Energy Tidbits

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Biden's Team Messages Prepared to Give on "Details" to Get JCPOA Done

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

This week's memo highlights:

1. US messages it is prepared to make concessions to get JCPOA done, but any give will be messaged as a detail. (Click Here)
2. IEA warns that absent "*strong policies to curb demand growth*", "*gas supply adequacy could emerge as a concern for the medium term"* (Click Here)
3. Shell didn't name projects for its LNG supply growth, but lists LNG Canada Phase 2 as one of its three pre-FID LNG supply projects (Click Here)
4. TotalEnergies CEO signals a lifting of its Mozambique LNG force majeure could be in a few months (Click Here)
5. Many excellent oil market insights from Vitol's Head Asia, Mike Muller, this morning. (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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Natural Gas – Natural gas draw of 268 bcf, storage now -393 bcf YoY deficit

YoY storage at -393 bcf YoY deficit

Gas draws have increased as the colder weather has settled in across the US. The reality is that if we didn't have increasing US LNG exports, US gas storage would be a lot worse. The EIA reported a 268 bcf draw (vs 278 bcf draw expectations) for the Jan 28 week, which was above the 5-yr average draw of 150 bcf, and last year's draw of 192 bcf. Storage is 2.323 tcf as of Jan 28, decreasing the YoY deficit to -392 bcf, from 309 bcf last week and storage is 143 bcf below the 5-year average vs 15 bcf below last week. Below is the EIA's storage table from its Weekly Natural Gas Storage Report [LINK].

Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (01/28/21)		5-year average (2017-21)	
Region	01/28/22	01/21/22	net change	implied flow	Bcf	% change	Bcf	% change
East	541	609	-68	-68	590	-8.3	557	-2.9
Midwest	616	701	-85	-85	728	-15.4	669	-7.9
Mountain	133	143	-10	-10	160	-16.9	141	-5.7
Pacific	196	201	-5	-5	263	-25.5	217	-9.7
South Central	837	938	-101	-101	976	-14.2	883	-5.2
Salt	231	279	-48	-48	282	-18.1	269	-14.1
Nonsalt	606	658	-52	-52	694	-12.7	614	-1.3
Total	**2,323**	**2,591**	**-268**	**-268**	**2,716**	**-14.5**	**2,466**	**-5.8**

Source: EIA

Natural Gas – US Nov gas production up 1.4 bcf/d MoM, +4.9 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 November gas production. US gas production in November was 96.9 bcf/d, up MoM from October of 95.6 bcf/d and up 6.6 bcf/d YoY. Note that September's data was revised upwards by 0.1 bcf/d. 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 begins. There continues to be a YoY surplus of +6.6 bcf/d and +4.2 bcf/d for the month of October and September, respectively. November production is down 0.522 bcf/d since the Dec/19 peak of 97.0 bcf/d and 1.4 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	96.9
Dec	61.0	65.6	66.0	66.5	73.2	73.9	71.2	80.4	89.5	97.0	92.5	
Average	58.4	62.7	65.9	66.3	70.9	74.2	72.9	74.9	84.3	93.0	91.6	

Source: EIA

Natural Gas – US LNG exports +0.9 bcf/d YoY in Nov to 10.2 bcf/d

US Nov LNG +0.9 bcf/d YoY

US LNG exports for Nov saw a decline in the YoY increase which we expect will continue into 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 10.2 bcf/d in November, which is up +0.9 bcf/d YoY and up +0.6 bcf/d from October of 9.6 bcf/d. After recording record highs in the first half of 2021, exports decreased in September as production has also declined up slightly. The EIA expects exports will remain "at high levels" for the remaining months of 2021. Note our table rounds to one decimal and the actual is 10.213 bcf/d for November. 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	
Full Year	0.5	1.9	3.0	5.0	6.6	

Source: EIA

Natural Gas – US pipeline exports to Mexico down MoM to 5.5 bcf/d in November

US Nov pipeline exports to Mexico down MoM

The EIA Natural Gas Monthly also provides its "actuals" for gas pipeline exports to Mexico, which were 5.5 bcf/d in November, which was flat YoY and down from October 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	
Full Year	2.0	2.9	3.8	4.2	4.6	5.1	5.5	

Source: EIA

Big support for HH gas prices

Natural Gas – Big support for 2022/23 HH/AECO: Sabine Pass 6, Calcasieu Pass LNG

We have been highlighting how HH gas prices would be a lot lower with the record hot December temperatures if not for increasing LNG exports. And that there was added support for 2022/2023 HH prices with new LNG exports projects starting up – Sabine Pass Train 6 and Calcasieu Pass LNG. On Friday, Bloomberg reported that FERC authorized Cheniere to begin service at Sabine Pass Train 6 and Venture Global LNG is seeking permission to load its first LNG commissioning cargo at Calcasieu Pass LNG on or about Feb 9. Our July 25, 2021 Energy Tidbits highlighted our view that there is big potential upside to 2022/23 HH and AECO gas prices from the start up of feed gas into Cheniere Sabine Pass LNG Train 6 of 0.7 bcf/d and Calcasieu Pass LNG (1.3 bcf/d) around year end 2021 ie. an added >700 bcf of demand for US natural gas supply that could be exported in 2022.

Driftwood LNG to start construction in April

Natural Gas – Driftwood LNG construction start in Apr without FID or full financing

We really haven't focused much on Tellurian's Driftwood LNG project. Phase 1 is 2 plants with approx. 1.45 bcf/d of LNG capacity on the Gulf Coast. We have been like many others and waiting to see more specifics on financing potential or the likelihood of FID before jumping on the train. It looks like Tellurian is going to skip the traditional financing stages before starting construction of the Driftwood LNG project in April. Tellurian Executive Chairman said that construction will be starting even though they don't yet have the financing for the project and to do so without a FID. This is not the norm. On Wednesday, Platts [LINK], and others similarly, reported "*Driftwood LNG full construction to begin in April regardless of financing status: Tellurian". "Tellurian will begin full construction of its Driftwood LNG export terminal in Louisiana in April regardless of whether it has sufficient financing in place by that time to complete the first phase of the project, Executive Chairman Charif Souki said in a podcast posted on the company's website Feb. 1. Less than a week after telling S&P Global Platts that the developer was confident it would meet its project financing goals* *by the end of March, in line with its previous target, Souki said bank talks may extend "a little bit longer." "It is critical to get it right for the value of the shareholder, so we're not going to rush through that process," Souki said in his latest public message. "We're very comfortable starting the construction program without being completely sure that the financing will be put in place." "Regarding Driftwood LNG, Souki said FID "doesn't apply here."* Our Supplemental Documents package includes the Platts report.

Figure 5: Driftwood LNG Phase 1

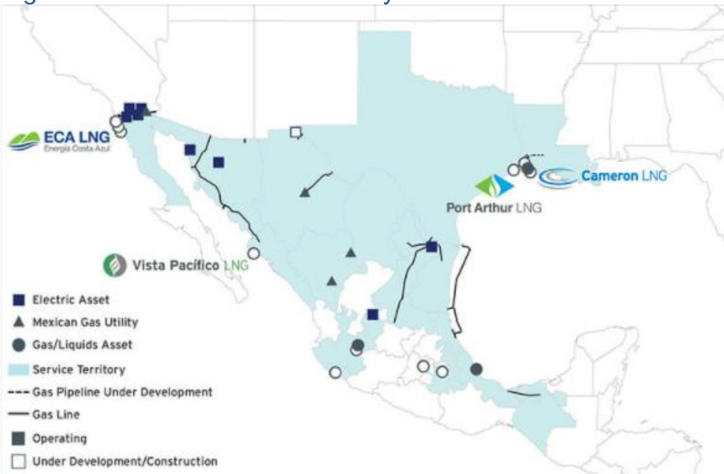
Source: Tellurian Nov 2021 Investor Presentation

Natural Gas – Sempra signs non-binding MOU for more Mexico LNG export

LNG development on Mexico Pacific Coast

Sempra and Mexico's Federal Electricity Commission (CFE) have signed a non-binding memorandum of understanding (MOU) for the development of multiple projects on the Pacific coast. Sempra issued a press release on Monday [LINK] that noted the two companies agreement to jointly develop the 0.53 bcf/d Vista Pacifico LNG Export facility in Topolobampo, Sinaloa, as well as a regasification project in Baja California Sur. The development would allow CFE to optimize natural gas and pipeline capacity from Texas to Topolobampo to increase gas supply at its power plants in the Baja California Sur and will cement President Obrador's commitment to supply the state with low-cost electricity and lower emission fuels. The project would be connected to two existing pipelines, including a high-pressure pipeline system Sempra owns in Sonora, Mexico. Sempra Infrastructure would need to build "a very small spur-type pipeline"[LINK]. The Sempra press release noted *"The MOU also addresses the return to service of the Guaymas–El Oro pipeline in Sonora through a proposed re-routing based on mutual understanding between the Yaqui community and CFE through continued respectful dialogue. Through this new route, CFE would be able to supply natural gas to industrial, commercial and residential markets in the Pacific Coast of Mexico, Baja California Sur, as well as the Vista Pacífico LNG facility."* Below is a map of the Sempra infrastructure in Mexico. Our Supplemental Documents package includes the Sempra press release.

Figure 6: EIA's Estimated Weekly US Oil Production



Source: NGI

Natural Gas – IEA, govts need to curb gas demand or else supply concern for mid term

IEA warns on supply risk

There was a very bullish analysis for LNG and natural gas from the IEA on Monday it its "*Gas Market Report, Q1-2022*". We tweeted [LINK] "*Very bullish for both #NatGas & #LNG in 2020s. @IEA, absent "strong policies to curb demand growth", "gas supply adequacy could emerge as a concern for the medium term" due to LNG project delays, relatively small # of LNG FIDs & "a structural decline in upstream spending". #OOTT."* The IEA had a very clear view that governments need to put in policies in place to curb natural gas demand growth. Think about that, it comes down to governments putting policies, taxes, whatever so industry and people will slow down their use of natural gas. Because if governments don't curb demand growth, there will likely be a supply shortfall. The IEA wrote "*However, in the absence of strong policies to curb demand growth to achieve net zero emission targets, gas supply adequacy could emerge as a concern for the medium term on a combination of recent LNG project delays, the relatively small number of new LNG final investment decisions (FIDs) in 2020-2021 and a structural decline in upstream spending since the early 2010s."* Our Supplemental Documents package includes excerpts from the IEA report. [LINK]

Natural Gas – LNG Canada Phase 2 is one of Shell's 3 pre-FID LNG projects to grow

Will Shell FID LNG Canada Phase 2?

Shell continues to indicate they plan to grow their LNG supply and LNG Canada Phase 2 is one of only three preFID LNG projects on the books. Shell reported its Q4 and held its Q4 call on Thursday. Unfortunately, none of the analysts asked about LNG growth projects so there was no additional insight beyond what was in the Q4 slide deck. When we saw the Q4 slide deck, we tweeted [LINK] "*Will @Shell FID #LNGCanada Phase 2? It's 1 of 3 #LNG pre-FID options. Surely Shell's Integrated Gas "grow the business. selective investment in competitive LNG assets" doesn't stop at under construction? Be huge for Flag of CanadaCdn #NatGas. See SAF 11/23 blog #OOTT".* Shell plans to grow natural gas share of total hydrocarbon production to 55%. For Integrated Gas, Shell writes "*Integrated Gas: "Grow the business. selective investment in competitive LNG assets".* If Shell were only going to develop the existing under construction LNG projects such as LNG Canada Phase 1, we don't think they would be saying "*grow the business*". Rather we believe they are clearly pointing to more LNG FIDs. LNG Canada Phase 2 is one of only three pre-FID LNG projects on their project list. Our Supplemental Documents package includes excerpts from the Shell Q4 call slide deck and our Nov 23, 2021 blog "*LNG Supply FIDs Starting to Happen, Does Shell Need to Get LNG Canada Phase 2 FID in the Queue To Protect Its Brownfield Advantages?*".

Shell is looking for outside Asia for LNG supply growth

Our Dec 26, 2021 Energy Tidbits highlighted TASS Dec 21 interview with the head of Shell's Russia operations (Ekaterina Grushetskaya) [LINK]. Her comments didn't name LNG Canada Phase 2, but her comments certainly put LNG Canada Phase 2 as one of the potential next LNG supply projects for Shell. In our Dec 26, memo, we wrote "*she made 4 key points on Shell's LNG outlook. (i) LNG demand to almost double from 2020 to 2040, which is +45 bcf/d. This was consistent to Shell's forecast such as we noted in our Aug 2, 2021 Energy Tidbits memo on Shell's Q2 results call. See below item. (ii) 75% of the demand growth is in Asia. This was always in Shell's outlook, but Grushetskaya's 75% puts in perspective at approx. +34 bcf/d to 2040. (iii) Russia is ideally located for LNG supply project development because of its proximity to Asian markets. (iv) Then Grushetskaya notes 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 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. Our Supplemental Documents package includes the TASS Grushetskaya interview.*

LNG Canada Phase 2 would be a game changer to Western Can natural gas

If Grushetskaya's "other regions" does include Shell's LNG Canada Phase 2, it would fit perfectly with our views that LNG Canada Phase 2 is ideally positioned to take advantage of the abrupt change in Asian LNG buyers to long term supply deals. We have been highlighting that the best validation for a LNG supply gap in the 2020s is that Asian LNG buyers have made an abrupt change to their LNG contracting and pivoted to trying to lock in long term LNG supply. On July 14, 2021 we posted our 8-pg "*Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs".* Here is an excerpt from

Natural Gas – Equinor's 0.63 bcf/d Melkoeya LNG restart revised to May 17, 2022

Equinor Melkoeya LNG restart May 17/22

The restart at the Melkoeya LNG facility has been pushed further back once again due to further developments of Covid-19. The facility has been offline for over a year. Equinor reported on Monday that the operational restrictions associated with the repairs and the uncertainty over the past months related to the pandemic are responsible for the delay in the restart to May 17 from the original date of March 31. The Equinor facility has been closed since September 2020 due to a build up of insects in the pre filters of the air intake-auto which caused an ignition. We last noted the Equinor facility on our May 2, 2021 Energy Tidbits which covered the first delay From Oct 2021 to March 31 2022. The Equinor release noted *"Extensive work has been carried out after the fire at the plant in September 2020. More than 22,000 components have been checked, 180 kilometres of electrical cables have been replaced and daily around 1,000 people have been working to get the plant back into operation. The latest wave of infections, combined with restrictions and narrow working areas, impacts the progress. At times, half of staff have been in quarantine and isolation."* Our Supplemental Documents package includes the Equinor release.

Natural Gas – Shell expects Prelude FLNG 0.47 bcf/d to be out for most of Q1

Shell Prelude FLNG out for most of Q1

Shell is different than the other supermajors in that it holds separate media and analyst calls, and their answers can be slightly different on the same point. Not materially but a reason why we have to listen to both calls. Our Jan 7, we tweeted [LINK] *"#Shell's unplanned #LNG supply interruption at Prelude LNG 0.47 bcf/d is expected to remain shut until at least late-Feb as repairs continue according to people with knowledge of the matter, reports @SStapczynski. See SAF 12/26/21 Energy Tidbits re NOPSEMA 12/23 order. #OOTT".* Shell was asked on the status of Prelude. We tweeted [LINK] after listening to the Shell analyst call and tweeted "*Re: #Shell's unplanned supply interruption at Prelude #LNG 0.47 bcf/d. In Q4 call, CFO Uhl "it was equipment failure that will take us some time to work thru and get back that on line and get that back on line safely". "some time" doesn't sound like in Q1? #OOTT*". Shell CFO Uhl said "*So Prelude, we had an event in the fourth quarter. An electric event that was very kind of specific, it was not a process issue or wider operational issue. it was equipment failure that will take us some time to work thru and get back that on line and get that back on line safely*", We later listened to the media call and CEO van Beurden replied ".. *but, indeed it is out at this point in time. And, for now, we expect it to be out for most of Q1."*

Natural Gas – TotalEnergies setting up for a return to Mozambique sometime after Q1

TotalEnergies Mozambique LNG

On Monday, we saw the most encouraging comments from TotalEnergies that a lifting of their Mozambique LNG force majeure could be coming in a matter of months. And if that's the case, then this is clearly a putting a clock on other LNG projects that are thinking about going FID to get in the queue for service companies and fabricators ie. LNG Canada Phase 2. We tweeted [LINK] "*Clock ticking for other #LNG FIDs to get in queue. @PPouyanne wants next MZ trip to be force majeure lift & retart of Phase 1 LNG. Remember @TotalEnergies restart unlocks 5 bcfd of MZ LNG, not just Phase 1 of 1.7 bcfd. See SAF Apr 28/20 blog. https://safgroup.ca/news-insights/ #OOTT #NatGas."* The Club of Mozambique reported on TotalEnergies CEO Pouyanne meeting with Mozambique President Nyusi in Mozambique. Pouyanne said his goal is to restart the project in 2022 and that "*we are ready*", but "*there is still some progress to be made in order to have sustained security. We want to see the population and villages return to their normal lives*." But the part that got our attention was how he wants his next trip to mark a restart. We do not think he would say that if he was looking out to H2/22, rather we think he was trying to point to something in Q2. Club of Mozambique wrote "*"I am optimistic", said Pouyanné, about the resumption of works, although without commitments. The CEO of TotalEnergies said that the next time he returns to Mozambique, he wants to be able to go "to Palma, Mocímboa da Praia and Mueda" "When I see that life is back to normal, with State services and the population, then the project can start over", he said."* Our Supplemental Documents package includes the Club of Mozambique report. [LINK]

Seems like TotalEnergies is setting up momentum to its restart in other ways

In the last two weeks, we have seen some other indicators that suggest TotalEnergies is setting up momentum to its big Mozambique LNG project. These are other smaller non-LNG items in and around Mozambique that we don't think they would be doing if they weren't looking at a near term restart. For some reason, the saying that came to mind was prettying up the pig for sale. (i) On Monday, Bloomberg reported "*TotalEnergies SE on Monday announced the acquisition of BP PLC's retail network, wholesale fuel business and logistics assets in Mozambique. The transaction covers a network of 26 service stations, a portfolio of business customers and 50% in Samcol, the logistics company previously jointly owned by TotalEnergies and BP, which operates the Matola, Beira and Nacala fuel import terminals."* (ii) We couldn't help wonder if this would have been done if Rwandan troops hadn't been the game changer to the Mozambique fight against the terrorists. And its still not clear what role or for how long Rwanda troops will be in Mozambique to keep security. On Monday, BusinessWire reported [LINK] "*During a visit to the country by Patrick Pouyanné, TotalEnergies (Paris:TTE) (LSE:TTE) (NYSE:TTE) and Rwanda Development Board, a Rwandan public institution responsible for accelerating Rwanda's economic development, have signed a Memorandum of Understanding (MoU) to develop collaboration on projects related to energies. The scope of the agreement covers in particular: -- The energy products distribution (including LPG, and electric charging), -- The supply of LPG as a substitute for burning biomass, -- The renewable hydro-electricity generation, -- The development of power storage solutions for the electrical network, -- The development of Natural Based Solution for carbon storage, -- The implementation of education and training programs on new energies and the energy transition."* (iii) On Tuesday, Club of Mozambique announced TotalEnergies signed a MOU with Mozambique to establish a new training program for 2,500 young people who will contribute to the Mozambique LNG. They wrote "*"We want the villagers, the people and the region to understand that we are there to give them some prosperity. We want more young people from Cabo Delgado and Mozambique to be involved in the projects," the TotalEnergies CEO, Patrick Pouyanne said, adding TotalEnergies wants more and more local content involved.*

Reminder Mozambique LNG delays are 5 bcf/d, not 1.7 bcf/d Total Phase 1

We think it is important to remember that TotalEnergies lifting the force majeure on its Mozambique LNG Phase 1 is much more than getting back on its 1.7 bcf/d Phase 1, its actually getting back into the timeline a total of 5 bcf/d. This was the reason 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] We thought, and still think, there has been a major change to the outlook for LNG supply in the 2020s and one that is still being overlooked – there is a big new LNG supply gap starting around 2025 that is hitting faster and bigger than anyone expects. 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 this situation backs up an additional 3.3 bcf/d of LNG supply that is also being counted on in all LNG supply forecasts. Total's Phase 2 of 1.3 bcf/d was to follow, and Exxon's Rozuma Phase 1 of 2.0 bcf/d was originally expected to go FID in 2019 but is now not expected to have a FID decision until 2022 at the earliest. Mozambique is considered a premium LNG supply region for Asia and is in LNG supply forecasts. Total's original in service for Phase 1 is 2024. We had been warning that Mozambique has a major LNG market impact and its why we posted the April 28 blog. Its also why earlier we said that this is starting the clock running for other LNG projects wanting to go FID to make their mind up ie. like LNG Canada Phase 2. Our Supplemental Documents package includes our 7-pg April 28, 2021 blog.

Natural Gas – Qatar need to increase supply so LNG "*prices stay reasonable*"

Qatar sees LNG prices as reasonable

There was an overlooked comment from Qatar on LNG prices from the reporting of the Qatar/EU discussions. The headlines were all about how Qatar stands ready to help. But the Peninsula reported [LINK] "*Discussions between the Minister and the EU's Commissioner for Energy also covered various aspects of the global gas industry. Minister Al-Kaabi noted that "the world oil and gas sector has been under-invested for the last few years, and that growing demand for cleaner, safer, and more reliable baseload energy means we all need to increase investment in the gas sector to make sure supply will be available and prices stay reasonable*." Is Qatar suggesting LNG prices, at least on a spot basis, in the $25 to $30 range are reasonable?

Natural Gas – India says "rapidly deploying natural gas in our energy mix"

India's natural gas push

We continue to believe India's move to increase natural gas to 15% of its energy mix is a game changer for LNG markets. Yesterday, India's minister for petroleum and natural gas, Hardeep Singh Puri, reminded on how India is moving on increasing natural gas in its energy mix. The Economic Times reported on Puri's comments at The World Energy Policy Summit 2022 "*Referring to India's target to reach net-zero carbon emissions by 2027, he said the government has already taken several measures to overhaul the hydrocarbon policy framework to ensure energy security for the country while pursuing the green path to progress."* And quoted Puri *"We are rapidly deploying natural gas in our energy mix by increasing its share from the current 6 per cent to 15 per cent by 2030*". This is not a new initiative, and Puri has spoken before with much more specific progress on this rapid buildout. In our Nov 21, 2021 Energy Tidbits, we reported on Puri's 12:45 min Al Arabiya interview [LINK]. We listened to the interview and edited/added the Al Arabiya quotes where needed. Puri is talking about the actions India is taking on the energy transition, starts on biofuels and then moves to natural gas. In our Nov 21 memo, we wrote "*at 3:23 min mark, Puri says "Gas. Pipelines. We are expecting 60 billion dollars of investment into gas pipelines. "We started in 2014 when he [Narendra Modi] became prime minister at 14 thousand kilometers. Today, we are 18.5 thousand kilometers, [and in the] next four months we will get another four thousand* *to [achieve] 22.5 thousand kilometers and we will take that up to 34 thousand kilometers to have the whole country be covered by gas pipelines. I could go on!" Puri is simply reinforcing what he said recently on India is actively expanding the natural gas pipeline/distribution system to make natural gas available to the whole country. Build out of infrastructure is the key and its happening*. Our Supplemental Documents package includes The Economics Times report.

Petronet sees India LNG imports +12.4 bcf/d to reach 15.8 bcf/d in 2030

To put in perspective, India's push to get natural gas to 15% of its energy mix would mean added LNG imports of approx. 3 times the capacity of Qatar's big LNG expansion project. The best illustration of the added LNG import impact was from Petronet. Our October 24, 2021 Energy Tidbits memo wrote "*We continue to believe India's moves to increase natural gas to 15% of its energy mix by 2030 is a game changer for LNG markets in the 2020s. Especially as we have seen clear signs of action toward that target. On Friday, there was very bullish for India's LNG import growth from Petronet CEO Singh at the India Energy Forum on Friday. As soon as we saw the reports, we tweeted [LINK] "Bullish for #LNG #NatGas in 2020s. #Petronet CEO fcasts India LNG imports +12.4 bcfd to reach 15.8 bcfd (120 MTPA) in 2030. In line with his June est, see below SAF Group June 20 Energy Tidbits #Petronet sees LNG imports +13 bcfd to 2030. Thx @JournoDebjit @rajeshsing13 #OOTT". Bloomberg's India energy team reported "India's import of natural gas is expected to hit 120 million tons/year by 2030 as the nation targets an energy mix goal, Akshay Kumar Singh, CEO of Petronet LNG, said at the India Energy Forum by CERAWeek. NOTE: India aims to boost use to natural gas to 15% of primary energy mix from about 6% now. * India's current annual LNG import is about 26 million tons". Singh is forecasting India's LNG imports to grow from current 26 MTPA (3.4 bcf/d) to 120 MTPA (15.8 bcf/d) in 2030. That is an increase of 12.4 bcf/d to 2030. This is very bullish for LNG and natural gas in the 2020s. Our Supplemental Documents package includes the Bloomberg report."*

India has been serious to expand natural gas infrastructure

The biggest change in the past 2 years is that India is getting serious about increasing natural gas consumption including the infrastructure. Our September 19, 2021 Energy Tidbits memo wrote "*Natural Gas – India to expand natural gas distribution to cover 96% of population. LNG buyers better hope that the security picture in Mozambique get settled to an acceptable level for TotalEnergies, Exxon and others to get back to moving on 5 bcf/d of LNG capacity that has been held up now for several months. Because we continue to see support for the major LNG demand theme for the 2020s – India's target to double the share of natural gas in its energy mix to 15% by 2030. Yesterday, we retweeted [LINK] "Positive to #LNG. India to expand #NatGas distribution to cover 96% of population. Fits move to double #NatGas share of energy mix to 15% by 2030, which #Petronet CEO est adds 13 bcf/d #LNG demand. See [LINK]." Our retweet was of an India Ministry of Petroleum and Natural Gas tweet [LINK] on the new 11th round of bidding for city distribution of natural gas, and that "once completed, the CGD network in India shall cover 86% of the Country's area and 96% of the population". This will take years to roll out but covering 86% of India and 96% of its population is a good indicator for a strong ramp* *up in natural gas uses post 2025. And we expect that the industrial/commercial coverage ratio is much the same ie. call it 90% of India."*

Remember Modi's highlighted India "should be a gas-based economy"

Our August 15, 2021 Energy Tidbits memo highlighted Modi's 75th anniversary of India independence speech. Modi has been stressing the importance to increase natural gas share of India's energy mix from 6% to 15% by 2030. India posted the Modi speech transcript at [LINK]. This is a big picture speech about the future for India and Modi's tries to set a vision for the next 25 years to the 100th anniversary. It's a general speech but it is also good reminder to people in the west that India still has a long way to go to catch up. Modi notes how they *"have made authentic efforts to construct toilets in 100% households*". One of his major themes was that India should be a gas based economy but targets to be energy independent in 25 years. Modi didn't get into his policy to increase natural gas share of the energy mix from 6% to 15% by 2030 and only gave gas a glancing mention, but the mention is significant – India "should be a gas based economy". Our August 15, 2021 Energy Tidbits had more detailed on the other Modi speech themes.

Natural Gas – Wonder if Exxon is hinting on a potential long term LNG deal with India

Is Exxon hinting on a long term LNG India deal?

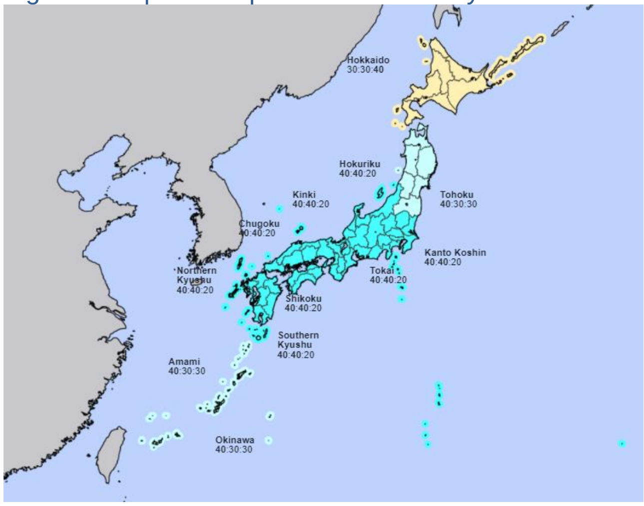
The supermajors people are normally careful for what they say but we also find they like to drop hints or teases on what may be to come. So we always look at what they say to see if there is some hint of something to come. In this case, we have to wonder if Exxon mgmt is hinting that a long term LNG supply deal with India is coming in the near term. The other reason is that Exxon's Investor Day is on March 2, 2022 and big companies like to have news for their investor day. We suspect we will find out in the next month if there is a long term LNG supply deal with India. On Friday, Reuters reported "*Global energy major ExxonMobil (XOM.N) is looking at signing more long-term gas sales deals with India as rising spot prices have added to the appeal of longer duration contracts. "We're certainly happy to work with our friends and partners in India to sign the kind of long-term contracts that allow a large part of the energy demand to be de risked from a price perspective," said Monte Dobson, CEO, ExxonMobil Gas (India)."* And "*Dobson said India needs to build a "stable base" of long-term contracts to de-risk its self from price volatility. He said people who had secured more of their supply in the long term were "feeling a lot better". "So that to me is the real solution," Dobson said at World Energy Policy Summit."* Our Supplemental Documents package includes the Reuters report.

Natural Gas – Japan expects continued cold for first half of February

Japan below average temp next few weeks

It was a warm December in Japan, but the weather turned colder in Jan and looks to be staying cold for the first half of February. The Japan Meteorological Agency posts its weekly temperature probability forecast for the next 4 weeks on Thursday mornings. [LINK]. JMA forecasts that Japan will experience well below normal temperatures for the first two weeks of Feb before returning to above average temperatures towards the end of the month. The northern regions of Japan are expected to have warmer temperatures while the southern regions are expected to be below average temperatures. Below is the JMA forecast for the next four weeks of the forecast period (Feb 5 - Mar 4), which expects below normal temperatures for the month of February.

Figure 7: Japan Temperature Probability Forecast Feb 5 – Mar 4



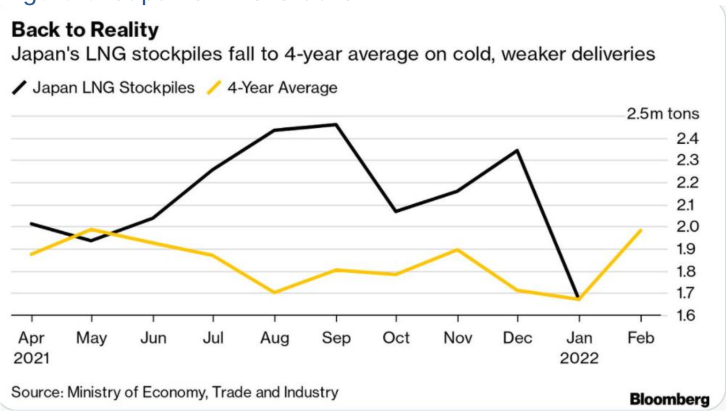
Source: Japan Meteorological Agency

Natural Gas – Japan LNG inventories slip 40% in January from cold weather

Japan LNG stocks back to normal

We are seeing the impact of colder weather in January in Japan on its LNG stocks and why Japan is back in the market getting spot LNG cargos. Every week, Bloomberg's Stephen Stapczynski & Shoko Oda tweet on the Japan's METI weekly LNG stockpiles. On Tuesday, they tweeted [LINK] "*Japan's LNG stockpiles extend slide on cold weather and weak deliveries. Japan LNG inventories held by utilities slipped to 1.67m tons, the 4-year average for this time of year. Thats quite a tumble, since supplies were 40% above avg in Dec.*" Below is their graph.

Figure 8: Japan's LNG Stocks



Source: Bloomberg, METI

Natural Gas – No surprise, Japan to ensure own gas needs before helping Europe

Japan priority is its own gas needs

The reports are that the US has asked Japan to be part of the coalition to help supply natural gas/LNG to Europe. Japan did not comment directly on the US request, but reminded they are not in a position to help the US objective as they have to make sure they have enough natural gas/LNG. Bloomberg reported Japan's "*Chief Cabinet Secretary Hirokazu Matsuno said on Friday, adding that the government is aware that the nation's electricity and gas companies have about two to three weeks worth of inventories*." And also ""*Japan is an energy importer, and we are resource-scarce," said Trade Minister Koichi Hagiuda at a press conference Friday in Tokyo. "There's forecast for a very cold winter this year, so we do need to make sure our own energy demands are met. Japan will consider what it can do to contribute to the international community then.*" Our Supplemental Documents package includes the Bloomberg report.

Natural Gas – Another Asian buyer (CNPC) locks up long term Gazprom natural gas

CNPC locks in 30 yr gas pipeline supply

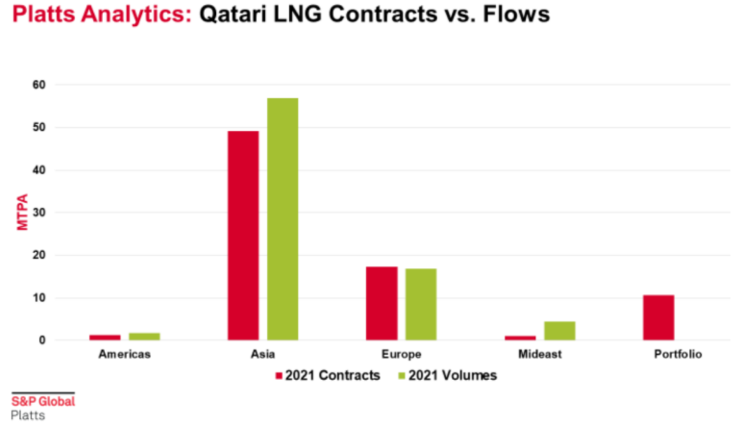
This doesn't fit into the category of Asian buyers locking up long term LNG supply and how that has been the abrupt change since the end of Q2/21. But it reinforces the concept that Asian buyers ant to lcok up long term natural gas supply past 2030. On Friday, Gazprom and CNPC signed an agreement to and additional supply 0.98 bcf/d to China via the far east pipeline originating in Russia. This is the second sale and purchase agreement signed between the two companies. The first deal was inked in 2014 with the agreement of 3.67 bcf/d over a 30-year period and marked the first ever Russia-China gas deal with flows beginning in Dec 2019. The new contract will bring the total natural gas supplied to 4.64 bcf/d, including the deliveries via the Power of Siberia Trunkline. The Gazprom press release noted [LINK] *"This is already a second contract to be signed for Russian gas supplies to China, and it is indicative of the exceptionally strong mutual trust and partnership between our countries and companies. Our Chinese partners from CNPC have already seen for themselves that Gazprom is a reliable gas supplier."* Our Supplemental Documents package includes the Gazprom press release.

Natural Gas – Qatar "keeping our contractual word is sacrosanct" ie. can't help EU

Can Qatar get more LNG to EU?

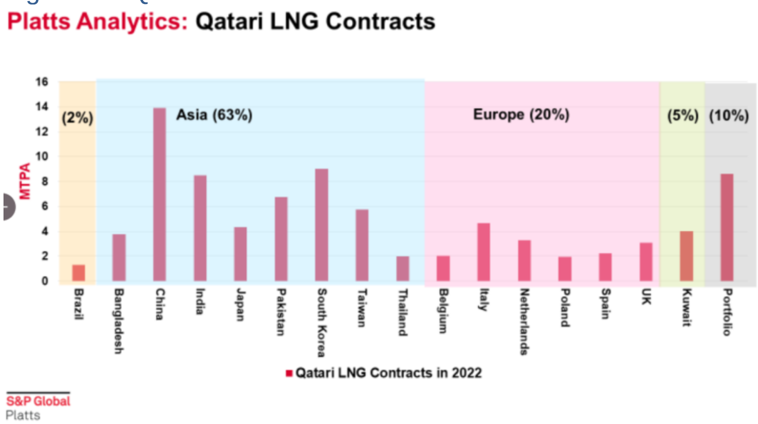
There shouldn't be any surprise to hear Qatar say that they only have limited ability to provide extra LNG volumes to Europe. Last week's (Jan 30, 2022) Energy Tidbits noted the Biden/Blinken asking major LNG and natural gas producers to surge their production for more LNG/natural gas to Europe. We started off our commentary "*Sometimes, we have to shake our head when we hear the Biden administration speak on oil and gas operations*." And "*The focus came firstly on Qatar. And Qatar has been pretty clear that it has been selling all the LNG it can, and that buyers have been lining up to get Qatar LNG in Q4/21. See below prior Qatar comments. (iv) We don't know the specific Qatar LNG contracts so don't know if there are minimum volumes that must be delivered each month and how long Qatar would have to replace any below contract volumes that are over the minimum. (v) Having said that, absent Qatar being able to break contracts, there would be some flexibility depending upon the commitments made to date on their "portfolio" volumes. Portfolio volumes are LNG volumes that aren't part of any contracted volumes. But Qatar may very well have committed some of these portfolio volumes for more than a tanker or month. On Thursday, we tweeted [LINK] "Excellent breakdown of Qatar #LNG contracts incl how much portfolio LNG might be available to help Europe. Thx @ira_joseph #OOTT." Platts tweeted [LINK] the two below graphs and noted "A couple of charts in support. Qatar largely sends #LNG where it's contracted & portfolios provide swing. In 2021, portfolions swung largely to Asia. In 2022, the contract structure is similar, so buyers & sellers will have to agree (read benefit) from wholesale swings in flows."* On Tuesday, the Peninsula reported on Qatar energy minister's call with the EU. They wrote "*During the meeting, which was held virtually, the Minister reaffirmed that "Qatar stands ready to support our partners around the world in times of need." As the largest LNG producer in the world, the Minister expressed "pride to have never missed a single cargo delivery for the last 25 years to all our partners around the world." He also stressed that "keeping our contractual word is sacrosanct in Qatar, and therefore we have the full trust of our global commercial partners and buyers." The Minister expressed hope that tensions in Europe can be resolved diplomatically, so that all suppliers can work together to ensure energy security for the short- and long-terms. "The volume of gas needed by the EU cannot be replaced by anyone unilaterally, without disturbing supplies to other regions around the world. Europe's energy security requires a collective effort from many parties," he remarked."* Below are the Platts graphs referenced above. Our Supplemental Documents package includes the Peninsula report.

Figure 9: Qatari LNG Contracts vs. Flows



Source: Platts

Figure 10: Qatari LNG Contracts



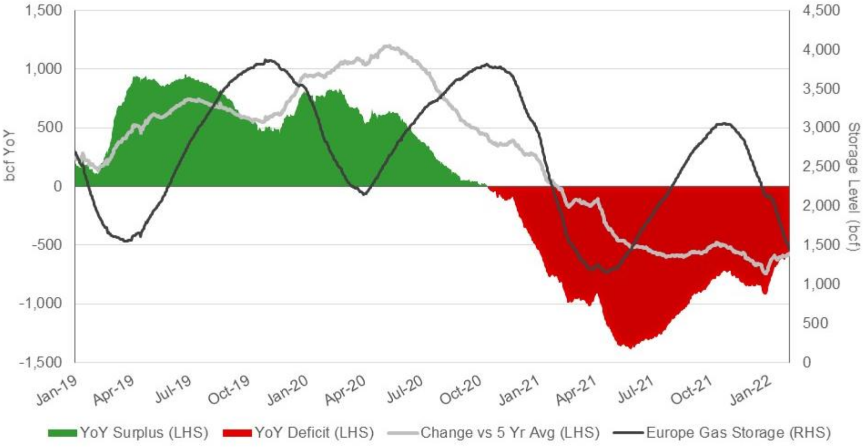
Source: Platts

Natural Gas – Europe storage only 37.04% full vs last year of 50.45%

Europe storage down to 37.04% full

Europe has been lucky that it hasn't been cold because the combination of a warm December, the massive increase in US LNG to Europe, and higher winds in January is having an impact on Europe gas storage. The YoY Europe storage gap has narrowed this week since the start of the winter natural gas season. Europe gas storage started down 18.52% YoY and is now down 13.41% as Europe has been experiencing warmer than normal temperatures recently. 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 2 is still only at 37.04%, which is -13.41% less than last year levels of 50.45% and are -15.08% below the 5-year average of 52.12%. 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.

Figure 11: Europe Gas Storage Level



Source: Bloomberg

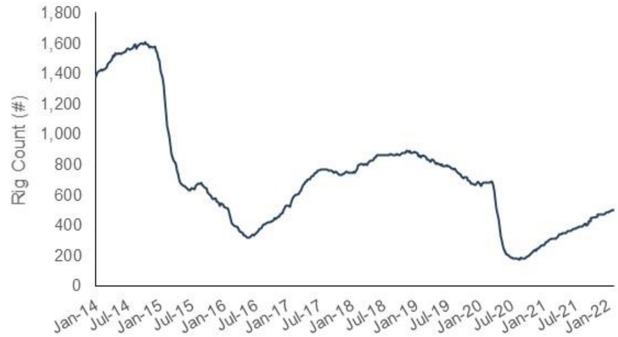
Oil – US oil rigs +2 WoW at 497 oil rigs at Feb 4

US oil rigs +2 WoW

Baker Hughes released its weekly North American drilling activity data on Friday. There has been some very cold weather in the US that we expect affected rig moves this week. It was very cold in all of the key oil and gas regions, including below snow and ice in parts of the Permian so no surprise that there has been no significant change this week. 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 +2 WoW at 497 oil rigs. Oil rigs are +325 off the bottom of 172 in Aug14/2020 week. There were marginal basin changes this week; Permian was up +1 at 294 rigs this week while Bakken was up +4 rigs at 31 rigs increasing for the first time in 8 weeks. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by 186 to 497 oil rigs (-26%). US

Gas rigs were +1 WoW reflecting the heightened $4 HH. Below is our graph of US oil rigs since January 1, 2014.

Figure 12: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

Oil – US frac spreads +3 to 264 for week ended Feb 4

Frac spreads +3 to 264

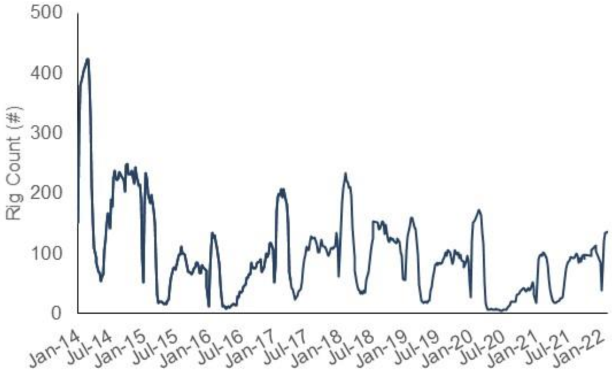
Mark Rossano (C6 Capital Holdings) held his weekly US frac spread recap for week ended Feb 4 on the Primary Vision network. YouTube video is at [LINK]. For the week ended Feb 4, US frac spreads at the high point in the week were +3 to 264. Rossano started off the call with something we weren't aware of for how he gets his frac spread number. He said he always takes the high point in the week so it does not represent the frac spreads as of the end of the week, in this case Feb 4. In this case, the high point was at the beginning of the week. He then says they had some weather issues, but not like last year, but freezing roads etc. whereas last year, it was freezing everything. So the freezing roads did have an impact on the frac spreads late in the week but these were not adjusted out of the 264 frac spreads, Rossano said about 3-5% in the Mid Con (Oklahoma) and 3% in the Permian mostly due to frozen roads. He is so comfortable with this being temporary which is why he used the high point for the week. And he said that most of it is back on line or will be back on line by today. Some of the increase is in the Bakken and he thinks need more to get to the 20 to 22 level to get things growing again, he did not say the current levels but the inference is something below 20 to 22.. Rossano still sees it on track to add another 10 spreads, the 274 was where they peaked before Xmas and sees getting back there in the next couple weeks

Oil – Total Cdn rigs +1 to 218 total rigs, +47 rigs YoY

Cdn rigs +1 WoW

Total Cdn rigs were up +1 this week to 218 total rigs. Cdn oil rigs were +1 at 136 rigs. Cdn gas rigs were flat at 82 gas rigs. We expect that Cdn rigs will start to decline this week or next to mark the start to the end of winter drilling. Total rigs are now +204 since the June 26, 2020 all-time low. Cdn drilling has recovered YoY, a year ago Cdn oil rigs were 95 and Cdn gas rigs were 76 for a total Cdn rigs of 171, meaning total Cdn rigs are +47 YoY and total rigs are -22 vs 2019.

Figure 13: Baker Hughes Total Canadian Oil Rigs



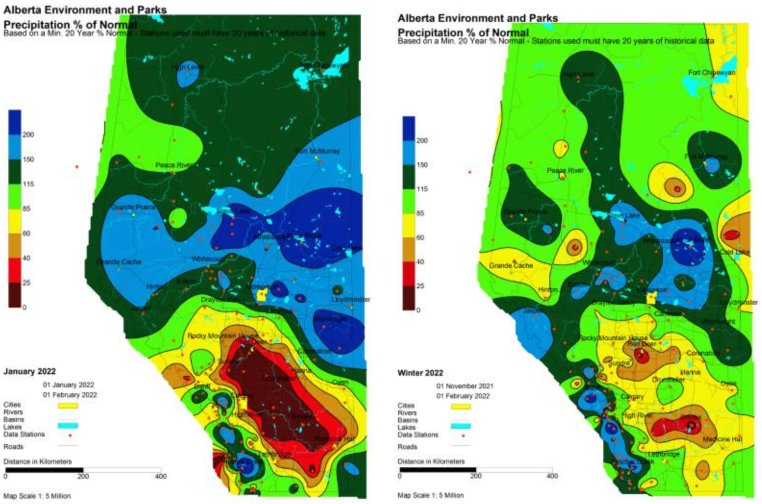
Source: Baker Hughes

Oil – Still some risk to quick end to Cdn winter drilling if it warms up

It was a good snow month in Alberta in January after a low snow start to the winter. This will help minimize the risk of a quick end to winter drilling if it warms up. The more snow the better as it provides an insulating blanket to the ground to keep it frozen for longer as it warms up. Even with a lot of snow in January, most of NW Alberta has still have less than normal snowfall from Nov 1 thru Jan 31. However, the sarcastic comment that we have heard from some of the NE BC Montney players is that it wouldn't make a difference if there was a quick end to winter drilling because they can't get any new licenses/permits with the outstanding Blueberry issue. Below are the Alberta accumulated precipitation maps for the month of January, and for the winter season November 1 thru January 31.

Below normal snow in Alberta

Figure 14: Accumulated Precipitation in Alberta For Jan, and Nov 1 thru Jan 31



Source: Alberta

Oil – US weekly oil production down -0.100 mmb/d at 11.5 mmb/d

As expected, it looks like cold, and snow likely had an impact on US oil production. Weekly production in the US was down -0.100 mmb/d this week at 11.5 mmb/d for the week ended Jan 28. Lower 48 production drove total production and was down from last weeks level at 11.1 this week; US oil production is up YoY at +0.600 mmb/d and is still down significantly at -1.6 mmb/d since the 2020 peak of 13.1 mmb/d on March 13. The decline in production is attributed to the freeze in Texas throughout the week and continued colder weather and snows in the Bakken. Absent further weather impacts, we would expect US oil production to remain relatively flat if not inch up a little higher in Q1/22.

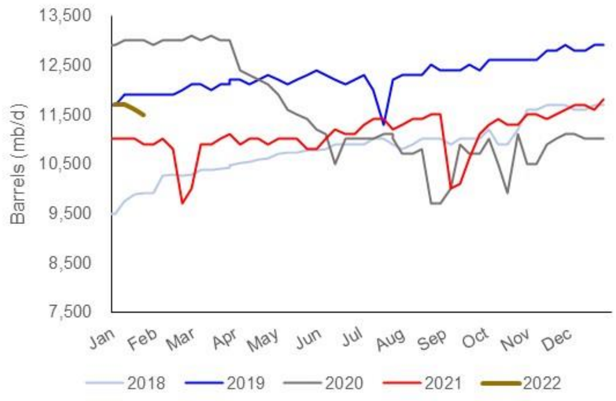
US oil production down WoW

Figure 15: EIA's Estimated Weekly US Oil Production

	Week 1		Week 2		Week 3		Week 4		Week 5	
Year-Month	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
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		

Source: EIA

Figure 16: US Weekly Oil Production



Source: EIA, SAF

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

EIA Form 914 October

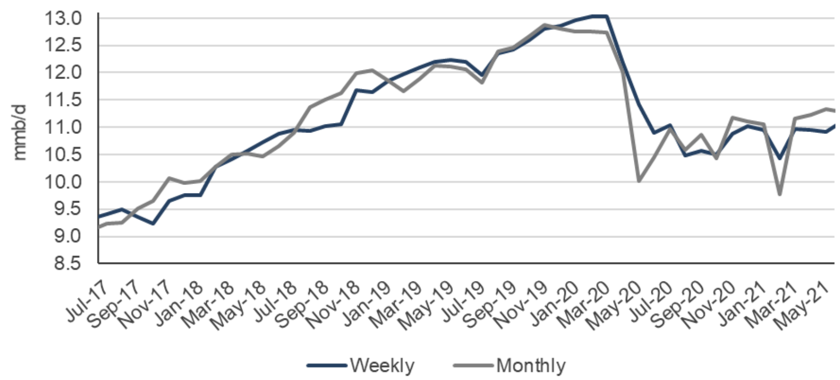
The EIA released its Form 914 data [LINK] on Monday, which is the EIA's "actuals" for November US oil and natural gas production. Form 914 shows November production of 11.753 mmb/d, up from October production of 11.509 mmb/d after being revised up +36,000 b/d, and up 0.585 mmb/d YoY from November 2020 of 10.121 mmb/d. Three key items to highlight. (i) The actuals for November were above the EIA weekly estimates and also a little above, 0.09 mmb/d higher, than the EIA STEO December had for November. (ii) This is the sixth consecutive month with YoY increases, and we expect to see this continue through the remainder of the year. (iii) Post hurricane recovery, the Federal Offshore in the Gulf of Mexico had the largest MoM increase, up +107,000 as offshore platforms recovered. The November actuals were +253,000 b/d above the weekly estimates average of 11.5 mmb/d for November, increasing for the consecutive month.

Figure 17: 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	11,509	11,753	
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 18: EIA Form 914 US Oil Production vs Weekly Estimate



Source: EIA

Oil – Likely some weather production impacts in next EIA weekly oil production data

Very cold in some oil and gas basins

This week, we tweeted a couple of times on the much colder than normal temperatures in key operating basins like Permian and Oklahoma. And there was snow and ice in these regions, where the oil and gas service sector doesn't set up for Canada winter like operating conditions. Our tweets were consistent that should probably expect some operational delays, rig/frac spread moves, some freeze-offs (shut in production) with the freezing. The other reminder is that if natural gas is forced to shut in with the freezing temperatures, for most of the plays in the Permian and Oklahoma, it will also impact oil volumes as the natural gas is associated gas produced from oil wells.

Oil – Conoco CEO says markets should be worried about US oil growth

Conoco warns on US oil growth

We continue to see examples of why we look at as many earnings call transcripts as possible as there are always the best insights from the Q&A instead of mgmt prepared comments. This was shown in the ConocoPhillips Q4 call on Thursday. The quotes are per the Bloomberg Transcripts of the Q4 call. In the Q&A, CEO Lance upped his estimate for US Lower 48 oil & condensate growth for 2022 and 2023. He replied "*Yeah, I can let Tim talk about -- specifically the Lower 48, but I'd say the macro, yeah, I was quoted in a recent discussion with several of our peers that we put the entry to exit about 800,000 barrels a day this year, and I think and in light of the last couple of announcements that I've heard, Neil, I would actually be moving that number up now because I think we were even a bit surprised by the strength of some of the numbers that we were hearing. But I think importantly we would place and that is a crude and condensate number and it doesn't include NGLs. So -- I would say we're 800,000 to 900,000 probably barrels a day growth this year from the US and probably a similar kind of number coming out next year. This year, dominated by the privates with some influenced by the publics, but clearly next year probably having that swap a bid.*" Then there was a subsequent question *"I want to come back to your comments about the Permian and when I ask you philosophically, are you concerned about the US going back to that level of growth given the recent history of growth for growth sake?"* CEO Lance replied "*And the fact that the inventories are down quite a bit globally and certainly here in the US. So I think there is a little bit of time that we have associated with that. But certainly if we're* *getting back to the level of growth in the US that if you're not worried about it. It should be and we think about it".*

Vitol, at $90 oil, sees Conoco's oil growth estimate as "reasonably modest"
No question US oil growth is going to be more than expected, but, that makes sense when oil is $90 and not $60 or $70 or even $80. Earlier this morning, we listened to Mike Muller, Vitol's head Asia, on the Gulf Intelligence podcast being asked about Conoco's US oil growth comments. We created a transcript of his reply ""*I didn't read the ConocoPhillips CEO comments as a warning, I read it as a factual statement. and I think it was another 800,000 to 900,000 barrels a day of US shale production that people at the very least would have expected. If you put me in a time capsule and sent me back a year and said if the oil price were at $75 a barrel, how much extra production would we see in the US? I would have given you his number. we're at 90 something so I think with WTI thru 90, I think those numbers are reasonably modest and they are a reflection of conservatism. And the prioritization among oil majors, even the listed US majors to not put all their eggs in the shale and oil basket in this time of energy transition."*

Oil – Biden says "we're working to bring them down" re gasoline prices

Biden working on gasoline prices

Other headlines from Biden's Friday press conference were his comment "*Gas prices at the pump are up. We're working to bring them down, but they're up.*" Some of the items that he seems to keep ignoring are the obvious in encouraging increasing US oil supply, Jones Act tanker waivers to allow cheaper shipping of oil and gasoline, reducing excise taxes. We still believe that he has been lax on enforcing Iran and Venezuela sanctions is to let more of their oil on the market, although no one from the administration has ever suggested or hinted to that reason. Rather, his only play so far has been release of Strategic Petroleum Reserve oil. So it will be interesting to see what his next direct play is to lower gasoline prices. We couldn't help tweeting yesterday [LINK] "*Had to chuckle at #Biden remarks. talks about high food, #Gasoline prices, etc & then says "We're going to keep strengthening the supply chains to bring down the costs of every — all of these goods." think he meant to say "every - all" except #Oil #NatGas supply chain. #OOTT".* We would be certainly surprised if he did an abrupt change and did something to support the oil and gas supply. Our Supplemental Documents includes excerpts from the White House transcript. [LINK].

Oil – Trans Mountain expansion now expected to cost ~$17bn and be delayed

TMX looks to be over budget and late

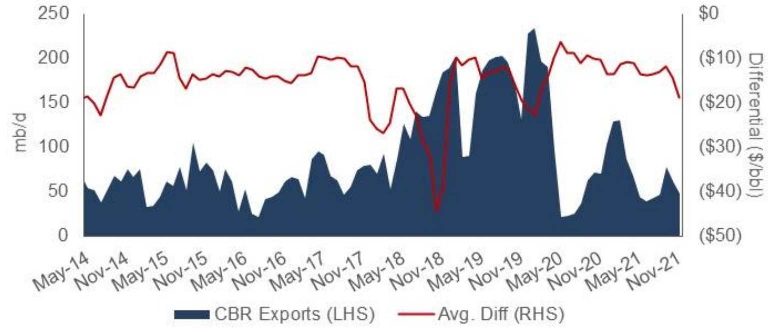
We shouldn't be surprised to see the reports that the Trans Mountain Pipeline Expansion project is expected to run over budget by ~$4b and be a little later in startup. TMX was scheduled to be in-service in Dec 2022, but reports are now that it will be sometime in 2023. We don't know the delay period but we suspect it will be months and not weeks. All major projects have been impacted by Covid restrictions. On Thursday morning, Bloomberg reported [LINK] on the Trans Mountain Pipeline Expansion project which is well behind schedule and continuing to incur greater cost. Work to expand the pipeline is now expected to cost ~$17bn after the budget was revised to $12.4 bn in 2020 from its initial price tag of $7.4bn. Trans Mountain and the federal government had no comment on what the final cost will be stating *"At this time, we have no update to the cost or overall schedule of the project."* Trans Mountain Corp. last updated the project's price tag in February 2020, bumping it to $12.6 billion, but much has changed since, including the routing work being finalized to accommodate the higher costs associated with the pandemic, damages from the weather and rising inflation. The Trans Mountain expansion is expected to add ~600,000 b/d in pipeline capacity out of Western Canadian Oil Fields for transport out of BC ports to Asia and other markets. Our Supplemental Documents package includes the Bloomberg report.

Oil – Cdn crude by rail imports to Gulf Coast down 22,000 b/d YoY in November to 47,000 b/d

Cdn crude by rail imports to Gulf Coast down 22,000 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 22,000 b/d in November, which is down 14,000 b/d MoM from October, and down 22,000 b/d YoY vs November 2020. There were no revisions to last months data. The start up of Enbridge Line 3 additional export volumes is likely the key reason for the decline in exports by rail Tighter YoY WCS to WTI differentials were the key factor in the low crude by rail volumes since December. Below is our graph of Cdn CBR exports to the Gulf Coast.

Figure 19: Canada CBR Exports to US Gulf Coast vs WCS Differential



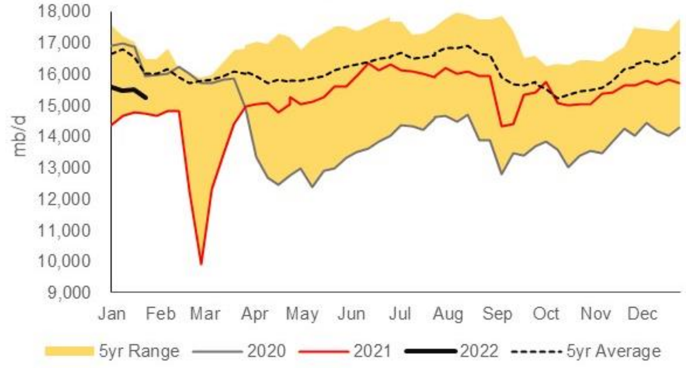
Source: EIA, Bloomberg

Oil – Refinery inputs -0.249 mmb/d WoW at 15.248 mmb/d

Refinery inputs up WoW

The EIA crude oil input to refinery data is for the week ended Jan 28. Refineries normally ramp up oil processing to year end and then decline in the new year. The decline appears to be underway as the EIA noted a WoW decrease in crude inputs to refineries, down -0.249 mmb/d this week to 15.248 mmb/d and are +0.407 mmb/d YoY. The normal ramp up is to still produce winter fuels before refineries go into the turnaround in Q1 to switch to more summer fuels. Refinery utilization was down at 86.7%, which is still +4.4% YoY though is still below 5-year average utilization levels. Total products supplied (i.e., demand) increased WoW, down -1.0 mmb/d to 21.410 mmb/d. Motor gasoline was down -0.278 at 8.226 mmb/d from 8.505 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 8.215 mmb/d, up from last year.

Figure 20: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA

Oil – US "net" oil imports up +1.269 mmb/d WoW at 4.709 mmb/d

US "NET" imports were up +1.269 mmb/d to 4.709 mmb/d for the Jan 28 week. US imports were u[+0.809 mmb/d to 7.085 mmb/d. US exports were down -0.420 mmb/d to 2.376 mmb/d. The WoW decrease in US oil imports was driven by US's Top 10 imports by country were up 0.904 mmb/d from Top 10. Some items to note on the by country data. (i) Canada was up this week by +0.201 mmb/d to 3.953 mmb/d, which is now ~0.1 mmb/d above the average levels in Jan/Feb of 2020. (ii) Saudi Arabia was up 17,000 b/d to 0.613 mmb/d this week. (iii) Colombia was up +0.143 mmb/d to 0.286 mmb/d. (iv) Ecuador was up from 0 at 0.236 mmb/d. (v) Iraq was up +279,000 b/d to 412,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico was up by 62,000 b/d to 0.383 mmb/d.

US "net" oil up WoW

Figure 21: US Weekly Preliminary Oil Imports by Major Countries

(thousand b/d)	Nov 19/21	Nov 26/21	Dec 3/21	Dec 10/21	Dec 17/21	Dec 24/21	Dec 31/21	Jan 7/22	Jan 14/22	Jan 21/22	Jan 28/22	WoW
Canada	3,559	3,773	3,869	3,879	3,147	4,032	3,803	3,340	3,556	3,752	3,953	201
Saudi Arabia	468	475	393	463	384	609	418	294	381	596	613	17
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	460	657	625	569	503	648	226	584	902	321	383	62
Colombia	141	214	71	232	146	184	64	241	193	143	286	143
Iraq	131	221	248	29	359	268	226	317	434	133	412	279
Ecuador	149	112	0	265	195	308	95	58	0	0	236	236
Nigeria	68	4	175	217	128	58	53	0	0	43	9	-34
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	4,976	5,456	5,381	5,654	4,862	6,107	4,885	4,834	5,466	4,988	5,892	904
Others	1,460	1,148	1,118	817	1,332	652	779	1,235	1,279	1,248	1,193	-55
Total US	6,436	6,604	6,499	6,471	6,194	6,759	5,664	6,069	6,745	6,236	7,085	849

Source: EIA, SAF

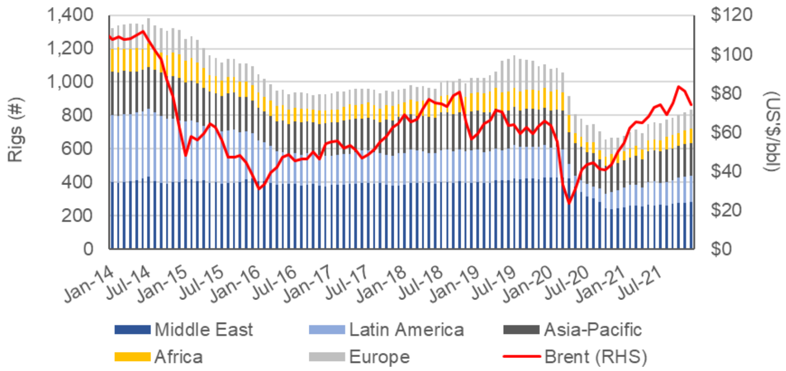
Oil – Baker Hughes International rigs +7 MoM to 841 rigs in January

Baker Hughes posted its monthly update to international rigs on Friday. There were no major surprises as we continue to see international rigs increase. This is consistent from the industry outlooks from the outlooks from the oilfield service calls. One of the common themes from the calls was strong growth in Latin America and that shows up in the Baker Hughes updated international rig counts for January released on Friday, especially in Argentina and Columbia. As expected, Baker Hughes reported an increase from last month's count. International activity had been increasing with stronger oil and gas prices. January is up

International rigs +7 MoM

+24% YoY from 677, but still down 22% vs January 2020 at 1,078. Total international rigs increased by +7 MoM to 841 in January. The YoY rig count is as followed: Asia-Pacific +35, Africa +35, Europe +17, Latin America 39, and the Middle East +38. The rig count in Latin America was driven by +13 oil rig increase in Argentina, +20 oil rigs for Colombia, bringing the respective nations back to their pre-Covid levels. Brazil remained was +2 oil rigs YoY at 10 rigs and are focused in offshore operations. Saudi Arabia increased by -1 rigs YoY, driving growth while Iraq and Egypt were up by +14 and +10 oil rigs YoY respectively. China offshore was up +8 rigs YoY in January while the rest of Asia pacific relatively flat YoY with Indonesia up YoY at +7 rigs. Below is our graph of international rigs by region and avg monthly Brent price.

Figure 22: Baker Hughes International Rig Count and Brent Price



Source: Baker Hughes, Bloomberg

Oil – Colombia Dec oil production was down slightly MoM at 0.745 mmb/d

Colombia Dec oil & gas production

Colombia oil production in December decreased slightly MoM at 0.745 mmb/d vs 0.747 mmb/d in Nov. On Wednesday, Colombia Ministry of Mines and Energy released its December oil and gas production data [LINK]. The Columbian Ministry of Mines and Energy reported *"Regarding oil production, during December 2021 this was 745,325 average barrels per day (bopd), which meant a slight decrease of 0.33% compared to November when it was 747,772 bopd. Compared to December 2020 (760,016 bopd), the decrease in production was 1.93%."* Colombia noted that the increase in production is mainly attributed to mechanical failures at the Rubiales, Castille Norte Yarigui-Conagallo and Indico fields as well as public order problems across the country. Colombia also noted that YTD Dec 31 oil production averaged 0.736 mmb/d, down 6.1% YoY from 0.785 mmb/d in the same period 2020. 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 23: Colombia Oil Production

million b/d	2015	2016	2017	2018	2019	2020	20/19	2021	21/20
Jan	1.036	0.986	0.860	0.860	0.899	0.884	-1.7%	0.745	-15.7%
Feb	1.030	0.955	0.864	0.823	0.893	0.878	-1.6%	0.746	-15.1%
Mar	1.023	0.917	0.804	0.856	0.885	0.857	-3.1%	0.745	-13.0%
Apr	1.029	0.915	0.857	0.865	0.891	0.796	-10.6%	0.745	-6.4%
May	1.027	0.904	0.851	0.866	0.895	0.732	-18.2%	0.703	-3.9%
June	1.010	0.888	0.857	0.864	0.892	0.730	-18.2%	0.694	-4.9%
July	0.947	0.843	0.856	0.860	0.869	0.735	-15.4%	0.731	-0.5%
Aug	0.968	0.827	0.858	0.866	0.883	0.742	-15.9%	0.748	0.8%
Sept	1.009	0.859	0.851	0.869	0.879	0.749	-14.8%	0.744	-0.7%
Oct	1.005	0.846	0.864	0.879	0.883	0.751	-14.9%	0.740	-1.5%
Nov	0.990	0.855	0.851	0.883	0.880	0.761	-13.5%	0.747	-1.9%
Dec	0.999	0.837	0.870	0.889	0.882	0.759	-14.0%	0.745	-1.8%

Source: Bloomberg, Colombia Ministry of Mines and Energy

Oil – Brazil December oil production of 2.84 mmb/d, up +4.0% YoY and -0.5% MoM

Brazil oil production in December was basically flat. We have been highlighting how Brazil was going to be below the expectations for 2021 and that is the case. There was growth but less than expected going into 2021. While November production noted a significant increase in production MoM, this theme continued in December with oil production up 4.0% YoY and -0.5% 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 heading into 2022. On Jan 19, ANP reported [LINK]. Brazil oil production of 2.84 mmb/d, which is up +4.0% YoY and -0.5% MoM from 2.85 mmb/d in November.

Brazil oil production down -0.5% MoM

Oil – Nigeria offshore FSPO Trinity Spirit facility explodes

There was a good reminder on the risk to oil production from poorly maintained facilities. It's bad enough that Nigeria has been struggling to get its oil production to its quota levels, but now an explosion/fire knocks out a smaller FPSO. The FSPO Trinity offshore facility owned and operated by Shebah Exploration and development was reported [LINK] to have exploded on Thursday and sunk off the Nigerian coast. All the reports have commented on the poorly maintained facilities. The FSPO facility serves as the primary production site for the OML 108 block, and all production is stored on the FSPO facility. The FSPO has a processing facility of 22,000 b/d and a storage capacity of 2 mmb [LINK]. The crude processing facility consists of separators which handles a 3-stage separation of the crude. It also harbors an IWTS (Injection water treatment system) for produced water treatment used for reservoir pressure maintenance via water injection. OML 108 covers an area of 750sqkm in water depth of 88ft (30m) in the western edge of the Niger Delta in shallow water offshore Nigeria, six miles southwest of Chevron's Meren field but reaches water depth of 700ft (213m) on the southern portion of OML 108. The block is composed of oil producing Ukpokiti field, Kunza discovery and deeper pool prospects in the southern portion of the block. Shebah E&P [LINK] confirmed the explosion on Thursday and is currently working to investigate the cause of the fire. No fatalities have been reported.

Nigeria offshore production facility explodes

Oil – Russia's oil production flat MoM in Dec

On Wednesday morning, Bloomberg reported *"Russia ramped up its oil output in January*

Russia 9.973 mmb/d in Dec, flat MoM

yet likely pumped below its OPEC+ quota for a second consecutive month, as the nation's producers struggle with a lack of spare capacity. Russian oil producers pumped 46.53 million tons of crude and condensate in January, according to preliminary data from the Energy Ministry's CDU-TEK unit. That equates to 11 million barrels a day, based on a 7.33 barrel-per-ton conversion rate, and is 0.7% higher than in December. Russia Seen Struggling to Keep Pace With OPEC+ Supply Hikes It's difficult to fully assess Russia's compliance with the OPEC+ deal as the CDU-TEK data doesn't provide a breakdown between crude and condensate, a lighter type of oil that's excluded from the agreement." If Russia's output was close to December's level of 0.95 mmb/d, crude only production would be 10.5 mmb, 50,000 bbls below the quota for the month. This makes January the second consecutive month in which Russia's crude only output was below its OPEC+ quota. Russia raised total output production by 0.2% in December. Our Supplemental Documents package includes the Bloomberg report.

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

OPEC+ sticks to July 18 plan

There were no surprises from OPEC+ this week in what was the shortest (16 minutes) ministerial meeting on record. In the last couple days ahead of the meeting, Goldman Sachs raised the potential of a bigger increase, but OPEC+ stayed with its planned +400,000 b/d monthly increase for March. OPEC stated, "*Reconfirm the production adjustment plan and the monthly production adjustment mechanism approved at the 19th ONOMM and the decision to adjust upward the monthly overall production by 0.4 mb/d for the month of March 2022, as per the attached schedule."* [LINK]. Our Supplemental Documents package includes the OPEC+ Feb 2 release.

Figure 24: OPEC+ Cut Schedule

OPEC (mmb/d)	Reference Level Production	May 2021	June 2021	July 2021	Aug 2021	Sept 2021	Oct 2021	Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	May/22 per July/21 Agreement -	Change in Ref. Level Post May/22	EIA STEO 2022E Production Avg
Algeria	1,057	887	898	912	922	932	942	952	962	972	982	992	1,057	-	n.a.
Angola	1,528	1,283	1,298	1,319	1,334	1,348	1,363	1,377	1,392	1,406	1,421	1,435	1,528	-	n.a.
Congo	325	273	276	281	284	287	290	293	296	300	303	306	325	-	n.a.
Equatorial G.	127	107	108	110	111	112	114	115	116	117	118	120	127	-	n.a.
Gabon	187	157	159	161	163	165	166	168	170	172	173	175	187	-	n.a.
Iran	n.a.	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	3,905	3,954	4,016	4,060	4,104	4,149	4,193	4,237	4,281	4,325	2,639	4,803	150	n.a.
Kuwait	2,809	2,358	2,387	2,425	2,452	2,478	2,505	2,532	2,558	2,585	2,612	1,718	2,959	150	n.a.
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.	n.a.
Nigeria	1,829	1,535	1,554	1,579	1,596	1,614	1,631	1,649	1,666	1,683	1,701	1,718	1,829	-	n.a.
Saudi Arabia*	11,000	9,232	9,347	9,495	9,600	9,704	9,809	9,913	10,018	10,122	10,227	10,331	11,500	-	n.a.
UAE	3,168	2,659	2,692	2,735	2,765	2,795	2,825	2,855	2,885	2,916	2,946	2,976	3,500	332	n.a.
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.	n.a.
Total OPEC	26,683	22,396	22,673	23,033	23,287	23,539	23,794	24,047	24,300	24,554	24,808	26,780	27,815	1,132	24,390
OPEC vs. ref.	**0**	**-4,287**	**-4,010**	**-3,650**	**-3,396**	**-3,144**	**-2,889**	**-2,636**	**-2,383**	**-2,129**	**-1,875**	**97**	**0**	**0**	**-2,293**
*Saudi Arabia quota for Feb-Apr 2021 includes voluntary 1mmb/d cut; May-July includes wind down of voluntary cut															
Non-OPEC	Reference Level Production	May 2021	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	EIA STEO 2022E Production Avg
Russia	11,000	9,418	9,457	9,495	9,495	9,495	9,495	9,913	10,018	10,122	10,227	10,331	11,500	500	n.a.
Kazakhstan	1,709	1,463	1,469	1,475	1,475	1,475	1,475	1,540	1,556	1,572	1,589	1,605	1,709	-	n.a.
Oman	883	741	750	762	762	762	762	796	804	812	821	829	883	-	n.a.
Azerbaijan	718	603	610	620	620	620	620	647	654	661	668	675	718	-	n.a.
Malaysia	595	499	506	514	514	514	514	537	542	548	554	559	595	-	n.a.
Bahrain	205	172	174	177	177	177	177	185	187	189	191	193	205	-	n.a.
Sudan	75	63	64	65	65	65	65	68	69	69	70	71	75	-	n.a.
South Sudan	130	109	110	112	112	112	112	117	118	119	121	122	130	-	n.a.
Brunei	102	86	87	88	88	88	88	92	93	94	95	96	102	-	n.a.
Total Non-OPEC	15,417	13,154	13,227	13,308	13,308	13,308	13,308	13,895	14,041	14,186	14,336	14,481	15,917	500	n.a.
Non-OPEC vs. ref.	**0**	**-2,263**	**-2,190**	**-2,109**	**-2,109**	**-2,109**	**-2,109**	**-1,522**	**-1,376**	**-1,231**	**-1,081**	**-936**	**0**	**0**	**n.a.**
Total OPEC+	42,100	35,550	35,900	36,341	36,595	36,847	37,102	37,942	38,341	38,740	39,144	41,261	43,732	1,632	n.a.
OPEC+ vs ref.	**0**	**-6,550**	**-6,200**	**-5,759**	**-5,505**	**-5,253**	**-4,998**	**-4,158**	**-3,759**	**-3,360**	**-2,956**	**-839**	**0**	**0**	**n.a.**

Source: OPEC

Oil – Next OPEC and non-OPEC ministerial meeting (ONOMM) is Wed March 2

OPEC+ meeting is March 2

The short press release on the 25th OPEC and non-OPEC Ministerial Meeting (ONOMM) noted that the next ONOMM meeting will be held, via videoconference, on Wed March 2. We would expect to see the JMMC the same morning unless there are some big changes to the outlook. And we would expect to see the Joint Technical Committee meeting either Mon Feb 28 or Tues March 1.

Oil – Energy Intelligence Group estimates only 2.5 mmb/d OPEC+ spare capacity

Lack of OPEC+ spare capacity

We still believe that the big upside to oil prices is what happens in the summer especially now that we are seeing more countries moving to opening up even with Omicron still around. If demand gets back to pre-Covid levels, the concern remains there is little spare OPEC+ oil capacity. On Monday, we tweeted [LINK] on comments from Amenr Bakr, Deputy Bureau Chief & Chief OPEC Correspondent for the well respected Energy Intelligence. Bakr reminds of this issue, but also a good reminder that a lot of spare capacity takes time and capital to be brought onstream. As an aside, we picked it up from our favorite morning podcast, the Gulf Intelligence podcast "Daily Energy Markets – Jan 31st [LINK]. We created at transcript of Bakr's comments. She said "*the group don't feel that they can do much really at this point. Their spare capacity is eroding really fast. The assessments we have now is that spare capacity among OPEC+ is about 2.5 million barrels. So, theoretically even if*". Evers then jumps in "*Across all of OPEC+?*" Bakr "*All of OPEC+. and there are only a few members, I would say Saudi Arabia and the UAE who could immediately add production and that production could be sustainable. The rest, its going to take some time to add these barrels to the market and keep it at sustainable levels*".

Oil – Saudi nest egg, its net foreign assets down $9.5b MoM in Dec

Saudi net foreign assets down $9.5b Mom in Dec

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 Dec was back down -$9.5b MoM after a significant increase in November. 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 Dec 31 were $437.5b, which was down $9.4b MoM from $446.9b in Nov and down $4.3b from $433.2b in Oct. 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 Dec 31 of $437.5b are down $11.4b 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 Dec 31 data.

Figure 25: Saudi Arabia Net Foreign Assets

Source: Bloomberg

Oil – WSJ: "*Saudi Aramco looks to sell $50 billion stake in fresh share listing*"

Potential Saudi Aramco equity issue?

On Friday morning, the WSJ posted its report "*Saudi Aramco Looks to Sell $50 Billion Stake in Fresh Share Listing. Oil giant is discussing plans for what would be the largest share sale ever, with a secondary listing possible in London, Singapore or other venues. Saudi Arabia has restarted plans to list more shares of Aramco, the world's most valuable oil company, according to people familiar with the company's strategy, with an ambition to sell as much as a $50 billion stake, which at current valuations would be 2.5% of the company."* There seemed to be some damage control put out indirectly by Aramco with commentators noting that no such decisions have been taken at this time. We thought the key part of this report was that Aramco was back to looking at foreign listing for this issue, which is why we tweeted [LINK] "*Would be a big validation to #Oil being stronger for longer if #SaudiAramco can pull off any significant equity issue to non-Saudi investors. Who would invest in long oil reserves if #PeakOilDemand was coming soon? Thx @summer_said @JBSteins #OOTT."* We don't care how big Saudi Aramco is, if investors all believe peak oil demand is coming before 2030, there is no way Saudi Aramco could pull off a big equity issue. Our Supplemental Documents package includes the WSJ report.

And Saudi Arabia needs Other People's Money to fund Vision 2030

A potential Aramco equity issue would also fit our long stated view 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. Earlier, we noted the huge burn in Saudi Arabia's net foreign assets (ie. piggy bank) and we believe they don't want to keep burning their assets. A $50 billion equity issue would be a big plus for Aramco's ability to keep sending big dividends upstairs to the Saudi Arabia treasury.

Oil – UAE implements corporate tax beginning in 2023

UAE corporate tax implemented

Big news in the UAE with the announcement that the UAE will implement a corporate tax. There is currently no corporate tax. The Emirates News Agency reported on Monday [LINK] that business's will be subject to a federal corporate tax beginning in 2023. The Corporate tax will be payable on the profits of UAE businesses as reported in their financial statements prepared in accordance with internationally acceptable accounting standards, with minimal exceptions and adjustments. The tax will apply to all businesses and commercial activities alike, aside form the extraction of natural resources which will remain subject to the Emirate level corporate tax. The ministry of finance commented "*As a leading jurisdiction for innovation and investment, the UAE plays a pivotal role in helping businesses grow, locally and globally. The certainty of a competitive and best in class corporate tax regime, together with the UAE's extensive double tax treaty network, will cement the UAE's position as a world-leading hub for business and investment."* No corporate tax will apply to foreign investors not carrying business in the UAE and no withholding tax will apply on domestic or cross border payments. Our Supplemental Documents package includes an infographic outlining the new corporate tax.

Oil – JCPOA, US prepared to make last minute concessions to get a deal done

US prepared to make last minute concessions

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."*

US provides some waivers re Iran

Notwithstanding the US protests, the Biden administration limited sanctions waivers on Friday is viewed as clear indication Biden is trying to get a JCPOA deal done very soon. The AP reported "*The waiver with respect to these activities is designed to facilitate discussions that would help to close a deal on a mutual return to full implementation of the JCPOA and lay the groundwork for Iran's return to performance of its JCPOA commitments," the State Department said in a notice to Congress that announced the move. "It is also designed to serve U.S. nonproliferation and nuclear safety interests and constrain Iran's nuclear activities," the department said. "It is being issued as a matter of policy discretion with these* *objectives in mind, and not pursuant to a commitment or as part of a quid pro quo. We are focused on working with partners and allies to counter the full range of threats that Iran poses." A copy of the State Department notice and the actual waivers signed by Blinken were obtained by The Associated Press."* US State Dept spokesperson Ned Price tweeted ""*We did NOT provide sanctions relief for Iran and WILL NOT until/unless Tehran returns to its commitments under the JCPOA*". For most, it was a sign that Biden is prepared to give in to Iran to get the deal done. The E3 negotiations said "*We welcome the U.S. waiver related to nuclear non-proliferation projects in Iran. This should facilitate technical discussions necessary to support talks on JCPOA return in Vienna*." No surprise, Iran said it was no big deal and the US needs to lift all sanctions. Regardless, this Friday afternoon change is viewed as indicative that the momentum is for a JCPOA deal very soon. Our Supplemental Documents package includes the AP reporting.

Oil – JCPOA, did Russia/China provide a reason to think a deal is soon?

Russia/China did not mention JCPOA

We think there is another reason to think that a JCPOA deal may be soon after reading the 9-pg single spaced "*Joint Statement of the Russian Federation and the People's Republic of China on the International Relations Entering a New Era and the Global Sustainable Development*." [LINK] This lengthy joint statement covers almost everything you could think of where they agree or support the other. The headlines are on the shots taken at the US. and there are a lot of them. Russia and China made a point of taking shots at the US directly and indirectly. We always look for what seems off or what isn't in a statement. This is a 9-pg single spaced statement that has one of its key focuses to dump on the US. But, the interesting part of this 9-pg statement was what Russia and China did not dump on the US. There was one thing not in this and that was any specific mention of Iran or JCPOA. We read it twice and did a word search and could not see any reference. The question is why not in such a lengthy joint statement. We would have thought that, with all the slamming of the US in this joint statement, they would have included JCPOA. Russia has been critical of the US in pulling out of the JCPOA. Our assumption is that the logical reason is that there is a deal soon The closest reference was "*The sides note that the denunciation by the United States of a number of important international arms control agreements has an extremely negative impact on international and regional security and stability*". Our Supplemental Documents package includes the Russia/China joint statement.

Oil – Reminder, a JCPOA deal also frees up Iran's 80-90 mmb oil in storage in Asia

Iran's 80-90 mmb in storage will come free

Last week (Jan 24), Bloomberg had a good reminder that any JCPOA would also immediately free up Iran oil barrels that are in storage in Asia. We tweeted [LINK] "*Tehran could sell some of the roughly 80 to 90 million barrels it holds in storage, many of them located in its main market of Asia". Good @business reminder these #Oil storage barrels will quickly hit market with #JCPOA return. Thx @PaulWallace123 gsmith52@bloomberg.net #OOTT."* These barrels will come quickly into markets with a JCPOA.

Oil – Shell significant struggle for oil supply to meet demand for some time to come

Shell see supply struggling

Shell CEO van Beurden had some blunt comments on the oil outlook in the Q&A of the Q4 call on Thursday. He sees a significant struggle for supply to keep up with demand and that this struggle will continue for some time to come. Van Beurden said *"think the sector that stays behind a little bit, I would say is more in the liquids side. So it is still aviation. I think* *many of the other liquids sectors, road transport, shipping are back and we see actually quite a few constraints. And if you look at the overall liquids demand of course, you will see Martijn, that that is largely sort of restored to where it was from before the pandemic. I think the big point of course is not so much the demand recovery, it is actually how supply is lagging, because in the meantime of course the industry has with capital discipline, but also to preserve financial resilience, been quite parsimonious with investments. And as a result of it, we actually see a significant struggle for supply to keep up with demand. And I think that is going to be with us for some time to come. Jessica".*

Vitol's bullish comments on oil

Oil – Vitol OPEC+ spare capacity will reach levels that are considered alarming

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 – No Vortexa floating crude oil storage for Feb 4 posted as of 7am MT

Vortexa floating storage

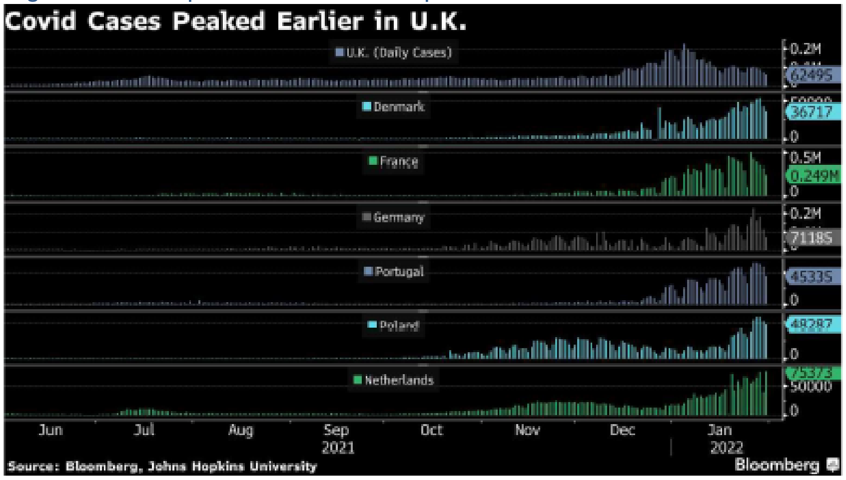
As of our 7am MT news cut off, Bloomberg terminal has not posted the Vortexa crude oil floating storage data as of Feb 4. It is normally posted by noon MT on Saturday. As a result, we do not have any Vortexa update this week.

Oil – Bloomberg Oil Demand Monitor, Congestion recovers in New York and London

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. Congestion began to recover in New York and London as the Omicron variant subsides in the respective regions; this is the first time that the two cities have been above pre-pandemic levels since December and could be an indicator that commuting is returning to normal. Traffic levels were higher in the UK for the third consecutive week in contrast from other European countries, indicating that the UK was 2-3 weeks ahead of other nations in their respective Omicron infection wave. The UK dropped their work from home advice on Jan 19. Congestion across the other 11 tracked cities was down significantly from 2019 levels with Tokyo, Rome, Paris and Los Angeles still down 24%, 48%, 20% and 27% respectively. UK Road fuel demand continues to recover with sales down 11% from 2019 vs 24% in December. US demand for gasoline was 14% below the equivalent week in 2019 with demand at 8.2 mmb/d. Roadway use monitored through roadway sensors was back to normal for the week ended Jan 30, 0.4% above 2019 levels in the US while the UK was 9% below the equivalent week from 2019. Diesel fuel sales in India fell 13% MoM and were 9% below the equivalent Jan 2020 levels. European air travel remained unimpressive though noted a small improvement in January. Arrival and departures for the 41 nations sank below 20,000 per day on Jan 10 and has not risen above according to data from Eurocontrol. The gap in US flight data also widened this week with the harsh weather contributing to the downturn. Refinery Utilization as of Jan 28 with US East refineries 15% above 2019 levels, while all other refinery regions were below the equivalent week from 2019. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 26: Europe Covid Peak Comparison



Source: Bloomberg

Oil – Caixin PMI for Jan is down at 49.1 after last month 50.9

Caixin PMI down in Jan

On Sunday morning, we tweeted [LINK] on the just released Caixin China Manufacturing PMI data for January. We tweeted "*ICYMI last night. China Caixin PMI for Jan 49.1 vs Dec 50.9 vs Est 50.0. Jan is lowest in 23 mths. Dipped negative for 4th time since Feb/20. #OOTT.*" IHS highlighted that the index, in January, dropped amid the second deterioration in the overall business conditions. It was the lowest PMI reading in the last 23 months and the fourth time since February it has dipped negative; the decline was linked to lower sales amid the uptick in Covid-19 both domestic and abroad. Lower intakes of new work led to a marginal fall in purchasing activities; inventories at manufacturing companies also declined with both stocks of inputs and finished items falling for the first time in three months. The Caixin China General Manufacturing PMI data decreased to 49.1 in January (vs estimate of 50.1) from 50.9 in December. Business confidence remained strong overall in Jan, though optimism slipped to a 20-month low due to the ongoing global pandemic, and its uncertain trajectory, as well as strained supply chains. 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 contracted in January. Supply shrank, and demand, especially external demand, was under pressure. Employment remained weak. Stocks and purchases of raw materials fell. Meanwhile, inflationary pressure eased, with the gauges of input costs and output prices remaining stable. The level of manufacturers' optimism held to its long-term average. From December to January, the resurgence of Covid-19 in several regions including Xi'an and Beijing forced local governments to tighten epidemic control measures, which restricted production, transportation and sales of manufactured goods."* Our Supplement Documents package includes the Caixin release. [LINK]

Oil & Natural Gas – UK's offshore oil & gas industry body now Offshore Energies UK

UK association drops oil & gas from name

It will be interesting to watch how UK's offshore oil and gas industry trade body changes its priorities with its announced name change and expanded focus. Will they still continue to be the champion for the offshore oil and gas sector or will that priority be dampened? Our concern is that there are two very different sides on the oil and gas vs low carbon, and that it will be difficult for an industry association to be best for both sides. On Monday, OGUK, announced [LINK] "*The leading representative body for the UK's offshore oil and gas industry – OGUK, is expanding to include the exciting low-carbon offshore energy technologies that its members are developing. These will include offshore wind, hydrogen production, carbon capture and storage systems, and other emerging low-carbon technologies. • The move will also see OGUK changing its name to Offshore Energies UK. • It follows a year-long strategic review and takes effect from February 14, 2022. • Offshore Energies UK will continue to champion the oil and gas sector but will also support those with an interest in carbon capture and storage, hydrogen production and offshore wind. • This move reflects the evolving nature of the industry in creating the diverse mix of energy generating systems needed to achieve net zero".* Our Supplemental Documents package includes the Offshore Energies UK release.

Energy Transition – Shell, just adding low carbon demand on top of high carbon

Shell explains energy transition problem

Shell CEO van Beurden had one of the best and simplest explanations for the energy transition problem in the Q&A of the Shell Q4 call on Thursday. Simply, the world isn't reduced high carbon demand, rather it is simply adding low carbon demand on top of high carbon demand. Van Beurden said "*In years to come, we will find that we have to put real* *carbon constraints on the product portfolios that you put out and we have to find good ways and we are finding good ways. Therefore to reform the demand that we are serving from a higher carbon demand to a lower carbon demand. While at the same time actually upgrading the cash flows as well. That is what the energy challenge is all about for us. And therefore making sure that people look at these opportunities as upgrade opportunities is as important, if not more important than simply growing market share, but a probably a little bit of both will happen. Because before the market were completely transitioned to a low-carbon market, it will just be adding low carbon demand under the existing demand as well. "*

Energy Transition – UK now wants more oil & gas drilling in North Sea

UK wants more oil and gas drilling

One of the UK actions this week was significant as they are probably the first real comments by leaders since Macron prior to COP26 who recognize the real problem and want to try to fix the problem and not just applying a bandage to stop the bleeding. They want to crank up oil and gas drilling in the North Sea. No one really pays much attention when they see China or Russia say there should be a practical approach to climate change. However, we believe the eye opener that the energy transition plan isn't working is when the world leaders for the energy transition and Net Zero change their tune. They can't change overnight to say it doesn't work. Rather, they start by saying that they need to be careful on how they get rid of fossil fuels. What they have seen from 2021/2022 is that they aren't managing the Energy Transition at all and that, if they don't take actions soon, they run the risk of energy crisis every year. It's time to get serious on how fossil fuels are needed. This is what we saw from Macron just before COP26. On Thursday, we saw it from the UK Chancellor of the Exchequer, Rishi Sunak in a dramatically changed UK position on oil and gas drilling in the North Sea. Don't forget, UK just finished hosting COP26 and pushing for more aggressive climate action. On Friday, we tweeted [LINK] "*UK @RishiSunak encourage more #Oil #NatGas drilling as "we're going to need #NatGas as part of our transition to getting to #NetZero". Latest to have #MacronMoment & come out of closet to try to have transition to avoid self inflicted energy crisis every yr. thx @joncstone #OOTT."* The UK now wants to increase oil and gas drilling in the North Sea! The Independent reported [LINK] "*Rishi Sunak has said he wants to encourage more investment in new fossil fuel drilling – potentially derailing the UK's climate targets. Scientists said in the run-up to the COP26 climate summit last year that new fossil fuel exploitation is incompatible with reaching net zero in time. But the chancellor said on Thursday that encouraging drilling under the North Sea would "support British jobs" and should get the green light. "I want to make sure that people acknowledge that we should also exploit our domestic resources," he told a press conference. "We have resources in the North Sea, and we want to encourage investment in that because we're going to need natural gas as part of our transition to getting to net zero.".* Our Supplemental Documents package includes the Independent report.

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

The UK changing to wanting more oil and gas drilling 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 – Japan keeps telling IEA that energy security is the priority

Japan priority is energy security

It looks like Japan had a replay of their Nov 9 call with the IEA where IEA Executive Director Birol tells Japan they have to focus on the energy transition and Japan tells Birol their priority is energy security. Japan has had their #MacronMoment and has come out with a consistent view that energy security, not reducing emissions, is their priority. (i) Post the Nov 9 call, METI and the IEA issued a joint press release that included the political speak for they disagreed – they exchanged views. At that time, the joint release said "*The two sides also exchanged views on acceleration of decarbonization efforts following COP26, and shared the importance on measures with pragmatic time frame based on individual circumstances that each countries face including its renewable energy potentials, while it is important to expand investment on renewable energy to achieve carbon neutral."* Its not too difficult to figure out which side wanted a pragmatic time frame. (ii) Clearly, the IEA didn't want another joint press release that highlights the disagreement in views. They spoke on Monday and issued separate tweets on their call. We then tweeted [LINK] "*5/6. Japan says it again to @IEA on 01/31/22. "exchanged views on the importance of both energy security and transitions". Japan has been very clear energy security is the priority, not reducing emissions. Exchanged views means different views. #OOTT* " That was the METI tweet, whereas the Birol tweet was "*we discussed how clean energy transitions need to be underpinned by market security*

& stability, both domestically and internationally". Birol did not want to have another joint release saying they exchanged views. Our Supplemental Documents package includes the METI and IEA Birol Jan 31 tweets.

Energy Transition – Expect change in messaging at IEA Mar 23/24 ministerial meeting

IEA ministerial meetijng

We believe it's clear that there are more and more government leaders backing off their Net Zero aspirations and that is being grudgingly acknowledged, either directly or indirectly as they are trying to avoid an energy crisis every year. Admitting the plan doesn't work is the first step but will they correctly identify what caused the energy crisis risk and will they take action soon enough to fix the problem. Hint, the answer isn't increase wind/solar in the near term. Because if they don't, they will be praying for weather breaks like this year when it was warm start around the world to winter. The IEA postponed its planned Feb 2/3 ministerial meeting that was to be hosted by Energy Secretary Granholm. It is now rescheduled for March 23/24. Prior to seeing the postponement, we tweeted a thread as we believe it is inevitable that the IEA will have to come out with a changed message on the energy transition. We do not expect them to come out with a blunt statement but a subtle change in wording/messaging that fits to all the comments we have seen from Net Zero leaders. (i) "*1/6. Look for big change in messaging from @IEA Feb 2/3 ministerial meeting. Will be subtle change but reality check need to slow play #EnergyTransition ie. #Oil #NatGas needed for longer. Major #NetZero leaders don't want an EU #EnergyCrisis to last thru 2020s. #OOTT".* [LINK]. (ii) "*2/6. Macron started it 10/31/21. "we are building a system where in the medium & long term fossil energy will cost more & more" "industries and households will need to be accompanied in this transition . . or it won't be sustainable". #MacronMoment #OOTT*." [LINK]. (iii) "*3/6. Japan then jumped in on 11/9/21 in its joint release with @IEA "exchancd views on accelaration of decarbonization efforts". Exchanged views is different views. Japan highlighted importance on "measures with pragmatic time frame". #OOTT."* [LINK] (iv) "*4/6. #Biden & EU on 01/28/22 "current challenges to European security underscore our commitment to accelerating & carefully managing the transition from #FossilFuels to clean energy". They don't want EU energy crisis for 2020s to need to slow play. #OOTT".* [LINK] (v) "*5/6. Japan says it again to @IEA on 01/31/22. "exchanged views on the importance of both energy security and transitions". Japan has been very clear energy security is the priority, not reducing emissions. Exchanged views means different views. #OOTT* " [LINK]. (vi) "*6/6.#NetZero leaders have to acknowledge need to change #EnergyTransition plans or risk EU #EnergyCrisis every yr. But will they actually make changes before too late for >2023 or just pray for favourable weather every year Big plus for #Oil #NatGas #LNG thru 2020s. #OOTT"* [LINK].

Energy Transition – India oil and gas is needed for the "foreseeable future"

India needs oil and gas

Earlier we noted The Economic Times reporting of India petroleum and natural gas minister Puri's India's rapid push to get natural gas to 15% of its energy mix. Suri also reminded of the that India is not planning to get rid of oil and natural gas anytime soon. The Economics Times reported ""*India's (economic) growth has the potential to catalyse global economic resurgence. Any achievement by India will have a multiplier impact on the achievement of the sustainable development goals." Referring to India's target to reach net-zero carbon emissions by 2027, he said the government has already taken several measures to overhaul the hydrocarbon policy framework to ensure energy security for the country while pursuing* *the green path to progress. "However, we acknowledge that oil and gas will continue to meet the baseload of our energy demand for the foreseeable future.*" he said.

Energy Transition – Russia/China "practical steps" on key areas like climate change

Russia/China on climate change

No one will be surprised or have their climate change views changed by the Russia/China comments on climate change in their 9-pg single spaced "Joint Statement of the Russian Federation and the People's Republic of China on the International Relations Entering a New Era and the Global Sustainable Development. [LINK]. It included a reinforcement of the key China position on climate change that China won't risk its economy for emissions. (i) There is the reminder of the "*practical*" concept on climate change. This is the political speak for being realistic. The statement said "*In order to accelerate the implementation of the UN 2030 Agenda for Sustainable Development, the sides call on the international community to take practical steps in key areas of cooperation such as poverty reduction, food security, vaccines and epidemics control, financing for development, climate change, sustainable development, including green development, industrialization, digital economy, and infrastructure connectivity*." (ii) Russia and China also fall back on Paris Agreement. Don't forget the climate change side had big picture issues with Paris on the key concept that emission targets were voluntarily set by each country as they determined appropriate, the progress thereon was unenforceable and there was no penalty mechanism. The joint statement said "*Jointly celebrating the 30th anniversary of the adoption of the UN Framework Convention on Climate Change, they reaffirm their commitment to this Convention as well as to the goals, principles and provisions of the Paris Agreement, including the principle of common but differentiated responsibilities*."

Last week, Xi reminded "cutting emissions is not aimed at curbing productivity"

Last week's (Jan 30, 2022) Energy Tidbits highlighted Xi's comments on cutting emissions. We then wrote "*No one should have any doubt that China's efforts to reduce emissions are limited to what it believes can be done without hurting China. Early Tuesday morning, we tweeted [LINK] on Xi's comments that China's priority is energy security not reducing emissions. On Monday, Xi reiterated China's position that it will not sacrifice security or productivity to reduce emissions. Xinhua reported [LINK] "The relations between development and emission reduction must be properly handled, Xi said. Cutting emissions is not aimed at curbing productivity or no emissions at all, Xi said, stressing that the economic development and green transition should be mutually reinforcing. While bringing down carbon emissions, efforts should be made to safeguard energy security, industrial and supply chain security, and food security, as well as ensure people's normal daily lives, Xi said." Xinhua also reported "Coordination should be strengthened to take concerted moves in reducing carbon emissions, cutting pollution, expanding green efforts and promoting growth, Xi said. On advancing energy revolution, Xi noted that the gradual exit of traditional energy sources should be based on the safe and reliable substitution of new energy sources." Our Supplemental Documents package includes the Xinhua report.*

China has clearly stated "supply shortage is the biggest energy insecurity"

Xi's comments last week were not new. China has been clear that their priority is not reducing emissions. On Oct 12, 2021, we tweeted [LINK] "*Must read. Bullish for*

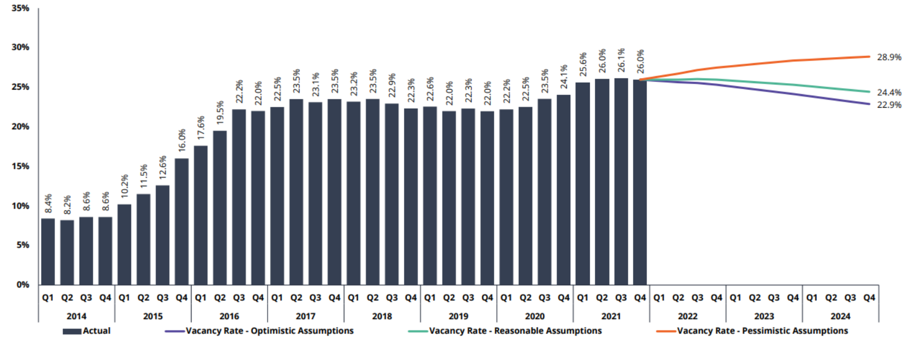
#Coal #NatGas #Oil. Not just for this winter, China changing 5-yr plan to improve energy security. Increase coal generation, strengthen construction NatGas & Oil storage capacity. Develop new timetable/roadmap to reach carbon peak #OOTT #EnergyTransition." China made a change in energy policy statement and we had to tweet as soon as we saw it on Tuesday morning. The China govt statement was titled "*Li Keqiang presided over a meeting of the National Energy Commission, emphasizing on ensuring stable energy supply and safety, enhancing the ability to support green development and Han Zheng attended the meeting*". [LINK] This is a relatively short, but a must read. The guiding principle to energy and climate change is "*Li Keqiang pointed out that energy security is related to development security and national security. my country is still a developing country, and development is the foundation and key to solving all problems."* Its all about ensuring energy security. And China said "*Supply shortage is the biggest energy insecurity*." And "*Aiming at the endowment of coal-based energy resources, the layout of coal production capacity should be optimized, advanced coal-fired power should be constructed rationally according to development needs, and backward coal-fired power should be eliminated in an orderly manner. Increase domestic oil and gas exploration and development, actively develop shale gas and coalbed methane, and carry out diversified international oil and gas cooperation. Strengthen the construction of gas and oil storage capacity, promote the large-scale application of advanced energy storage technology, and continuously enrich the insurance tools for safe energy supply."* And on the energy transition, China is going to look at a revised timetable for when it reaches peak carbon. China wrote "*To advance the realization of the "dual carbon" goal in a scientific and orderly manner, long-term arduous efforts must be made. It is necessary to take into account the recent situation of dealing with the contradiction between power and coal supply and demand, in-depth calculations and demonstrations, and study and put forward the timetable and roadmap of the steps to reach the peak of carbon*." There was more in the statement. Our Supplemental Documents package includes the China statement.

Capital Markets – Calgary downtown office space may have bottomed in Q4/21

Calgary downtown office space bottom?

We have seen a minor difference in estimates, but it is looking like Q4/21 may finally be a bottom for vacancy rates in Calgary downtown office space. Our Jan 16, 2022 Energy Tidbits noted that week's CBRE Canadian Office market report for Q4/21 [LINK] that estimated a minor QoQ increase in downtown office vacancies. We noted that it was a good indirect reminder this week on how different oil and gas is in the 2020s vs all prior cycles. In all prior cycles, high oil and natural gas prices, especially with an outlook for multi-year strong prices, would have led to quick and big increase in capex. And the big capex would signal strong multi year oil and gas production growth. The way to higher stock prices was growth. And big spending and big growth would lead to more hiring and more office space. Not this time. There probably are very few people who would think that very high oil and gas prices would see record Calgary office vacancy. We saw a slightly different view this week with the Avison Young its "*Calgary Office Market Report Fourth Quarter 2021*" [LINK] which noted a turnaround in Q4/21. The quarter saw the first positive absorption in office space since the pandemic began. The QoQ reduction in Calgary downtown office space was very small, but there was a decline from 29.9% in Q3/21 to 29.7% in Q4/21. Avison Young noted "this is the first time Calgary's Downtown office market has seen vacancy decrease since the COVID-19 pandemic started".

Figure 27: Calgary Office Historical and Projected Vacancy



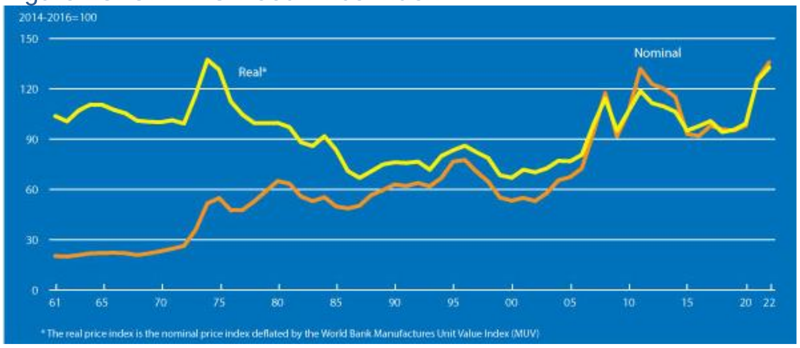
Source: Avison Young

Capital Markets – UN FAO Food Price Index in Jan is +19.6% YoY

UN food price index +19.6% YoY

UN global food price index is right near all time record highs and were +19.6% YoY in Jan. We have highlighted before how global food prices are going up at multiples higher than is being indicated in the US food price index. And there are global concerns that food prices are going to keep higher in 2022 in part of items how high natural gas prices are leading to a massive escalation in ammonia prices that have to flow thru to food prices or lesser harvests. Our fear is that we will keep seeing the same headlines for many months to come. The headline was in line with what we have been expecting in UN FAO index reports after noting a decline in last months food price index; it noted a rebound in food prices in January. On Thursday, the UN posted its monthly update of its FAO Food Price Index [LINK] titled "*FAO Food Price Index rebounded in January*." Note this is on a Real price basis. The FFPI averaged 135.7 points for Jan 2021, which was +1.1% MoM and +19.6% YoY. All food categories registered monthly increases. The Cereal Price Index was +0.1% MoM and +12.5% YoY and Dairy Price Index that was +2.4% MoM and +18.7% YoY. The Vegetable oil Index was up 4.2% MoM marking an all time high. Below is the all time FFPI graph. Our Supplemental Documents package includes the UN FAO Food Price Index update.

Figure 28: UN FAO Food Price Index



Source: UN

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

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

@Energy_Tidbits on Twitter

LinkedIn – Look for quick energy items from me on LinkedIn

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

Look for energy items on LinkedIn

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.

Today is the 70th anniversary of Queen Elizabeth ascending to the throne

It's pretty amazing that it was 70 years ago today that Queen Elizabeth ascended to the throne following the death of her father, King George VI. She was out of the country, en route to Kenya, when she received the news of King George VI's death on Feb 6, 1952. She immediately flew back to England. 70 years is pretty amazing and she is now 95, turning 96 on April 21. I recognize this isn't the way it is today, but, when she came to Canada in the 60s, it was a huge event. Congrats to the Queen for 70 years of service.

Speculation now comes that Charles will ascend to the throne in the next year

Yesterday, Queen Elizabeth released "*The Queen's Accession Day message*" [LINK] and she was clear that Charles will become King by making sure she wanted everyone to know that Camilla should be known as Queen Consort. Queen Elizabeth wrote "*This anniversary also affords me a time to reflect on the goodwill shown to me by people of all nationalities, faiths and ages in this country and around the world over these years. I would like to express my thanks to you all for your support. I remain eternally grateful for, and humbled by, the loyalty and affection that you continue to give me. And when, in the fullness of time, my son Charles becomes King, I know you will give him and his wife Camilla the same support that you have given me; and it is my sincere wish that, when that time comes, Camilla will be known as Queen Consort as she continues her own loyal service."*

Bank of Canada began issuing bank notes in 1935

The Queen's anniversary reminded of some older Cdn bank notes. The Bank of Canada was founded in 1934 and its first bank notes were its 1935 Series. Its second series was the 1937 Series, a classic setup featuring King George VI in the middle of the bank note, who was on all denominations excerpt for the $100 and

$1,000 notes that featured former Cdn Prime Ministers. The third series was the 1954 Series that featured Queen Elizabeth with her picture offset to the right. Not sure what year the bills were, but the Queen Elizabeth bills were sometime after 1956. I have some of each so pasted a picture of most of, but not all of the bills. I didn't put the entire bill in to avoid any potential issues.

Figure 29: Canadian $2 & $50 bills from 1954 series, $10 & $50 from 1937 series

Source: DTT

The Bank of Canada 1954 Series was known as the "Devil's Head" note

The reason why I say the Queen Elizabeth bills are after 1956 is that her hair looks normal. The Bank of Canada writes [LINK] "*The term "Devil's Head" is commonly used to describe this series. The notes caused quite a controversy because, in the engraving of the portrait, an area of the Queen's hair gave the illusion of a grinning devil. Modifications to the printing plates for all denominations were made in 1956 to exorcise the demon!"* The Bank of Canada doesn't say the negatives for the picture were tampered, but it seems like they were. Agence TOPO wrote [LINK] "*It was only in 1984 that the scandal re-erupted with the death of the photographer and the recovery of the negatives from the 1952 photo shoot, events which coincided with the publication of Peter-Dirk Uys, memoirs (Uys, Peter-Dirk, Her Majesty's Image - The Life Of The Official Photographer Of Elisabeth The Second, Yellow Sheets Books, London (UK), 1985). In his account, Mister Uys writes openly of his homosexuality and his long relationship with John Rietveld, Her Majesty,s hairdresser from 1947 to 1962. Even more surprising is the revelation that Uys flirted with certain circles of initiates before holding his job at Buckingham Palace. We learn in the book that he was one of Aleister Crowley's (an eccentric, writer and devil-worshiper) disciples, as well as Kenneth Anger's (a photographer and filmmaker) lover during the 1940's, just before his final dedication to the trade of portrait photographer."*

Figure 30: Canadian 1954 series notes before and after modifying Queen Elizabeth

Source: PMG

Durer drawing brought for $30 at yard sale is worth >$10 million

Anyone who gone to a yard sale or garage sales has inevitably ended up some items that ends up being worth way more than paid, but it's normally buying something for $10 that ends up be worth $100. Although we do recall a Toronto situation decades ago where someone bought a box of hockey cards that ended being worth a few thousand. Probably a lot more now. But on Thursday, CNN reported [LINK] "*A16th century drawing by one of the key figures of the German Renaissance has been valued in excess of $10 million after it was initially purchased at a yard sale for just $30 in 2017. According to Agnews Gallery -- the London auction house in possession of the artwork -- Albrecht Dürer, who died in 1528, is regarded as both the greatest German artist of his time and as one of the most important artists and intellectuals of the European Renaissance.*"

Figure 31: Albrecht Durer "The Virgin and Child" circa 1503

Source: CNN

Reminder to double check who you are texting/emailing before hitting send

We have seen the big oops when someone hits reply all or you send an email or text to the wrong person. But there was very big oops this week, when the Brian Flores (ex Miami Dolphins NFL head coach) filed his lawsuit against the NFL. Part of his suite reported contained the text messages sent by New England Patriots head coach Bill Belichick to Brian Flores (former coach on his staff) that were meant for Brian Daboll (another former coach on his staff and who was ultimately named New Giants head coach). The issue is that the Belichick texts were sent before Flores had been called in for his interview with the New Giants for the head coaching job. NBC reported on the texts [LINK] "*"Flores' suit says he was scheduled to interview for his dream job, head coach of the Giants, on Jan. 27. But on the Monday before the interview, he received confusing texts from New England Patriots coach Bill Belichick. "Sounds like you have landed - congrats," Belichick texted, according to screenshots included in the lawsuit. Flores responded, "Did you hear something I didn't hear?" "Giants?!?!?!" Belichick wrote back. "You are their guy," he wrote in part. "That's definitely what I want. I hope you're right coach," Flores said. And then something seems to have dawned on him. "Coach, are you talking to Brian Flores or Brian Daboll, just making sure."Belichick then wrote: "Sorry ... I double checked and misread the text. I think they are naming Brian Daboll. I'm sorry about that. BB." Flores then had to sit through dinner Wednesday with the Giants' general manager and the interview Thursday, the lawsuit says, knowing full well that Daboll had been chosen for the job."*