155,000 b/d. Reuters said there were no other significant declines in the group. (v) Reuters did not provide details but said that Nigeria and Iraq both increased oil production in Feb.

Oil – Bloomberg OPEC survey for Feb OPEC production down 480,000 b/d MoM

Bloomberg OPEC down 480,000 b/d in Feb

Bloomberg released its survey of Feb OPEC production on Monday morning, (i) Overall, we thought it was positive to oil prices with OPEC down big MoM but it was a good news/bad news survey. (i) Good news because OPEC in total is down 480,000 b/d in Feb to 27.910 mmb/d vs 28.390 mmb/d in Jan. (ii) Bad news because the reduction is all due to Libya being down 640,000 b/d with the ports blockade, and Libya can quickly add 1 mmb/d if the blockade ends. The other bad news is the key normal cheaters were up in Feb with Iraq +90,000 b/d to 4.610 mmb/d and Nigeria +100,000 b/d to 1.930 mmb/d. (iii) Saudi Arabia was basically flat at 9.740 mmb/d and still well below (404,000 b/d) quota. (iv) Iran was down 20,000 b/d to 2.050 mmb/d and has been around 2.1 mmb/d for the past 5 months. (v) Venezuela was -20,000 b/d to 750,000 b/d and continues to support a baseline of at least ~700,000 b/d. (vi) As a reminder, Ecuador is no longer in OPEC. (vii) The key reason for why investors see a near term cap on OPEC is the view on spare capacity. We recognize that some of the spare capacity may not be real, but it's a very large number, as Bloomberg estimates total capacity is 34.035 mmb/d, which is 6.125 mmb/d higher than Feb production levels. Below is our running table of Bloomberg survey data.

Figure 16: Bloomberg Survey of Feb 2020 production

thousand b/d	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	MoM	YoY	New Quota	Feb vs Quota
Algeria	1,030	1,025	1,020	1,010	1,010	1,010	1,020	1,030	1,020	1,020	1,010	1,010	**1,020**	10	-10	1,013	7
Angola	1,440	1,440	1,380	1,450	1,410	1,360	1,400	1,360	1,340	1,280	1,390	1,360	**1,360**	0	-80	1,481	-121
Congo	330	350	350	340	330	320	330	320	330	310	310	310	**310**	0	-20	311	-1
Equatorial Guin	110	120	120	110	110	120	120	120	120	120	120	120	**120**	0	10	122	-2
Gabon	200	190	180	200	200	190	200	190	200	180	210	200	**190**	-10	-10	179	11
Iran	2,740	2,710	2,550	2,380	2,280	2,210	2,210	2,130	2,110	2,070	2,080	2,070	**2,050**	-20	-690		
Iraq	4,620	4,550	4,630	4,730	4,750	4,750	4,780	4,780	4,680	4,710	4,650	4,520	**4,610**	90	-10	4,462	148
Kuwait	2,710	2,700	2,720	2,700	2,690	2,680	2,640	2,690	2,670	2,700	2,710	2,670	**2,680**	10	-30	2,669	11
Libya	900	1,100	1,190	1,150	1,150	1,100	1,070	1,120	1,180	1,170	1,110	790	**150**	-640	-750		
Nigeria	1,830	1,870	1,900	1,860	1,890	1,890	1,950	1,930	1,910	1,890	1,860	1,830	**1,930**	100	100	1,753	177
Saudi Arabia	10,100	9,820	9,790	9,830	9,820	9,780	9,830	8,650	10,020	9,870	9,830	9,730	**9,740**	10	-360	10,144	-404
UAE	3,070	3,050	3,070	3,070	3,060	3,060	3,070	3,070	3,070	3,100	3,040	3,010	**3,000**	-10	-70	3,012	-12
Venezuela	1,070	830	840	780	770	780	760	660	690	700	680	770	**750**	-20	-320		
Total OPEC 14	30,150	29,755	29,740	29,610	29,470	29,250	29,380	28,050	29,340	29,120	29,000	28,390	27,910	-480	-2,240	25,146	-186

Source: Bloomberg, SAF

Oil – No OPEC+ added cuts, No extension to existing cuts that end March 31

No OPEC+ added cuts, and no extension

We have to believe that, by now, everyone has heard of what happened on Friday so we will only briefly summarize. On Wed, the OPEC+ JTC met and post that meeting Russia energy minister Novak flew back to Moscow. On Thursday, OPEC ministers approved an OPEC cut of 1.0 mmb/d, but it was contingent on a non-OPEC cut of 0.5 mmb/d for a total OPEC+ cut of 1.5 mmb/d. Novak returned to Vienna. The OPEC+ meeting start was delayed by ~4 hours as there were a series of bilateral meetings to try to get a consensus ie. get Russia onside. The OPEC+ meeting was held and concluded with no agreement to the 1.5 mmb/d cut and also no agreement to extend the existing cuts past the March 31 end date. Novak's well reported comments after the no deal "*From April 1 neither OPEC nor non-OPEC have restrictions."* And then Saudi energy minister Abdulaziz after the no deal well publicized comments "*I will keep you wondering*".

Oil – Saudi slashes oil prices, Reuters says "significantly higher" than 10 mmb/d

Reuters: Saudi may get closer to 11 mmb/d

Note our news cut off is 8am MT and this is a building story today. The oil market story for Monday will be Saudi's response to Russia's refusal to join OPEC in additional cuts and Novak's invitation "*from April 1 neither OPEC nor non-OPEC have restrictions*". Saudi has not formally responded, but clearly indicated it is moving to fight for market share (increase volumes) by slashing its price to customer including Europe. Europe is Russia's main market. (i) The takeaway is that Saudi is using its unique strengths to try to make a huge statement to oil markets including Russia. Saudi has the lowest operating costs, a single owner (other than the very small float), at least 2 mmb/d of spare capacity. It has the capacity to impact oil markets more than any other country and looks like it is choosing to do so. What isn't clear is what does Saudi need to see before it stops punishing all other oil players. (ii) Slashing prices. Yesterday we tweeted [LINK] on Saudi's response. Our tweet was "*Oil markets/stocks to be ugly on Mon. Thx @JavierBlas for Saudi response to Russia. Its an all out price war. Aramco lowered April pricing for crude sales to Asia by $4-$6 a barrel and to the U.S. by $7 a barrel, according to a copy of the announcement seen by Bloomberg*". Saudi didn't keep markets waiting long for their response to Russia's refusal to contribute any additional cuts and the breakdown of any OPEC+ cuts past March 31 – they slashed oil prices and have effectively set in place an all out oil market share war. Bloomberg reported "*In the first major marketing decision since the meeting, the state producer lowered April pricing for crude sales to Asia by $4-$6 a barrel and to the U.S. by $7 a barrel, according to a copy of the announcement seen by Bloomberg."* This is being viewed simply as the start of an oil price and market share war with Saudi Arabia going after markets competing against Russia crude ie. in Europe. (ii) Increasing volumes. Today, Reuters [LINK] reported on Russia's invitation for all countries to produce at will after April 1. Reuters wrote "*On Saturday, Aramco slashed its official selling price (OSP) for April for all its crude grades* *to all destinations, after OPEC's oil supply cut pact with Russia fell apart on Friday, sending oil into a tailspin. The sources said that April's production will be significantly higher than 10 million bpd, possibly closer to 11 million bpd*." Our Supplemental Documents package includes the Bloomberg and Reuters stories.

Novak sees talks after April 1 but not based on previous quotas

Earlier this morning we tweeted [LINK] on the only Russia Energy Minister Novak make today on the situation. Sputnik [LINK] quoted Novak "T*his is why, I believe, we are coming to a moment when, starting 1 April, we will work without considering the previously active quotas and cuts. However, this certainly does not mean that every country will not analyse the situation developing in the market,*" and "*This will, most importantly, depend on companies' plans. We will need to discuss this with companies, as we have not discussed such an option.*" Note that this morning there are reports that the OPEC+ Joint Technical Committee is meeting on March 18 to discuss Q1 compliance.

Oil – Aramco shares closed Fri, down 9.1% today, but still think more for N.A. oils

Aramco shares down 9.1% today

Saudi's Tadawul market closes at 6am MT. Earlier today, we tweeted [LINK] on the today's trading "*For those not near their screens, Aramco closed down 9.1% to 30 riyals, below the IPO price of 32 riyals. Wonder how the strong North American oil producers will fare on Monday, hate to think about how the average ones will do. #OOTT".* Tadawul was closed on Friday and so today's trading was no question partially due to a catch up. And we tweeted a reply [LINK] because we don't agree with any implication that North American oil stocks won't have a bad day on Monday because today's Aramco shares are simply a catch up from Saudi markets being closed on Friday. Our tweet reply agreed with the fact that Saudi markets were closed, but we then reiterated our view. We tweeted "*Agreed. I just have trouble believe that North American oil stocks with higher cost structures, bigger decline rates and decreasing access to capital aren't going to be hit on Monday."* Putting aside any advantages Aramco has for its shares with its shareholder and captive buying audience, we just don't see how North American oil stocks don't get hit on Monday even after Friday's trading.

Oil – Saudis say thwarted a remote boat attack on tanker in the Arabian Sea

A thwarted attack on a tanker in Arabian Sea

Interesting story on Wed from the Saudi Press Agency "*The Joint Forces Command of the Coalition to Restore Legitimacy in Yemen: Thwarting a Terrorist Attack Targeting an Oil Tanker in the Arabian Sea*" [LINK] that noted ""*An imminent terrorist attack that was aiming to target an oil tanker in the Arabian Sea 90 nautical miles Southeast of Yemeni Nishtun port was thwarted and foiled. The failed terrorist attempt was carried out at (1439) on Tuesday 03 March 2020 during the sail of the oil tanker headed to Aden port. The attempt was carried out using (4) boats and attempting to bomb the oil tanker using one of the unmanned, remote-controlled exploding boats."* The Saudis did not blame any specific group for the attack. The interesting aspect is the location 90 nautical miles southeast of Yemeni Nishtun port. Nishtun port is on south Yemen coast at the very south east part of Yemen, far to the east of Aden and 90 miles SE means its in the Arabian Sea and not the Red Sea, the normal Houthis attack area. This opens up a wider risk area for tankers than just the Red Sea as the Houthi attacks (either by missiles or remote boats) against tankers have been in the Red Sea. We don't believe the Houthis have ever controlled the areas in south Yemen by the port. Its not that it isn't possible for the Houthis to have done, but it seemed strange that they were able to do controlled from a distance or from within STP controlled areas in south Yemen. On Friday, Hellenic reported [LINK] on a Xinhua story that Yemen said it was the Houthis and Iran. Hellenic wrote "*Yemeni Information Minister Muammar Iryani accused Iran* *of being behind a foiled attempt to attack an oil tanker in the Arabian Sea. "(Iran's) Islamic Revolution Guards Corps stands behind the foiled terrorist attack on the oil tanker as it was sailing toward the Gulf of Aden," Iryani said in a statement carried by the state-run Saba News Agency. "The terrorist attack was carried out by the Houthi militia … using four remotely controlled boats," he added. The attempted attack "confirms the Houthi militia's escalation of its terrorist activities," the Yemeni minister concluded."* If Yemen is right, it opens up an escalation of the Houthis attacking tankers and a wider risk area for potential Houthis tanker attacks. If Yemen isn't right, then the question is who did it if not the Houthis? Our Supplemental Documents package includes the SPA story.

Figure 18: Nishtun Port in SE Yemen

Source: Wikipedia

Oil – Was a potential Saudi coup thwarted?

Saudi royals arrested

The other interesting weekend Saudi Arabia story were the reports of arrests of members of the royal family and others for treason ie. plotting to overthrow MBS. Note this is a fluid story without formal updates from Saudi Arabia. We are seeing some reports this morning as we go to press that some of the arrested have been released. But on the assumption that the arrests stick and the arrested are charged with the treason, these moves are being viewed as MBS consolidating power and removing any potential threats in the event of a succession to the King. If anything this is supportive to oil to the extent that MBS continues on a couple of his major initiatives – the war against the Houthis and the fight to isolate Iran. The war against the Houthis will keep the risk of Houthis attacking Aramco oil facilities and/or tankers. The fight to isolate Iran should help to keep Iran oil barrels off the market. Our Supplemental Documents package includes the WSJ Sat story. [LINK]

Oil – Libya oil production down by 1.100 mmb/d, lost revenue now ~$2.9 billion

Libya lost oil revenues now ~2.9 billion

There is no change to the vast majority 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 fairly flat over the past week and is now 119,867 b/d, which is down 1,100,133 b/d since the start of the blockade. Most importantly, the lost revenues were $2.71 billion as of Wed night, so are now approx. $2.9 billion. Our Supplemental Documents package includes the NOC production update.

No sign of a let up from Haftar's on using oil as a weapon or Tripoli attacks

The Libya 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 such as the Wed mortar attack on one of the Libya NOC offices. The LIbya Observer story yesterday [LINK] "*The National Oil Corporation (NOC) announced that firefighting crews were exposed to heavy weapons fire while trying to control the fire of the Akakus Oil Operations Administration Building on the Airport Road in Tripoli, last Wednesday. The NOC stated that the building suffered severe material damage after mortar shells fell on it, causing a fire that broke out on the upper floors, which are devoted to the archive of financial files*." The other Libya Observer story yesterday [LINK] *"Haftar's militias continue to target residential neighborhoods in Tripoli*" "*The rockets landed in the Abu Salim area, hitting the homes and property of citizens as prayer goers were arriving to their homes after performing Friday prayers at the local mosques. Haftar's militias also bombed the Sooq Jumma area for the seventh day respectively on Friday while hitting the vicinity of Mitiga Airport with a barrage of rockets."* There are other multiple reports this week of Haftar shelling parts of Tripoli. The bottom line is he is continuing to attack while cutting off oil revenues. 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.

UNSMIL envoy for Libya peace deal steps down due to stress

Another sign that a peace deal or a respect to a ceasefire is near was the UN press release on Monday [LINK] that its UN Support Mission in Libya (UNSMIL) special envoy for the Libya peace talks resigned "*citing failing health caused by the immense stress of the job".* Ghassan Salame served for more than 2 years in the role. We can't believe he would have stepped down now if there was the chance of any near term break thru. Putting someone new in the job always adds time just to get to know all the players. Our Supplemental Documents package includes the UN release.

Oil – Tanker insights from Frontline

Tanker insights from Frontline

Frontline held its Q4 call last Thurs, which provided some insights on the tanker market. (i) Lots of near term uncertainty due to coronavirus as its difficult to predict when sentiment and markets return, but it's a temporary downturn. (ii) Global fleet is ageing, with almost no new orders being placed. Mgmt said "*Global Fleet capacity growth is slowing. Fleet growth is an important driver of long-term earnings in the tanker sector and investors have repeatedly been disappointed in the past, as over-ordering quickly destroys up cycles. There are currently virtually no tanker orders being placed and while this can be -- this can quickly change, the last time we saw the order book at present levels was in 1997*". (iii) IMO 2020 is leading to different tanker earnings impacts. Mgmt said "*Let's look at the next on Slide 9, and believe it or not, IMO 2020, actually did happen. Throughout last year, the shipping and investment communities were focused on IMO 2020 and rightly so. In our opinion, the impact of IMO 2020 has been overshadowed by other events recently, but the effects are real and* *will remain a factor for quite some time. IMO 2020, has created a huge spread in oilness [ph] fuel related costs. As an example, a modern VLCC we discovered will be earning $30,000 a day, at the same time as a large portion of the VLCC fleet, will earn around their daily operating expenses. Front that [ph] you know, has a very modern fleet with an average age of around four years, giving us a tremendous advantage in the current fuel price environment. And as I mentioned earlier on in the call in the introduction, we are at current rates still running at a profit*". (iv) Frontline has 26 vessels with scrubbers, and 6 more to come. In the Q&A, mgmt. said "*So at the moment we have 26 vessels sailing with scrubbers in operation. We have a further six due for installation over the next -- most of next quarter but partly Q3 probably as well given our view on various delays at yards, it might be Q3 that will bring us to 50% of the fleet. And to be clear on the 50%, there's overweight on Suezmaxs and VLCCs and underweight in LR2. So we view this as -- simple, the bigger the ship the more they makes sense*". (v) Near term views on Suezmax's and Aframax's. In the Q&A, mgmt. was asked about implications when coronavirus ends, and demand picks up. Mgmt. replied "*In terms of this we're looking for the various segments, but the other one first for Aframax's and Suezmax's, we normally have a strong presence in Atlantic basin and that is fortunately the case now. The Atlantic and the Mediterranean Black Sea and the Baltic has been hit a lot less. So we're in the right position there. We're not seeing that much inquiry going, so we're sticking around. So we're in the right place, I think where we are. About the Vs, they are spread out phenomenal. There's a quite a lot of fixing out of the Middle East. And at today's levels, if I was to have the choice between a 40-day voyage or an 80-day voyage, I will go for the short voyage, given our market view. As soon as we start seeing real changes here in the contained virus and so forth, we will be taking more ships balancing to the West on speculation, because that will then go inside with Chinese demand coming back, and giving the U.S-China deal. We then believe that the U.S. Gulf exports from these will pick up tremendously*." Our Supplemental Documents package has excerpts from the Frontline Q4 call.

Oil – IEA, EIA and OPEC working overtime this weekend for their monthly forecasts

IEA, EIA, OPEC monthly forecasts this week

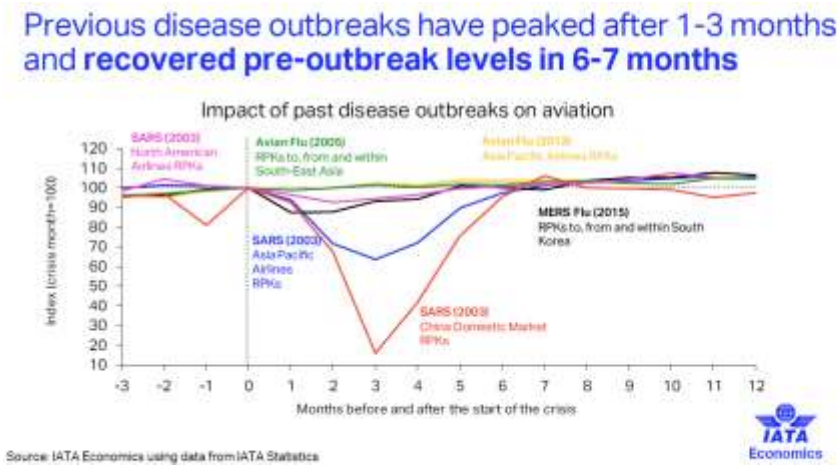
We have to believe none of the IEA, EIA or even OPEC's research groups have been preparing to go to press this week for their March monthly forecasts assuming the Friday night events. Rather, we expect the were working on the assumption of either an extension of the expiring March 31 cuts to June 30 or possibly some additional cuts. Their monthly forecasts are scheduled to be released IEA Oil Market Report on Monday morning, EIA Short Term Energy Outlook on Tuesday morning and the OPEC Monthly Oil Market Report on Wed morning. Its tough enough they have been trying to deal with the spreading of coronavirus. But then to have the uncertainty of what happens next for OPEC+ and the rest of the oil industry. What do they assume about demand with lower oil prices, US oil supply, Russia production, etc. Below is a recap of their current quarterly forecasts for demand and non-OPEC supply and resultant call on OPEC.

Oil – No surprise, air passenger revenues expected down big

Passenger air revenues going lower

We preface this item by saying there are more and more announcements this weekend on airlines cutting scheduled flights and that means forecasts for air travel are going lower. It was no surprise that the IATA (International Air Transport Association) reduced its estimate for the Coronavirus impact on international air travel. (i) The IATA does not have an estimate yet for impact on cargo volumes. (ii) But for air passenger traffic, the IATA doubled its based impact forecast and also included a further downside case. The "*IATA now sees 2020 global revenue losses for the passenger business of between $63 billion (in a scenario where COVID-19 is contained in current markets with over 100 cases as of 2 March) and $113 billion (in a scenario with a broader spreading of COVID-19). No estimates are yet available* *for the impact on cargo operations. IATA's previous analysis (issued on 20 February 2020) put lost revenues at $29.3 billion based on a scenario that would see the impact of COVID-19 largely confined to markets associated with China. Since that time, the virus has spread to over 80 countries and forward bookings have been severely impacted on routes beyond China."* (iii) We would have thought their broader case would have a much larger impact. The IATA had an excellent slide deck. The broader case looks at the added impact on passenger traffic including countries that have 10 confirmed cases or more such as Canada and US. The IATA estimates the Coronavirus reduced China passenger numbers by -23% and an impact on passenger revenue of -$22.2b. Whereas the IATA estimates that Coronavirus would reduce US/Canada passenger numbers by -10% and an impact on passenger revenue of -$21.1b. We would have expected a bigger impact from US/Canada. (iv) Good reminder of the recovery time. The big market call for all sectors will be how long will the Coronavirus impact last and how steep is the recovery. The IATA had the below slide, which is shows the impact of past disease outbreaks on aviation and the typical recovery period. (v) Our Supplemental Documents package includes the IATA slide presentation

Figure 19: IATA Impact of Past Disease Outbreaks On Aviation



Source: IATA

Oil – OECD lowers Global GDP Forecast for 2020 by 0.5%

OECD lowers GDP forecast

As we highlighted last week, one of the major themes in March will be a reduction in forecasts for global GDP as well as for oil and natural gas prices. And our concern is that most forecasts will be lowered in a step down manner as opposed to one big hit ie. so we should expect further reductions to forecasts. This step down approach to lowering GDP forecasts started two weeks ago with the IMF lowering their 2020 global growth forecast by 0.1% to 2.8%, and this week, the OECD lowered their 2020 global GDP forecast by 0.5% to 2.4% [LINK]. A major part of the global GDP forecast revision was the lowering of China's 2020 GDP forecast by 0.8% to 4.9%, and the key assumption is "*On the assumption that the epidemic peaks in China in the first quarter of 2020 and outbreaks in other countries prove mild and contained, global growth could be lowered by around ½ percentage point this year relative to that expected in the November 2019 Economic Outlook".* No one should be surprised to see a widespread lowering of global growth forecasts, and our fear is that these forecasts are centered on China's economy basically returning to normal in Q2 along with mild and contained international outbreaks. We recognize its too early to say definitively the impact on global GDP, but it is clearly getting worse and the OECD warns that a *"longer* *lasting and more intensive coronavirus outbreak, spreading widely throughout the Asia Pacific region, Europe and North America"* could drop 2020 global GDP growth to just 1.5%. This is a key reason for why we expect forecasts to be lowered in a step down manner, as its just too early for agencies to make one big hit to global growth projections without knowing the full impact of coronavirus.

Oil – IMF says under any scenario, 2020 global growth will be less than 2019

IMF on lower 2020 global growth

Two weeks ago, the IMF lowered its 2020 global growth forecast by 0.1% to 2.8%, and our fear was the forecast was a step down revision based upon China's economy returning to normal in Q2 and wasn't fully reflecting a broader global impact from coronavirus. This week, the IMF posted a blog titled *"Potential Impact of the Coronavirus Epidemic: What We Know and What We Can Do"* [LINK] which wrote *"Under any scenario, global growth in 2020 will drop below last year's level"*. Note, the IMF forecasts 2019 global growth at 2.9%, and we have to believe the new forecast will come in at a lower number than the guidance of 2.8% given two weeks ago, especially since the 2.8% forecast was stated before reports on the wider global outbreak. When we see a blog like this, we believe the interpretation is that this is the way agencies like the IMF try to guide down expectations as a prelude to a reduction in their forecasts ie. it's a warning without calling it a warning for a forecast reduction. The new IMF forecast is expected to be released in the next few weeks. Our Supplemental Documents package includes the IMF blog.

Oil and Natural Gas – Look for ESG actions from renewables with existing operations

ESG combining wind with Permian oil wells

There was an interesting commentary on renewables in the Chevron investor day Q&A. It sounds that renewables can only compete for capital in the Chevron portfolio if they are integrated with their existing operations ie. wind with Permian well sites. It is a way for Chevron to add to its ESG efforts and one that we expect will be used by other oil and gas producers to enhance their ESG efforts. Chevron mgmt didn't confirm directly that renewables alone don't make the economic cutoff, but that seems to be a clear message. Here is the transcript that we made of this part of the Q&A. Question "*You have a return on capital employed focus which makes renewables prohibitive unless you are integrating with your existing business and it's a return enhancement … do you see a case in the next few years where renewables become more attractive because you have some visibility afforded to you by customers and by the energy consuming side of the market?"* Mgmt replied "*we welcome the future, and we welcome a lower carbon future. We intend to be a big player in a low carbon energy future and in the future of energy. And as Peter Said, we need to do two things. This is the challenge how do you invest in things that are good for the environment and good for shareholders. Right now for us, renewables create the most value when we integrate them in our existing operations. But we are mindful of the opportunity for new business models and new technologies where investing in new technology. And we are looking for ways to increase renewables in our portfolio. So Mark talked about being the first company ever to feed bio feedstock to a FCC. We are working on renewable natural gas in California with dairy farmers. So we are looking for the value proposition that can extend down the value chain and integrate into our business in a way that we think is sustainable, affordable for consumers without subsidies and economically competitive within our portfolio. We intend to be disciplined on capital investment in our existing business that you well know and to be disciplined on investment into the emerging businesses that come at us over time. So I can't point to a specific technology right now that I think is gong to scale but we are working hard on all of these things and I think that as we learn more and markets evolve, you're going to find us there*.

Oil and Natural Gas – Other sector insights from Chevron investor day

Chevron's investor day

Chevron held its annual investor day on Tues. We highlight a number of items from the Q&A, which, as usual, had the best insights. (i) Earlier we noted their comments on global declines and combining/integrating renewables with existing oil and gas operations. (ii) Permian returns >20%. In the Q&A, mgmt. replied "*So we showed in the second quarter call book returns in the Permian are more than 20%. We reaffirm that today. As we invest more in that, that's accretive to a portfolio that's targeting 10%".* We wonder how they calculate returns and if the early returns to date are impacted by a front end loading of infrastructure costs and if the returns should increase over time. We hope so as we would have expected more than >20% returns for a top North American play. (iii) Are restricting Permian IP rates. In the Q&A, mgmt. replied "*And digital is playing a big role in some of the insights that we gain and how to do better completions, efficiency, how to start wells up. We get criticized sometimes we're being slow on our early production, but that's because we're really looking at ultimate recovery and returns. And so we restrict wells in the early days to make sure that we get the ultimate recovery we're looking for as we bring them on."* (iv) LNG isn't really a big growth area for now and they raise the risk for LNG FIDS in 2020. In the Q&A, mgmt. replied "an*d certainly, today's market is exhibiting the characteristics of commodity markets where supply comes on in big tranches and demand grows incrementally. We need to invest in low-cost, highly competitive supply that will work through the cycle. So we'll continue to look for those things, but we're in no hurry to do anything there. So stay tuned. But we can be -- I think frankly, everybody who is looking to make an FID decisions on LNG is going to have to be pretty thoughtful about when and how they step into that market".* (v) Duvernay remains in their growth plans. In the Q&A, mgmt. replied "*In the orange wedge are risked growth opportunities, again within our portfolio. So, these would be PZ, they would be Venezuela, it will be ramping up in Argentina or the Duvernay, for instance could be concession extensions or exploration success. But again, within our portfolio, and all conditioned on certain things.*" PZ is the partitioned zone, or neutral zone shared Kuwait/Saudi oil fields. (vi) Sounds like Chevron's operated oil % may be less than their 50% guidance. There was a question that seemed to catch mgmt. off guard and we think the interpretation is that Chevron's operated Permian oil ratio is less than 50% but its non-operated and royalty barrels have a higher oil %. The question was "*But it looks like about 370,000 barrels a day of black oil in 2024, which would put you at about less than 40% oil in your mix. So I just want to make sure we're reading that right. I think previously you've said 50-50*." The CEO replies "*Yes. So short answer is, mix guidance hasn't changed 50, 25, 25, I'm looking at the chart you're talking about, and between now and when I see it later, I'll try to figure out why this chart seems to not quite reflect*." The CFO then adds "*Well, it doesn't have non-ops*." The CEO then says "*Oh, that's equity*?" The CFO jumps back in "*Equity, royalty taken in kind of doesn't have non-op"*. The CEO then wraps up "*We don't have our non-op JV in there. Yes. It's total production. And you can speak to sustaining capital*." (vii) There are many other sector items. (viii) Our Supplemental Documents package includes excerpts from the Chevron transcript.

Energy Transition – Self driving trucks continue to advance

Self driving trucks advancing

Good food for thought brief this week from the World Economic Forum "*The surprising benefits of self-driving trucks*." This isn't the only view we have seen that predicts autonomous trucking isn't too far away, so its something to think about. (i) On the surface, you have to believe autonomous long haul trucking is positive to trucking volumes and therefore oil demand. However, we have to believe it is all linked to electric trucks, which means that, if this is successful, it ends up being a net negative to oil demand ie. another factor driving peak oil demand. (ii) Its clearly a positive for trucking miles that are currently constrained by lack of truck drivers and limits on truck drivers hours per day. And autonomous trucks on highways point to more than a doubling of highway trucking capacity for those trucks that can be autonomously driven. (ii) This will help the relative cost/benefit equation relative to rail if trucks can operate for 18 hrs a day, but it won't make up for items that rail is better equipped to handle for long distances such as coal. But 18 hours a day will increase trucking capacity to move product and more capacity means more trucking miles. (iv) It will take time to ramp up but we have to believe that highway autonomous trucks will start to penetrate the market in the next 5 years. This won't be for ICE trucks (at least we haven't seen anyone focus on retrofitting ICE trucks), so it is negative to oil demand from long distance trucking and another factor that will move the world to peak oil demand. (v) Its also another example of how the big energy theme for the future is the electrification of the world. Our Supplemental Documents package includes the World Economic Forum blog. [LINK]

Energy Transition – GM breakthrough: new Ultium batteries have 400+ mile range

GM new Ultium batteries

We continue to believe the key to the energy transition for the world remains improving battery storage effectiveness for general electricity consumption and for EVs, and along with this is the movement to EVs that will only continue to accelerate. On Thurs, GM revealed its new Ultium batteries, which could enable a range up to 400 miles [LINK]. And on Friday, we tweeted [LINK] *"GM'x Ultium EV battery, range to 400 miles, can do Level 2 and DC fast charging. Supportive of increasing EV penetration starting to accelerate sometime after 2025. adds to stress on the grid, #NatGas generation will be needed for grid to supply reliable/affordable power. #OOTT"*. This is worth noting because it reinforces the narrative that technology continues to get better. It may not deal with costs but it deals with the big EV issues – range and charge time. It also fits the narrative that the EV car sales will start to accelerate post 2025. Additionally, it also reminds of our bigger energy market concern being battery electricity storage is on the cusp of being a game changer for electricity markets. Our Supplemental Documents package includes the GM release.

Climate Change – Oil Search reminds that "tree planting" is a major global push

More tree planting

Our Jan 26, 2020 Energy Tidbits highlighted one of the themes coming out of Davos was the 1 trillion tree movement, which is attempting to meet global climate, biodiversity and sustainable development goals by restoring and conserving 1 trillion trees around the world. There is no question tree planting is a major global push for the next decade and we continue to see more comments supporting this theme. The Oil Search Q4 call was a good example. Mgmt said "*When combined with one of our initiatives, being the potential biomass project in PNG, where we've already planted over 4 million trees, it has the potential to offset over 4 million tonnes of CO2 over its 25-year project life. To put that into context, it is equivalent to offsetting the Pikka development over that period*".

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 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 – Sign up on our email distribution for tidbits and blogs

Sign up to receive future Energy Tidbits memos

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].

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

Surely both sides have to be impressed by Dr. Jill Biden

We try to stay out of picking sides in politics (especially for the US), rather, we try to focus on the actions taken by the political parties as they impact markets, energy and energy transition. But every now and then, there is something that one side does that should transcend politics. And that was this week's Super Tuesday when we thought both sides should have been impressed by Dr. Jill Biden blocking a protester storming the stage on Tues night. On Tues night we tweeted [LINK] "*If you aren't watching Super Tuesday coverage, its been a big news night so far (California still to come though), but the best moment tonight was wonder woman @DRBiden as the first line of defense against the protesters. how is that for a potential FLOTUS*". We aren't pickling sides in the election, we just thought it was impressive on how she reacted without hesitation. Below is the picture, but the video clip is quite impressive.

Figure 20: Jill Biden Blocking Protesters

Source: ABC News

Alaska's Iditarod Trail Sled Doc Race started yesterday

One of the coolest races started yesterday – the Iditarod Trail Sled Dog Race, which is Alaska's most famous sporting event a sled dog race across Alaska. [LINK] This year, being an even numbered year, the race is 975 miles across Alaska starting in Anchorage and ending in Nome. Unfortunately, the Iditarod was in the news this week with announcement from Alaska Airlines that it was dropping its sponsorship due to a change in its corporate giving policy and not due to social pressures. Hmm!