SAF GROUP

Energy Tidbits

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Will Russia's Attempt to Backdoor Some US Ukraine Sanctions Delay a Return To JCPOA?

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. Our priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector and not just a specific company results. Our target is to write on 48 to 50 weekends per year and to post by noon mountain time on Sunday.

This week's memo highlights:

1. Will Russia's attempt to backdoor some US Ukraine sanctions delay a return to JCPOA by a couple weeks? (Click Here)
2. Excellent oil insights from Vitol's Mike Muller this morning should be topical for oil markets tonight. (Click Here)
3. Shell's to get out Gazprom ventures including Sakhalin LNG projects has to move LNG Canada Phase 2 FID up the priority list. (Click Here)
4. Russia's oil and petroleum products exports increasingly hit, a moving target and going higher. (Click Here)
5. Potential CP rail strike/lockout could be as soon as March 16. (Click Here)
6. Please follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK].

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Table of Contents

Natural Gas – Natural gas draw of 139 bcf, storage now -216 bcf YoY deficit

Weather is the key variable for natural gas in the winter and there can be WoW swings in gas demand (and therefore storage) with warmer or colder weeks. A good example is the EIA reported a 139 bcf draw (vs 137 bcf draw expectations) for the Feb 25 week, which was less than the 5-yr average draw of 98 bcf, and above last year's draw of 98 bcf. Storage is 1.643 tcf as of Feb 25, decreasing the YoY deficit to -216 bcf, from 209 bcf last week and storage is 255 bcf below the 5-year average vs 214 bcf below last week. Below is the EIA's storage table from its Weekly Natural Gas Storage Report [LINK].

YoY storage at -216 bcf YoY deficit

Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (02/25/21)		Historical Comparisons: 5-year average (2017-21)	
Region	02/25/22	02/18/22	net change	implied flow	Bcf	% change	Bcf	% change
East	358	396	-38	-38	389	-8.0	397	-9.8
Midwest	404	450	-46	-46	471	-14.2	481	-16.0
Mountain	96	105	-9	-9	118	-18.6	109	-11.9
Pacific	164	176	-12	-12	211	-22.3	183	-10.4
South Central	620	655	-35	-35	670	-7.5	728	-14.8
Salt	163	168	-5	-5	158	3.2	220	-25.9
Nonsalt	457	487	-30	-30	512	-10.7	509	-10.2
Total	**1,643**	**1,782**	**-139**	**-139**	**1,859**	**-11.6**	**1,898**	**-13.4**

Source: EIA

Natural Gas – US Dec gas production up 0.2 bcf/d MoM, +4.6 bcf/d YoY

There is no change to the US natural gas story that US natural gas supply from both dry shale gas and association gas from shale/tight oil continues to be up strongly YoY. The EIA released its Natural Gas Monthly on Monday, [LINK], which includes its estimates for "actuals" for December gas production. US gas production in December was 97.2 bcf/d, up MoM from November of 97.0 bcf/d and up 4.6 bcf/d YoY. Note that November's data was revised upwards by +0.1 bcf/d from 96.9 bcf/d last month. As expected, Hurricane Ida's landfall led to a temporary halt in production in September, which we have now seen production start to recover and ramp up as the heating season is underway. There continues to be a YoY surplus of +4.6 bcf/d and +5.0 bcf/d for the month of December and November, respectively. December production is up 0.165 bcf/d since the Dec/19 peak of 97.0 bcf/d and 2.6 bcf/d above March 2020 of 94.6 bcf. Our Supplemental Documents package includes excerpts from the EIA Natural Gas Monthly.

Figure 2: US Dry Natural Gas Production

bcf/d	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Jan	56.0	60.0	66.0	65.3	66.8	73.4	73.6	70.6	78.7	89.4	95.1	92.8
Feb	57.2	58.8	67.0	65.4	68.4	73.8	77.3	71.5	80.4	90.0	98.1	86.2
March	57.3	61.5	65.0	65.3	68.9	74.1	73.8	73.2	81.3	90.6	94.6	92.3
Apr	57.6	62.3	64.8	66.1	70.5	75.2	73.7	73.3	81.2	91.0	92.9	93.2
May	58.0	62.4	65.0	65.9	70.2	74.1	72.9	73.3	82.1	91.7	87.8	93.0
June	57.2	62.1	64.6	65.8	70.5	74.0	72.2	74.0	82.5	92.0	88.4	93.2
July	58.2	62.5	66.3	67.1	72.0	74.2	72.8	74.7	84.2	92.5	89.8	93.7
Aug	58.9	63.2	66.0	66.9	72.4	74.3	72.2	74.7	85.9	94.8	90.2	94.3
Sept	59.1	63.1	66.4	66.8	72.4	74.7	71.7	76.0	87.3	94.7	89.5	93.6
Oct	60.1	65.1	66.5	67.0	73.1	74.2	71.4	77.3	88.4	96.0	88.9	95.6
Nov	60.1	65.9	66.6	67.7	72.6	73.9	72.0	79.8	89.9	96.7	92.0	97.0
Dec	61.0	65.6	66.0	66.5	73.2	73.9	71.2	80.4	89.5	97.0	92.5	97.2
Average	58.4	62.7	65.9	66.3	70.9	74.2	72.9	74.9	84.3	93.0	91.6	93.5

Source: EIA

Natural Gas – US LNG exports +1.3 bcf/d YoY in Dec to 11.1 bcf/d

US Dec LNG +1.3 bcf/d YoY

US LNG exports for Dec saw a increase in the YoY increase which we expect will be offset by the Feb 2022 data that will be comping against the Texas cold freeze LNG drop. The big driver to stronger (and higher downside support) US natural gas prices has been the ramp up in US LNG exports, which are up ~7 bcf/d over the past 3 years. This is over 2.5 tcf a year of added gas demand for US natural gas supply. On Monday, the EIA Natural Gas Monthly reported "actuals" for US LNG exports were 11.1 bcf/d in December, which is up +1.3 bcf/d YoY and up +0.9 bcf/d from November of 10.2 bcf/d. After recording record highs in the first half of 2021, exports decreased in September as production had also declined, but have since returned to growth with strong demand for LNG in both Europe and Asia amid spiking natural gas prices. The EIA expects exports will remain "at high levels" for the beginning of 2022. Note our table rounds to one decimal and the actual is 10.141 bcf/d for December. Below is our table of EIA's monthly LNG exports.

Figure 3: US LNG Exports (bcf/d)

(bcf/d)	2016	2017	2018	2019	2020	2021
Jan	0.0	1.7	2.3	4.1	8.1	9.8
Feb	0.1	1.9	2.6	3.7	8.1	7.4
March	0.3	1.4	3.0	4.2	7.9	10.4
Apr	0.3	1.7	2.9	4.2	7.0	10.2
May	0.3	2.0	3.1	4.7	5.9	10.2
June	0.5	1.7	2.5	4.7	3.6	9.0
July	0.5	1.7	3.2	5.1	3.1	9.7
Aug	0.9	1.5	3.0	4.5	3.6	9.6
Sept	0.6	1.8	2.7	5.3	5.0	9.5
Oct	0.1	2.6	2.9	5.7	7.2	9.6
Nov	1.1	2.7	3.6	6.4	9.4	10.2
Dec	1.3	2.7	4.0	7.1	9.8	11.1
Full Year	0.5	1.9	3.0	5.0	6.6	9.7

Source: EIA

Natural Gas – US pipeline exports to Mexico down MoM to 5.4 bcf/d in December

US Dec pipeline exports to Mexico down MoM

The EIA Natural Gas Monthly also provides its "actuals" for gas pipeline exports to Mexico, which were 5.4 bcf/d in December, which was up YoY and down from November of 5.5 bcf/d.

There were no revisions to this month's data. Mexico natural gas production remains stuck below 5 bcf/d and the completion of new pipeline infrastructure such as the Wahalajara system [LINK] increases US penetration further into Mexico. Below is our table of the EIA's monthly gas exports to Mexico. To the most part, US pipeline exports will be more seasonally linked as Mexico is slowing down, at least for now, its domestic natural gas infrastructure buildout.

Figure 4: US Pipeline Gas Exports To Mexico (bcf/d)

bcf/d	2014	2015	2016	2017	2018	2019	2020	2021
Jan	1.7	2.2	3.2	3.9	4.4	4.9	5.2	5.6
Feb	1.8	2.3	3.5	4.0	4.5	4.8	5.4	4.9
March	1.9	2.4	3.3	4.2	4.3	4.8	5.4	5.9
Apr	1.9	2.6	3.5	3.7	4.4	4.7	4.6	6.1
May	2.0	2.8	3.7	4.0	4.4	5.0	4.7	6.2
June	2.2	3.0	3.9	4.5	4.6	5.2	5.4	6.6
July	2.2	3.3	4.0	4.4	4.9	5.4	5.8	6.4
Aug	2.1	3.3	4.3	4.4	5.0	5.4	6.0	6.3
Sept	2.2	3.3	4.1	4.2	5.0	5.4	6.1	6.0
Oct	1.9	3.2	4.2	4.2	4.9	5.5	6.0	6.0
Nov	1.9	3.0	4.0	4.5	4.7	5.3	5.5	5.5
Dec	2.1	3.2	3.6	4.4	4.5	4.9	5.3	5.4
Full Year	2.0	2.9	3.8	4.2	4.6	5.1	5.5	5.9

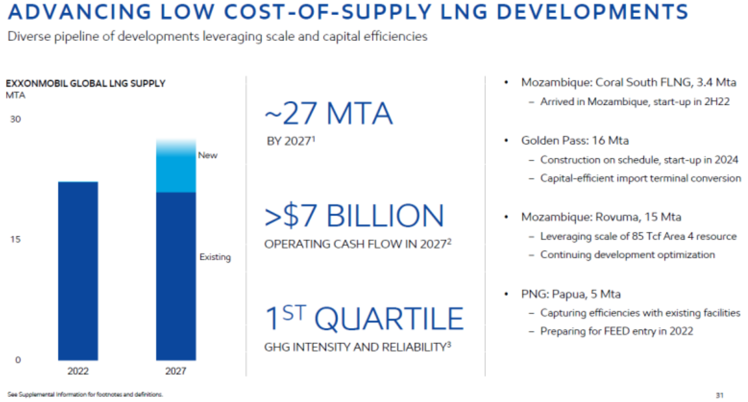
Source: EIA

Natural Gas – Exxon's 2027 LNG forecast does not include Mozambique Rovuma LNG

Exxon on Mozambique LNG

We were on the Exxon Investor Day on Wednesday when we tweeted [LINK] "*More support for #LNG Supply Gap in mid 2020s. In Q&A, #Exxon confirms Rovuma MZ LNG 2.0 bcf/d is NOT in 2027 LNG forecast. 3 yrs ago in 03/19 mgmt expected 1st LNG in 2024. MZ was game changer for LNG. See SAF 2021 blogs 04/28, 07/14, 11/23. #OOTT #NatGas".* In the Q&A, mgmt confirmed that the only two new LNG projects in the uplift to higher LNG volumes in 2027 are Coral, the FLNG offshore Mozambique that is starting up right now, and the Golden Pass LNG in the US Gulf Coast in 2024. Exxon's Rovuma 2.0 bcf/d Mozambique LNG Phase 1 of 2.0 bcf/d is not in the 2027 LNG volumes. Our tweet reminded that in the Exxon March 2019 investor day, Exxon expected first LNG from Rovuma in 2024. On Rovuma, in the Q&A, mgmt said "*two other big steps of course as you mentioned in Rovuma in Mozambique. That will really depend on the security situation. We're working closely with the government with our partners and with Area 1, this aware Area 1's development has been suspended. So we are working during this period to improve the capital efficiency of that investment and we'll see in time if that security situation has stabilized. I think the government has made great strides in that area. So I think that's perspective and I think that offers that potential, but it really depends on the security situation."* We pasted the below LNG slide from the Exxon investor day to our tweet.

Figure 5: Exxon 2022 to 2027 LNG Supply Forecast



Source: Exxon Investor Day

Exxon's 2 bcf/d Rozuma LNG is part of the 5 bcf/d Mozambique LNG delays

Our tweet this week noted that Exxon's original expectation (March 2019) was that its Mozambique Rozuma 2 bcf/d was to have first LNG in 2024. Its delay is part of the major LNG market factor in the 2020s – the delay of 5 bcf/d of Mozambique LNG due to violence/fighting in Mozambique's LNG region. This was the game changer to LNG markets and why, on April 28 2021, we posted a 7-pg blog "*Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?*" [LINK] The April 28 blog included our view that there is a big new LNG supply gap starting around 2025 that is hitting faster and bigger than anyone expects. We saw Total's April 27, 2021 announcement of force majeure at its Mozambique Phase 1 LNG of 1.7 bcf/d was much more significant that viewed. We just didn't see market focused on the fact that the TotalEnergies force majeure also backed up an additional 3.3 bcf/d of LNG supply that is also being counted on in all LNG supply forecasts. Total's Phase 2 of 1.3 bcf/d was to follow, and Exxon's Rozuma Phase 1 of 2.0 bcf/d was also to follow Total's Phase 1. Mozambique is considered a premium LNG supply region for Asia and is in LNG supply forecasts. Total's original in service for Phase 1 was also in 2024. We had been warning that Mozambique has a major LNG market impact and its why we posted the April 28, 2021 blog. Our blog reminds that even if Total makes a restart development decision in 12 months, it will take months just to get back to where they left off including rehiring services so any return to where they were in the construction process is at least more likely 18 months at a minimum. Our Supplemental Documents package includes our SAF April 28, 2021 blog.

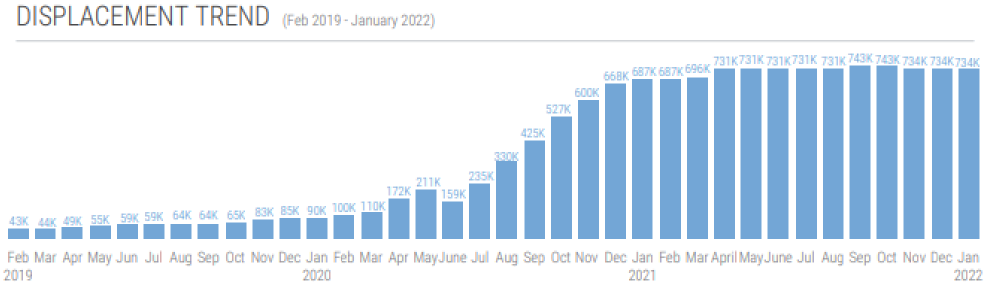
Natural Gas – UN says Cabo Delgado (Mozambique) people displacement is still high

Mozambique security situation

We recognize it's hard to get updates on the security situation in the key Cabo Delgado province in Mozambique. The government and TotalEnergies are have been consistent that there has been a dramatic improvement in the security situation. (i) Our Feb 13, 2022 Energy Tidbits highlighted TotalEnergies Q4 call on Feb 10 and out Feb 10 tweet [LINK] "*1/2. #LNGSupplyGap getting biggger. Expect longer time to restart @TotalEnergies*

#Mozambique. In Q&A, @PPouyanne "But my view is that the conditions under which we could restart the project might be fulfilled, maybe it will take a year. I don't know. We'll see" #LNG #NatGas #OOTT." And [LINK] "*2/2. @PPouyanne "We know that when we say yes we can come back, it will take six months really to start up again". Hope was 2022 restart for 1st #LNG in 2026. Backs up ~5 bcf/d of #MozambiqueLNG. see SAF 04/28/21 blog. Need brownfield FIDs ie. #LNGCanada Phase 2. #NatGas #OOTT".* Pouyanne received headlines for his other comments that day such as "*We will not build a plant in a country where we will be surrounded by soldiers."* Pouyanne was clear, the restart of work on Mozambique LNG is likely not happening until at least H2/2023. (ii) Mozambique President Nyusi's big cabinet shuffle this week. Nyusi made a number of cabinet moves including a new PM, and Finance minister. We have not seen any reports if this will have any positive or negative impact on the fight against terrorism in the Cabo Delgado province. However, we didn't get the impression that the fight is almost over based on Nyuzi's comments announcing the cabinet shuffle. On Friday, Club of Mozambique [LINK] wrote "*Nyusi was speaking at the inauguration ceremony of the new Prime Minister, Adriano Maleiane, and six other government officials, in what he calls "a delicate moment of governance, in which the country faces numerous challenges". "On the one hand, there is the drama of terrorism in Cabo Delgado and the bad weather throughout the country. On the other hand, we are faced with the difficult political situation that the world is going through, with repercussions internally," – an allusion to the conflict between Russia and Ukraine, which is driving up the price of various raw materials. The situation "demands from the government energetic and coordinated actions, aiming to protect the living conditions of Mozambicans", he said.* (iii) The UN's Office for Coordination of Humanitarian Affairs January 2022 report "*Mozambique: Cabo Delgado, Nampula & Niassa Humanitarian Snapshot"* [LINK] posted the below displacement graph for the three provinces and writes "*In January, the security situation in Cabo Delgado province remained highly unstable, particularly in the districts of Macomia, Nangade, and Meluco, resulting in the displacement of 12,876 people*." Our Supplemental Documents package includes the Club of Mozambique report and the UN OCHA snapshot.

Figure 6: Displacement Trend For Cabo Delgado, Nampula & Niassa



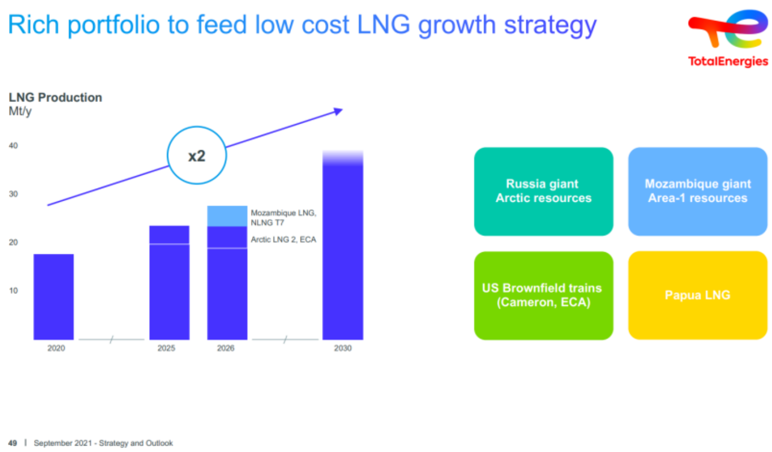
Source: UN Office for Coordination of Humanitarian Affairs

Natural Gas –Why it's no surprise TotalEnergies hasn't abandoned Russia

TotalEnergies staying in Russia

We didn't expect TotalEnergies to join the rapidly growth group of major companies like BP and Shell and say they will sell or get rid of their Russian interests. (i) On Tuesday, TotalEnergies did not address their existing current or existing future projects, but said they would not provide capital to "new" projects. [LINK] "T*otalEnergies supports the scope and* *strength of the sanctions put in place by Europe and will implement them regardless of the consequences (currently being assessed) on its activities in Russia. TotalEnergies will no longer provide capital for new projects in Russia."* (ii) We then tweeted [LINK] "*Here's why, at least for now, @TotalEnergies says will no longer provide capital for "new" projects in Russia & not sell like @bp_plc @Shell. Existing currently moving ahead RUS #LNG projects are core part of their growth for 2020s. #OOTT #NatGas."* The existing currently moving ahead LNG projects in Russia are just too significant to TotalEnergies growth. Our tweet included slides from their Sept 2020 and Sept 2021 Strategy and Outlook slide decks. Their Russian Arctic LNG projects is one of their "*flagship LNG projects fueling 2025 growth*." Russia LNG has become even more important given the multi-year delays being seen at its' Mozambique LNG. Below is one of the slides from the Sept 2021 Investor Strategy and Outlook. Our Supplemental Documents package includes slides from both the Sept 2020 and Sept 2021 slide decks.

Figure 7: TotalEnergies Russia Arctic LNG Growth



Source: TotalEnergies

Natural Gas – Shell's to exit Russia Gazprom deals including LNG projects

Shell to exist Russia

There was potentially huge news for western Canada natural gas when, on Monday morning, Shell announced [LINK] "*Shell intends to exit equity partnerships held with Gazprom entities*". It's not so much that Shell has any large existing LNG operations in Russia, but this exist would also include its exit out of planned LNG projects with Gazprom such as in Sakhalin-2. We tweeted [LINK] "*#Shell exiting RUS Sakhalin is a huge deal. Even w/ Sakhalin, on 12/22 #Shell's RUS head saw need for "other regions" #LNG to meet Asian demand. See SAF Group 12/26 Energy Tidbits on #Shell's RUS head. #LNGCanada FID anyone? #OOTT*." Our Supplemental Documents package includes the Shell release.

Shell was keen on its Russia LNG potential

Shell's head of Russia discussed Russia and Shell's role in late December. Our Dec 26, 2021 Energy Tidbits highlighted the head of Shell's Russia operations (Ekaterina Grushetskaya) comments in her TASS interview on Dec 22 [LINK] She made was bullish on Russia's LNG being ideally located to meet the key Asian LNG demand growth region and also for Shell's participation in Sakhalin 2 LNG projects. (i) Grushetskaya said "R*ussia has a huge development potential in this area, given its proximity to the promising Asian region. Now, of course, Russia is still underrepresented in the global LNG market: 19% of the world's residual gas reserves versus 8% of the world's LNG production. At the same time, the demand for liquefied gas is growing. By 2040, it will reach about 700 million tons per year, that is, it will almost double compared to the 2020 level. And at the same time, 75% of this growth will be concentrated in Asia, in close proximity to the Russian resource base. Therefore, it is logical that Russia will occupy a significant place here. (ii)* Shell wanted to participate in Russia far east LNG projects. Grushetskaya said "*In this sense, we would like to participate in such projects in the Far East, because the Asian market, of course, is in need of this energy resource*". TASS then asked *That is, Shell's ambitions in the development of the LNG business lie in the Far East region?*. Grushetskaya replied "*Not necessarily just there. I'm talking about where it makes sense to develop this area in terms of proximity to the Asian region. But we may be interested in other regions as well."* (iii) Shell also confirmed they are working expanding the natural gas resource for the Sakhalin 2 LNG projects and then specifically said they would like to continue in Sakhalin 2 after 2041. Our Supplemental Documents package includes the TASS Grushetskaya interview.

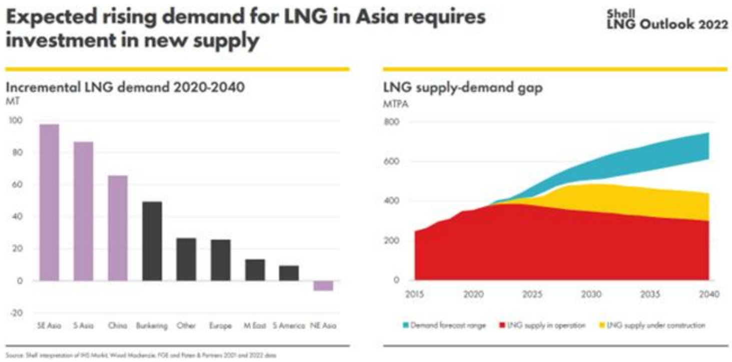
Even with Russia, Shell saw "other regions" needed to meet Asian demand

The other key takeaway from Shell's Russia operations (Ekaterina Grushetskaya) comments in her TASS interview on Dec 22 [LINK] was that Shell's development of new LNG supply will have to come from places outside the Far East to supply the growing Asian LNG demand. Far East also typically includes Australia and Papua New Guinea. She isn't specific, just calls its "other regions". Grushetskaya highlighted Russia, but then said "*Therefore, it is logical that Russia will occupy a significant place here. At the same time, we see that production capacity is not enough to meet this demand. In this sense, we would like to participate in such projects in the Far East, because the Asian market, of course, is in need of this energy resource."* TASS asks "*That is, Shell's ambitions in the development of the LNG business lie in the Far East region?"* Grushetskaya replies "*Not necessarily just there. I'm talking about where it makes sense to develop this area in terms of proximity to the Asian region. But we may be interested in other regions as well."* So the question is what are these "*other regions*" that Shell will look to supply LNG to the Asian LNG demand growth. If Shell is looking to advantaged areas, the three that jump to mind are future NW Shelf Australia development, future potential in Tanzania and, of course, our pick, LNG Canada Phase 2.

Shell now forecasts a LNG supply gap ie. its now part of their planning

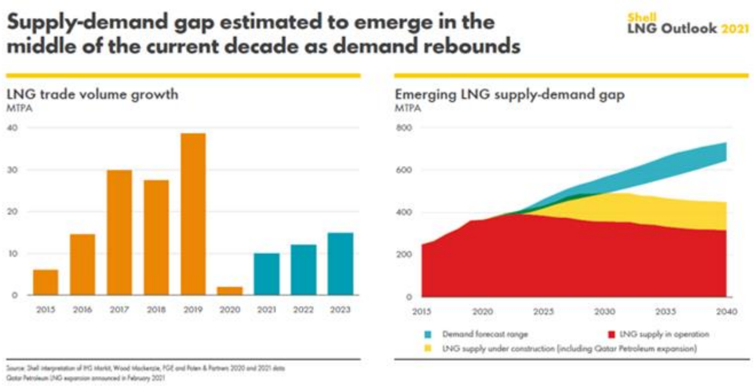
The most important takeaway is that Shell is now planning their strategies and capital allocation on a forecast of a LNG supply-demand gap to emerge in the mid-2020s. They are clearly telling markets that this is their business planning case, not an upside scenario. As soon as we saw the new slide deck, we tweeted [LINK] "*1/2. Buckle up for strong #LNG & #NatGas prices for 2020s. Clear warning from @Shell, now "forecast" #LNGSupplyGap to "emerge" in mid-2020s & "focuses attention" on need for more investment to increase supply. Yr ago, were bullish but not as certain,* *expected vs forecast #OOTT".* This is significant as there is a big difference between forecasting a LNG supply gap vs their 2021 LNG outlook that said "*a supply-demand gap is expected to open in the middle of the current decade".* Because it says that their planning scenarios on what they do for LNG is based on their view there is a supply gap. There was no change to Shell's forecast for LNG demand to almost double and hit ~92 bcf/d (700 MTPA) by 2040. But the issues on LNG supply mean that there is a LNG supply gap and investment in new supply is needed.

Figure 8: Shell LNG Outlook 2022 – Feb 21, 2022



Source: Shell

Figure 9: Shell LNG Outlook 2021 – Feb 25, 2021



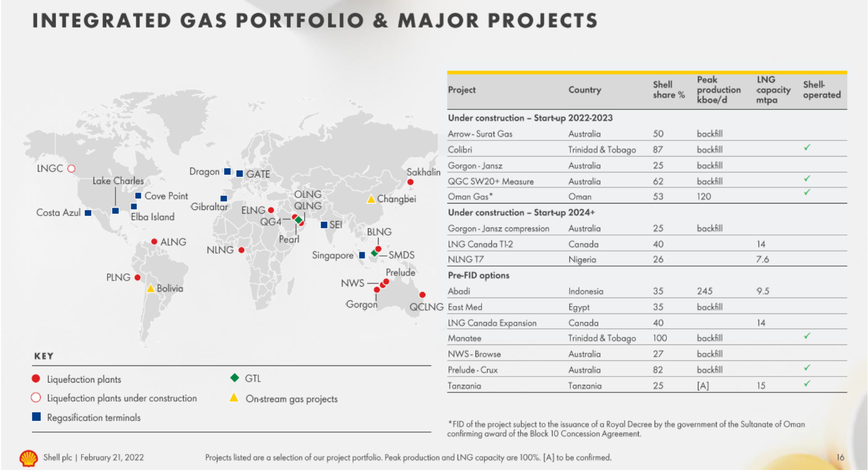
Source: Shell

Still seems Shell has been showcasing LNG Canada as prelude to Phase 2 FID

We keep going back to what other options does Shell have beside LNG Canada Phase 2 if it wants to hit Asian LNG markets. It has the greenfield potential at Tanzania but LNG Canada Phase 2 would be brownfield. And now with the walkaway from Sakhalin 2, there is an even greater role for LNG Canada Phase 2 unless Shell wants to change its business plan. We recognize that almost no one else has been believing Shell will FID LNG Canada Phase 2 this year, but we can't help still believe this following Shell's LNG Outlook 2022 and its Integrated Business

Deep Dive webcast that followed the outlook webcast. We tweeted [LINK] "*Was #Shell showcasing #LNGCanada or just highlighting its positives today? @Shell expects average IRR of 14-18% for its pre-FID projects, which includes #LNGCanada Phase 2. #LNGCanada "is set to deliver the lowest carbon intensity in the entire industry". #OOTT #NatGas #LNG*". (i) Just like we have been highlighted over the past months, this week, Shell seemed to showcase LNG Canada on multiple fronts (i) Shell now plans assuming there is an LNG supply gap in mid 2020s and that this "*focuses attention*" on the need for more LNG supply FIDs. So they are saying there is a clear market need for someone to step forward. (ii) In the Integrated Gas comments, mgmt said they are making good progress on LNG Canada Phase 1 construction and first LNG cargos are on track for by the middle of this decade. (iii) LNG Canada is the lowest emissions LNG project in industry. This is making the case that if there is any LNG to be done in a world of reducing emissions, it is the lowest emissions and Shell says LNG Canada is the best. Mgmt said "*But the long term role of gas depends on efforts to abate emissions and develop cleaner pathways for gas. This is why we continually try to reduce the carbon intensity of our new projects. Take LNG Canada currently under construction. It will run on hydropower and is set to deliver the lowest carbon intensity in the entire industry*." (iv) Shell's pre-LNG FID supply projects that includes LNG Canada have high RORs. Mgmt said "*For the pre-FID projects, we have an expected average internal rate of return of between 14% and 18%, and a unit technical cost below $5/mmbtu. With most of these projects clearly having lower costs than the average in the industry. These are good numbers, but you will understand that we strive to push the IRR to the higher end and to push the unit costs down even further.*" There were other items showcasing LNG Canada including pictures. It just feels like Shell continues to showcase LNG Canada, which we believe keeps pointing to them wanting to FID LNG Canada Phase 2 in 2022 and sooner rather than later. Our Supplemental Documents package includes excepts from the Shell Integrated Gas slide deck and transcripts we made of some of the Shell mgmt comments.

Figure 10: Shell Pre-FID LNG supply options – Indonesia, LNG Canada, Tanzania



Project	Country	Shell share %	Peak production kboe/d	LNG capacity mtpa	Shell-operated
Under construction – Start-up 2022-2023					
Arrow - Surat Gas	Australia	50	backfill		
Colibri	Trinidad & Tobago	87	backfill		✓
Gorgon - Jansz	Australia	25	backfill		
QGC SW20+ Measure	Australia	62	backfill		✓
Oman Gas*	Oman	53	120		✓
Under construction – Start-up 2024+					
Gorgon - Jansz compression	Australia	25	backfill		
LNG Canada T1-2	Canada	40		14	
NLNG T7	Nigeria	26		7.6	
Pre-FID options					
Abadi	Indonesia	35	245	9.5	
East Med	Egypt	35	backfill		
LNG Canada Expansion	Canada	40		14	
Manatee	Trinidad & Tobago	100	backfill		✓
NWS - Browse	Australia	27	backfill		
Prelude - Crux	Australia	82	backfill		✓
Tanzania	Tanzania	25	[A]	15	✓

*FID of the project subject to the issuance of a Royal Decree by the government of the Sultanate of Oman confirming award of the Block 10 Concession Agreement.

Source: Shell

Shell wants enough gas supply to align with LNG Canada offtake obligations

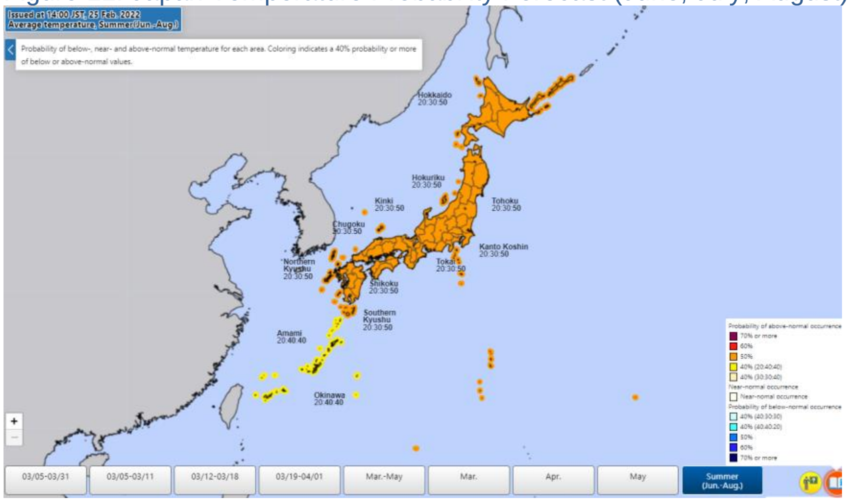
We remind that Shell wants to have enough equity gas to meet its LNG offtake. It's why we recently tweeted [LINK] "*Buckle up, could be huge for Cdn #NatGas M&A. @Shell just said like to align equity #NatGas supply and offtake obligations, used #LNGCanada, Shell has 40% interest so would be 1.44 bcf/d if it FIDs #LNGCanada phase 2. It's why #LNGCanada Phase 2 is the must watch event #OOTT #LNG".* Shell specifically said they want to have enough natural gas supply to align with their offtake obligations at LNG Canada. There was another excellent example of mgmt showcasing LNG Canada when they really didn't have to do so. In the Q&A, the analyst asks a general question if they will align their natural gas supply with their offtake obligations for any LNG project and then the analyst asked about the Coastal GasLink attack. The percentage question was not specifically directed at LNG Canada. However, mgmt took the opportunity to answer the supply question using LNG Canada. Mgmt replied "*typically, what I would say, as much as possible, having access across the entire value chain in as close of a percentage as you can, helps ensure that wherever value might rate at any point in time, you are capturing that value. So in general. Take our LNG Canada investment that you just referenced in the second question, we would look to be able to at least assure ourselves that we are not caught up by vagaries of one part of the market. let's say the gas supply, but we would want to have enough on the gas supply equity side to be able to make sure if gas prices go up there, we benefit from them while maybe disadvantaging the midstream or vice versa depending on where prices go. So we are not in the game of necessarily taking undue risk. we are in the game of creating integrated value chains that we can leverage as part of the broader portfolio."* Shell has 40% in LNG Canada. Phase 1 is 1.8 bcf/d so Shell equity gas supply is 0.72 bcf/d. Our tweet included the Shell disclosure on North America natural gas supply, they don't provide Canada/US split, but that is roughly equal to North America in Q4/2021. They have some GoM natural gas but don't know the split. Maybe half or a little more in Canada? Phase 2 is 1.8 bcf/d so another 0.72 bcf/d

Natural Gas – A warm summer being predicted for Japan

Japan forecasted warm summer

Winter weather natural gas demand is more or less finished in Japan so our look at near term weather outlook for Japan will be turning to the summer. The Japan Meteorological Agency posts its weekly temperature probability forecast for the next four weeks on Thursday mornings [LINK], which included their first temperature outlook for the summer. JMA forecasts that Japan will start to experience warmer temperatures during the peak summer months, which should be supportive for Japan's LNG demand. Although the qualifier is that it's still early. The early summer forecast is for all of Japan to be have above average temperatures. Below is the JMA summer 2022 forecast for Jun-Aug which expects above normal temperatures fin the three-month period.

Figure 11: Japan Temperature Probability Forecast (June, July, August)



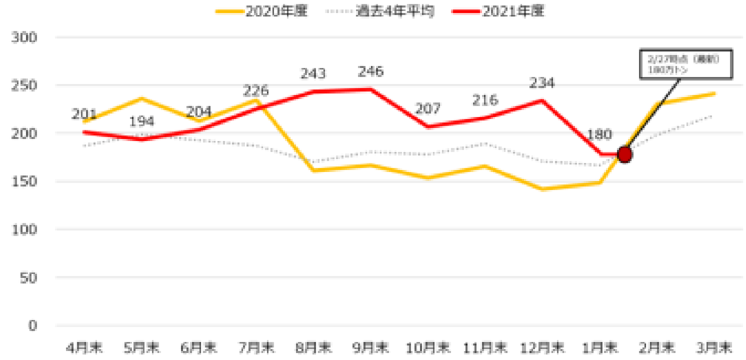
Source: Japan Meteorological Agency

Natural Gas – Japan's LNG stocks decrease slightly at 1.80 mm tons

The colder than normal January led to increased demand but also more LNG cargos to ensure Japan wouldn't be caught short to end winter. The net impact was slightly higher WoW LNG stocks. Japan's METI data was released on Tuesday [LINK] and gave us insight into Japan's LNG stocks. LNG stocks decreased for the week ended Feb 27, from 1.82 mm tons the previous week, and are now at 1.80 mm tons; this is below last year's levels of 2.30 mm tons and 8% below the 5-year average of 1.98 mm tons. The decrease is likely a result of the well below average temperatures in Japan over thew course of the week. We have been noting that Japanese LNG buyers returns to the spot market after weeks of absence to resupply the quickly dwindling stockpiles of LNG. We expect further increases in the coming weeks as Japan is expected to experience warmer weather during March and demand is likely to dampen. Below is a chart depicting Japan's LNG stocks.

Japan LNG stocks below 5 yr ave

Figure 12: Japan's LNG Stocks



Source: METI

Natural Gas – Germany says "endangering social peace" if cut off Russia natural gas

Germany can't cut Russia natural gas

On Wednesday, Germany's Economic Minister Habeck (from the Green party) said what everyone knows – Germany needs Russia's natural gas, oil and coal or else there will be major issues within Germany. Habeck made it clear that Germany cannot cut off Russia oil, natural gas and coal. Der Spiegel reported [LINK] "*At the same time, the Economics Minister made it clear that Germany does not support calls from other countries for a ban on the import of oil, gas or coal from Russia. "I would even speak out against it because we are endangering social peace in the republic," said Habeck. Germany is initially dependent on deliveries of oil, gas or coal. The dependency on Russia for energy that has built up in recent years cannot be ended in a few months, said the Green politician. "That's why we need and will keep open the possibility of energy supplies from Russia." This is needed to create price stability and energy security. However, work is being done to reduce dependency, for example by building up coal and gas reserves. In addition, efforts to save energy would have to be intensified, demanded Habeck. Coal-fired power plants that went offline would be held in reserve; The problem, however, is that they also need fuel. Energy prices are unlikely to remain as high as they are now, but: »It is very, very likely that we will have to expect higher prices."* Our Supplemental Documents package includes the Der Spiegel report.

Putin: abandoning natural gas may put humans back in caves

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

Natural Gas – Uniper reverses position & is back to planning Germany LNG terminal

Uniper brings back LNG import terminal potential

Uniper reversed its April 2021 decision to abandon a potential LNG import terminal at Wilhelmshaven given Germany new energy plan to reduce its natural gas dependence on Russia. We have not yet seen any Uniper release or posting. But on March 4, Rechargenews reported [LINK], and other similarly, that "*To make Europe's energy independent from Russian supplies, German utility Uniper has decided to resume planning for a 'hydrogen-ready' terminal for liquefied natural gas (LNG) in Germany, while parent Fortum will apply for an extension to the operating lifetime of a nuclear power plant in Finland, Fortum chief executive Markus Rauramo said. The decision came after German Chancellor Olaf Scholz on Sunday announced Germany would rapidly build two LNG terminals, one of them possibly at the North Sea port of Wilhelmshaven, to become less dependent of Russian gas, which currently accounts for more than half of the country's* *consumption. Uniper only last year had mothballed plans for an LNG terminal at Wilhelmshaven on cost grounds, and said it would instead turn the port into a hub for climate-friendly hydrogen, including an import terminal for green ammonia and a 410MW electrolyser for the production of green hydrogen."* Many of the reports said that this was done at the request of the German government. Our Supplemental Documents package includes the RechargeNews report.

Uniper abandoned its Wilhelmshaven LNG terminal plans on April 14, 2021

Our April 18, 2021 Energy Tidbits noted Uniper's announcement on the Wilhelmshaven terminal. Note that the release did not specify the LNG import terminal abandonment. Note our comment at that time said that this was likely linked to German natural gas users believing that Nord Stream 2 was likely to get done. It makes sense that if Nord Stream 2 isn't going to get done now that this LNG import terminal will be needed. At that time, we wrote "*On Wednesday, Uniper announced that that they will be establishing a hydrogen hub on the coast of Germany in Wilhelmshaven [LINK] with commissioning expected in late 2020s. The hub is expected to include a green ammonia import terminal and ammonia cracker for producing green hydrogen, which will also be connected to a planned hydrogen network. Also to be included is a 410 megawatt electrolysis plant. These components together would be able to supply 295,000 metric tons of hydrogen, ~10% of expected hydrogen demand for Germany by 2030. Uniper also reminded of what seems to be the key use case for hydrogen, heavy industry. Uniper wrote "It is essential that Germany and Europe remain industrial powerhouses: If we want to achieve this and still hit our ambitious climate protection targets, we need hydrogen to power sectors such as steel production, the chemicals industry or in freight, shipping and air transport". The Uniper release also points to a key theme of the mismatch between clean energy aspirations/demand and the current and planned generation capacity. Uniper wrote "Currently, Germany plans to generate 14 TWh of green hydrogen in 2030, but the demand for that year is forecast to be 90–100 TWh — the discrepancy between these two figures is abundantly clear". What the release doesn't remind of is that Uniper had previously planned for this site to be a floating LNG import terminal. However, there was little interest shown during the period for binding bids for import capacity from Sept 22-Oct 30 2020. We have to wonder if part of the lack of interest in the LNG terminal was a reflection that natural gas users in Germany ultimately believe Nord Stream 2 will get done*."

Natural Gas – Europe natural gas demand in summer is approx. ½ winter demand

Europe summer vs winter gas demand

It looks like Europe is going to skate thru the winter without a natural gas outage due to storage being depleted. But we have been highlighting that a theme for this spring and summer will be a greater urgency to fill Europe storage, which will give support for natural gas and LNG in the spring shoulder season. On Wednesday, we tweeted [LINK] "*reminder Europe #NatGas demand is less than 1/2 winter demand. a huge supply issue to figure out before winter 22/23. will be urgency to fill storage this spring providing support for #NatGas #LNG prices in normally weak shoulder season. Thx @ENTSOG for data. #OOTT."* Our tweet included the Europe natural gas demand estimates from ENTSOG (European Network of Transmission Systems Operators for Gas) from their current summer [LINK] and winter [LINK] natural gas supply outlooks.

Figure 13: European Natural Gas Demand – ENTSOG summer 2021 outlook

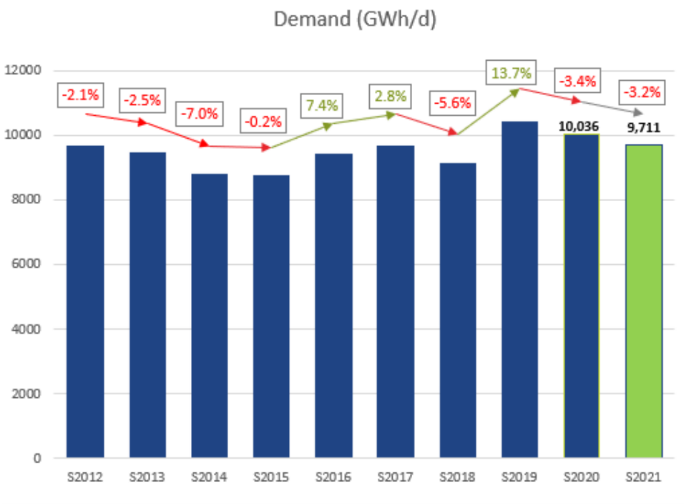


Figure 1. - European daily average demand comparison (forecast for summer 2021).

Source: European Network of Transmission Systems Operators for Gas

Figure 14: European Natural Gas Demand – ENTSOG winter 2021/22 outlook

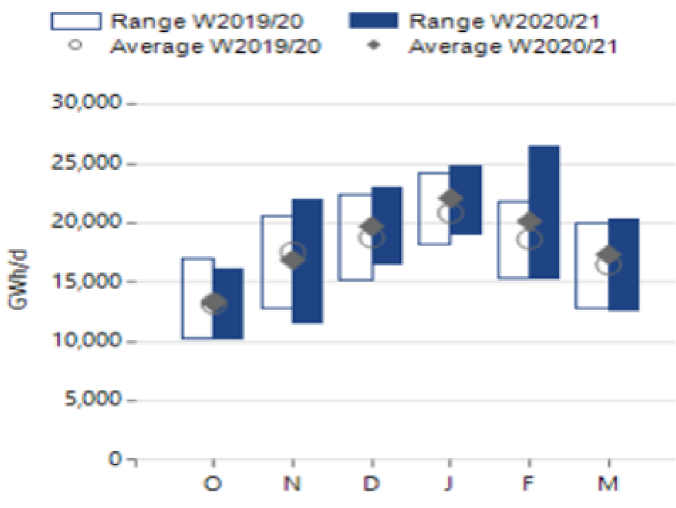


Figure 3 - Total gas demand. Winter 2019/2020 vs Winter 2020/2021

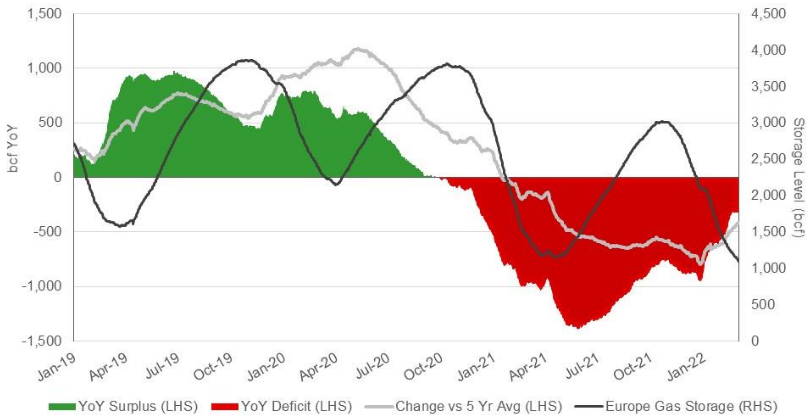
Source: European Network of Transmission Systems Operators for Gas

Natural Gas – Europe storage YoY deficit is now only 7.82% ie. 28.02% full vs 35.84%

Europe avoided natural gas shortages this winter with the combination of warmer weather, strong wind generation and a massive increase in US LNG imports. As a result, the YoY Europe storage gap continues to narrow since the start of the winter natural gas season. Europe gas storage started down 18.52% YoY and is now down to a YoY deficit of 7.82%. Draws to European gas storage units continued this week. It was a smaller draw due to the warmer weather. Europe inventories are at their lowest level at this time of the year in more than a decade. Europe gas storage started last winter (Nov 1/20) at basically full levels at 94.66% and had dropped by 65.77% to be 28.89% at Apr 1/21. Europe storage levels bottomed in late Apr at 29%, which was the lowest level since Apr 2018. This winter began (Nov 1/21) with gas storage at 77.14% capacity, down 18.52% YoY. The YoY deficit has tightened since Nov 1. Despite the warm weather and US LNG, storage as of Feb Mar 3 is still only at 28.02%, which is -7.82% less than last year levels of 35.84% and are -10.45% below the 5-year average of 38.47%. The set up for winter natural gas prices continues to support strong winter natural gas prices. Below is our graph of Europe Gas Storage Level.

Europe storage down to 28.02% full

Figure 15: Europe Gas Storage Level



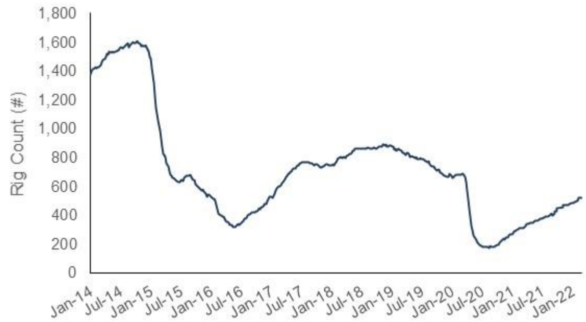
Source: Bloomberg
Prepared by SAF Group https://safgroup.ca/news-insights/

Oil – US oil rigs -3 WoW at 519 oil rigs at Mar 4

Baker Hughes released its weekly North American drilling activity data on Friday. We expected another increase given the ~$110/bbl WTI though there was a slight decline as the turnaround season is underway and producer maintain caution in increasing production. There is still strong oil, NGLs and natural gas prices and industry has fresh 2022 capex budgets and is still just catching up in 2021 from an extremely low 2020 activity level. This week US oil rigs were up -3 WoW at 519 oil rigs, with all major oil and gas basins either flat or down slightly. Oil rigs are +347 off the bottom of 172 in Aug14/2020 week. There were modest basin changes this week; Permian was up +1 at 310 rigs this week while Bakken was flat at 33 rigs after increasing for consecutive weeks. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by 165 to 520 oil rigs (-15%). US gas rigs were +3 WoW with increases in the Haynesville reflecting the heightened $4 HH. Below is our graph of US oil rigs since January 1, 2014.

US oil rigs -3 WoW

Figure 16: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

Oil – US frac spreads -10 to 280 for week ended March 4

Frac spreads -10 to 280

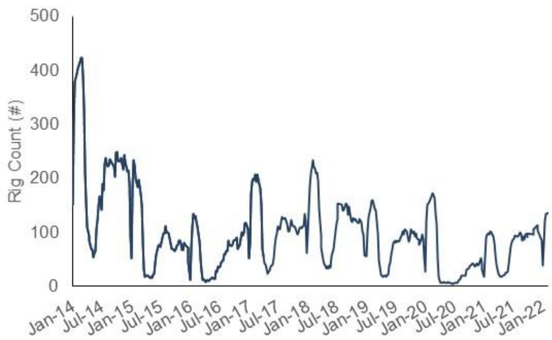
Mark Rossano (C6 Capital Holdings) held his weekly US frac spread recap for week ended March 4 on the Primary Vision network. YouTube video is at [LINK]. For the week ended March 4, US frac spreads at the high point in the week were -10 to 280. The decrease was due to some of the "spot work" coming off, some small declines in the Permian, and 1 or 2 other areas that have gone down slightly. Rossano still thinks the near term move is to 300, but that will be closer to the end of March. He expects frac spreads to bounce around between 277 and 287/290. And as come out of winter, will get more activity in the Williston and should get more activity in the Anadarko. The Anadarko is one that he stills see a big push because of the liquids. Permian continues to be strong, at the highest level that he has seen in the past 5/6 years at this time of the year.

Oil – Total Cdn rigs -7 to 217 total rigs, +76 rigs YoY

Cdn rigs -7 WoW

Total Cdn rigs were up -7 this week to 217 total rigs. Cdn oil rigs were -4 at 134 rigs. Cdn gas rigs were -3 at 82 gas rigs; attributed to the end to winter drilling season. We expect to see much bigger WoW declines in the next few weeks. Total rigs are now +203 since the June 26, 2020 all-time low. Cdn drilling has recovered YoY, a year ago Cdn oil rigs were 80 and Cdn gas rigs were 61 for a total Cdn rigs of 141, meaning total Cdn rigs are +76 YoY and total rigs are +6 vs 2019.

Figure 17: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

Oil – US weekly oil production flat at 11.6 mmb/d

In the absence of any inclement weather, US production has remained flat in line with the expectation for the quarter. Weekly production in the US was flat this week at 11.6 mmb/d for the week ended Feb 25. Lower 48 production drove total production and was up +0.100 from last weeks level at 11.2 this week, offset by decline in Alaska production; US oil production is up YoY at +1.6 mmb/d from last year's February freeze and is still down significantly at -1.5 mmb/d since the 2020 peak of 13.1 mmb/d on March 13. Absent weather impacts, we would expect US oil production to remain relatively flat if not inch up a little higher in Q1/22.

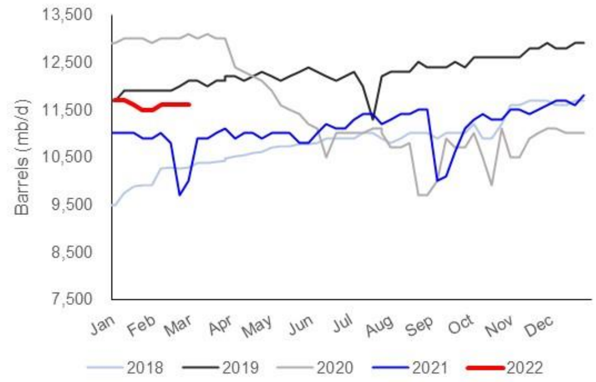
US oil production flat WoW

Figure 18: EIA's Estimated Weekly US Oil Production

Year-Month	Week 1		Week 2		Week 3		Week 4		Week 5	
	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
2019-Jan	01/04	11,700	01/11	11,900	01/18	11,900	01/25	11,900		
2019-Feb	02/01	11,900	02/08	11,900	02/15	12,000	02/22	12,100		
2019-Mar	03/01	12,100	03/08	12,000	03/15	12,100	03/22	12,100	03/29	12,200
2019-Apr	04/05	12,200	04/12	12,100	04/19	12,200	04/26	12,300		
2019-May	05/03	12,200	05/10	12,100	05/17	12,200	05/24	12,300	05/31	12,400
2019-Jun	06/07	12,300	06/14	12,200	06/21	12,100	06/28	12,200		
2019-Jul	07/05	12,300	07/12	12,000	07/19	11,300	07/26	12,200		
2019-Aug	08/02	12,300	08/09	12,300	08/16	12,300	08/23	12,500	08/30	12,400
2019-Sep	09/06	12,400	09/13	12,400	09/20	12,500	09/27	12,400		
2019-Oct	10/04	12,600	10/11	12,600	10/18	12,600	10/25	12,600		
2019-Nov	11/01	12,600	11/08	12,800	11/15	12,800	11/22	12,900	11/29	12,900
2019-Dec	12/06	12,800	12/13	12,800	12/20	12,900	12/27	12,900		
2020-Jan	01/03	12,900	01/10	13,000	01/17	13,000	01/24	13,000	01/31	12,900
2020-Feb	02/07	13,000	02/14	13,000	02/21	13,000	02/28	13,100		
2020-Mar	03/06	13,000	03/13	13,100	03/20	13,000	03/27	13,000		
2020-Apr	04/03	12,400	04/10	12,300	04/17	12,200	04/24	12,100		
2020-May	05/01	11,900	05/08	11,600	05/15	11,500	05/22	11,400	05/29	11,200
2020-Jun	06/05	11,100	06/12	10,500	06/19	11,000	06/26	11,000		
2020-Jul	07/03	11,000	07/10	11,000	07/17	11,100	07/24	11,100	07/31	11,000
2020-Aug	08/07	10,700	08/14	10,700	08/21	10,800	08/28	9,700		
2020-Sep	09/04	10,000	09/11	10,900	09/18	10,700	09/25	10,700		
2020-Oct	10/02	11,000	10/09	10,500	10/16	9,900	10/23	11,100	10/30	10,500
2020-Nov	11/06	10,500	11/13	10,900	11/20	11,000	11/27	11,100		
2020-Dec	12/04	11,100	12/11	11,000	12/18	11,000	12/25	11,000		
2021-Jan	01/01	11,000	01/08	11,000	01/15	11,000	01/22	10,900	01/29	10,900
2021-Feb	02/05	11,000	02/12	10,800	02/19	9,700	02/26	10,000		
2021-Mar	03/05	10,900	03/12	10,900	03/19	11,000	03/26	11,100		
2021-Apr	04/02	10,900	04/09	11,000	04/16	11,000	04/23	10,900	04/30	10,900
2021-May	05/07	11,000	05/14	11,000	05/21	11,000	05/28	10,800		
2021-Jun	06/04	11,000	06/11	11,200	06/18	11,100	06/25	11,100		
2021-Jul	07/02	11,300	07/09	11,400	07/16	11,400	07/23	11,200	07/30	11,200
2021-Aug	08/06	11,300	08/13	11,400	08/20	11,400	08/27	11,500		
2021-Sep	09/03	10,000	09/10	10,100	09/17	10,600	09/24	11,100		
2021-Oct	10/01	11,300	10/08	11,400	10/15	11,300	10/22	11,300	10/29	11,500
2021-Nov	11/05	11,500	11/12	11,400	11/19	11,500	11/26	11,600		
2021-Dec	12/03	11,700	12/10	11,700	12/17	11,600	12/24	11,800	12/31	11,800
2022-Jan	01/07	11,700	01/14	11,700	01/21	11,600	01/28	11,500		
2022-Feb	02/04	11,600	02/11	11,600	02/18	11,600	02/25	11,600		

Source: EIA

Figure 19: US Weekly Oil Production



Source: EIA, SAF

Oil – EIA Form 914 December actuals up vs weekly production estimates

EIA Form 914 December

The EIA released its Form 914 data [LINK] on Monday, which is the EIA's "actuals" for December US oil and natural gas production. Form 914 shows December production of 11.567 mmb/d, down from November production of 11.773 mmb/d after being revised down +20,000 b/d, and up 0.466 mmb/d YoY from December 2020 of 11.084 mmb/d. Three key items to highlight. (i) The actuals for December were above the EIA weekly estimates and also a little below, 0.01 mmb/d lower, than the EIA STEO January had for December. (ii) This is the seventh consecutive month with YoY increases, and we expect to see this continue through the remainder of the year. (iii) With the beginning of the seasonal decline operations, the Federal Offshore in the Gulf of Mexico had the largest MoM decrease, down -81,000 as offshore platforms winded down into the December holiday's. The December actuals were +17,000 b/d above the weekly estimates average of 11.5 mmb/d for December, increasing for the consecutive month.

Figure 20: EIA Form 914 US Oil Production

State	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	11,056	9,773	11,160	11,230	11,334	11,288	11,330	11,206	10,851	11,526	11,773	11,567
2020	12,785	12,826	12,816	11,911	9,711	10,420	10,956	10,558	10,868	10,413	11,121	11,084
2019	11,848	11,653	11,899	12,125	12,141	12,179	11,896	12,475	12,572	12,771	12,966	12,910
2018	9,996	10,276	10,461	10,493	10,424	10,628	10,888	11,373	11,422	11,488	11,868	11,924
2017	8,873	9,109	9,168	9,103	9,184	9,110	9,246	9,245	9,516	9,659	10,077	9,979
2016	9,201	9,063	9,088	8,871	8,832	8,672	8,660	8,688	8,542	8,802	8,901	8,814
2015	9,382	9,504	9,582	9,658	9,474	9,358	9,446	9,409	9,480	9,400	9,332	9,275

Source: EIA

Figure 21: EIA Form 914 US Oil Production vs Weekly Estimate

Source: EIA

Oil – Devon CEO says take 9-12 mths before see any real impact from more oil rigs

Devon CEO on Permian oil growth

Two key reminders from Devon CEO as to why it takes 9 to 12 months to see any real impact from adding rigs by the larger players. On Monday, we tweeted [LINK] ""*quite honestly if you were to add a rig today, you would be 9 to 12 months before you really started seeing the impact" says #Devon CEO on impact of tight labor, sand, etc to @GuyJohnsonTV @kaileyleinz #OOTT."* Devon CEO was on Bloomberg TV and we made a transcript of his key comments. But he reminds of how larger Permian players look at the timing/impact of adding rigs. He reminded of the overall industry constraints saying "" *I can tell you that labor is tight ….. the Permian Basis is probably where you are going to see most of the sustained growth. that's not to say the other basins couldn't have some growth. sustained growth is going to be the Permian…. the market is tight, let's be patient, let's be disciplined …. things are tight. We've seen tightness in things like steel, things like sand and other things."* Then he reminded that large companies drill and complete in multi- well pads saying "*quite honestly if you were to add a rig today, you would be 9 to 12 months before you really started seeing the impact. Most of the development that we are doing here in the US today is on multi-well pads so you are drilling 4 to 6 wells on a pad. So you have to drill 4 wells. You have to complete* those, *set facilities. So if you could drop a flag today, you say roughly 12 months out."* Our Supplemental Documents package includes the full transcript we made of Devon CEO comments.

Oil – Pioneer CEO on constraints for Permian oil growth

Constraints on Permian growth

Pioneer CEO' Sheffield's headlines were on his comments (see following item) that Pioneer would, with caveats, move to a higher growth rate to help a coordinated effort for more oil to replace Russian oil. However, the item that we highlighted were Sheffield's comments on constraints for Permian growth. On Thursday, we tweeted [LINK] "*Also @PXDtweets CEO concerns on labor, gas pipeline takeaway would limit #Permian growth over next few years. Remember #NatGas is associated gas in oil wells. Industry push on flaring/venting means if can't move #NatGas, can't produce oil. Great interview @meghangordon".* We created a transcript of Sheffield's key comments in his Platts interview including this section. Sheffield said *"After having three downturns, the labor force, especially in the Permian, it's really hard to get people to move back. We had a downturn in 2009, we had one in 14, and we had a real bad one obviously in 2020. Three downturns, people change industries. So it's not as* *much the technical people. There are plenty of engineers and geologists. It's the labor force that is needed for the rigs, the frac fleets and the service companies. It's really hard to get people to change industries. And, after Covid, we're seeing people doing all kinds of things. Post Covid 19, you can't even get them to go to their current jobs. They want to work from home. So things have changed so much, it be really hard It will be one of the major impediments to ramping up the Permian to much higher levels over the next 2, 3, 4 years. There's shortages of frac sands going on already now. We've heard recent people that are increasing their activity that they're having to go to Wisconsin. And they're paying somewhere around $70, $80 a ton just to bring sand down from Wisconsin. That's unheard of. In addition to what also could limit growth is that everybody's committed to new flaring and venting guidelines. It looks like that we're going to have the next major pipeline won't be ready until the middle of 24 so that will present some issues to the Permian Basin. The private companies don't make commitments on pipelines downstream. So that could be one of the big bottlenecks is not having enough natural gas. with everybody's commitment not to flare and vent, that could affect prevent the Permian from growing substantially over the next several years. Those are the current bottlenecks."*

Oil – Pioneer CEO, US could double oil growth with a coordinated effort

US oil growth could double

The big headlines from the Platts interview with Pioneer CEO' Sheffield were on his comments that Pioneer would look to increase its growth rate from 5% to 10% to support a coordinated global western countries effort to replace a ban on Russia crude, and that this coordinated effort could double US oil growth over the next 2 to 3 years ie. add another 700,000 b/d. . Those were the headlines but Sheffield did note some key conditions for Pioneer to move their growth rate. We made a transcript of Sheffield's comments *"Yes, Meghan. It's our business case, long term. But I made all those comments several weeks ago to the media. And, I was at a Credit Suisse First Boston, we went to our first energy conference yesterday. It was in Vail, the first one in 2 years in person. So I reframed my comments based on what's happened last week. And I said if there is a coordinated effort for all the western nations, including Europe and the US, to ban Russian exports that Pioneer would visit with our shareholders and change, if there is a mindset to change to be able to grow more over the next several years to help Europe out to ban those exports that we would definitely participate in that. So from a business case, we are not going to change our 5% growth long term. But if there is a coordinated effort, we would definitely participate in that. But it's not something that would happen overnight because we do have limits in the Permian Basin already of labor. There is shortages of sand going on. There is shortages of rigs and frac fleets. But it's going to take awhile to get people back. So this is probably a 3 year plan or a 5 year plan that the world would have to cooperate to help ban all exports to Europe and to the rest of the world. We'd have to leave out China obviously because China is going to take some. But it's got to be a coordinated effort we would participate".* And *" Sheffield "we're growing about 5% now, about 20,000 barrels a day, so I'm sure we could, over time if the world did this, we could double that. So 10% growth and do it for a period of shortened time frame, like 3 years at 10% growth if there was a coordinated effort. So, it's like taking the US is growing say 700,000. People have us between 500 and a million barrels a day from the various forecasts. I've been using 700,000. I think the US could get to a point where they could double that, probably with a coordinated effort, but it would take a year, two years to get it going. And we could do it over a 2 or 3 year time frame from a coordinated effort."*

Oil – Biden admin on why they don't focus on increasing drilling on federal lands

Biden on oil and gas drilling

This week, we saw two of the Jen Psaki (White House Press Secretary) that were the best we have seen on the Biden administration not wanting to focus on increasing drilling on federal lands. Don't forget they have said for months on how they are doing everything to get global oil producers to produce more to help alleviate pressures on gas prices. And in the State of the Union on Tuesday, Biden said "*And I will use every tool at our disposal to protect American businesses and consumers*." (i) On Sunday, we tweeted [LINK] *"#OPEC+ must love this. Read why #Biden doesn't focus on increasing drilling on federal lands, @PressSec says because US needs to reduce dependence on #Oil & look at other ways of having energy. Squeezing supply & not reducing demand hasn't worked so far. Bullish for Oil. #OOTT."* On Feb 24, she gave her standard line to ask the oil companies why they aren't drilling more on their leasing. But then on Sunday, she said "*would also note that, on oil leases, what this actually justifies, in President Biden's view, is the fact that we need to reduce our dependence on foreign oil, on oil in general, and need to -- and we need to look at other ways of having energy in our country and others."* Reminds the strategy is to try to reduce US oil supply. (ii) On Thursday, Psaki used her standard line on asking the oil companies why they aren't drilling the undrilled leases. But then she used her other key strategy – don't answer a simple question, rather instead of answering, ask a question back that allows her to avoid saying the Biden Administration don't want to do anything to support//encourage more drilling. Here is the exchange "*Q We also know, you know, the President, as recently as yesterday, talked about increasing domestic manufacturing to bring down prices on inflated items like goods. So why not apply the same logic to energy and increase domestic production here? MS. PSAKI: Well, there are 9,000 approved oil leases that the oil companies are not tapping into currently. So I would ask them that question. Q Is there nothing that the administration can do to get those providers back to pre-pandemic levels? MS. PSAKI: Do you think the oil companies don't have enough money to drill on the places that have been pre-approved? Q Just asking.".* Our Supplemental Documents package includes the excerpts from the White House transcript from the Feb 27 and March 3 press conference.

Oil – Don't expect Biden to provide Jones Act waivers to lower gasoline costs

Biden on Jones Act

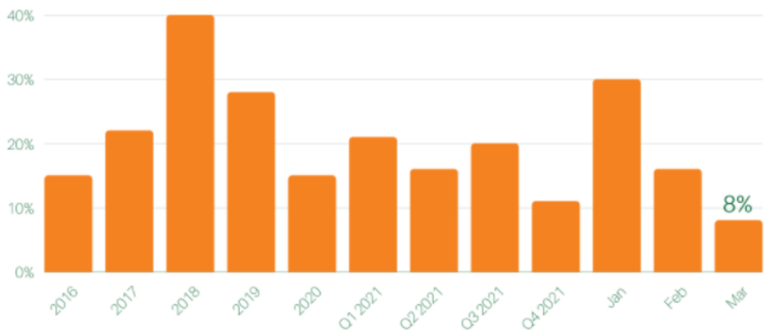
We have noted on multiple times that Biden's using all tools to reduce gasoline prices has ignored providing any type of relief on the Jones Act so that US oil, gasoline, and other petroleum products can be moved cheaper to US refineries or markets. The Jones Act requires all tankers to be US owned, US flagged and US staffed. At the Thursday press conference, Psaki ignoring the question on Jones Act is another indicator that the Biden administration still has no attention. Here is the exchange. "*I know people have asked a lot about, you know, the price of oil, but I want to come at it in a little bit of a different way. The fact is that the price of oil is high, it is very unlikely to go down anytime soon, and more than likely will go up. What is the White House looking at? I know that there was the strategic release of oil, but are there other things that the White House is looking at to help consumers at the pump — maybe to, you know, direct subsidies, maybe more biofuels, maybe easing the Jones Act? Like what is the plan for Americans who are going to have to be living with these high oil prices? MS. PSAKI: Well, I would say, first, on the release of the Strategic Petroleum Reserve, it first goes to an auction, and it's a process that will proceed. And a lot of that will happen over the course of the coming week. So we haven't seen, obviously, all of the direct impact of the announcement that was just made two days ago. But a range of* *options remain on the table. I can't get into all the details of those. But the President is quite focused on making sure that we are taking steps to reduce the impact, to ensure there is supply necessary out there. Obviously, tapping the Strategic Petroleum Reserve is part of that; engaging with global partners around the world who may be big global suppliers about putting more oil in the system — that is part of the discussion; ensure there are a range of domestic options. But there have been ongoing discussions and consideration, some of that you've saw with the announcement of the Strategic Petroleum Reserve released just two nights ago."*

Oil – Trans Mountain apportioned by 8% for Mar

Trans Mountain apportionment

On Wednesday [LINK], Trans Mountain released an update on its capacity for the month of March. Total system nominations are apportioned by 8% for March, meaning 8% of demand for the pipeline exceeds its capacity. Trans Mountain reminds that it has been running at full capacity and has seen regular monthly apportionment for over a decade ie, the clear sign for a need for expansion. The Trans Mountain apportionment update also includes a bit of an apportionment 1010. Trans Mountain wrote "*When a pipeline experiences significant and prolonged apportionment like in the case of the existing Trans Mountain Pipeline, it's one signal that more capacity is needed. Apportionment can bring with it a discounting of prices as producers compete to sell what they can through the pipeline before having to use another pipeline or other modes of transport to another, less profitable market. It can also mean the buyers at the end of the pipeline are forced to source their shortfall of supply from alternate, less desirable sources*."   Below is a chart which shows the average apportionment since 2016. Our Supplemental Documents package includes the Trans Mountain release.

Figure 22: Trans Mountain Pipeline Apportionment



Source: Trans Mountain Pipeline

Oil – Teamsters vote in favour of strike action against CP rail strike

Teamsters strike action approved

TCRC announced the union voted 96.7% in favor of a strike if they aren't able to reach a deal by March 16. [LINK]. We tweeted *"ICYMI, Potential CP rail strike/lockout on March 16 if no negotiated deal. Union voted 96.7% for strike action if no deal. Latest data is Dec, total Cdn crude by rail exports to US of 131,000 b/d. #OOTT #Oil".* Last week's (Feb 27, 2022) Energy Tidbits memo noted balloting issues led to an extension in the vote for strike action against CP rail as the union was just finishing the strike voting by locomotive engineers, conductors, trainpersons and yardpersons – basically all the key personnel to keep trains moving. The voting was completed on Monday, with an overwhelming number of members voting in favour of strike action should the mediation process be unsuccessful with CP. Of the 3,062 ballots sent out to membership, 96.7% voted in favour of strike action if necessary. The strike date is set for March 16. The release noted *"Also, tomorrow, March 01, 2022, all Local Chairmen, Division Presidents and Secretary Treasures will be sent several documents regarding the preparations necessary in the event a strike or lockout occurs on March 16, 2022. While we are committed to negotiating collective agreements, we must move forward to make the arrangements for a work stoppage if required. We would ask that everyone assist the local executive and strike captains in this necessary procedure. The bargaining committee will provide updates and support as needed."*

Liberals haven't stepped in before with back to work legislation

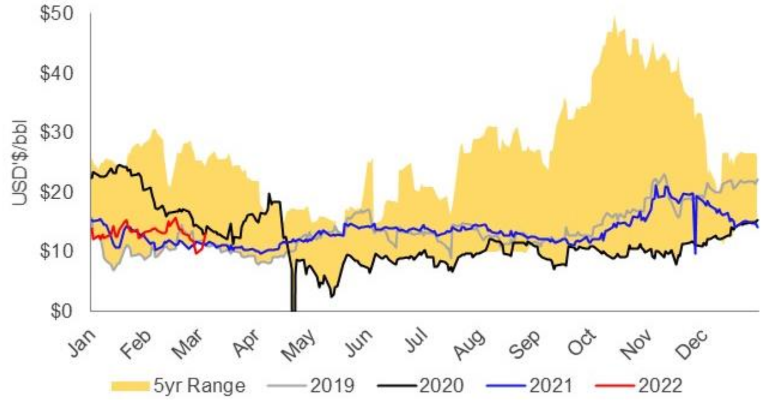
If there isn't success in the conciliation process, we should expect an actual strike because the Liberals haven't previously stepped in to enact back to work legislation to stop a rail strike. Our Dec 1, 2019 Energy Tidbits highlighted the end of the 8-day CN Rail strike. At that time we wrote "*Oil – CN Rail strike ended on Day 8, but says "weeks, not days" to recover. As expected the CN Rail strike ended with a negotiated deal and not back to work legislation. It was well reported that the Liberals were doing all they could to avoid, what we called the nuclear option of recalling parliament to pass back to work legislation as the first bill of the new Liberal minority government. Especially a bill that would be supported by Conservatives but opposed by the NDP, who they will be needed support to stay in govt. The strike ended up lasting 8 days, so longer than the prior 7 day strike. National Post* [LINK] re*ported on comments from CN Executive Vice President of Corporate Services Sean Finn writing "We're looking at weeks to recover fully," Sean Finn, CN's executive vice-president of corporate services, said in an interview Thursday. "This is a complex network — 21,000 miles of track that at any given time 100,000 rail cars are operating on" and "During the strike, CN operated its network at about 10 per cent capacity. It will take between one and four weeks to clear the backlog depending on how far a customer is from an operating yard and how frequently they typically receive service, Finn said."*

Oil – Moving into spring season when WCS-WTI differentials normally narrow

WCS-WTI differentials normally narrow in the spring

It's been a good month for WCS (Western Canadian Select) heavy oil prices hitting over $100 on Mar 2, and this week closing at US $102.75, exacerbated by supply shocks prevailing from the war in Ukraine. Our Feb 13, 2022 Energy Tidbits noted one of the key support factors for the strong WCS prices was low western Canadian inventories. On Feb 8, we tweeted [LINK] "*Crude #Oil stockpiles in West Can down >14 mmb since early Nov, to <25 mmb at end Jan, according to Wood Mackenzie data. At ~36% of storage capacity, lowest utilization observed by Wood Mackenzie during this time of year. Thx @roberttuttle & @WoodMackenzie Dylan White. #OOTT."* There are many factors that impact Cdn heavy oil differentials, but we remind that we are just moving into the time of the year that normally sees Cdn heavy oil differentials narrow. This is the time of year, when refineries tend to maximize production of asphalt ahead of the annual summer paving season. As is said in Canada, there are two seasons in Canada – winter and paving season. Below is graph showing WCS-WTI differentials that shows this normal seasonal trend of narrowing WCS-WTI differentials thru May.

Figure 23: WCS-WTI Differential



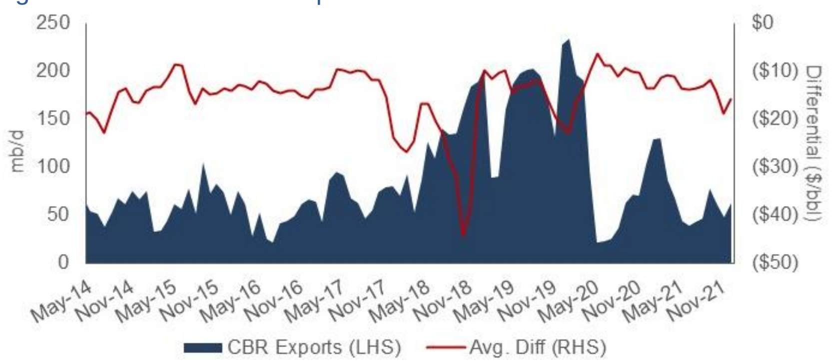
Source: Bloomberg

Oil – Cdn crude by rail imports to Gulf Coast down 40,000 b/d YoY in December to 63,000 b/d

Cdn crude by rail imports to Gulf Coast down 40,000 b/d YoY

The EIA posted its monthly "U.S. Movements of Crude Oil by Rail" [LINK] on Monday, which also had good insights on Cdn crude by rail. Canadian CBR volumes to PADD 3 (Gulf Coast) were 63,000 b/d in December, which is up 16,000 b/d MoM from November, and down 40,000 b/d YoY vs December 2020. There were no revisions to last months data. The ramp up of the holiday season travel was likely the key reason for the increase in exports by rail and tighter YoY WCS to WTI differentials were the key factor in the higher crude by rail volumes since December. Below is our graph of Cdn CBR exports to the Gulf Coast.

Figure 24: Canada CBR Exports to US Gulf Coast vs WCS Differential



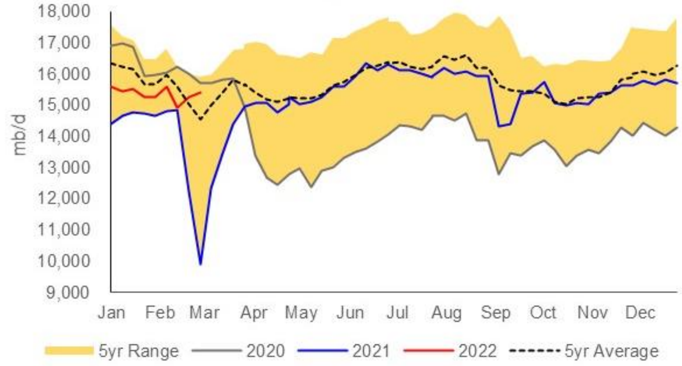
Source: EIA, Bloomberg

Oil – Refinery inputs +0.152 mmb/d WoW at 15.348 mmb/d

Refinery inputs up WoW

The EIA crude oil input to refinery data is for the week ended Feb 25. This is normally the seasonal period when crude oil inputs to refineries slightly declines due to turnarounds. US refineries have also been impacted by unplanned outage that have been impacting crude oil inputs. This week, the EIA reported crude oil inputs at refineries, up +0.152 mmb/d this week to 15.348 mmb/d for the week ended Feb 25 and are +5.50 mmb/d YoY from last years February Freeze in the Permian. Refinery utilization was up at 87.7%, which is +31.7% YoY though is still below 5-year average utilization levels. Total products supplied (i.e., demand) decreased WoW, down 0.654 mmb/d to 20.830 mmb/d. Motor gasoline was up 0.086 mmb/d at 8.743 mmb/d from 8.657 mmb/d last week. Gasoline supplied, a proxy for demand, was up last week. Gasoline stockpiles are at their lowest levels with demand for gasoline at a 4-week high. The four-week average of production supplied increased to 21.734 mmb/d, up from last year.

Figure 25: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA

Oil – US "net" oil imports down -2.171 mmb/d WoW at 1.971 mmb/d

US "NET" imports were down -2.171 mmb/d to 1.971 mmb/d for the Feb 25 week. US imports were down -1.061 mmb/d to 5.767 mmb/d. US exports were up +1.110 mmb/d to 3.796 mmb/d. The WoW increase in US oil imports was driven by US's Top 10 imports by country were down 0.606 mmb/d from Top 10. Some items to note on the by country data. (i) Canada was down this week by -0.239 mmb/d to 3.630 mmb/d, which is now ~0.1 mmb/d above the average levels in Jan/Feb of 2020. (ii) Saudi Arabia was up 162,000 b/d to 0.520 mmb/d this week. (iii) Colombia was down -0.188 mmb/d to 0.144 mmb/d. (iv) Ecuador was down -0.098 at 0 mmb/d. (v) Iraq was up 10,000 b/d to 295,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico was down by 271,000 b/d to 0.497 mmb/d.

US "net" oil imports down WoW

Figure 26: US Weekly Preliminary Oil Imports by Major Countries

(thousand b/d)	Dec 17/21	Dec 24/21	Dec 31/21	Jan 7/22	Jan 14/22	Jan 21/22	Jan 28/22	Feb 4/22	Feb 11/22	Feb 18/22	Feb 25/22	WoW
Canada	3,147	4,032	3,803	3,340	3,556	3,752	3,953	3,631	3,342	3,869	3,630	-239
Saudi Arabia	384	609	418	294	381	596	613	383	250	358	520	162
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	503	648	226	584	902	321	383	958	510	768	497	-271
Colombia	146	184	64	241	193	143	286	258	234	332	144	-188
Iraq	359	268	226	317	434	133	412	226	225	285	295	10
Ecuador	195	308	95	58	0	0	236	101	98	98	0	-98
Nigeria	128	58	53	0	0	43	9	144	182	25	43	18
Kuwait	0	0	0	0	0	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	0	0	0	0	0	0
Top 10	4,862	6,107	4,885	4,834	5,466	4,988	5,892	5,701	4,841	5,735	5,129	-606
Others	1,332	652	779	1,235	1,279	1,248	1,193	688	949	1,093	638	-455
Total US	6,194	6,759	5,664	6,069	6,745	6,236	7,085	6,389	5,790	6,828	5,767	-1,061

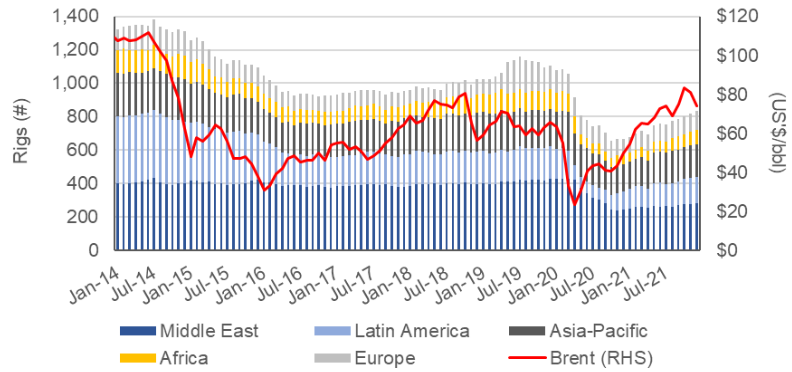
Source: EIA, SAF

Oil – Baker Hughes International rigs -28 MoM to 813 rigs in February

International rigs -28 MoM

Baker Hughes posted its monthly update to international rigs on Friday. There was a shift from the trend we have been noting as international rigs declined for the first time after consecutive months of increases. There is some seasonality within these declines, but there as also a large decline in rigs in Ukraine, which we have to believe is going much lower. As expected, post the invasion, Ukraine rigs dropped from 39 in Jan to 31 in Feb. International activity had been increasing with stronger oil and gas prices though the turnaround season typically begins at the end of Feb and the Russian invasion of Ukraine damped European drilling. January is up +16% YoY from 701, but still down 25% vs February 2020 at 1,085. Total international rigs decreased by -28 MoM to 813 in February. The YoY rig count is as followed: Asia-Pacific -7, Africa -5, Europe -9, Latin America -5, and the Middle East -2. The rig count in Latin America was driven by -6 oil rig decrease in Colombia, -1 oil rigs for Mexico, after consecutive months of growth in both countries. Brazil remained was +2 oil rigs YoY at 12 rigs and are focused in offshore operations. Saudi Arabia decreased by -3 rigs YoY, driving growth while Iraq and Egypt were basically flat YoY. Indonesia was down -4 rigs YoY in February while the rest of Asia pacific relatively flat YoY with India up YoY at +1 rigs. Below is our graph of international rigs by region and avg monthly Brent price.

Figure 27: Baker Hughes International Rig Count and Brent Price



Source: Baker Hughes, Bloomberg

Oil – Venezuela oil exports increase amid Russian sanctions

Venezuela oil exports up in Feb

Sanctions against Russia have resulted in oil importers seeking new crude and fuel supplies in February. Venezuela's exports of oil and refined products last month recovered to mid-2021 levels, boosted by sales of its flagship crude grade and fuel oil bound for Asia. Reuter's reported on Wednesday [LINK] that state run oil company PDVSA reported higher exports come oil importers seek alternative sources of crude as financial and shipping sanctions were enforced against Russia in response to its invasion of Ukraine. 22 total cargoes were shipped by PDVSA in Feb carrying 730,930 b/d, the highest on record since July 2021 and a 76% increase MoM; most cargoes were bound for China. The report noted *"The intermittent operation of PDVSA's oil upgraders forced the company to produce and export more Merey 16, its most popular grade, leaving 9.4 million barrels of its competitor oil, diluted crude (DCO), in storage, the documents showed. The switch, which also led to less domestic refining for motor fuel production, allowed PDVSA to overcome four outages at its upgraders last month. At the month's end, only the Petrosinovesa blending station and the Petropiar* *crude upgrader were operational."* Our Supplemental Documents package includes the Reuters report.

Oil – Biden officials meeting with Maduro govt

Biden officials to meet Maduro govt.

Earlier this morning, we tweeted [LINK] ""*never let a good crisis go to waste". US to meet #Maduro govt, potential to find path for more VEN #Oil to markets. If US wants more heavy/medium to Gulf Coast & world, faster to send US officials to meet with @jkenney to work to restart #KeystoneXL #OOTT.* Yesterday, the New York Times [LINK] reported "*Senior U.S. officials are traveling to Venezuela on Saturday to meet with the government of President Nicolás Maduro, according to people familiar with the matter, as the Biden administration steps up efforts to separate Russia from its remaining international allies amid a widening standoff over Ukraine. The trip is the highest-level visit by Washington officials to Caracas, Venezuela's capital, in years".* We have been waiting for signs that the Biden administration was going to try to reduce sanctions on Venezuela as its attempt to work with Guaido to get Maduro to leave haven't worked to date. And that this is one of the few levers Biden has to help reduce global oil prices. Biden can use the Russia crisis as cover to make this happen. We noted Keystone XL in our tweet but the reality is that it would e almost impossible for Biden and the Democrats to backtrack on another of their key villains they used to sell their energy transition message. Our Supplemental Documents package includes the New York Times report.

Oil – Colombia Jan oil production was down slightly MoM at 0.740 mmb/d

Colombia Jan oil & gas production

Colombia oil production in December decreased slightly MoM at 0.745 mmb/d vs 0.747 mmb/d in Nov. On Tuesday, Colombia Ministry of Mines and Energy released its December oil and gas production data [LINK]. The Columbian Ministry of Mines and Energy reported *"Colombia's controlled oil production was 739,848 average barrels per day (BOPD) during January 2022, which represented a slight decrease of 0.75% compared to the same month in 2021.* The decrease in crude oil production was attributed to the road blockades in the Yarigu-Cantagallo field, in the departments of Santander and Bolívar, which resulted in the suspension of operations of 64 wells that represented 54% of the total production of the countryside. Colombia also noted that Jan production was down 0.75% MoM from Dec production of 0.745 mmb/d/. Note that Colombia wants to attract more capital to its oil sector. Our Jan 23, 2022 Energy Tidbits highlighted that week's Argus report [LINK], that Colombia's Mines and Energy Ministry expects to increase the oil production to 0.800 mmb/d in 2022, which were the same production goals the nation had entering 2021. The ministry hopes that 60 exploration wells will be drilled in 2022, up from the 34 wells drilled from Jan-Nov. A total of 112 upstream contracts will be in the exploration phase with agreed investments close to $4.11bn in 2022. Our Supplemental Documents package includes the Google Translate version of the Colombia release.

Figure 28: Colombia Oil Production

million b/d	2015	2016	2017	2018	2019	2020	2021	21/20	2022	22/21
Jan	1.036	0.986	0.860	0.860	0.899	0.884	0.745	-15.7%	0.740	-0.7%
Feb	1.030	0.955	0.864	0.823	0.893	0.878	0.746	-15.1%		
Mar	1.023	0.917	0.804	0.856	0.885	0.857	0.745	-13.0%		
Apr	1.029	0.915	0.857	0.865	0.891	0.796	0.745	-6.4%		
May	1.027	0.904	0.851	0.866	0.895	0.732	0.703	-3.9%		
June	1.010	0.888	0.857	0.864	0.892	0.730	0.694	-4.9%		
July	0.947	0.843	0.856	0.860	0.869	0.735	0.731	-0.5%		
Aug	0.968	0.827	0.858	0.866	0.883	0.742	0.748	0.8%		
Sept	1.009	0.859	0.851	0.869	0.879	0.749	0.744	-0.7%		
Oct	1.005	0.846	0.864	0.879	0.883	0.751	0.740	-1.5%		
Nov	0.990	0.855	0.851	0.883	0.880	0.761	0.747	-1.9%		
Dec	0.999	0.837	0.870	0.889	0.882	0.759	0.745	-1.8%		

Source: Bloomberg, Colombia Ministry of Mines and Energy

Oil – Brazil January oil production of 3.03 mmb/d, up +5.5% YoY and +7.0% MoM

Brazil oil production up 7.0% MoM

Brazil oil production growth was modest, but less than expected going into 2021. It looks like 2022 could turn out to be similar. While December production was almost flat in production MoM, this theme continued in January with oil production up 5.0% YoY and -7.0% MoM. And recall that Brazil has been expected to have oil growth in both 2021 and 2022. Brazil continued to recover from the planned maintenance stoppages in October and is expecting to increase production throughout 2022. On Feb 22, ANP reported [LINK]. Brazil oil production of 3.03 mmb/d, which is up +5.5% YoY and +7.0% MoM from 3.03 mmb/d in December.

Oil – Russia's oil production increased MoM in Feb

Russia 11.05 mmb/d in Feb, up MoM

On Tuesday morning, Bloomberg reported *"Russia increased its oil production in February, yet likely pumped below its OPEC+ quota for a third consecutive month, constrained by a lack of spare capacity. Russian oil producers pumped 42.23 million tons of crude oil and condensate in February, according to preliminary data from the Energy Ministry's CDU-TEK unit. That equates to 11.055 million barrels a day, based on a 7.33 barrel-per-ton conversion rate and is 0.2% higher than in January."* If the nation's condensate output last month was close to January's level of some 960,000 barrels a day, crude-only daily production was around 10.095 million barrels, some 132,000 below its quota for the month. Russia's compliance with the OPEC+ deal rose to 109% in January from 107% in December in which Russia pumped below its quota for the first time since the record OPEC+ cuts.

Oil – Russian oil exports down ~2.5 mmb/d in the early days post invasion

Russian oil exports were down by 1/3 by March 2

We recognize this is a moving target and Russian oil exports continue to go lower. Earlier this morning, Vitol's Head Asia, Mike Muller, referenced a 3 mmb/d hit. But on Wednesday, there was a good Energy Intelligence report [LINK], that Russian export flows have fallen by 33%, or ~2.5 mmb/d this week as a result of financial and shipping sanctions and a general reluctance of buyers to take Russin cargoes. There is an outstanding ~1.5 mmb/d of crude and another 1 mmb/d of refined product that are not making it to market. Normally, Russia exports 4.7 mmb/d of crude and 2.8 mmb/d of products as reported by government data. Their remains 1.8 mmb/d of crude exports that are transported by pipeline that have not been impacted so far, 1 mmb/d of which flows to Europe and another 800,000 b/d flowing to China. Sources from the report believe that Russian oil will be lifted by big trading houses that have sufficient scale and leverage to ensure they get the vessels and financing needed to export

Russian crude. Absent any direct sanctions on Russian crude, these trading houses are likely to continue to move Russian oil to market as the article stated, "*Vitol and Trafigura will not stop lifting," a source said. "Some of them may even have long-term pre-payments or financing arrangements linked to the offtake*". Our Supplemental Documents package includes the Energy intelligence report.

Oil – OPEC+ reconfirms July 18 production plan to add 400,000 b/d in Apr

OPEC+ sticks to July 18 plan

OPEC+ had another short (14 minutes) ministerial meeting which is the shortest on record. The Russian-Ukraine conflict had a few questioning whether OPEC+ would make any changes to their planned production increases, but OPEC+ stayed with its planned +400,000 b/d monthly increase for April. OPEC stated, "*Reconfirm the production adjustment plan and the monthly production adjustment mechanism approved at the 19th Ministerial Meeting and the decision to adjust upward the monthly overall production by 0.4 mb/d for the month of April 2022, as per the attached schedule"* [LINK]. Our Supplemental Documents package includes the OPEC+ Mar 3 release.

Figure 29: OPEC+ Cut Schedule

OPEC (mmb/d)	Reference Level Production	June 2021	July 2021	Aug 2021	Sept 2021	Oct 2021	Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May/22 per July/21 Agreement -	Change in Ref. Level Post May/22
Algeria	1,057	898	912	922	932	942	952	962	972	982	992	1,002	1,057	-
Angola	1,528	1,298	1,319	1,334	1,348	1,363	1,377	1,392	1,406	1,421	1,435	1,450	1,528	-
Congo	325	276	281	284	287	290	293	296	300	303	306	309	325	-
Equatorial G.	127	108	110	111	112	114	115	116	117	118	120	121	127	-
Gabon	187	159	161	163	165	166	168	170	172	173	175	177	187	-
Iran	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4,370	n.a.	n.a.	n.a.
Iraq	4,653	3,954	4,016	4,060	4,104	4,149	4,193	4,237	4,281	4,325	2,639	4,414	4,803	150
Kuwait	2,809	2,387	2,425	2,452	2,478	2,505	2,532	2,558	2,585	2,612	1,718	2,665	2,959	150
Libya	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nigeria	1,829	1,554	1,579	1,596	1,614	1,631	1,649	1,666	1,683	1,701	1,718	1,735	1,829	-
Saudi Arabia*	11,000	9,347	9,495	9,600	9,704	9,809	9,913	10,018	10,122	10,227	10,331	10,436	11,500	-
UAE	3,168	2,692	2,735	2,765	2,795	2,825	2,855	2,885	2,916	2,946	2,976	3,006	3,500	332
Venezuela	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total OPEC	26,683	22,673	23,033	23,287	23,539	23,794	24,047	24,300	24,554	24,808	26,780	25,315	27,815	1,132
OPEC vs. ref.	**0**	**-4,010**	**-3,650**	**-3,396**	**-3,144**	**-2,889**	**-2,636**	**-2,383**	**-2,129**	**-1,875**	**97**	**-1,368**	**0**	**0**
*Saudi Arabia quota for Feb-Apr 2021 includes voluntary 1mmb/d cut; May-July includes w ind dow n of voluntary cut														
Non-OPEC	Reference Level Production	June 2021	July 2021	August 2021	Sept 2021	Oct 2021	Nov 2021	Dec 2021	January 2022	February 2022	March 2022		May/22 per July/21 Agreement -	Change in Ref. Level Post May/22
Russia	11,000	9,457	9,495	9,495	9,495	9,495	9,913	10,018	10,122	10,227	10,331	10,436	11,500	500
Kazakhstan	1,709	1,469	1,475	1,475	1,475	1,475	1,540	1,556	1,572	1,589	1,605	1,621	1,709	-
Oman	883	750	762	762	762	762	796	804	812	821	829	838	883	-
Azerbaijan	718	610	620	620	620	620	647	654	661	668	675	681	718	-
Malaysia	595	506	514	514	514	514	537	542	548	554	559	565	595	-
Bahrain	205	174	177	177	177	177	185	187	189	191	193	195	205	-
Sudan	75	64	65	65	65	65	68	69	69	70	71	71	75	-
South Sudan	130	110	112	112	112	112	117	118	119	121	122	123	130	-
Brunei	102	87	88	88	88	88	92	93	94	95	96	97	102	-
Total Non-OPEC	15,417	13,227	13,308	13,308	13,308	13,308	13,895	14,041	14,186	14,336	14,481	14,627	15,917	500
Non-OPEC vs. ref.	**0**	**-2,190**	**-2,109**	**-2,109**	**-2,109**	**-2,109**	**-1,522**	**-1,376**	**-1,231**	**-1,081**	**-936**	**-790**	**0**	**0**
Total OPEC+	42,100	35,900	36,341	36,595	36,847	37,102	37,942	38,341	38,740	39,144	41,261	39,942	43,732	1,632
OPEC+ vs ref.	**0**	**-6,200**	**-5,759**	**-5,505**	**-5,253**	**-4,998**	**-4,158**	**-3,759**	**-3,360**	**-2,956**	**-839**	**-2,158**	**0**	**0**

Source: OPEC

Oil – Next OPEC and non-OPEC ministerial meeting (ONOMM) is Thurs March 31

OPEC+ meeting is March 31

The short press release on the 26th OPEC and non-OPEC Ministerial Meeting (ONOMM) noted that the next ONOMM meeting will be held, via videoconference, on Thurs March 31. We continue to watch how the Ukraine-Russia conflict will impact the oil production within OPEC as more energy sanctions are held against Russia and those who support the nation throughout the conflict.

Oil – Saudi nest egg, its net foreign assets down $8.1b MoM in Jan

Saudi net foreign assets down $8.1b Mom in Jan

We thought there was likely some timing issues and that the use of Other People's Money was a key factor in the first big increase in Saudi net foreign assets in November. It looks like that was the case as Jan was back down -$8.1b MoM after a return to decline In December. Saudi Arabia's net foreign assets are what we call their nest egg to help them thru the Energy

Transition. Saudi Arabia is far from going broke but there has been a huge decline in the last 7 years, but it is still a very big nest egg. This net foreign asset depletion is why we have been highlighting that the primary financial theme for Saudi Arabia in the 2020s is getting Other People's Money (OPM) to fund as much of their Vision 2030 as possible. And no question, accessing OPM is helping to stop the decline in net foreign assets. Saudi's net foreign assets at Jan 31 were $429.4b, which was down $8.1b MoM from $437.5b in Dec and down $17.5b from $446.9b in Nov. Saudi Arabia's central bank (SAMA) doesn't provide explanations for the monthly swings. But it looks like Dec is back to normal after November being an outlier. Saudi net foreign assets at Jan 31 of $429.4b are down $16.1b YoY from $448.9b at Dec 31, 2020. The peak in Saudi net foreign assets was $737.0b on Aug 31, 2014, which means there has been a decline in the 86 months of 300.0b, or approx. $3.5b per month for that period. We believe this is why there has been such a big push in the last few use to get OPM so Saudi doesn't keep depleting its nest egg. And why we call this the #1 financial theme for Saudi Arabia in the 2020s – the increasing use of Other People's Money. And not just in Saudi Aramco, although we do expect to see more equity and bond sales from Aramco. Below is our graph of Saudi Arabia net foreign assets updated for the Jan 31 data.

Figure 30: Saudi Arabia Net Foreign Assets

Source: Bloomberg

Oil – Saudi MBS "simply, I do not care" if Biden misunderstands something about him

MBS "simply, I do not care" re Biden

The Atlantic's March 3 report "Absolute Power" [LINK] based on its interviews Saudi crown prince Mohammed bin Salman got some good headlines. MBS says their "*aim is to keep it and strengthen it*" talking about their long historical relationship with the US. The headlines were on his Biden comments and warning to not interfere in Saudi domestic issues. The Atlantic wrote "*We asked whether Biden misunderstands something about him. "Simply, I do not care," he replied. Alienating the Saudi monarchy, he suggested, would harm Biden's position. "It's up to him to think about the interests of America." He gave a shrug. "Go for it." For now, MBS's main request to the outside world, and especially the United States, is the usual request of misbehaving autocrats—namely, to stay out of his internal affairs. "We don't have the right to lecture you in America," he said. "The same goes the other way." Saudi affairs are for Saudis. "You don't have the right to interfere in our interior issues."* It reminds that no one should expect the Saudi's to bend over in anyway to the US on oil. The problem for Biden and the Democrats is that it's difficult to reverse their view on MBS. We look at it as another of the situations where Biden and the Democrats like to have a villain to make sure they can get people onside their views. But by doing so, it makes it difficult for Biden to back track in a public way. It's like now with the oil companies, they really can't say anything positive about them or ask them to help without looking very weak. They made the oil companies the villains to sell energy transition for so long. How can they go back and say something good. They made MBS out to be a huge villain, Biden's team making it clear that Biden wouldn't meet or talk with MBS, only the King, they pulled out a Patriot missile defense system from Saudi Arabia, and have supposedly not given in to Saudi's request for more Patriot missiles to replace the shot missiles. So no surprise by the MBS comments on US. And unfortunately for the US, it means that Saudi isn't likely to help the US unless it helps them. We will be watching to see if there are reports on restocking Patriot missiles and any potential MBS/Biden meeting. Our Supplemental Documents package includes The Atlantic report.

Saudi King tells Biden OPEC+ is managing oil markets just fine
MBS comments in The Atlantic remind of the recent Biden call to King Salman on potential Saudi help to produce more oil to help relieve oil and gasoline prices. In our Feb 13, 2022 Energy Tidbits, we wrote "*There was a good reminder this week to look at two leaders separately report on one conversation. On Wednesday, Biden called Saudi King Salman and one of the topics was oil and Saudi Arabia's ability to help Biden in his move to get more oil in the market. The White House wrote [LINK] "Both leaders further reiterated the United States' and Saudi Arabia's commitment to ensuring the stability of global energy supplies." It was interesting to see that most of the western media made it sound like Saudi was going to work with Biden. But that isn't what the Saudis said. King Salman basically told Biden OPEC+ is doing the right thing with their agreement ie. thanks but no thanks. This is why we tweeted [LINK] "Note @WhiteHouse didn't mention #KingSalman "stressed the importance of maintaining balance and stability in the oil markets, highlighting the role of the historic #OPEC+ agreement in this regard, and the importance of maintaining the agreement" to #Biden on #Oil. #OOTT. The Saudi Press Agency (official news from Saudi Arabia) wrote [LINK] "Regarding energy and oil markets, the Custodian of the Two Holy Mosques stressed the importance of maintaining balance and stability in the oil markets, highlighting the role of the historic OPEC Plus agreement in this regard, and the importance of maintaining the agreement*."

Oil – Will JCPOA deal be delayed as Russia tries to backdoor US Ukraine sanctions

Did Russia delay JCPOA?

We miss most of the Sunday morning news flows as we have a 7am MT news cut off. So there is a big question left hanging from Russia yesterday that might cause a delay from a JCPOA deal in the next few days ie. Tues or Wed? (i) Up until yesterday, we were in the camp that expected a JCPOA deal in the next few days. We think that is less likely but we still expect it to be done in a matter of weeks and not months. (ii) Earlier this morning, we tweeted [LINK] "*Will #JCPOA be delayed? RUS #Lavrov looks to be trying to backdoor US sanctions re Ukraine. Wants US gurantee that "current process launched" won't impact "free and full-fledged trading, economic, investment, military and technical cooperation with Iran". # OOTT*." We don't know exactly how Russia would use this backdoor to work around some of the Ukraine sanctions impact, but we can't believe the US isn't looking at this as a work around the sanctions. This is why we worry that it causes delays to the JCPOA resigning. TASS reported [LINK] "*Moscow has demanded written guarantees from Washington" ""We* *need guarantees these sanctions will in no way affect the trading, economic and investment relations contained in the Joint Comprehensive Plan of Action for the Iranian nuclear program. We have asked the American counterparts, who rule the roost here, to provide us with guarantees at least at the level of the secretary of state the current process launched by the United States will by no means affect our right to free and full-fledged trading, economic, investment, military and technical cooperation with Iran," Lavrov said."* (iii) prior to this we had thought a deal was imminent. Early yesterday morning, we tweeted [LINK] "*#JCPOA deal possibly on Tues/Wed? It was needed for Iran to at least agree to let @iaeaorg probe be done. @iaeaorg board scheduled quarterly Iran probe meeting is Mon. @SecBlinken is in Europe scheduled thru Tues. Thx @virtualnomad @RcShahla."* Prior to any JCPOA, a needed event was some sort of agreement for Iran to cooperate with the IAEA (International Atomic Energy Agency) on some sort of process. Yesterday, Bloomberg reported "*Iran agreed to provide international atomic monitors with documents that will help resolve a contentious investigation, paving the way for a broader nuclear agreement with world powers and a potential return of Iranian oil to global markets by the third quarter. The agreement was announced on Saturday in Tehran between International Atomic Energy Agency Director General Rafael Mariano Grossi and Iran's nuclear chief Mohammad Eslami. Potentially, it represents a key step toward restoring a 2015 agreement that curbed the Islamic Republic's nuclear program in exchange for sanctions relief."* Later on Saturday, the IAEA posted its joint release with Iran on this agreement. (b) On Wednesday, we tweeted [LINK] on a key logistical coincidence – Blinken is in Europe. "*#JCPOA. @SecBlinken is conveniently in Europe March 3-8. Would fit all the chatter that running out of time for a deal or no deal. Still in the camp that there is a return to JCPOA and any US gives will be messaged as a detail. #OOTT".* (iv) We also reminded of what we thought was the key Biden negotiating approach from the US State Department Jan 31 press briefing. On Thursday, we retweeted our Feb 1 tweet [LINK] "*Sounds like #Biden prepared to make last minute concessions to get #JCPOA. "We are prepared to go back into the deal. It doesn't mean that every detail of the negotiation has been resolved from our side, but we are prepared to make those tough choices" US State Dept. #OOTT."* The point is that this was a clear signal from the White House that they are prepared to give in on items to get the deal done and we believe any gives will be messaged as a detail. Our Supplemental Documents package includes the IAEA/Iran release and the TASS report.

On Feb 1, Biden gave his clearest indicator he was prepared to give a little

We have been of the view that Biden was going to give in to some degree to get a revised JCPOA. We still believe that. And we think that Biden has clearly signaled he was prepared to make changes. Our Feb 6, 2022 Energy Tidbits memo was titled "*Biden's Team Messages Prepared to Give on "Details" to Get JCPOA Done*". At that time, we wrote "*No question it was a week of indicators pointing to a JCPOA deal coming very soon. On Tuesday morning, we tweeted [LINK] "Sounds like #Biden prepared to make last minute concessions to get #JCPOA. "We are prepared to go back into the deal. It doesn't mean that every detail of the negotiation has been resolved from our side, but we are prepared to make those tough choices" US State Dept. #OOTT." Yesterday, we retweeted [LINK] the Tuesday tweet with the message "#JCPOA. #Biden had this briefing on Tues for a reason - he is prepared to give on something to get JCPOA done. Reality is that any give will be messaged as a "detail". #OOTT ." There was a US State Department background briefing on*

Monday afternoon (not Tues as in my tweet) on JCPOA and it seemed like there must be a reason. Last week's (Jan 30, 2022) Energy Tidbits noted the US official comment that they were "in the ballpark" for a JCPOA deal. At the Monday briefing, the Stated Dept official was specifically asked about the "in the ballpark" comment. The official didn't shoot down or confirm the question of the other US official saying they were in the ballpark for a deal. Rather he talked about making progress but still more work to be done. But then we saw what looked to be the one big opening given by the US as to why there will be a deal. At the start, he stuck to the line that its really up to Iran and that the US will remove sanctions that are inconsistent with the JCPOA. But then there is this exchange that he admits they will have to make some concessions but these are just details. The US State Dept transcript [LINK] has the official saying "Again, your question is kind of a different way to ask the prior question about what we think, where we are in the negotiations, which I don't want to – I'm not going to address outside of the negotiating room. I'd say the decisions that need to be made by the U.S. in order to come back to the deal have been made. We are prepared to go back into the deal. It doesn't mean that every detail of the negotiation has been resolved from our side, but we are prepared to make those tough choices."

Oil – Libya production down ~300,000 b/d

Libya oil down ~300,000 b/d

Earlier this morning, we tweeted [LINK] "*Looks like more #Libya #Oil risk near term. Production down to 920,000 b/d from 1.2 mmb/d on Wed says Oil Minister Oun reports @S_Elwardany hmohareb@bloomberg.net. Fields being shut down by groups, parallel govts being set up, #OOTT."* Our concern is that this is only just the start of a return to more oil supply interruptions especially with the east's move to set up the return of a parallel government. This morning, Bloomberg reported "*Libya's oil production has fallen below 1 million barrels a day, according to the energy minister, as the OPEC member plunges deeper into political crisis just as prices surge following Russia's invasion of Ukraine. Output is down to 920,000 barrels a day, Oil Minister Mohammed Oun said in a response to a query from Bloomberg. It stood at roughly 1.2 million barrels on Wednesday."* Our Supplemental Documents package includes the Bloomberg report.

Oil – Vitol's Muller bullish oil insights will get market attention tonight

Bullish Vitol oil comments

Earlier this morning, we tweeted [LINK] on the very near bullish comments for oil from Vitol's Head, Asia, Mike Muller on the Gulf Intelligence podcast Daily Energy Markets – March 6th [LINK]. We tweeted ""*1/2. Bullish & topical for #Oil markets tomorrow will be @vitolnews @michaelwmuller comments on @sean_evers podcast. Many great oil insights ie. shipping RUS oil around south of Africa adds 1 mth to supply chain #OOTT must listen to podcast."* And [LINK] "*2/2. @michaelwmuller closer "And the market is just telling you there's not enough oil in prompt end. The law of high prices is going to have to weed out the weaker demand and destroy it" Much more in the ppodcast. thx @sean_evers. #OOTT Bulish for #Oil".* A few other insights. Muller believes there would be a stock-out if Shell didn't get that Russia crude for refineries, likely in Germany. He thinks there will be other similar transactions to avoid stock-outs. Muller reminds that oil is still $20 off the all time high and oil markets haven't yet panicked in the same way as natural gas and coal markets. He sees close to 3 mmb/d hit to Russian exports so far. Our tweet noted a great reminder on logistics, Muller said "*Now with millions of barrels a day of Russian oil probably likely to be backed in. some of it perhaps making the long way around thru [??]around the bottom end of Africa to* *eastern Asian markets. The impact is going to be very profound. If you have to build a artificially long maritime pipeline to transport the oil to the other hemisphere, that does away with a month's worth of demand as that oil is in transit. It's like line fill on a pipeline."* He also warned on something that hasn't been said – a shortage of sweet barrels in the western hemisphere refining system. We ran out of time this morning to write more on this, but we refer you to the transcript we made of two of Muller's comments. They are very bullish and he clearly sees near term upside to oil from here. Plus it is important to remember, he warned us that the fundamentals were already tight and we were one disruption away from sending oil much higher. And what a disruption. Our Supplemental Documents package includes the transcript we made this morning.

Vitol warned one disruption away from markets getting stronger

It is important to remember that Muller warned us on this a month ago. Our Feb 6, 2022 Energy Tidbits highlighted Muller's comments on the Gulf Intelligence that morning. He normally appears on the first Sunday every month on the podcast. Here is what we wrote in our Feb 6, 2022 memo. "*Earlier this morning, we tweeted a thread of 3 tweets on a few of the many oil and gas insights from Mike Muller, Vitol Head Asia, on the Gulf Intelligence podcast "Daily Energy Markets – Feb 6th" [LINK]. We only tweeted a few of the key statements from his opening statement alone. He had many other good comments in the podcast that are definitely worth a listen. (i) Our 1st tweet [LINK] was "1/3. what an opening statement from @michaelwmuller to @sean_evers "market is telling you be careful, don't be short because we are one disruption, one refinery wobble away from markets getting even stronger. #OOTT". (ii) Our 2nd tweet [LINK] was "2/3. "inventories continue to sit at levels that are worrisome. spare capacity in OPEC+ is really down to 2 ½ or 3 members now & month after the month the 400,000 barrels per day that is being put on the market is actually, in effect, a much much smaller number than that" #OOTT". (iii) Our 3rd tweet [LINK] was "3/3. "we can debate whether it's the 2nd half of this year or sometime next year, #OPEC spare capacity reaches levels that are considered alarming""debate has now swung to how soon we need Iranian supply to help alleviate the situation". that's opening statement only. #OOTT ". (iv) Earlier, we noted Muller's comments on ConocoPhillips forecast of US oil growth. (v) Muller was asked by Gulf Intelligence Sean Evers "Mike, what are your thoughts coming from many that this is a year of two halves. The first half will be tight, the second half will ease off." Muller replied "so, Yes, I don't subscribe to the view that you have two halves, the second half being weak." (vi) a good reminder that most of the Iranian floating oil in storage is actually condensate. Muller said "Except, everybody is building into their balances for the second half, the return of Iranian crude. And it's really a question of when. Administratively, even if there were to be a reconciliation and an agreement to drop sanctions, the return of Iranian crude is not foreseeable in Q2, even under an express outcome. So one has to assume this is a second half event. And then it's a question of what sort of rate of ramp up and I think most observers will be aware that there is a floating inventory of unsold oil on ships that have been commonly referred to as the floating flotilla of South Pars condensate largely. That would obviously all get released into the market somewhat quicker and then the rate of ramp up will also be reasonably quick. But the fact that this is in people's balances already and has been. Without exception, every investment bank, every advisory* *consultant, every oil major, they all have a view that Iranian oil will be out later this year tells you the world needs this oil." (vii) There were more from Muller in the podcast including on how he sees China coming back into the oil market post new years. Our Supplemental Documents package includes the transcript of what we only had time to do this morning – Muller's first two comments.*

Oil – IEA coordinates 60 mmb release from strategic reserves

IEA announces SPR release

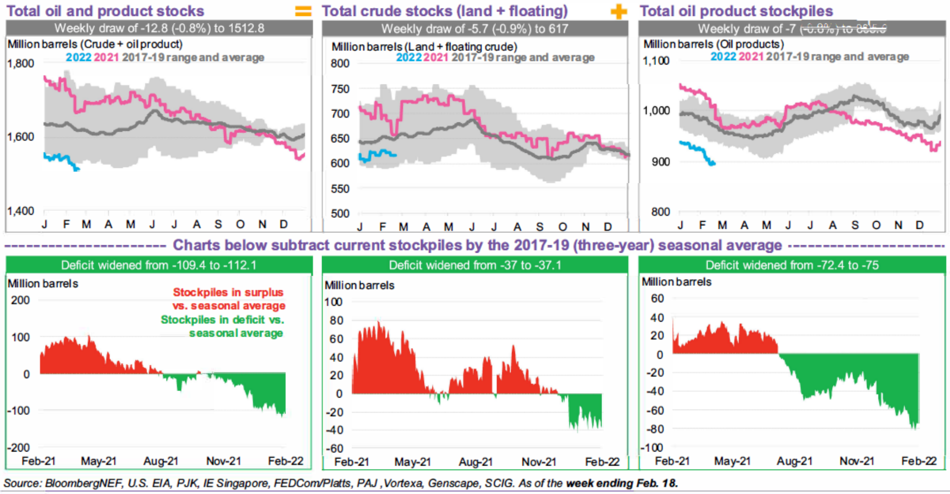
The IEA eld an extraordinary meeting with its 31 member countries in which they agreed to make 60 mmb of oil available following the Russian invasion of Ukraine [LINK]. This in hopes that it will signal to global energy markets that there will be no shortage of supplies as a result of the invasion of Ukraine. The member countries in the March 1 meeting declared their solidarity with Ukraine and condemned the action of the Russian government. The IEA noted "*It is heartening to see how quickly the global community has united to condemn Russia's actions and respond decisively. I am pleased that the IEA has also come together today to take action. The situation in energy markets is very serious and demands our full attention. Global energy security is under threat, putting the world economy at risk during a fragile stage of the recovery."* IEA members hold collectively 1.54 bnb in reserves, this release would account for 4% of the total and is equivalent to 2 mmb/d. The DOE will contribute 50% or 30 mmb to the coordinated release, which will include some sweet crude oil this time. S&P Global Platts reported Friday [LINK] morning that Japan would be contributing 7.5 mmb to the collective release. Japan only has 240 days worth of oil reserves in their stockpiles equating to 484 mmb as of December 2021. Japan had priorly committed a 1.64 mmb release in its joint effort with the US to combat inflation in oil prices. IEA director Faith Hill flagged for the potential of further emergency stockpile releases on March 3 following the decision by OPEC+ to stick to its planned 400,000 b/d production increase for April despite growing aversion to Russian oil. Our Supplemental Documents package includes the IEA release.

Oil – Bloomberg: Global oil inventories continue to show big deficit

BNEF's oil price indicators

For those with a Bloomberg terminal we recommend flipping thru BloombergNEF's "Oil Price Indicators" weekly that comes out on Mondays as it provides good charts depicting near-term global oil demand and supply indicators. The key data this week is the outlook for global oil and products stocks which delivers a bullish outlook at the widening of the deficit relative to the 2017-2019 average. The deficit for crude and product widened from 109.4 mmb to 112.1 mmb compared to the 2017-2019 average. For the week ended Feb 18, land crude oil storage in tracked regions rose by 1.6% WoW to 525.7 mmb. The stockpile deficit against the 5 yr average (2015-2019) narrowed from 74.2 mmb to 63.0 mmb. Total crude inventories decreased by 0.9% to 617.0 mmb, including global floating inventories. Product stocks were down 0.8% WoW with the stockpile deficit against the 3-year average widening from 72.4 mmb to 75.0 mmb. Gas oil and middle distillate stocks have narrowed against their three-year average deficit (2017-2019) of 43.0 mmb to 41.5 mmb. Jet fuel consumption by international departures rose by 89,000 b/d WoW while consumption by domestic passenger departures rose by 37,000 b/d. Global mobility indices were mixed over the week putting an end to four weeks of gains. The high frequency oil and product stockpile deficit against the three-year seasonal average (2017-2019) suggests the stockpile deficit has widened to near the post pandemic record set three weeks ago. Below is a snapshot of aggregate global stockpiles. Our Supplemental Documents package includes excerpts from the Bloomberg report.

Figure 31: Aggregate Global Oil and Product Stockpiles



Source: Bloomberg

Oil – Vortexa crude oil floating storage 91.27 mmb at March 4, -4.32 mmb WoW

Vortexa crude oil floating storage

Note that we are referencing the Vortexa global crude oil floating storage data posted on the Bloomberg terminal as of 3pm MT yesterday and that these estimates get revised over the course of the week. Note we do not check daily for the revisions, so our comments are compared to the Feb 25 and 18 estimates posted on Feb 28 at 4am MT. (i) As of 3pm MT yesterday, Bloomberg has posted Vortexa crude oil floating storage estimate as of March 4 was 91.27 mmb, -4.32 mmb YoY from 95.59 mmb as of Feb 25. Note Feb 25 was revised +1.39 mmb from the Bloomberg estimate posted as of 4am on Feb 28. The trend still fits what we have seen for the past few months that floating oil storage has generally been stuck around 100 mmb. (ii) Below are the last several weeks estimates made as of yesterday at 3pm MT, Feb 28 at 4am MT, and Feb 19 3pm MT. (iii) As a reminder, Vortexa estimates get revised over the weekend, next week and even weeks later. Yesterday's Feb 25 estimate is 95.59 mmb, which is +1.39 mmb vs 94.20 posted as of 4am on Feb 28. Yesterday's Feb 18 estimate of 90.58 mmb is revised -0.69 mmb vs 91.27 mmb posted as of 4am on Feb 28. (iv) March 4 estimate of 91.27 mmb is -131.19 mmb vs June 26, 2020 peak of 222.46 mmb. (v) March 4 estimate of 91.27 mmb is +14.98 mmb vs pre-Covid March 6, 2020 of 76.29 mmb. Below is the Bloomberg posted Vortexa crude oil floating storage data for the past two years as was posted yesterday at 3pm MT.

Figure 32: Vortexa Floating Storage March 4 Posted on Bloomberg 3pm MT Sat

Source: Bloomberg, Vortexa

Figure 33: Vortexa Estimates Mar 5 3pm MT, Feb 28 4am MT, and Feb 19 3pm MT

Est as of Mar 5, 3pm MT		Est as of Feb 28, 4am MT		Est as of Feb 19, 3pm MT	
FZWWFST VTXA Inde 03/03/2020 - 03/04/2022		FZWWFST VTXA Inde 02/25/2021 - 02/25/2022		FZWWFST VTXA Inde 02/17/2020 - 02/18/2022	
Date	FZWWFST VT... Mid Px	Date	FZWWFST V... Mid Px	Date	FZWWFST V... Mid Px
Fr 03/04/2022	91266	Fr 02/25/2022	94196	Fr 02/18/2022	87358
Fr 02/25/2022	95594	Fr 02/18/2022	91273	Fr 02/11/2022	105.508k
Fr 02/18/2022	90582	Fr 02/11/2022	105.439k	Fr 02/04/2022	108.86k
Fr 02/11/2022	105.596k	Fr 02/04/2022	109.303k	Fr 01/28/2022	100.734k
Fr 02/04/2022	108.301k	Fr 01/28/2022	100.26k	Fr 01/21/2022	103.197k
Fr 01/28/2022	97268	Fr 01/21/2022	100.67k	Fr 01/14/2022	88542
Fr 01/21/2022	100.968k	Fr 01/14/2022	84345	Fr 01/07/2022	97261
Fr 01/14/2022	85494	Fr 01/07/2022	92945	Fr 12/31/2021	100.096k
Fr 01/07/2022	93164	Fr 12/31/2021	95983	Fr 12/24/2021	101.285k
Fr 12/31/2021	96699	Fr 12/24/2021	97736	Fr 12/17/2021	99643
Fr 12/24/2021	95972	Fr 12/17/2021	96391	Fr 12/10/2021	94172

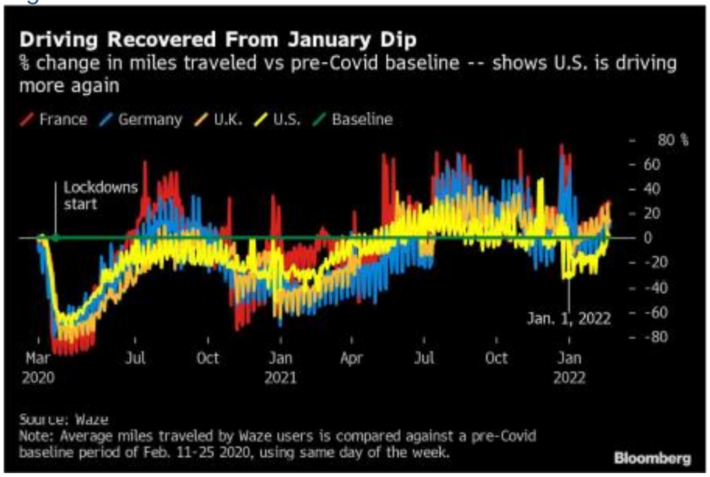
Source: Bloomberg, Vortexa

Oil – Bloomberg Oil Demand Monitor, Gas demand outlook uncertain given high prices

Bloomberg's Oil Demand Monitor

We recommend reading the weekly Bloomberg terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. High gas prices have begun to cloud the outlook for gasoline moving forward through 2022, which has not completely recovered since its fall throughout the pandemic. US gas demand was near the 5-year average last week but was still 2.7% below demand for the equivalent 2019 week; service stations sales in the UK trailed for the week ended Feb 20 trailed pre-pandemic levels by 13%. Regular gasoline prices in the US were above $3.60/gal for the first time since 2014, with sanctions against Russia causing additional strain on the security of oil supply with demand destruction likely the only outcome that will prevent oil prices increasing. Waze reports that the average number of miles driven per day has recovered from the early dip in 2022, with estimates now slightly above the Feb 2020 baseline; UK and France have also shown increases in miles driven as the Omicron wave continues to recede. Congestion levels in London were +14% above that of 2019 levels and New York was close at -2% below; the other 13 tracked cities were below the 2019 equivalent week. Car use has remained below 2019 levels while the volume of heavy goods vehicles and vans has increased, vehicle use on US highways was 0.6% below 2019 levels, after being 0.5% above the prior week; In the U.K., the use of all vehicles was 5% below a pre-pandemic benchmark. Air traffic data continued to show Europe and parts of Asia lagging against recovery in activity in North and South America, even though flight numbers are higher than they were in January; Europe remains down 27% in total flights. Refinery utilization was in the US 87.7%, +0.6% from 2019 levels with both US east and Midwest refineries up +26% and 6.8% respectively; US GoM refineries were down 1.6% versus 2019. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 34: Global Vehicle Miles Driven



Source: Bloomberg

Oil – Caixin PMI for Feb is up at 50.4 after last month 49.1

Caixin PMI up in Feb

On Monday morning, we tweeted [LINK] on the just released Caixin China Manufacturing PMI data for February. We tweeted "*China Caixin PMI for Feb 50.4 vs Est 49.3 & Jan 49.1. "Supply in the manufacturing sector improved. Overall demand was strong, though external demand remained subdued" "manufacturing sector stayed on the track for recovery" Thx @IHSMarkitPMI #OOTT.*" IHS highlighted that the index, in February, gained amid the after a slight improvement in the overall business conditions. It was up after Jan recorded the lowest PMI reading in the last 23 months and was the fourth time since February it had dipped negative; the increase was linked to a boost in output amid the fastest total sales increase since June. The increases in overall demand conditions helped drive a fresh increase in Feb while Covid-19 pressure continue to dampen overall gains as exports decreased during the month. The Caixin China General Manufacturing PMI data increased to 50.4 in Feb (vs estimate of 49.3) from 49.1 in January. Firms remained cautious with regards to their staffing levels, which fell for the seventh consecutive month, though job shedding has eased since January while capacity pressures remained present as backlogs across firms increased. We recommend reading the short release as opposed to just seeing the headlines as there is more color on China. The press release said *"Overall, manufacturing activity expanded in February. Supply recovered, while demand more clearly* *improved. The level of optimism about the future business outlook increased further. However, the job market remained under high pressure. And we still need to keep an eye on inflationary pressure. From January to February, several regions across China, including Jiangsu province and the Guangxi Zhuang and Inner Mongolia autonomous regions, suffered flare-ups of Covid-19. Epidemic control measures were strengthened, which restricted transportation and sales of manufactured goods. Under the "triple pressure" of demand contraction, supply shocks and weakening expectations, the manufacturing sector recovery is still not robust. Stabilizing economic growth remains an important focus of the government."* Our Supplement Documents package includes the Caixin release. [LINK]

Oil – New Jersey self serve stations fight reminds gasoline consumption is inelastic

New Jersey self service gas stations

I have been wondering when we would see the next battle to see if New Jersey would finally give in and allow self service gas stations. The push to self service gas stations really took off after the Arab Oil Embargo 1973-74. Up until then, there were very few self service pumps. But the lone holdout in the US is New Jersey that still doesn't allow self service gas stations. On Monday, legislation was introduced in the New Jersey Legislature that, if passed, would let gas stations provide self serve pumps in addition to continuing full service pumps. I was reviewing the New Jersey Gasoline-Convenience-Automotive Association release and background info on their support for the proposal, when we saw a comment that reminded us of the inelasticity of gasoline demand in the short term. There really isn't any way to replace driving in the short term. We tweeted [LINK] ""*no more competitive product than #Gasoline, it is the only business left where even a penny difference in price can make a huge difference" "many consumers will go out of their way just to save a few pennies per gallon" reminds @NJGCA_. If you have to drive, you drive. #OOTT."* To the most part, the car is a necessity for people in their daily lives. But we had to laugh at the comment that people will drive out of their way to save a few pennies per gallon. But I suspect many are like me who get gasoline at the convenient location, simply grin and bear it and tweet [LINK] to warn others of the price where I stopped "*"#Calgary gasoline prices at #Husky station up 11 cents WoW for 91 octane to $1.799 per litre*." Our Supplemental Documents package includes the NJGCA March 1 press release "Option Fueling Model Myths vs Facts". [LINK]

Energy Transition – Poland says time for Europe to slow down emissions push

Poland wants to slow down emissions fight

This week, we saw the most direct comment yet that the Europe should slow down their emissions reductions plan. To date, we see items like the UK saying they now need North Sea drilling or the starting comment before COP26 when Macron warned that the energy transition was going to lead to higher costs. This is the first we recall seeing where a country is saying that Europe should slow down their emissions reduction program. We had to pull out one of our favorite quotes this week – Winston Churchill's quote "never let a good crisis go to waste". Last Sunday afternoon, we tweeted [LINK] ""*never let a good crisis go to waste" #Churchill. #RussiaUkraine gives cover to #EU leaders to have a #MacronMoment and follow @moskwa_anna suggestion to hit pause button on #Fitfor55 #NetZero push? Thx @E_Krukowska #Oil #NatGas should be strong thru 2020s. #OOTT."* Anna Moskwa is Poland's Minister of Climate and Environment. Our position is clear – we believe there are politicians who are looking for an off ramp to be able to put a pause on the Net Zero push or in Europe's case its Fit for 55 push. Bloomberg reported "*Poland said the proposals put forward so far to toughen EU climate policies should be revised following the energy crisis, aggravated by the invasion of Ukraine by Russia. * The EU should aim for a low-carbon shift* *but it's "equally or even more important" to ensure energy independence, Climate Minister Anna Moskwa told reporters before an emergency meeting of the bloc's energy ministers. * "In the moment of crisis we expect the EU Emissions Trading System to be suspended until normal prices are restored in the European markets and member states," she said. * "Also, there's no time now for talks about the Fit for 55 package," she said, referring to a set of draft laws to align the EU to a more ambitious climate goal for 2030."* Our Supplemental Documents package includes the Bloomberg report.

2022 Prediction #1, leaders admit energy transition isn't working

Poland's warning that Europe should slow down its emissions reduction fits to our expectation for 2022. In our Dec 12, 2021 Energy Tidbits, we noted what we called our 2022 Prediction #1. At that time we wrote "*Its December and so analysts will soon be coming out with 2022 predictions, so we thought we would beat them with one of our main 2022 predictions. On Thursday, we tweeted [LINK] "Time for #2022Predictions. My #1 is more #EnergyTransition #NetZero leaders come out of closet, have a #MacronMoment ie. have "transition" not self inflicted shortage so 2021 energy crisis isn't every year. A return to #EnergySecurity = #Oil #NatGas #LNG strong thru 2030. #OOTT." This should not surprise readers as we have been noting the start of energy transition leaders starting to admit, in a politician's manner, that the energy transition isn't working as per aspirations and energy costs will be a lot higher than aspired. We have said for years that the energy transition will happen, but it will take longer, be bumpy road and cost more than the aspirations. Last week's (Dec 5, 2021) Energy Tidbits wrote on the ADNOC CEO speech There was much more in the speech, which is why we tweeted [LINK] "If more leaders have a "Macron Moment" in 2022, maybe COP28 UAE in 2023 can be catalyst for getting down to work on practical, commercial, sustainable energy solutions: pro climate/pro growth? See SAF Group transcript of @SultanAhmedalj8 #ADIPEC keynote. #EnergyTransition #OOTT." We do wonder if we will see more world leaders accept that the energy transition isn't working according to their aspirations and that there is an increasing risk of a decade of energy crisis like seen in Europe in H2/21 unless the world puts in an achievable energy transition plan." We think COP26 will turn out to be turning point, but a turning point to force energy transition leaders into changing their plan. It why we think we will more of the energy transition leaders come out of the closet and admit this in 2022. But what got us to tweet this week was after seeing Saudi Aramco CEO Nasser speech at the WPC in Houston. Nasser said "There is one more thing that can no longer remain unsaid. A majority of key stakeholders agree with these realities as much as they believe in addressing climate change. We know this, because they say so in private. They should say it publicly too. I understand their dilemma. Publicly admitting that oil and gas will play an essential and significant role, during the transition and beyond, will be hard for some." So our #1 2022 Prediction is that we will see leaders come out of the close and admit, in a politician's way, that the energy transition plan needs to be changed. The key result will be that fossil fuels are needed for way longer and the outlook for oil, natural gas and LNG will be stronger thru 2030 and beyond.*

Energy Transition – U.S. offshore wind power auction nets record $4.37bn

Record US offshore wind auction

There is no doubt that offshore wind is going to be the big renewable push around the world and including in the US. Its potentially big, scalable and avoids the biggest issue for wind onshore – getting communities to sign off on big wind farms that are near major populations. While the offshore wind industry is established in Europe, the U.S. has just two offshore wind farms, which operate off Rhode Island and Virginia, and another two projects approved for development. Last Friday, the US Department of Interior announced "*Biden-Harris Administration Sets Offshore Energy Records with $4.37 Billion in Winning Bids for Wind Sale*" [LINK] The DOI wrote "*Today's lease sale offered six lease areas totaling over 488,000 acres in the New York Bight for potential wind energy development and drew competitive winning bids from six companies totaling approximately $4.37 billion*." The auction blew by the prior offshore wind record of $405 million in 2018. The provisional winners and winning bids were Bight Wind Holders LLC $1.10b, Attentive Energy LLC $0.795b, Atlantic Shoares Offshore Wind Bight LLC $0.780b, OW Ocean Winds East LLC $0.765b, Invenergy Wind Offshore LLC $0.645b, and Mid-Atlantic Offshore Wind LLC $0.285b.

Energy Transition – Electrify America reminds cold weather hits charging time

Cold weather increases EV charge time

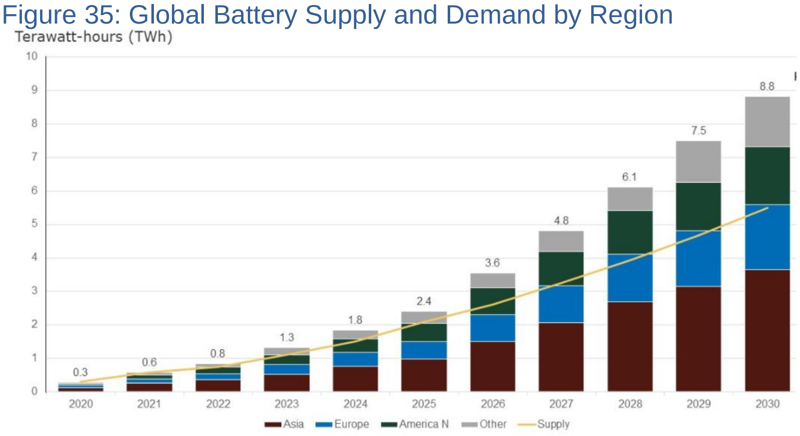
The headlines on EVs performance in the winter is normally on how range is hit by cold weather. But there was a good reminder that cold weather also hits charging times. Electrify America provided a few tips [LINK] to consider when determining whether an EV is right for you. Electrify highlights the department of Energy's cold weather testing revealed a reduction in fuel economy for gas, hybrid, and electric vehicles during cold weather with EVs undergoing a 39% reduction in fuel economy whereas gas vehicles had a reduction of 15-24%. In temperatures below 40 F, a University of Michigan Energy Institute study noted that charging power was also reduced. Electrify America noted that it is the EVs that control their own charging rate not the charger, with colder temperatures, EV software reduces its charging power to help avoid stressing the battery. The report noted "*The Idaho National Laboratory study found that at 32 degrees Fahrenheit, an EV battery took in 36% less energy than when the battery was charged for the same amount of time at 77 degrees Fahrenheit – this means the colder the weather, the more time the battery needed to charge.*" The report notes to plan your charges to insure enough power for your desired trips and to park indoors if possible. Note this is not in the cold Canada temps but more so for cold (around freezing) temps in the US. Electrify America is not an anti EV group, their mission aims to promote greater Zero-Emission Vehicle adoption to offer an ultra fast and convenient charging network to fuel today's EVs and lead to rapid growth in the future. Our Supplemental Documents package includes the Electrify America tips.

Energy Transition – Rystad reminds of an upcoming battery shortage in 2020s

The inevitable battery shortage

We continue to believe a major issue for the energy transition is still mostly overlooked – the shortage of critical minerals needed to support the energy transition. This will get reflected in items like an inability to deliver the needed number of batteries for the projected EVs growth. The reality is that something will have to give. There was a good Rystad Energy report [LINK] that global battery demand will surge 15x the levels seen in 2021 by 2030 to meet emission reduction targets. Rystad reported "*Rystad Energy research shows that although global battery demand in 2021 stood at 580 gigawatt-hours (GWh), more than double 2020's total, global supply was still able to keep up. However, that is set to change in the coming years as the appetite for battery technologies in passenger vehicles and stationary storage* *grows significantly, straining the supply chain."* Passenger EVs will be the most significant contributor to future battery growth accounting for 55% of total demand by 2030. Stationary storage will be the next biggest contributor to battery demand with a projected demand of more than 2.5 TWh in 2030, 29% of the total market. The need for storage is expected to skyrocket from the current levels of 139 GWh in 2021 due to the prominent roles that renewables will play as the world shifts from fossil fuels. On the supply future the Rystad release noted *"global supply will fall short without substantial investment or improvements in battery technology in the immediate future. Based on announced targets, battery supply will hit 5.5 TWh by 2030, meeting only about 60% of the expected demand. Gigafactories are being built quickly worldwide, and this supply outlook will likely change. Still, the importance of these continued investments cannot be understated."* Below is a chart depicting the forecasted global supply and demand growth for batteries. Our Supplemental Documents package includes the Rystad report.

Figure 35: Global Battery Supply and Demand by Region



Source: Rystad

Energy Transition – Increased battery costs drive up EV prices

EV prices increase with battery costs

There was a good reality check this week of how increasing critical metals costs are leading to big increases in battery costs and therefore EV costs. EV start-up Rivian automotive said Tuesday [LINK], it had increased selling prices by 20% due to inflationary pressures and higher battery component prices which angered some of their customers. Rivian stated that the price of R1T pickup trucks had increased by 17% and its R1S SUV by about 20% with price increases would affect even those who had pre-ordered the vehicles. One customer indicated that the cost of his R1T model had been increased by US$15,000. The base price of the Rivian R1T is rising to approximately US$79,500 from US$67,500, while the R1S is starting at US$84,500, up from US$70,000. Rivian ended up pulling back the price increases in pre-ordered vehicles after mounting public scrutiny. Tesla has also raised prices to offset the high costs related to logistics and supply chain disruptions.

Capital Markets – S&P TSX Index changes effective March 21

TSX Index changes effective March 21

After the market close on Friday, S&P announced changes to the S&P TSX 60 and S&P TSX Composite from their quarterly review [LINK] . The changes are effective prior to the open on Monday, March 21, 2022. There were very few changes. (i) For the TSX 60, Intact Financial

Corporation was added and Canopy Growth Corporation was deleted. (ii) For the TSX Composite, Headwater Exploration (the latest successful E&P run by Neil Rozell) and Nuvista Energy were added, and Silvercorp Metals was deleted.

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

@Energy_Tidbits on Twitter

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

LinkedIn – Look for quick energy items from me on LinkedIn

Look for energy items on LinkedIn

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

Misc Facts and Figures.

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

Two years ago, March 12, 2020, was Alberta's first Covid lockdown

It was March 5, 2020 that Alberta announced its first case of Covid, although it was later determined the first case was actually Feb 24, 2020. But that quickly escalated and it's still hard to believe it's been two years since the lockdown in Alberta first happened. But it was March 12, 2020 that Alberta put its first restrictions cancelling all gatherings with more than 250 people. That quickly escalated all schools being closed on March 15, 20-20, and then the declaration of the public health emergency on March 17.

Chiefs Andy Reid "it's like being a farmer, there is always work to do"

There was a great quote from Kansas City Chiefs Head Coach Andy Reid on how a great player like Patrick Mahomes keeps getting better. After the Chiefs lost to the Bengals in the AFC Championship, Reid said ""*Patrick's a great player, so he was trying to make a play," "Like I said, I've got to do a better job of giving him things that he can make plays with. I can do a lot better in that area*." Reid was asked on NFL Live on Friday on this quote and said what could he do to help Mahomes. Reid starts off with the great line "*It's like being a farmer, there is always work to do*" and how Patrick Mahomes "*is phenomenal on wanting to be the best*". It's a great reminder that there is always work to do.

Big man moving, Georgia nose tackle Jordan Davis runs 40-yards in 4.78 sec

We had the replays of the NFL Combine on after market and the one performance that is getting attention from more than NFL fans was the 40-yard by Georgia nose tackle Jordan Davis. The expressions used are Big Man Moving and similar. Davis is just under 6'7" and weighted in at 341 pounds. And ran the 40 in 4.78 seconds. If you watch video, he is a big man but is he smooth. lea

Figure 35: Jordan Davis runs 40-yard dash

Source: Arizona Sports

Titans Head Coach Vrabel reminds winning teams don't panic/give up

Listening to Tennessee Titans Head Coach Mike Vrabel reminded of what inevitably happens when there are market turns. We have all seen everyone make money in great markets, but, down markets tend to separate the wheat from the chaff. Vrabel comments on Wednesday's Good Morning Football reminded of why winning teams win. We created a transcript of his comments. On having they managed their successful season to be #1 AFC seed despite massive injuries including to Derek Henry. Vrabel "*early on in my coaching career, I thought man we really gotta eliminate distractions. And then, quickly I realized that's impossible. Distractions are going to come up, it's how we handle them. I figured if I don't panic, the coaches don't panic, and then, in turn, the players don't panic. So our job is to get guys ready. A testament to our coaches and those players that come in on Wednesday and be playing in the game for us on Sunday. There is a lot of those players that did that and helped us win. It's just something that we believe in. We try to give our guys the best chance, the best game plan. At times, it wasn't perfect, but the consistency that you mention is certainly something that I believe in*." On what are the Tennessee Titans like under Mike Vrabel. Vrabel "*having done this for a few years, culture to me and to us is what we look like at our worst. What we look like after 2 or 3 losses in a row, which we've had in the last 4 years. What we look like in a bad first half. What we look like when we are down 14-0 in this stadium here and to be able to come back and win. Because, how is the culture with the Rams right now, it's great. you have won. That's the easy way to define culture when things are good. We want to be able to stick together, we want to put the team first. There's a lot of things that we believe in terms of conditioning and physicality, but it comes down to* *competitiveness and winning. How committed are to winning are you and how competitive can we be*."

"When everyone knows what we know, what we know is no longer important"

It was NFL combine week, which meant there was a lot comments from NFL coaches and GMs on their philosophy of team building. There was a great insight from new New York Giants Asst GM Brandon Brown that reminded me of some of the best leaders in financial services industry where every day is different, just like every game is a new game. I have had the opportunity to work with some of the best in Canada in the financial services and one common denominator is that they never rest on yesterday's laurels, they keep pushing for a new edge on their competitors. A new edge, a new idea, a new lasting trend that others will eventually jump on, just an edge over the competitors to bring to their clients. Brown's comments also reminded why the followers can do okay but generally don't out to be the winner. The Giants website posted the video [LINK] and Brown speaks of his time with the Eagle on the approach he will bring to the Giants. Brown said "*Just being progressive. Pushing the needle. The biggest quote I like to use is 'When everyone knows what we know, what we know is no longer important.' You always want to be pushing the envelope forward and not be reactive to what's going on. Whether it's involving the scheme, whether it's involving the player usage, whether it's involving where to find players. That's a process I put into practice in Philadelphia, football players come from every walk of life. That was shown through finding players in Canada, finding players who played rugby, finding players that came from small schools. It doesn't matter. If you have the developmental mindset and the developmental physical traits, and you have the aptitude to learn, then it's our job in terms of personnel and coaching and player development to get you onto the right onboarding process and that maximizes you as you're going on in your role and eventually on game day*."

Colts HC Reich believes Wentz will have a lot of success, but might not be here

You gotta feel for Indianapolis Colts QB Carson Wentz being told, but not being told, that he isn't going to be on the roster on March 18, when additional 2022 guarantees kicks in. Another of the many comments from NFL Combine week, this one from Colts Head Coach Frank Reich on his QB Carson Wentz. He says he stills Wentz will have a lot of success but it might not be with the Colts. Football Outsiders reported [LINK] "*But surely, Colts coach Frank Reich would un-pop the balloon by playing good cop to his boss' bad cop when he spoke later on Tuesday. And Reich did indeed make more complementary remarks about Wentz's touchdown-interception ratio and the fact that he improved from 2020. But then the normally upbeat Reich downshifted into a mix of ominous warnings, fatalism, coach-speak, and therapeutic self-help aphorisms. "We know in this business, everybody and everything gets evaluated every year," Reich said. "And the second thing we know about that process is head coach and quarterback are under the most scrutiny." "I believe in Carson," Reich later added. "I stuck my neck out for him. Last year, I was a big part of that decision to get him here. I believe he's going to continue to have a lot of success at quarterback. That might be here. It might not be here. That's yet to be determined. But I still believe in the person; I still believe in the player."*