Energy Tidbits

May 1, 2022

Produced by: Dan Tsubouchi

China's Major Cities Set Covid Testing Requirements for Public Venues, Transportation, etc.

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. China's major cities have put in place Covid testing requirements for public venues, transportation, etc (Click Here)
2. Russia crude oil production in April was ~9.2 mmb/d, versus its OPEC+ quota of 10.549 mmb/d (Click Here)
3. Not clear how many more countries will be onside with Russia's central bank clarification of the natural gas payment process under Putin's decree (Click Here)
4. Key Biden cabinet (Kerry & Granholm) comments clearly point to Biden backing off his climate change ambitions (Click Here)
5. Cdn Q3 drilling will surpass normal peak winter drilling levels for only the 2nd time in the last 40 years (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 injection of +40 bcf, storage now -446 bcf YoY deficit

The natural gas winter withdraw season is over and it was a good winter for gas storge despite it being warmer than normal winter as there was a widening of the YoY storage deficit from -282 bcf YoY at Oct 31 to current -446 bcf YoY. The EIA reported a 40 bcf build (vs 37 bcf build expectations) for the Apr 22 week, which was less than the 5-yr average build of 53 bcf, and above last year's injection of 15 bcf. Storage is 1.490 tcf as of Apr 22, decreasing the YoY deficit to -446 bcf, from 429 bcf last week and storage is 345 bcf below the 5-year average vs 303 bcf below last week. Below is the EIA's storage table from its Weekly Natural Gas Storage Report [LINK].

YoY storage at -446 bcf YoY deficit

Figure 1: US Natural Gas Storage

	Stocks billion cubic feet (Bcf)				Historical Comparisons: Year ago (04/22/21)		Historical Comparisons: 5-year average (2017-21)	
Region	04/22/22	04/15/22	net change	implied flow	Bcf	% change	Bcf	% change
East	238	238	0	0	320	-25.6	301	-20.9
Midwest	309	304	5	5	426	-27.5	385	-19.7
Mountain	90	89	1	1	119	-24.4	105	-14.3
Pacific	171	169	2	2	216	-20.8	197	-13.2
South Central	681	650	31	31	815	-16.4	808	-15.7
Salt	215	201	14	14	258	-16.7	257	-16.3
Nonsalt	467	449	18	18	557	-16.2	550	-15.1
Total	**1,490**	**1,450**	**40**	**40**	**1,896**	**-21.4**	**1,795**	**-17.0**

Source: EIA

Natural Gas – US Feb gas production down 0.7 bcf/d MoM, +7.8 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. However, it looks like weather was an issue for Feb natural gas production though not nearly as impactful as a year earlier. The EIA released its Natural Gas Monthly on Friday, [LINK], which includes its estimates for "actuals" for February gas production. US gas production in February was 94.1 bcf/d, down MoM from January of 94.7 bcf/d and up 7.9 bcf/d YoY from last year's February freeze. Note that January's data was revised downwards by -0.2 bcf/d from 94.9 bcf/d last month. There continues to be a YoY surplus of +7.9 bcf/d and +2.7 bcf/d for the month of February and January, respectively. February production is down 2.94 bcf/d since the Dec/19 peak of 97.0 bcf/d and 0.5 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	2022
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	94.7
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	94.1
March	57.3	61.5	65.0	65.3	68.9	74.1	73.8	73.2	81.3	90.6	94.6	92.3	
Apr	57.6	62.3	64.8	66.1	70.5	75.2	73.7	73.3	81.2	91.0	92.9	93.2	
May	58.0	62.4	65.0	65.9	70.2	74.1	72.9	73.3	82.1	91.7	87.8	93.0	
June	57.2	62.1	64.6	65.8	70.5	74.0	72.2	74.0	82.5	92.0	88.4	93.2	
July	58.2	62.5	66.3	67.1	72.0	74.2	72.8	74.7	84.2	92.5	89.8	93.7	
Aug	58.9	63.2	66.0	66.9	72.4	74.3	72.2	74.7	85.9	94.8	90.2	94.3	
Sept	59.1	63.1	66.4	66.8	72.4	74.7	71.7	76.0	87.3	94.7	89.5	93.6	
Oct	60.1	65.1	66.5	67.0	73.1	74.2	71.4	77.3	88.4	96.0	88.9	95.6	
Nov	60.1	65.9	66.6	67.7	72.6	73.9	72.0	79.8	89.9	96.7	92.0	97.0	
Dec	61.0	65.6	66.0	66.5	73.2	73.9	71.2	80.4	89.5	97.0	92.5	97.0	
Average	58.4	62.7	65.9	66.3	70.9	74.2	72.9	74.9	84.3	93.0	91.6	93.5	94.4

Source: EIA

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Natural Gas – US LNG exports +3.9 bcf/d YoY in Feb to 11.3 bcf/d

US Dec LNG +3.9 bcf/d YoY

The story for US natural gas markets continues to be the increasing US LNG exports, which was down slightly from record of 11.4 bcf/d in Jan to 11.3 bcf/d in Feb, which was +3.9 bcf/d YoY. Note the YoY comp is to the big freeze in Feb 2021 that caused shut in of production and LNG. 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 Friday, the EIA Natural Gas Monthly reported "actuals" for US LNG exports were 11.3 bcf/d in Feb, which is up +3.9 bcf/d YoY and down 0.1 bcf/d from January of 11.4 bcf/d. The EIA expects exports will remain "at high levels" for the through 2022 as prices are expected to remain elevated and the US looks to supply Europe who has an increased demand for US LNG as sanctions hit Russia in March. Note our table rounds to one decimal and the actual is 11.313 bcf/d for February. 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	2022
Jan	0.0	1.7	2.3	4.1	8.1	9.8	11.4
Feb	0.1	1.9	2.6	3.7	8.1	7.4	11.3
March	0.3	1.4	3.0	4.2	7.9	10.4	
Apr	0.3	1.7	2.9	4.2	7.0	10.2	
May	0.3	2.0	3.1	4.7	5.9	10.2	
June	0.5	1.7	2.5	4.7	3.6	9.0	
July	0.5	1.7	3.2	5.1	3.1	9.7	
Aug	0.9	1.5	3.0	4.5	3.6	9.6	
Sept	0.6	1.8	2.7	5.3	5.0	9.5	
Oct	0.1	2.6	2.9	5.7	7.2	9.6	
Nov	1.1	2.7	3.6	6.4	9.4	10.2	
Dec	1.3	2.7	4.0	7.1	9.8	11.1	
Full Year	0.5	1.9	3.0	5.0	6.6	9.7	11.4
Full Year bcf	186.8	707.5	1,083.1	1,819.4	2,390.0	3,560.8	670.6

Source: EIA

Natural Gas - Permian Highway Pipeline to add 0.65 bcf/d for more LNG exports

Permian Highway Pipeline expansion

We don't think it is unfair to say that Europe's increasing determination to cut itself off Russian oil, natural gas and LNG is the biggest global game changer to energy markets seen in decades. Especially with the urgency they are moving to do so, which, in turn, creates the urgency to find replacement supply, supply capacity and infrastructure to deliver. Yesterday, we tweeted [LINK] "*Sprint is on to add huge #LNG global supply in 2020s (sooner the better) as EU moves to cut off RUS #NatGas. #PermianHighwayPipeline expansion +0.65 bcfd. Remember @qatar_energy 6.4 bcfd expansion offsets RUS existing in-service #NordStream 5.3 bcf/d #OOTT.*" There has been a big push on US Gulf Coast LNG because they are fastest to get to in-service so US LNG is best suited to help backfill Russian natural gas as quickly as possible. On Monday, Permian Highway Pipeline announced [LINK] a "binding" open season for an expansion project that would add 0.65 bcf/d capacity for more Permian natural gas to get to Gulf Coast LNG export projects. Note this is a "binding" open season, which clearly suggests they know there is the demand. This is a relatively simple expansion that is primarily just adding compression so its in-service date is Oct 1, 2023. The existing capacity of the Permian Highway Pipeline is ~2.1 bcf/d. Our Supplemental Documents package includes the Permian Highway Pipeline open season and the Kinder Morgan summary on the Permian Highway Pipeline.

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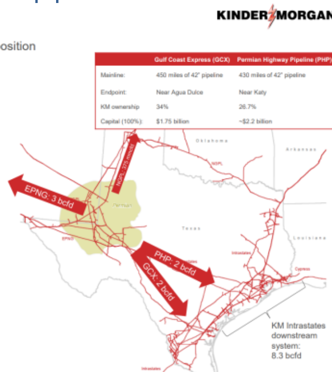
Figure 4: Kinder Morgan Permian pipelines



Source: Kinder Morgan

US Jan pipeline exports to Mexico down MoM

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

The EIA Natural Gas Monthly also provides its "actuals" for gas pipeline exports to Mexico, which were 5.5 bcf/d in February, which was up 0.6 bcf/d YoY and down from January of 5.6 bcf/d. There were no material revisions to this month's data. Feb was cooler than normal in most parts of Mexico, which means pleasant weather and not huge demand for air conditioning ie. open the windows weather. 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.

Figure 5: US Pipeline Gas Exports To Mexico (bcf/d)

bcf/d	2014	2015	2016	2017	2018	2019	2020	2021	2022
Jan	1.7	2.2	3.2	3.9	4.4	4.9	5.2	5.6	5.6
Feb	1.8	2.3	3.5	4.0	4.5	4.8	5.4	4.9	5.5
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	6.2	
Sept	2.2	3.3	4.1	4.2	5.0	5.4	6.1	6.0	
Oct	1.9	3.2	4.2	4.2	4.9	5.5	6.0	6.0	
Nov	1.9	3.0	4.0	4.5	4.7	5.3	5.5	5.5	
Dec	2.1	3.2	3.6	4.4	4.5	4.9	5.3	5.4	
Full Year	2.0	2.9	3.8	4.2	4.6	5.1	5.5	5.9	5.6

Source: EIA

Renewed international focus on natural gas

Natural Gas - Nabors sees renewed international focus on natural gas

The big service companies can be very direct on the macro oil and natural gas outlook as Baker Hughes did last week on their hugely bullish call for LNG and natural gas for the 2020s. But they can also just give tidbits that infer a much bigger message. Thursday was the major day for big oilfield service companies to report Q1, including Nabors. We tweeted [LINK] ""*We see opportunities emerging in our larger international market, we are also seeing an increase in gas prices and many countries reassessing their hydrocarbon needs focused*

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on natural gas" says $NBR. Bullish indicator on need for global #LNG #NatGas supply in 2020s. #OOTT". We thought this comment was bullish for LNG and natural gas markets for the 2020s. Nabors is seeing a shift and an increasing international priority for natural gas. This makes sense as Europe cutting off Russia's pipeline and LNG imports means there has to be other natural gas around the world to replace this supply. Nabors is seeing an emerging international focus on natural gas. Nabors doesn't say it, but this has to be related to the concern on what happens as Russia natural gas/LNG exports get cut off. They don't say it, but it's clearly supportive of a bullish view for LNG. Mgmt said "*We see opportunities emerging in our larger international market, we are also seeing an increase in gas prices and many countries reassessing their hydrocarbon deeds focused on natural gas*." Later in the memo, we note other items from the Nabors Q1 call.

Natural Gas – TotalEnergies take at least thru 2022 before restart Mozambique LNG

Total Mozambique LNG status

It wasn't what Mozambique was hoping to hear from the TotalEnergies Q1 call on when they expect to restart their Mozambique LNG Phase 1 construction. But, in reality they should be happy as TotalEnergies did seem to point to a potential restart a few months earlier than they said in their Q4/21 earnings call. Will take at least through 2022 before a potential restart. TotalEnergies did not say when but they seemed to leave the door open to a restart could happen in early 2023. A restart in April 2023 would mean that the force majeure caused a minimum two year delay. On Thursday, we tweeted [LINK] "*Restart of TotalEnergies Mozambique LNG Phase 1 not expected in 2022. @PPouyanne "my view is that all that will take at least 2022, and then what we plan on our side is to willing to go back there." Security much improved but "not yet fully recovered" Thx @business. #OOTT #LNG"* CEO Pouyanne noted the improving security situation but said "*So that I said there is an activity on the ground, not from us, but from the Government of Mozambique and utilize to recover the security and then to bring back as a population in piece to over normal life. We saw the two conditions we agreed with the Mozambique government, my view is that all that will take at least 2022, and then what we plan on our side is to willing to go back there. And as I said, last time we reshuffled activities a but I will have be able to visit (inaudible) Palomar and Mozambique mostly by the prior year. Because my security people told me not to go, I will not send any of my people of contractors to face a difficult situation. So I think it's a matter of, as I said before, there is a good news. Good news and the run the security as much improved and less, much less. I would say with the fact, it's not yet fully recovered. I think the Government of Mozambique communicated, but they the objective is to recover the security."*

An H1/23 restart would be a few months sooner than Total's Q4/21 call view

The TotalEnergies CEO Q1 call comments are a reminder that that there is still security risk. Pouyanne did not suggest any potential restart timetable, but seemd to leave the door open to restart in H1/23. This would be a sooner restart than he said in the Q4/21 call. Our Feb 13, 2022 Energy Tidbits highlighted TotalEnergies Q4 call on Feb 10 and out Feb 10 tweet [LINK] "*1/2. #LNGSupplyGap getting bigger. Expect longer time to restart @TotalEnergies #Mozambique. In Q&A, @PPouyanne "But my view is that the conditions under which we could restart the project might be fulfilled, maybe it will take a year. I don't know. We'll see" #LNG #NatGas #OOTT."* And [LINK] "*2/2. @PPouyanne "We know that when we say yes we can come back, it will take six months really to start up again". Hope was 2022 restart for 1st #LNG in 2026. Backs up ~5 bcf/d of #MozambiqueLNG. see SAF 04/28/21 blog. Need*

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brownfield FIDs ie. #LNGCanada Phase 2. #NatGas #OOTT". Pouyanne received headlines for his other comments that day such as "*We will not build a plant in a country where we will be surrounded by soldiers."* Pouyanne was clear, the restart of work on Mozambique LNG is likely not happening until at least H2/2023.

TotalEnergies Mozambique LNG delay was the game changer to LNG markets
We have been highlighting TotalEnergies force majeure on its Mozambique LNG Phase 1 for the past year as the game changing event for LNG markets. Phase 1 at 1.7 bcf/d is significant, but our view has been because TotalEnergies delaying Phase 1 of 1.7 bcf/d is actually leading to a delay of 5.0 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 – Have late rains & Ramadan led to Mozambique attack lull?

Late rains and Ramadan in Mozambique

The question is have late rainy season and Ramadan led to a temporary lull in terrorist attacks in Mozambique. The reality is that a restart of TotalEnergies Mozambique LNG decision will be made by TotalEnergies board and not the government or anyone else. So it will be their assessment of the security situation is the security assessment that will count. However, it is good to try to see what is being said on the Mozambique security situation in Cabo Delgado province. A good site to bookmark for weekly updates is Cabo Ligado who posts a weekly update. Their latest update "Cabo Ligado Weekly: 18-24 April 2022" was posted on Tuesday. [LINK]. We find it insightful as they note the government has been highlighting the improving security situation, but then also close the situation summary section noting there may be temporary reasons (weather and Ramadan) why there is a lack of terrorist activity. Cabo Ligado wrote "*There is some speculation that the lack of activity may be due to the late rains, which are still ongoing, and that it is the middle of Ramadan. While it is premature to draw firm conclusions about the future trajectory of the insurgency, the security forces' recent operations have borne some success in cutting off the insurgents' supply routes and undermining their offensive capability*." Our Supplemental Documents package includes the Cabo Ligado Weekly

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Natural Gas – Qatar's 6.4 bcf/d expansion just covers existing Nord Stream 5.3 bcf/d
On Thursday, Qatar Energy announced it had aware the "final major North Sea East Project EPC Contract". [LINK]. The release concluded "*With the execution of this EPC contract, the only remaining major EPC contract for the delivery of the North Field Expansion Project, comprising the NFE and NFS projects, is the EPC contract for the NFS two onshore processing and liquefaction trains, which is currently planned to be awarded by the end of 2022. When completed, the NFE and NFS projects will increase the State of Qatar's LNG production capacity from 77 MTPA today to 126 MTPA by 2027."* This is an unchanged timeline to add this major 6.4 bcf/d LNG expansion. We were reminded of the perspective of what this means to LNG markets. Prior to Russian/Ukraine, the Qatar expansion was considered needed to meet growth in LNG demand and, even still, there was going to be an LNG supply gap. But now with Europe moving to cut off Russian pipeline natural gas and LNG imports, the Qatar expansion capacity is needed to the quantity to replace Russian natural gas and LNG to Europe and there will be no effective capacity left for global markets. Note this is a numbers to numbers comparison to illustrate the impact on global LNG supply/demand balance as the vast majority of the expansion is expected to go to Asia. We tweeted [LINK] "*Here's why #LNG market #NatGas is way tighter for 2020s. @qatar_energy's massive LNG expansion to add ~6.4 bcf/d by 2027 was meant to meet growing LNG demand pre RUS/UA. #Gazprom's existing in-service #NordStream is 5.3 bcf/d. #OOTT #NatGas*." Gazprom's existing in-serve Nord Stream gas pipeline is a 5.3 bcf/d pipeline. The just completed, but not in-service Nord Stream 2 is a similar 5.3 bcf/d capacity. Our Supplemental Documents package includes the Qatar Energy release.

Qatar expansion to add 6.4 bcf/d by 2027

Pre RUS/Ukraine, Shell forecast LNG supply gap to emerge in mid-2020s
Russia's invasion of the Ukraine took over all the world news that week including energy. One item that was overlooked that week was Shell's LNG Outlook 2022 on Feb 21 Our Feb 27, 2022 Energy Tidbits wrote on the new outlook and how this was very bullish for LNG and therefore the natural gas supply that can supply new LNG export projects. This was a forecast that included Qatar's 6.4 bcf/d expansion as the key major new LNG supply for the 2020s. Again, this was before Russia invaded Ukraine and Europe started moving to ban Russian natural gas pipeline and LNG imports. In the new outlook, Shell moved to now forecast (again pre Russia/Ukraine) an LNG supply gap to emerge in the mid-2020s as part of their planning scenario, not a potential scenario. We thought that was the most important takeaway that Shell is now planning their strategies and capital allocation on a forecast of a LNG supply-demand gap to emerge in the mid-2020s. They are clearly telling markets that this is their business planning case, not an upside scenario. As soon as we saw the new slide deck, we tweeted [LINK] "*1/2. Buckle up for strong #LNG & #NatGas prices for 2020s. Clear warning from @Shell, now "forecast" #LNGSupplyGap to "emerge" in mid-2020s & "focuses attention" on need for more investment to increase supply. Yr ago, were bullish but not as certain, expected vs forecast #OOTT".* This is significant as there is a big difference between forecasting a LNG supply gap vs their 2021 LNG outlook that said "*a supply-demand gap is expected to open in the middle of the current decade".* Because it says that their planning scenarios on what they do for LNG is based on their view there is a supply gap. There was no change to Shell's forecast for LNG demand to almost double and hit ~92 bcf/d (700 MTPA) by 2040.

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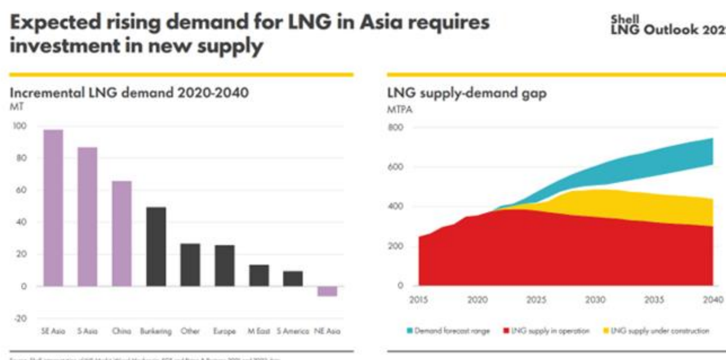
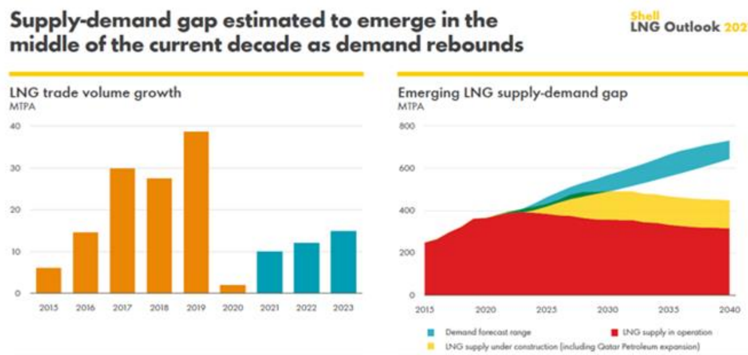
But the issues on LNG supply mean that there is a LNG supply gap and investment in new supply is needed.

Figure 6: Shell LNG Outlook 2022 – Feb 21, 2022



Source: Shell

Figure 7: Shell LNG Outlook 2021 – Feb 25, 2021



Source: Shell

Post RUS/UA, hugely bullish LNG capacity demand forecast by Baker Hughes
Shell's LNG outlook was on Feb 21, so it was pre Russia/Ukraine The service company who is best plugged into the LNG market is unquestionable Baker Hughes, who has been involved in almost all LNG projects. And last week, we saw their post Russia/Ukraine LNG outlook and it was a WOW! Last week's (April 24, 2022) Energy Tidbits memo was titled "Baker Hughes' Hugely Bullish LNG Forecast Calls For 24 Bcf/d of New LNG FIDS by 2025 to Meet 2030 Required Capacity". We then wrote "*There is no other way to describe it but to say Baker Hughes has a hugely bullish view for LNG and the need for massive LNG export FIDs over the next 3 years. We were on the Bloomberg terminal and missed the first 10 minutes of the Baker Hughes Q1 call on Wednesday morning, but jumped on the call as soon as we saw the headlines coming across the terminal on CEO Simonelli's opening comments. We had to tweet [LINK] "LNG growth is hugely more than expectations.*

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On @business "Baker Hughes CEO Says Global LNG Capacity Will Exceed 800 MTPA By End Of This Decade". That's 105 bcf/d capacity. Recall Shell's LNG Outlook 2022 on 02/21 forecast #LNG demand of ~92 bcf/d in 2040. #LNGCanada #OOTT." Fortunately, we had recorded the call so was able to make a quick transcript and attach it to our followup tweet [LINK] "Must read transcript 👇. Huge #LNG growth fcast by #BakerHughes @simonelli_l. LNG capacity in 2030 >105 bcfd less current cap 61 bcfd less under construction 20 bcfd = FIDs needed by 2025 of 24 bcfd. Surely Shell will FID #LNGCanada Phase 2? Big plus to Cdn #NatGas. #OOTT". Baker Hughes sees the need for 24 bcf/d of LNG export FIDs by 2025 to meet their forecast. Here is the transcript we created of Simonelli's comments/ At 2:45 min mark. Simonelli "Recent geopolitical events have severely constrained what was already a tight global natural gas market and have refocused the world on the importance of energy security, diversity, and reliability. As the world reacts to the rapid changes in the global commodity market, governments are prioritizing natural gas and LNG as a key transition and destination fuel. We continue to see a focus on prioritizing LNG from stable, lower cost markets, and locations that can provide cleaner LNG. Given the current LNG price environment and the quickly changing dynamics, we believe that global LNG capacity will likely exceed 800 MTPA by the end of this decade to meet growing demand forecasts. This compares to the current global installed base of 460 MTPA and projects under construction totalling almost 150 MTPA. In order to be operational by 2030, this additional capacity will need to reach FID by around 2025." Note Simonelli is referencing capacity and not LNG demand. A higher level of capacity is always needed to meet certain levels of demand. This is a hugely bullish LNG forecast from the company that is likely the most plugged into what is happening on LNG export project planning and discussions. Our tweet highlighted LNG Canada Phase 2, which as readers know we have been bullish on the potential for Phase 2 FID in 2022 and still expect to see it happen. "

Natural Gas – India Feb natural gas production +7.45% YoY to 3.29 bcf/d

India natural gas production +7.45% YoY

One of the key themes for India in the last year is that it looks like they have turned the corner on a decade of declining domestic natural gas production, which is even more important given the stronger than expected LNG prices in 2021-2022. The key India natural gas theme for the past decade was that India's natural gas production declined, which meant that increases in natural gas consumption had to be met by increased LNG imports. India's domestic natural gas production peaked in 2010 at 4.6 bcf/d but it now looks like we are seeing modest return to growth. On Tuesday, India's Petroleum Planning and Analysis Cell released their monthly report for March natural gas and oil statistics [LINK]. India's domestic natural gas production was up 7.45% YoY from 2.31 bcf/d in March 2022 to 3.29 bcf/d, up from 3.28 bcf/d in February. India has consistently struggled to grow domestic natural gas production with 2018-2019 production averaging 3.18 bcf/d, declining to 3.02 in 2019-2020 and averaged 2.78 bcf/d 2020-2021. Our Supplemental Documents package includes excerpts from the PPAC monthly package.

Natural Gas – India Mar LNG imports down -12.3% YoY to 2.98 bcf/d, down 5.9% MoM

India LNG imports -5.9% MoM

There is no surprise that the above noted modestly increasing India domestic natural gas production means reduced need for LNG imports. India is always viewed as an extremely

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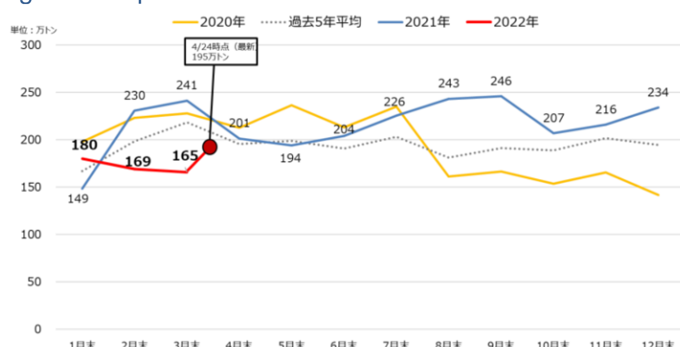
price sensitive buyer in terms of its LNG imports, which was exemplified in their 2020-2021 import data. India had ramped up imports from June to October 2020, taking advantage of low LNG prices to fill their stocks. Imports began to decline in November 2020 as LNG prices began to rise, with the price trajectory ramping up in late Dec and reaching record levels January. This resulted in India LNG imports declining from a 2020-2021 peak of 3.84 bcf/d in Oct 2020 to just 2.85 bcf/d in Jan 2021. Despite LNG imports normalizing in March and April to 3.06 bcf/d and 3.12 bcf/d, respectively, they have fluctuated slightly with Mar 2022 decreasing from a Feb 2022 increase to 2.98 bcf/d, Mar decreased 5.86% MoM to 2.98 bcf/d down 12.26% YoY due to abnormally high spot prices. India has been trying to avoid high spot LNG prices. Note, imports in March were down by 5.9% MoM despite the MoM increase in production.

Natural Gas – Japan's LNG stocks -3% YoY

Japan LNG stocks -3% YoY

The beginning of April has seen above average temperatures, which helped support a modest build in inventories despite the earthquake that knocked off some coal fired plants. Japan's METI weekly LNG stocks data was released on Wednesday morning local time [LINK]. LNG stocks at April 24 were ~94 bcf, +11% WoW from 85 bcf, down 3% YoY from 97 bcf and up small from the 5-yr average of 91 bcf. Below is the LNG stocks graph from the METI weekly report.

Figure 8: Japan's LNG Stocks



Source: METI

Natural Gas – "*China to scrap tariffs on coal imports in rare move*"

China to scrap tariffs on coal imports

It looks like China is going to be doing what it can to support economic growth in a tough year, which should also have some impact to reduce China's LNG imports in 2022. On Thursday, we tweeted [LINK] ""*China to scrap tariffs on coal imports in rare move to ensure energy supply", says will benefit RUS. Also "promoting high-quality economic development" likely implies more coal usage instead of high priced #LNG. #OOTT #NatGas."* We have to believe China encouraging more coal will mean less consumption of natural gas and less imports of still very expensive LNG. Earlier on Thursday, China's Global Times (state sponsored media) reported [LINK] "*China will scrap tariffs on coal imports between May 1 and March 31, 2023, the Ministry of Finance announced on Thursday, marking a rare move over the several years to ensure energy security amid growing uncertainties in global coal supply due to geopolitical and other factors. The move is aimed at enhancing energy supply and promoting high-quality economic development, the ministry said. Different types of coal*

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products, which face tariff rates between 3 percent and 6 percent, will see zero tariffs during the stated period. Chinese experts said that the move will further guarantee China's coal supply and in particular help to stabilize domestic coal prices, which have seen a rising trend. The move will also benefit major coal exporting countries such as Indonesia and Russia, according to experts." Sure we see the benefit to Russia comment, but when we see China see the words enhancing energy supply and promoting high-quality economic development, we see that as a message they will try to reduce energy costs to help economic growth. Our Supplemental Documents package includes the Global Times report.

Natural Gas – No surprise, Novatek admits 2.6 bcf/d Arctic LNG-2 timing at risk

Novatek's 2.6 bcf/d Arctic LNG-2

Last week's (April 24, 2022) Energy tidbits noted that it was hard to believe Novatek's 2,6 bcf/d Arctic LNG-2 wasn't to be in limbo and that the it's got to be at big risk of some sort of indefinite delay. The question will be how long will of a delay will it be? The first of three phases had previously expected to have first LNG by end-2023. On April 22, Novatek announced [LINK] that it "*has decided not to publish its financial statements and not to hold a teleconference with investors on the first quarter 2022 financial results*." That had to be a bad sign. On Tuesday, Bloomberg reported "*Prospects for Russia's second-biggest LNG exporter Novatek look in doubt, after its CEO Leonid Mikhelson warned at a shareholders' meeting last week that the schedule for its upcoming Arctic LNG-2 project could be delayed because of sanctions. Arctic LNG-2 has relied significantly on Western equipment and technology, not to mention financing to cover its $21bn cost. But sanctions have meant many Western companies involved in the development have had to pull out. Mikhelson acknowledged that the project is "strained" because of complications caused by sanctions, and that Novatek may not meet its deadlines."* As a reminder, Novatek's website posted "*At the end of 2021, the overall progress for Arctic LNG 2 is estimated at 59%, the first train is roughly 78% completed. As of December 31, 2021, about 57% of the total Project's planned capital expenditures had already been financed. At the end of 2021, we have drilled a total of 56 production wells. Essentially, we have drilled and completed enough wells to start production at GBS #1."* The partners in Arctic LNG-2 are Novatek 60%, TotalEnergies 10%, CNPC 10%, CNOOC 10%, and Mitsui/Jogmec 10%. Our Supplemental Documents package includes the Bloomberg report and the Novatek Arctic LNG-2 info posted on their website. [LINK]

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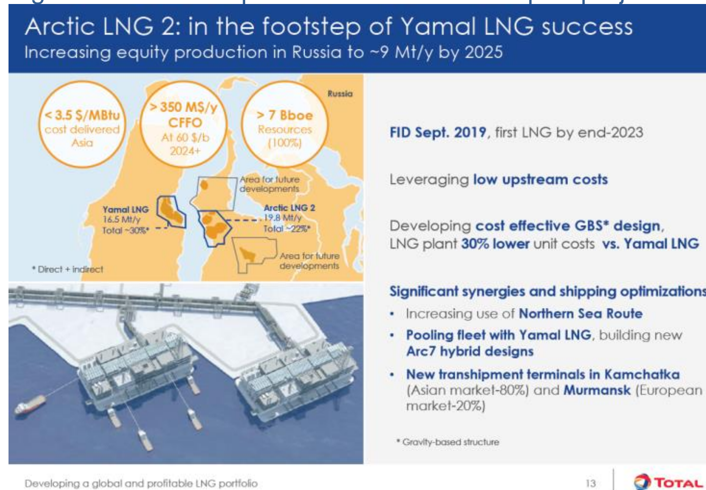
Figure 9: Novatek operated Arctic LNG-2 export project



Source: TotalEnergies

Natural Gas – Russia tweaks gas payment plan to try to get more onside

Russia clarifies Putin gas payment process

The reality check is that Russia doesn't want to lose any foreign revenues as it needs every dollar/euro it can get as it tries to keep its economy flowing and support people during the war against Ukraine. We don't know yet if it will be significant, but we have to believe the clarification of the mechanism for Putin's decree for how countries need to pay for Russia natural gas will have some help. We reviewed the Central bank of the Russian Federation posted this payment clarification [LINK] and think Bloomberg did a good job of summarizing. Bloomberg wrote "*Russia clarified the rules on how European customers are required to pay for natural gas supplies in rubles, easing the terms slightly as concerns grow the mechanism could force companies to violate European Union sanctions if they want to keep the fuel flowing. President Vladimir Putin last month demanded buyers switch to paying in rubles, threatening to cut off supplies to countries that don't. But the EU said the process Russia set up for making the payments, which requires customers to open both foreign-currency and ruble accounts with state-controlled Gazprombank, was in breach of sanctions on the central bank. Russia cut supplies Wednesday to Poland and Bulgaria, which refused to pay in rubles. In an official document issued Friday, the Bank of Russia said that if buyers paid into their foreign-currency accounts in good faith, gas wouldn't be turned off even if Gazprombank fails to convert those funds into rubles, as long as the hang-up wasn't caused by sanctions. It wasn't immediately clear whether the shift would be enough to allay European customers' concerns. Slovakia warned earlier Friday that meeting the Gazprombank rules for euro accounts, which involve foreign exchange authorization from the central bank, could also run afoul of sanctions. The clarification came just hours after Bank of Russia Governor Elvira Nabiullina announced the mechanism also limits the period for converting the euros and dollars into rubles to two working days.*" Our Supplemental Documents package includes the Central Bank of Russia release and the Bloomberg report.

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Natural Gas – Algeria warns Spain not to re-export gas supplies to Morocco

Algeria warns Spain no to export to Morocco

We probably shouldn't be surprised to see the reports that Algeria is warning Spain to not take Algerian natural gas and re-export it to Morocco. Algeria cut off natural gas to Morocco. On Wednesday, Reuters reported [LINK] on Algeria's warning to Spain that it would terminate gas supplies if Madrid sold any Algerian gas to other countries. Spain cited previously that it was a Spanish decision as to supply gas to Morrocco via gas pipeline. Algeria has previously said it will stick to its contract with Spain despite withdrawing its ambassador over a dispute between the two countries relating to the Moroccan-held territory of Western Sahara. Since the Russian invasion of Ukraine, North African gas supplies have become increasingly more important to Europe, as our April 10, 2022 Energy Tidbits noted that Italy locked in an increased supply contract with Italy. Spain's energy ministry has confirmed its plan to supply Morrocco with natural gas but stressed that the gas would not be of Algerian origin. Morocco now wants to import liquefied natural gas (LNG) from Spain by reversing the flow of the pipeline while it moves to develop its own longer-term LNG import terminals, as Reuters first reported last year. Algeria decided at the end of 2021 not to extend a deal to export gas through a pipeline running through Morocco to Spain that made up nearly all Morocco's gas supply. It is supplying Spain through a direct subsea pipeline and by vessel. Our Supplemental Documents package includes the Reuters report.

Natural Gas – Europe gas storage at risk of undersupply with no Russian flows

Europe gas storage at risk without Russian imports

BloombergNEF reported Friday its monthly "Europe Gas Monthly" report that gives a good overview and forecast of European gas. Russian gas flows to Poland and Bulgaria were terminated on April 27 due to both countries non-compliance with Putin's order that all gas supply would be paid for in rubles. This accounts for the uncertainty the forecast due to the risk of Russian flows. Markets are waiting to see what happens as May contractual deadlines are fast approaching and European buyers are attempting to compromise in ways to pay for gas. The payment structure as proposed in the decree is likely to fall foul of EU sanctions, the European Commission said. Companies must work closely with European governments to secure acceptable compromises or face sanctions risk. In the unlikely event that Russian supplies occur in line with the estimated minimum contractual obligations, Europe needs to build gas storage in order to make it through the upcoming winter. Europe's gas storage could make it through a 10-year average winter without any Russian gas supplies if storage reaches 86% by the start of Oct 1. Further price increases, in addition to measures to actively dampen European demand or increase supply, would naturally lower this percentage. BNEF forecast's that Europe gas storage will reach 2,583 bcf; this assumes 1,016 bcf of Russian imports from May-Sept, and without such, Europe will struggle to meet sufficient inventory levels for the winter. BloombergNEF notes "The BNEF forecast for May-September LNG flows to Europe has already risen from 8.4 bcf/d to 8.8 bcf/d, given an increasingly negative JKM-TTF spread sending cargoes to Europe. Any further price increases from April 27 onward are likely to further drive-up LNG flows to Europe. BNEF's perimeter could gain an additional 98cm were an 80% LNG terminal utilization rate -- as observed in April - realized between May and Sep, but this would require lower flows to other buyers. Our Supplemental Documents package includes the BNEF report.

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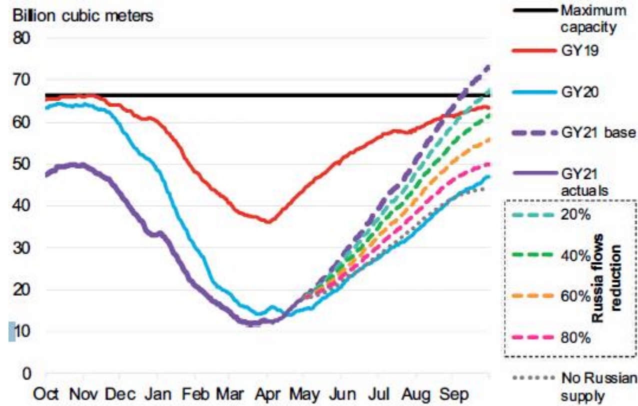
Figure 10: Europe Underground Storage Inventories



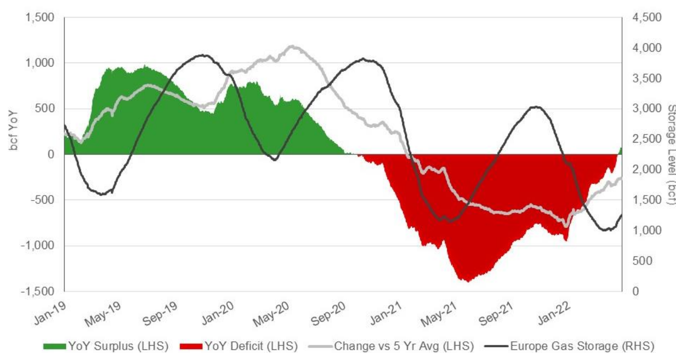
Source: Bloomberg

Natural Gas – Europe storage YoY surplus is now only 2.28% ie. 32.32% full vs 30.04%

The urgency to refill Europe storage has been working. As a result, the YoY Europe storage gap continues to narrow since the start of the winter natural gas season. Europe gas storage started down 18.52% YoY and is now only a YoY surplus of 2.28%. Draws to European gas storage units ended two weeks ago with the now third observed build. Despite the shrinking YoY surplus in storage, 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 turned to surplus after months of the deficit tightening this week. Thanks to the warm weather and US LNG, storage as of Apr 27 is at 32.32%, which is +2.28% greater than last year levels of 30.04% and are -6.47% below the 5-year average of 38.79%. As winter draws come to an end, we expect to see a decline in demand for LNG as less is used to heat homes as we continue through the injection season. Below is our graph of Europe Gas Storage Level.

Europe storage now 32.32% full

Figure 11: Europe Gas Storage Level



Source: Bloomberg

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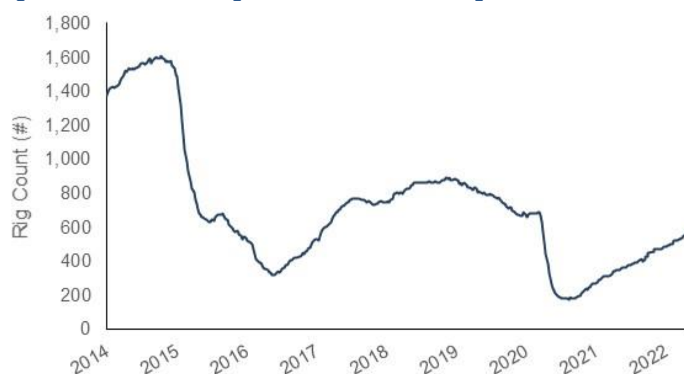
Oil – US oil rigs +3 WoW at 552 oil rigs at Apr 29

Baker Hughes released its weekly North American drilling activity data on Friday. There are still extremely strong oil, NGLs and natural gas prices and industry has fresh (and many modestly increasing) 2022 capex budgets and the reality is that industry needs to crank up drilling to increase the depleted inventory of DUCs. This week US oil rigs were +3 WoW at 552 oil rigs, with all major oil and gas basins up slightly. Oil rigs are +380 off the bottom of 172 in Aug14/2020 week. There were modest basin changes this week; Permian was +1 at 334 rigs this week while Bakken was up +1 at 36 rigs after remaining flat last week. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by 126 to 552 oil rigs (-12%). US gas rigs were +1 WoW though still higher than normal with increases in the Eagle Ford basin reflecting the heightened $4 HH. Below is our graph of US oil rigs since January 1, 2014.

US oil rigs +3 WoW

Figure 12: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

Oil – US frac spreads +2 to 273 for the week ended April 29

Mark Rossano (C6 Capital Holdings) held his weekly US frac spread recap for the week ended April 22 on the Primary Vision network. YouTube video is at [LINK]. For the week ended April 29, US frac spreads at the high point in the week were +2 to 273. Rossano said "*it's more of a steady grind*". Permian was above 150 spreads but came down a bit. The increases were mostly in the smaller basins and what they call "Others", these Other counties, some of which are active in dry gas. Rossano highlighted refracs and sees a lot of potential for refracs in the Haynesville and Eagle Ford. He did not recap his near term frac spread forecast. Last week, he said that he expects to see that steady move up to the 290 level. And then through May and into June should get to the 300 level, then some additional spreads in July.

Frac spreads +2 to 273

Oil – Total Cdn rigs -6 to 95 total rigs, +44 rigs YoY

Total Cdn rigs were down -6 this week to 95 total rigs as winter drilling season ended a few weeks ago and the Cdn sector is in spring breakup. Cdn oil rigs were -3 at 45 rigs. Cdn gas rigs were -3 at 50 gas rigs. However, we have been highlighting how the decline in Cdn rigs would be less than the normal decline during spring break-up. Total rigs are now +80 since

Cdn rigs -6 WoW

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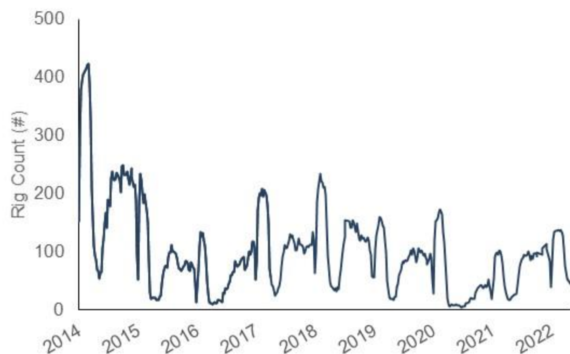
the June 26, 2020 all-time low. Cdn drilling has recovered YoY, a year ago Cdn oil rigs were 20 and Cdn gas rigs were 31 for a total Cdn rigs of 62, meaning total Cdn rigs are +44 YoY and total rigs are +32 vs 2019.

Figure 13: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

Oil – Q3 Cdn drilling to surpasss normal winter peak for only 2nd time in ~40 years

Precision sees big 2022 Cdn drilling year

The US E&P may be having a more reserved increase for drilling in 2022, but that isn't the case in Canada with Cdn E&P drilling at very high levels. And don't forget this is in the face of the continued lack of drilling on the Blueberry first nations lands in NE BC that is still awaiting a BC govt deal. Precision Drilling held its Q1 call on Thursday and CEO Kevin Neveu gave some very clear indications or how Cdn drilling is higher than normal and going higher. As most are aware, Cdn drilling typically peaks every winter when frozen grounds give access to basically all potential lands, drilling then drops hugely during the spring break-up and then starts building again in June/July up to its winter peak. Neveu gave two clear data points on Cdn drilling. (i) Drilling up during spring break-up. Neveu said *"Turning to Canada for the first quarter, we experienced strong customer demand matching 2018, activity level. Importantly, our customers extended the winter drilling program is well into the traditional spring breakup period driving first quarter activity up almost 50% from last year. Even today, in the midst of spring break-up, we have 33 rigs operating compared to 21 this time last year continuing the trend."* (ii) Q3 drilling will surpass the normal peak in the winter. On Friday, we tweeted [LINK] ""*we expect Q3 [Cdn drilling] will surpass the winter season for only the 2nd time in memory, has to be the busiest 2nd half since 2014" says #PrecisionDrilling CEO Neveu. Cdn E&P has never looked stronger - very low debt, increasing dividends & drilling up."* Neveu has almost 40 years of oilfield experience and this is only the 2nd time that Q3 drilling will surpass the normal winter peak drilling. Later in the memo, we note other items from the Precision Q1 call.

Oil – Cdn oil drilling prospects have quick payout of capital invested

Payout of cdn oil wells

Cdn E&P companies have been paying down debt, increasing dividends and still able to reinvest for modest growth. Precision notes how Cdn drilling is reaching high levels. No one should be surprised as their plays have excellent economics that only make these companies even better positioned to keep their momentum on paying down debt and increasing

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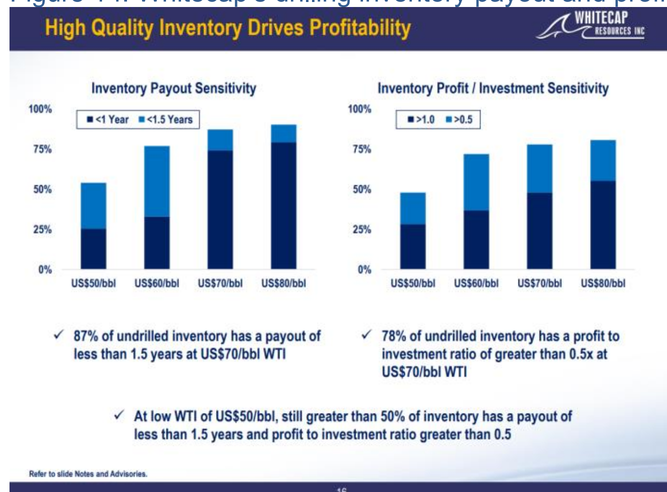
dividends. We don't see as many well economics as used to be the case, but Whitecap did so in its new corporate presentation with their Q1 this week. Forget about $100 oil or $90 oil, at $70 oil, ¾ of Whitecap's well portfolio have payout periods less than 1 year ie. all the upfront well capital is recovered in less than 1 year and then the cash flows are surplus to the well cost. This makes a great financial model for reducing debt and increasing dividends.

Figure 14: Whitecap's drilling inventory payout and profit sensistivity



Source: Whitecap Resources

Oil – US weekly oil production flat at 11.9 mmb/d

US oil production flat WoW

US oil production was flat this week at 11.9 mmb/d for the week ended Apr 22 after increasing for consecutive weeks. Lower 48 production drove total production and was up flat from last weeks level at 11.5 mmb/d this week, Alaska was also basically flat this week. US oil production is up YoY at +1.0 mmb/d from last year's production and is still down significantly at -1.2 mmb/d since the 2020 peak of 13.1 mmb/d on March 13. Absent weather impacts and the continued sanctions against Russian crude, we would expect US oil production to remain relatively flat if not inch up a little higher in Q2/22.

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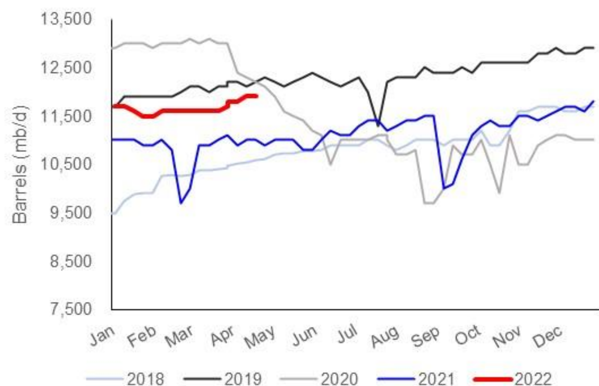
Figure 15: EIA's Estimated Weekly US Oil Production

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

Source: EIA

Figure 16: US Weekly Oil Production



Source: EIA, SAF

Oil – EIA Form 914 February actuals down vs weekly production estimates

EIA Form 914 February

The EIA released its Form 914 data [LINK] on Friday, which is the EIA's "actuals" for February US oil and natural gas production. Form 914 shows February production of 11.312 mmb/d, down from January production of 11.362 mmb/d after being revised down +9,000 b/d, and up 1.539 mmb/d YoY from February 2021 of 9.773 mmb/d when the freeze in the Permian saw a sharp decline in production. Three key items to highlight. (i) The actuals for February were below the EIA weekly estimates and also a little below, 0.021 mmb/d lower, than the EIA STEO March had for February. (ii) This is a consecutive decline after seven consecutive months with YoY increases, and we expect to see this continue through the remainder of the year. (iii) With the beginning of the seasonal decline operations, Federal

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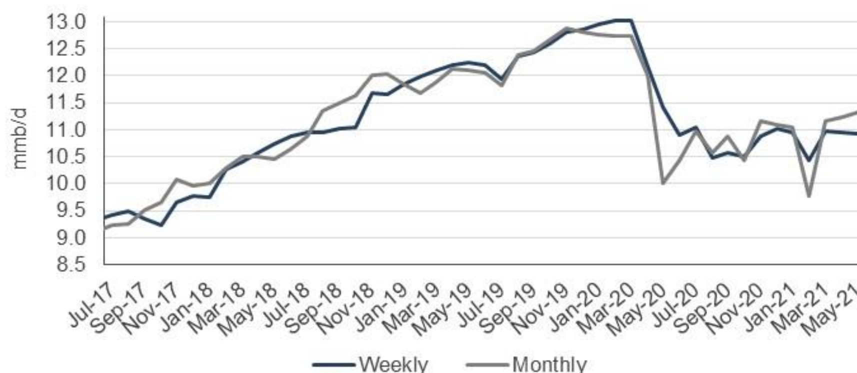
Offshore had the largest MoM decrease, down -93,000 as oil rigs were slow to ramp up production after the holiday season and some colder weather towards the end of the month. New Mexico production was up by 64,000 b/d MoM. The February actuals were -288,000 b/d below the weekly estimates average of 11.6 mmb/d for February, decreasing 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
2022	11,362	11,312										
2021	11,056	9,773	11,160	11,230	11,334	11,288	11,330	11,206	10,851	11,526	11,769	11,604
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

Source: EIA

Figure 18: EIA Form 914 US Oil Production vs Weekly Estimate



Source: EIA

Oil – North Dakota oil back to 700,000 b/d after blizzard crashed it to 300,000 b/d

Blizzard crashed North Dakota to 300,000 b/d

Last week's (April 24) Energy Tidbits memo highlighted how the blizzard will be leading to North Dakota oil production in April being down MoM vs March. For some reason, this blizzard impact was below the radar. That is, unless you read the Bismarck Tribune [LINK] report "*Last week's blizzard caused North Dakota's daily oil output to drop by 25%, according to an estimate from state officials. The storm also resulted in at least one significant spill and fire in the oil fields. More winter weather expected this weekend could prolong the production slowdown, North Dakota Pipeline Authority Director Justin Kringstad said. The National Weather Service's Bismarck office forecasts rain and snow, with the most winter impacts in North Dakota's oil-producing regions, including the western third of the state and in the north central part.*" The actual impact was much worse. On Friday, the Bismarck Tribune reported [LINK] "*North Dakota's oil output briefly plummeted to just 300,000 barrels per day earlier this week as the second blizzard to hit the state in April pummeled the oil patch. That amounts to a 70% drop in production relative to the start of the month. State Mineral Resources Director Lynn Helms provided updated production estimates to state regulators at Friday's Industrial Commission meeting. He said production has already rebounded to about 700,000 barrels*

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per day in the week since the blizzard hit. The state's oil industry had been steadily producing about 1.1 million barrels per day for the past year up until April's storms." The Bismarck Tribune reminded how natural gas is also being hit. Our Supplemental Documents package includes the Bismarck Tribune report.

Oil – Helmerich & Payne doesn't see any evidence privates are ramping production

Cdn crude by rail exports

Interesting point highlighted by Helmerich and Payne in their Q1 call on Thursday on how much more private E&P companies can ramp up production. H&P just doesn't see any evidence privates are doing so. We tweeted [LINK] "*"we keep hearing about this wild card that the privates are just going to go ramp-up production. And we just really haven't seen evidence of that" says $HP. Big #Oilfield services co's not expecting huge ramp up in Lower 48 #Oil #NatGas drilling in Q2/Q3. #OOTT."* Here is the except from the Q&A on this point. Mgmt was asked "*Okay, got it. And I appreciate it. It's very early not on this front, but just in your conversations with customers. Do you feel that there is a willingness or desire to grow within their stated frameworks. grow CapEx within their stated allocation frameworks. Or you think, they're more sort of, thinking about the production growth that they promised the street, which we're able to think they're solving or forth."* Mgmt replied ""*Yeah, I think they're intending to live within their CapEx budget. In that CapEx budget, that they announced. They had a -- depending on the customer, they had anywhere from no growth to 5% growth. And that's their expectation. And I don't see any indication that there's any change at all with the large public players and quite frankly, even the private companies, they're, we keep hearing about this wild card that the privates are just going to go ramp-up production. And we just really haven't seen evidence of that. I think, there is a lot of discipline associated with those companies as well. And again, I just I think it sets us up for a much better outlook as an industry. We have done a good job in the past and doing that. But I really believe in -- like we've talked about that. We're on a course to continue to go down this path."* Later in the memo, we note other items from the Helmerich and Payne Q1 call.

Oil – Cdn crude by rail exports down MoM at 124,781 b/d in Feb, up 11.5% YoY

Cdn crude by rail exports

The Canadian Energy Regulator (successor to NEB) reported Canadian crude by rail exports were +6,716 b/d MoM in February to 124,781 b/d vs 131,497 b/d in January [LINK]. This puts Feb export volumes at +12,910 b/d YoY (-11.5%) vs Feb 2021 of 111,871 b/d. CBR volumes are +85,914 since the July 2020 bottom of 38,867 b/d, when COVID-19-fueled capital spending reductions and lower drilling activity in Western Canada were in full effect. February WCS-WTI differentials increased to -$13.53 as prices steadily increased over the course of the month. The start-up of Enbridge Line 3 additional export volumes is likely the key reason for the decline in exports by rail. We expect to see volumes increase as we move into March and observe the impact of the Russian invasion of Ukraine. Below is our graph of Cdn crude by rail exports compared to the WCS–WTI differential.

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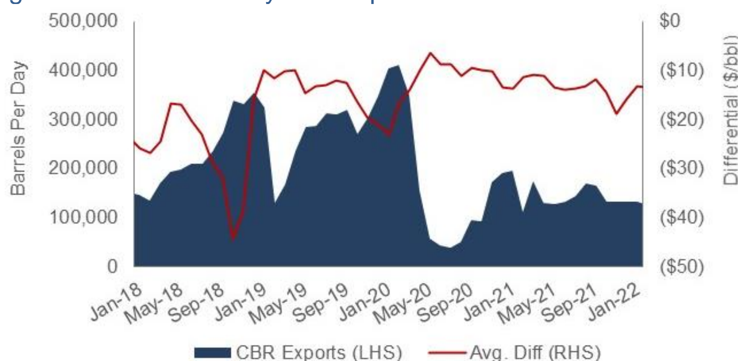
Figure 19: Cdn Crude by Rail Exports vs WCS Differential



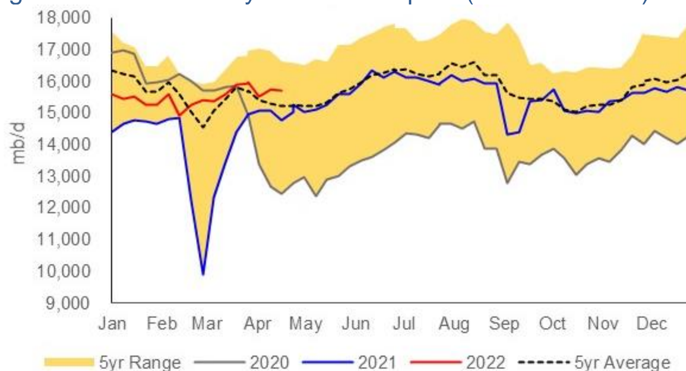
Source: Canadian Energy Regulator, Bloomberg

Oil – Refinery inputs -0.033 mmb/d WoW at 15.684 mmb/d

Refinery inputs down WoW

The EIA crude oil input to refinery data is for the week ended Apr 22. This week, the EIA reported crude oil inputs to refineries down 0.033 mmb/d this week to 15.684 mmb/d for the week ended Apr 22 and are +0.665 mmb/d YoY from last years February Freeze in the Permian. Refinery utilization was down slightly at 90.3%, which is +6% YoY though is still below 5-year average utilization levels as US refineries begin planned maintenance in sync with the Canadian oil sands. Total products supplied (i.e., demand) increased WoW, up 0.788 mmb/d to 19.821 mmb/d. Motor gasoline was down 0.129 mmb/d at 8.739 mmb/d from 8.868 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 decreased to 19.360 mmb/d, down from last year

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



Source: EIA

Oil – US "net" oil imports up +0.647 mmb/d WoW at 2.213 mmb/d

US "net" oil imports up WoW

US "NET" imports were up +0.647 mmb/d to 2.213 mmb/d for the Apr 22 week. US imports were up +0.097 mmb/d to 5.934 mmb/d. US exports disappointed and were down -0.549 mmb/d to 3.721 mmb/d. The WoW increase in US oil imports was driven by US's Top 10 imports by country were down up by 0.155 mmb/d from Top 10. Some items to note on the

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by country data. (i) Canada was up this week by +0.045 mmb/d to 3.510 mmb/d, which is now ~0.1 mmb/d above the average levels in Jan/Feb of 2020. (ii) Saudi Arabia was up 183,000 b/d to 0.438 mmb/d this week. (iii) Colombia was up 0.032 mmb/d to 0.364 mmb/d. (iv) Ecuador was down -0.103 at 0.108 mmb/d. (v) Iraq was dow 24,000 b/d to 242,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico was down by 97,000 b/d to 0.391 mmb/d.

Figure 21: US Weekly Preliminary Oil Imports by Major Countries

(thousand b/d)	Feb 11/22	Feb 18/22	Feb 25/22	Mar 4/22	Mar 11/22	Mar 18/22	Mar 25/22	Apr 1/22	Apr 8/22	Apr 15/22	Apr 22/22	WoW
Canada	3,342	3,869	3,630	3,731	3,398	3,806	3,612	3,923	3,153	3,465	3,510	45
Saudi Arabia	250	358	520	701	562	534	333	573	328	255	438	183
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	510	768	497	412	645	641	731	619	763	488	391	-97
Colombia	234	332	144	71	279	72	284	216	49	332	364	32
Iraq	225	285	295	188	161	489	82	71	155	266	242	-24
Ecuador	98	98	0	160	205	103	96	76	145	211	108	-103
Nigeria	182	25	43	96	0	2	148	148	89	191	0	-191
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	4,841	5,735	5,129	5,359	5,250	5,647	5,286	5,626	4,682	5,208	5,053	-155
Others	949	1,093	638	960	1,145	839	973	674	1,313	629	881	252
Total US	5,790	6,828	5,767	6,319	6,395	6,486	6,259	6,300	5,995	5,837	5,934	97

Source: EIA, SAF

Oil – Russia April oil production ~9.2 mmb/d vs OPEC+ May quota of 10.549 mmb/d

Russia down to 9.2 mmb/d

As bad as it is so far for Russia, it will only get worse if Europe bans Russian oil imports. On Friday, TASS reported [LINK] on Russia's oil production for April. TASS wrote "*If the Russian oil production statistics is recalculated in barrels at the coefficient used for Russia's Urals oil (7.33), the country's average daily output in April 2022 amounted to 10.057 mln barrels compared with 10.05 mln barrels in December 2020 including gas condensate. Russia's average gas condensate production per month amounted to 800,000-850,000 barrels per day.*" Earlier today, we tweeted [LINK] on the numbers stripping out the normal condensate of 800-850,000 b/d "*The worst is still to come for Russia if EU bans #Oil imports from RUS. Even still, crude oil only production in April averaged ~9.2 mmb/d, vs their #OPEC+ quota of 10.549 mmb/d. #OOTT* ". Our Supplemental Documents package includes the TASS report.

Oil – Next OPEC and non-OPEC ministerial meeting (ONOMM) is Thurs May 5

OPEC+ meeting is May 5

The next, 28th OPEC and non-OPEC Ministerial Meeting (ONOMM) is to scheduled to be held on Thursday May 5, 2022. As of our 7am MT news cut off, we haven't heard any serious chatter that the meeting will be anything more than the last few meetings – a rubber stamp o the existing plan to increase OPEC+ production by ~0.4 mmb/d for the month of June.

Oil – Saudi nest egg, its net foreign assets up MoM, but down $17.9b since Nov 30

Saudi net foreign assets down $17.9b since Nov 30

We continue to see key financial reasons why Saudi Arabia is going to do all it can to maintain high oil prices (ie. say >$80) for the foreseeable future. And we continue to believe the #1 financial theme for Saudi Arabia in the 2020s will be their continued, and likely increasing, use of Other People's Money as they try to transition their country to MBS's Vision 2030. We are surprised that markets and oil watchers don't seem to pay much attention to the Saudi net foreign assets data ie. what we call their nest egg to help them thru the Energy Transition. Saudi Arabia's net foreign assets at Mar 31 were $434.2b, which was up $10.1b MoM from $424.1b in Feb, but down $17.9b from $452.1b in Nov. Oil prices have

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been $100 since Russia/Ukraine, but they were still basically still over $70 in Dec and over $80 in Dec. With the decline in net foreign assets, it reinforces that there is a lot more on the cost side to Saudi Arabia. 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 has helped to slow down and temporarily pause the decline in net foreign assets, at least up until the past few months. Saudi Arabia's central bank (SAMA) doesn't provide explanations for the monthly swings. But it looks like it is trending back towards November levels as oil prices remain elevated. Saudi net foreign assets at Mar 31 of $434.2b are down $10.38b YoY from $444.6b at Mar 31, 2021. 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 Mar 31 data.

Figure 22: Saudi Arabia Net Foreign Assets

Source: Bloomberg

Oil – Risk for terrorist attacks as Ramadan ends tonight

Month long Ramadan ends tonight

The month long Ramadan ends tonight. We were reminded of the risk to terrorist attacks with Ramadan ending after reading the Cabo Ligado Weekly (see earlier item on Mozambique) comment on the low level of terrorist attacks in the past month. Cabo Ligado wrote "*There is some speculation that the lack of activity may be due to the late rains, which are still ongoing, and that it is the middle of Ramadan. While it is premature to draw firm conclusions about the future trajectory of the insurgency, the security forces' recent operations have borne some success in cutting off the insurgents' supply routes and undermining their offensive capability*."

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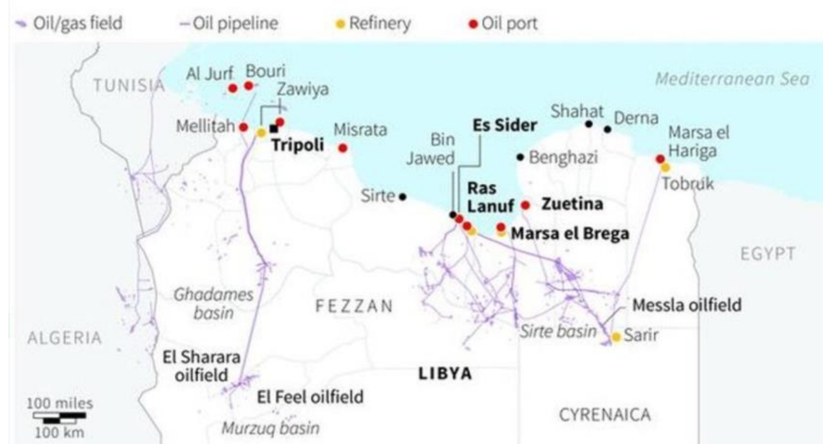
Oil – Libya NOC says Zueitina oil port to temporarily reopen

Libya's 70,000 b/d Zueitina oil port

Libya's Zueitina oil port has a capacity of ~70,000 b/d. Earlier this morning, the Libya National Oil Corporation posted on Facebook "*The National Oil Corporation reports that with the efforts of the benevolent people of this country and in periodic and continuous communication with the actors, the Zueitina oil port has resumed work temporarily, in order to avoid environmental disasters that may occur, God forbid, unless the tanks are emptied. Thus, the National Oil Corporation announces a temporary lifting of force majeure on the Zueitina oil port, in the hope that the crisis will resolve soon*." Yesterday, the NOC had put out an urgent plea warning that Zueitina needed to be opened ASAP. NOC wrote "*The crude oil Abu-Attefl is produced from the fields of Abu-Attefl and Rimal in addition to the production from area 107 of the Sarir oil company, which is about 130 km from the field 103A of Zueitina company and is stored in its dedicated tanks containing heaters, steering system and then pumped to the port of Zueitina by displacing it with the Zueitina crude, a mixture of crude produced from each of the fields of 103 and Nafura of the Gulf Company and at strictly calculated rates. What make matters worse, the sudden cessation of operations at the terminal of Zueitina forced the NOC and its companies to add a safe crude pump to the system in Zueitina, in order to ensure the complete displacement we have introduced the Amna crude in the line to the terminal of Zueitina and from there to the tanks allocated to it via the 40-inch line 212 km passing through a heating station to maintain its temperature to prevent waxing. This line carrying more than 1 million barrels and is pumped in an orderly manner and the required tankers are also scheduled for these operations accurately so that these crudes are marked and felt with it properly.*" Our Supplemental Documents package includes the Libya NOC postings yesterday and today.

Figure 23: Libya Ports, Major oilfields and Terminals map



Source: SAF Group

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

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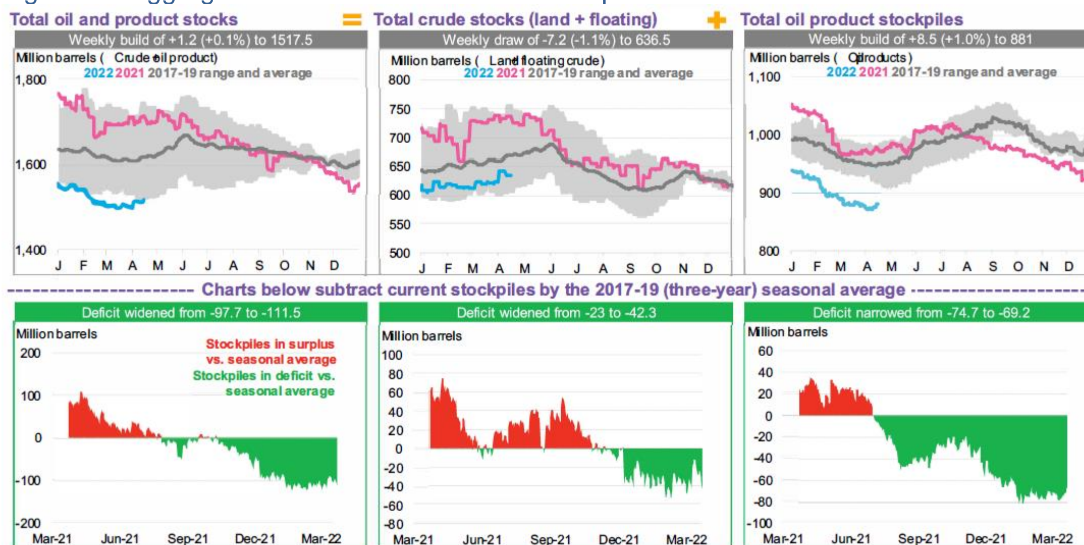
BNEF's global oil inventories

For those with a Bloomberg terminal we recommend flipping thru BloombergNEF's "Oil Price Indicators" weekly that comes out on Mondays as it provides good charts depicting near-term global oil demand and supply indicators. There is no question that there are increasing risks on the demand indicators with lockdowns in China, inflation, etc, but the key global oil and products stocks data point continues to be positive with a large deficit relative to the 2017-2019 average. The deficit for crude and product widened from 97.7 mmb to 111.5 mmb compared to the 2017-2019 average. For the week ended Apr 25, land crude oil storage in tracked regions fell WoW at 527.1 mmb. The stockpile deficit against the 5 yr average (2015-2019) widend from 76.1 mmb to 92.8 mmb. Total crude inventories decreased by 1.1% to 636.5 mmb, including global floating inventories. Product stocks were down 1% WoW with the stockpile deficit against the 3-year average narrowing from 74.7 mmb to 69.2 mmb. Gas oil and middle distillate stocks have widened against their three-year average deficit (2017-2019) of 39 mmb to 39.2 mmb. Jet fuel consumption by international departures decreased by 13,700 b/d WoW while consumption by domestic passenger departures declined by 31,700 b/d, a consecutive week of declines. Global mobility indices fell significantly last week as was expected with the Easter weekend. The high frequency oil and product stockpile deficit against the three-year seasonal average (2017-2019) suggests the stockpile deficit has widened to near the post pandemic record set three weeks ago. Below is a snapshot of aggregate global stockpiles. Our Supplemental Documents package includes excerpts from the Bloomberg report.

Figure 24: Aggregate Global Oil and Product Stockpiles



Source: Bloomberg

Vortexa crude oil floating storage

Oil – Vortexa crude oil floating storage 88.98 mmb as of Apr 29, -10.61 mmb WoW

We are referencing the Vortexa global crude oil floating storage data posted on the Bloomberg terminal as of 2pm MT yesterday. And we note that these estimates get revised over the course of the week. And, as noted below, the revisions can go back for months. We do not check daily for the revisions, so our comments today are compared to the prior weeks

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Vortexa estimates posted on Bloomberg on April 23 at Noon MT. (i) As of 2pm MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate as of April 29 was 88.98 mmb, which is -10.61 mmb WoW vs revised down April 22 of 99.59 mmb. Note April 22 was revised down -2.37 mmb from the 101.96 mmb posted by Bloomberg as of noon MT on April 23. (ii) Please note it looks like Vortexa reversed most of the revisions up last week. Last week, we noted that Vortexa revised up its estimates for crude oil in floating storage for the last several weeks. The revisions up each week were about the same for the last several weeks, which made it feel like they missed 4 or 5 larger tankers. So instead of floating storage being around 90 mmb, last week's estimates pointed to the more typical level being around 100 mmb. Whereas this week, they revised down (not as much) the last several weeks. So it really gets back to the range being stuck in the 90 to 100 mmb or so. It's probably not too surprising as it coincides with the post Russia invasion of Ukraine period. (iii) The revisions to the last several weeks were all revised down but not as much as the revised up last week. It suggests that instead of missing 4 or 5 tankers a couple weeks ago, they likely missed 3 or 4 tankers. Revisions in yesterday's estimates vs the Vortexa estimates posted as of noon MT on April 23. April 22 data revised -2.37 mmb to 99.59 mmb. April 15 data revised -3.43 mmb to 103.67 mmb. April 8 data revised -3.29 mmb to 100.03 mmb. April 1 data revised –3.71 mmb to 88.91 mmb. (iv) April 29 estimate of 88.98 mmb is -132.03 mmb vs June 21, 2020 peak of 221.01 mmb. (v) Note that the below graph goes back 3 years and not just 2 years as floating oil storage was in the big ramp up period in late March/April 2020 as Covid started to have a huge impact. April 29 estimate of 88.98 mmb is +39.94mmb vs pre-Covid of 49.04 mmb as of April 29, 2019. Note May 1, 2020 was 165.93 mmb, which was up ~100 mmb vs March 27, 2020 of 65.33 mmb.

Figure 25: Vortexa Floating Storage as of April 29 Posted on Bloomberg 2pm MT Sat

Source: Bloomberg, Vortexa

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Figure 26: Vortexa Estimates Apr 30 2pm MT, Apr 23 noon MT, and Apr 16 noon MT

Est as of Apr 30, 2pm MT

FZWWFST VTXA Inde 94) Sug
04/28/2019 - 04/29/2022
1D 3D 1M 6M YTD 1Y 5Y

	Date	FZWWFST VT... Mid Px
Fr	04/29/2022	88983
Fr	04/22/2022	99590
Fr	04/15/2022	103.672k
Fr	04/08/2022	100.027k
Fr	04/01/2022	88907
Fr	03/25/2022	92321
Fr	03/18/2022	93582
Fr	03/11/2022	97056
Fr	03/04/2022	94408
Fr	02/25/2022	91897
Fr	02/18/2022	85737

Est as of Apr 23, noon MT

FZWWFST VTXA Inde 94) Sug
04/21/2019 - 04/22/2022
1D 3D 1M 6M YTD 1Y 5

	Date	FZWWFST VT... Mid Px
Fr	04/22/2022	101.958k
Fr	04/15/2022	107.1k
Fr	04/08/2022	103.317k
Fr	04/01/2022	92621
Fr	03/25/2022	97776
Fr	03/18/2022	98006
Fr	03/11/2022	102.976k
Fr	03/04/2022	99424
Fr	02/25/2022	97694
Fr	02/18/2022	91072
Fr	02/11/2022	102.693k

Est as of Apr 16, noon MT

FZWWFST VTXA Inde 94) Su
04/14/2019 - 04/15/2022
1D 3D 1M 6M YTD 1Y

	Date	FZWWFST VT... Mid Px
Fr	04/15/2022	91882
Fr	04/08/2022	93949
Fr	04/01/2022	84450
Fr	03/25/2022	89304
Fr	03/18/2022	90780
Fr	03/11/2022	93993
Fr	03/04/2022	93116
Fr	02/25/2022	92805
Fr	02/18/2022	86368
Fr	02/11/2022	97959
Fr	02/04/2022	99663

Source: Bloomberg, Vortexa

Oil – Bloomberg Oil Demand Monitor: Summer driving season expects slow start

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. The driving season in the northern hemisphere is set up for a weak start this summer as high gasoline prices deter demand. UK road fuel sales have continued to decline, now 13% below equivalent 2019 levels on April 17; the UK has only surpassed pre-Covid sales twice since the pandemic began, once in September with a spur of panic buying and most recently at the onset of the Russian invasion of Ukraine. Gasoline and diesel fuel sales are down a combined 7% WoW, though this is largely attributed to the impact of the Easter holiday in the second half of the week. The lockdown in Shanghai continued for its fourth week and has continued to take a huge toll on vehicle movements in the nation, down 24% for the week ended April 18 from the equivalent 2019 week. While Beijing vehicle traffic has increased, the average for 15 Chinese tracked cities has fallen by 5% with a notable slump in Guangzhou over the last couple of weeks. China's zero-tolerance policy toward Covid-19, and the movement restrictions that come with it, were one of the main reasons for the International Energy Agency's decision earlier this month to revise down its estimate for this year's global oil demand. US gasoline demand was down 6% from pre-pandemic levels on April 15. Roadway congestion in Paris and Mumbai were down the most of the 13 tracked cities at -55% and -53% respectively on April 18. The driving season traditionally begins in the US on Memorial Day (May 30) and lasts until Labour Day in early September. High diesel prices have started to impact sales in India, while the effect is more mixed in developed nations. Experts in the market believe that wage inflation and larger personal savings should allow people to tolerate a higher gasoline price point, a deviation from the impact of elevated price points. Air seat travel capacity showed improvements in northeast Asia this week, including in China, though remains down 36% from 2019 levels which is up from 42% last weeks. Global commercial flights are about 20% below the equivalent week in 2019 according to the 7-day moving average. US refinery utilization on April 15 was up at 91%, +3% from 2019. The increase was primarily attributed to US GoM refineries +5.4% from 2019 in preparation of summer demand. Our Supplemental Documents package includes the Bloomberg Oi Demand Monitor.

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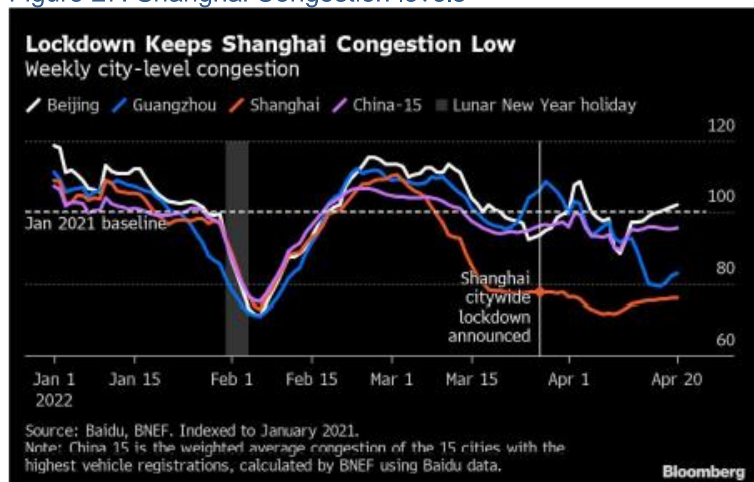
Figure 27: Shanghai Congestion levels



Source: Bloomberg

Oil – BNEF, driving activity ramped up towards the end of the month

Most driving is needed

The outlook for gasoline demand is still generally positive as the Northern hemisphere heads into the summer driving season. Everyone likes to complain or at least comment on the high price of gasoline because everyone goes to the gas station, has to pump their own gas so sees the price per litre or gallon. But we keep reminding that, to the most part, driving gasoline consumption is mostly inelastic in the short term. Unless there is a forced restriction on driving, driving miles don't change much in the short term as most driving is needed as part of everyday living whether its commuting to work, running errands, taking kids to places, etc. It's also why governments are all scrambling to ``cut taxes on gasoline – they know people need their cars. The question mark is how high do gasoline prices have to go before there is a significant impact on personal consumption. All we know so far is that gasoline prices linked to $100+ oil isn't hammering driving. There is still uncertainty in the outlook for gasoline demand through Covid as we have seen in the Asia Pacific region, and if the high gas prices persist if consumers will reduce their driving as the impact of high prices begins to impact their budget. Congestion levels in the America's, Europe and Asia were up in most major city centres WoW with the exception of Athens. Our Supplemental Documents package includes the BloombergNEF report.

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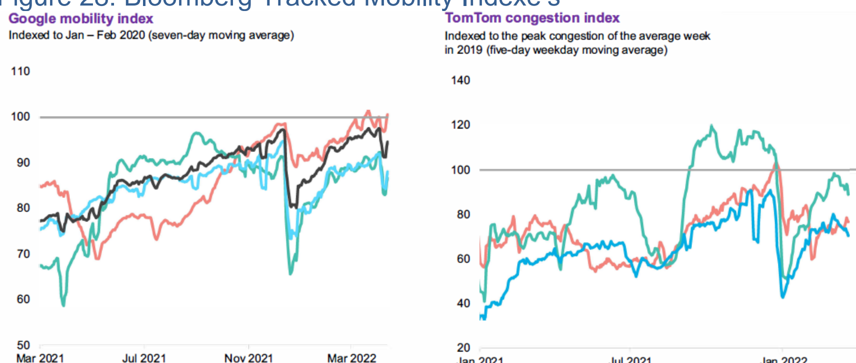
Figure 28: Bloomberg Tracked Mobility Indexe's



Source: BloombergNEF

Oil – Bloomberg: Strong rebound in European jet fuel demand ahead of summer

BNEF Aviation Indicators weekly

BloombergNEF's released its "Aviation Indicators Weekly" which was subtitled "*Strong rebound ·in Europe ahead of summer, despite issues with pilot shortages globally*" which shows that the global picture for jet fuel demand is still positive. Global passenger jet fuel demand decreased 0.4% WoW with Asia declines leading the decline. Cancellations over the past week has seen 59,162 b/d of demand be removed over the same four-week period, largely attributed to the war in Ukraine. European departures according to Eurocontrol have increased 2.6% WoW as summer schedules commence, increasing the implied jet fuel demand. British airways continue to experience delays from staff shortages due to the spike in flight demand schedules. US passengers decreased by 0.2% WoW as demand from the Easter weekend began to ween down. The number of scheduled flights in China increased by 5.4% against the previous week in lieu of persistent Covid-19 lockdowns. Jet fuel demand in Asia Pacific and the America's declined by 2.1% and 0.6% WoW. The global passenger flight schedule for the next 12 weeks ahead is 0.78% lower WoW with cuts remaining minimal. Our Supplemental Documents package includes the BloombergNEF report.

Oil – Bullish US oil demand indicators

US oil demand indicators

The US still looks to be the strength of the recovery in oil and products demand. Jet fuel demand continues to increase despite elevated prices, while the same cannot be said for gasoline which remains down significantly due to the high prices. Bloomberg released their "US Oil Indicators" weekly report on Thursday, and it provides a positive outlook for oil demand through 2022. All of the US oil indicators are bullish for the remainder of 2022. The WTI has seemed to stabilize around $100/bbl since late March as the growing demand risk surrounding the lockdowns in China counteract the supply concerns that initially saw prices spike. US production remains flat at its pandemic high of 11.9 mmb/d and output from the shale patch is expected to grow though is unlikely to relieve the pressure on the supply side due to continued investor pressure. Gasoline demand continues to narrow against its 5-year average, indicating that the shock of high prices may be wearing off; demand still remains ~560,000 bbls below average for this time of year. The cost of jet fuel has made its way into ticket prices but has shown less price sensitivity compared to gas demand; demand for aviation fuel continues to inch closer to pre pandemic levels as daily flight departures across the US continue to ramp up. Airport throughput in the US is almost back to 2019 levels. North

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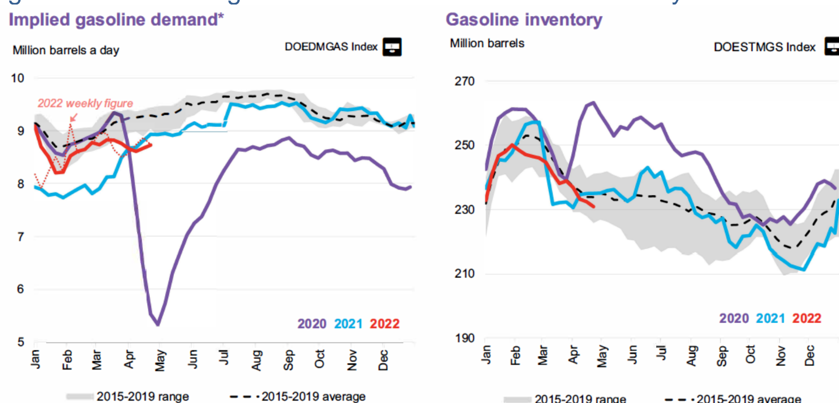
American mobility levels have returned to their pre-Omicron levels, though that data dipped slightly because of the Easter long weekend. US restaurant activity is holding firmly with 2019 levels. Our Supplemental Documents package includes the BloombergNEF report

Figure 29: BloombergNEF Gasoline Demand and Inventory



Source: BloombergNEF

Oil – Caixin PMI for Apr is down at 46.0, after last month at 48.1

Caixin PMI down in Apr

No surprise given the expanded lockdowns in China, China manufacturers continue to be hit even harder On Friday evening, we tweeted [LINK] on the just released Caixin China Manufacturing PMI data for April. We tweeted "*China Caixin PMI for Apr 46.0 vs Est 48.0 (#Reuters) & Mar 48.1. "The figure pointed to a second successive monthly deterioration in overall business conditions faced by Chinese manufacturers, and one that was the quickest since February 2020". Thx @IHSMarkitPMI #OOTT.*" IHS highlighted "*A further tightening of COVID-19 restrictions in China led to notably quicker falls in both output and new business at the start of the second quarter. Increased supply chain disruption meanwhile drove the second-fastest deterioration in average vendor performance on record. Softer demand conditions resulted in more marked falls in both purchasing activity and stocks of purchases. Inflationary pressures persisted, with the rate of input cost inflation exceeding that seen for selling prices, as efforts to stimulate sales restricted firms' pricing power. Business confidence towards the 12-month outlook for output remained relatively subdued.*" Our Supplement Documents package includes the Caixin release. [LINK]

Oil – China's big cities set Covid testing requirements for public venue, transportation

China's new testing requirements

It's hard not to believe it will be awhile before we see China's economy back humming. China's major cities are all moving to testing requirements for public venues, transportation, etc. If there are going to be testing requirements, how can this not impact day to day life and the economy even if it isn't a "lockdown"? Earlier this morning, we tweeted [LINK] "*Continued pressure on China economy (#Oil, #NatGas demand) from Covid. want to balance covid control & economic growth by having major Chinese cities (ie. Beijing, Shanghai, Guangzhou, Shenzhen, etc) w/ new covid testing guidelines & proof for public venues, transport, etc" #OOTT*". Yesterday, Global Times (China state media) reported [LINK] "*In order to execute the "Dynamic zero-COVID" policy and effectively curb the risk of the Omicron variant, multiple Chinese metropolises including Beijing, Shanghai, Guangzhou and*

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Shenzhen have issued new guidelines to normalize nucleic acid testing, while require proof of a negative test result for tourists and local residents in public venues and transport systems." And "*But since the Omicron variant is highly infectious, the normalization of nucleic acid testing will prove to be a measure to at least normalize or recover passenger transportation in the country amid the ongoing epidemic, and also to minimize impact on China's economy which has shown signs of a marked slowdown."* Our Supplemental Documents package includes the Global Times report.

Oil & Natural Gas – No surprise, World Bank base case is prices peak in 2022

Significant change to energy landscape

No one should be surprised to see the World Bank's base case in its Commodity Markets Outlook call for commodity prices to peak in 2022. We had to tweet [LINK] "*Politically, #WorldBank couldn't call for continued high 2023 as base case. Rather just note of the risk. No politician driven organizations want to say it's bad in 2022 and could still be bad in 2023. #OOTT #NatGas #Oil.*" It's not just their call on oil and gas, it's their call on basically the full range of commodities including food. The World Bank base case calls for peak commodity prices in 2022 and then falling in 2023 and 2024. And the forecast decline is significant, it's not like the World Bank calls for 2023 prices to be close to 2022. For example, fertilizer prices are forecast down 11% in 2023 and a further 15% in 2024, and energy prices forecast down 12% in 2023 and a further 12% in 2024. As our tweet highlights, we wouldn't expect any political organization like the World Bank to come out and high commodity prices are here to stay as their base case. Rather, they put out their qualifier that it could happen. Our first tweet on the outlook was [LINK] "*Updated #WorldBank commodity fcast calls for #Oil #NatGas #Food prices to peak in 2022, but "depends heavily on the duration of the war in Ukraine and the severity of disruptions to commodity flows, with a key risk that commodity prices could be higher for longer". #OOTT #NatGas."* Right up front, the World bank wrote "*While prices generally are expected to peak in 2022, they are to remain much higher than previously forecast. The outlook for commodity markets depends heavily on the duration of the war in Ukraine and the severity of disruptions to commodity flows, with a key risk that commodity prices could be higher for longer.*" Our Supplemental Documents package includes excerpts from the World Bank commodity outlook. [LINK]

Oil & Natural Gas – sector/play/market insights from Q1 calls

Sector insights from Q1 calls

This was the first real week of Q1 reporting with all the major oilfield service companies and the start of supermajors reporting. The oil and gas services companies are first to report and we typically get some of the best macro insights from the services, pipelines, refineries and utilities. We find we get the best insights into a range of oil and gas themes/trends, sectors and plays form the conference calls. As a reminder, our Energy Tidbits memo does not get into the quarterly results, forecasts, or valuation. Rather the purpose of highlighting a company is to note themes/trends and plays that will help shape a reader's investment thesis to the energy sector. In the conference calls, we also tend to find the best insights from the Q&A portion as opposed to the prepared remarks.

Helmierich and Payne – no significant ramp up in drilling in Q2/Q3

Helmirich and Payne held its Q1 call on Thursday. (i) Another drilling company that doesn't see a huge increase in drilling activity in Q2/Q3 of 2022 as companies continue to live within their capex budgets for the year despite the elevated pricing environment. Mgmt commented *"Our expectation is that the, if prices remain strong*

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in terms of oil prices, gas prices our customers will reset budgets again like they did in '21 and then again in '22 and we'll be in a position with our first fiscal quarter. Fourth calendar quarter to be able to add capacity if the demand is there." (ii) They do not seen any signs of a ramp up in drilling by private companies, with continued capex discipline across the industry noting "*I think they're intending to live within their CapEx budget. In that CapEx budget, that they announced. They had a -- depending on the customer, they had anywhere from no growth to 5% growth. And that's their expectation. And I don't see any indication that there's any change at all with the large public players."* (iii) They continue to highlight the lack of capacity available in the super spec rigs as has been the theme across drilling companies, this will limit how much shale drillers can actually increase their rig levels. The industry issue remains there needs to be an increase in DUCs ie. more rigs drilled than completed. (iv) The reactivation of super spec rigs is getting more expensive from inflation and a lack of supply , mgmt. noted *"These reactivation costs were higher than expected as we have stated on prior call, reactivation costs increase both with the rig of the length of time the rig has been idle. Accordingly, we expect these costs, when, and as and as incurred in future quarters to continue to increase. Given that the, average idle super speck is been stacked for two plus years. Further, inflation has started to put upward pressure on the reactivation cost for rig."* (v) Another to highlight the Vaca Muerta. HP didn't say it, but in the Nabors call, they noted how Vaca Muerta players need superspec rigs and there aren't many in Argentina. HP said *"In our South American operations, Argentina and Colombia remain focus areas, and we have begun to contract additional rigs in those countries."* Our Supplemental Documents package includes excerpts from the Q1 call.

Nabors – Expects operators to increase activity by 15% by YE

Nabors held its Q1 call on Thursday. (i) Nabors survey shows operators expect to ramp up activity >15% by year end but it is important to note that this is only up a little from last quarter survey. This is not a 15% change QoQ, rather only a small incremental increase. We believe this is consistent with what HP said that not huge growth in Q2/Q3 but then more at end of 2022 as producers look to 2023 budgets. Mgmt noted *"Our latest survey of the larger lower 40, operators indicates a slightly higher 2022, exit rate, rig count than expected just a quarter this reflects that notwithstanding some height at least for now, operator plans appear to remain largely based on the pre-war commodity outlook."* (ii) There were bullish signs for LNG as Nabors sees an emerging international focus on natural gas. Nabors did not mention Russia, but we believe that this is related to the concern on what happens when Russian LNG/exports are cut off. (iv) Nabors has 16 Super Spec rigs that can be reactivated for <$1mm per rig, though market pricing does noty support the build of new super spec rig. Mgmt commented *"We have 23 additional super speck rigs in various stages. The first 5, we can bring out with very little capital, the next 11 for capital less than a $1 million to the million bucks and then the remaining seven as you go into the seventh, deeper and deeper, so, we have some firepower there to get us to get that rig count above 100, by the end of the year. And so, that's our plan right now. In terms of new bills, obviously the market pricing, doesn't support new bills yet."* (iii) Nabors headline comment is that they do not believe Russia will be a factor to them. In the Q&A Mgmt stated *"Throughout the remainder of the year,*

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Russia will not even be a factor you will not see it will disappear. And I think that's how do you will continue to, grow really very material over the next week or so. So we feel very comfortable about the guidance that we gave for 2023." (iv) Mgmt spoke to Saudi Arabia's ramp up of unconventional, *"Obviously, the number one area where the US is Saudi Arabia and Aramco has been committed to increase their production capacity by a 1 million barrels in barrels. And also they're making a big commitment on the unconventional away from our new bills. There's actually interested in there and adding to their unconventional rig activity and they have the only actually end up in front of a lot of incremental guests. So, the opportunity exists out there."* Our Supplemental Documents package includes the Nabors Q1 Transcript.

Patterson UTI – Continues to highlight challenges in increased drilling

Patterson UTI held its Q1 call on Thursday and it was a pretty short call with only a few questions. (i) They spent some time highlighting the challenges that will face any big ramp ups in activity. Mgmt noted *"I don't recall another period where leading-edge day rates for drilling rigs moved up this quickly. The supply of high-quality equipment is now very limited. Any meaningful increase in drilling or completion equipment capacity across the market is further limited by global supply chain challenges, where there are longer lead times for various raw materials and manufactured components, such as structural steel, steel tubular, engines, and electrical components…. At this point, if you're an operator looking to increase your activity and you don't have an agreement for a Tier 1 super speck rig or for a frac spread, you may have the challenge to find what you want. We will always try to work with our customers to get the equipment and services they need. But the industry is now constrained and its ability to respond as quickly as the industry." had in the past."* They also note the labor shortage and difficulties associated with hiring and retaining employees. (ii) They see a higher end in rig counts compared with prior views with continued activation of rigs through the year and ending at ~700 rigs in total. (iii) They expect to see larger public's kick in with their programs and larger public companies begin working in through 2023, with increasing rig counts. (iv) They don not see the same wage pressure through the remainder of 2022 as was the case last year, mgmt. commented, "*We gave some large wage increases last year, and those have been baked into our numbers since Q4 results. And, at this time -- We're still recruiting and we're still hiring, but, at this time, we don't have visibility on a strong need to raise wages from where we are, maybe some small increases, going forward, but not to the extent that we did last year, at least on our current visibility."* (iv) The call concluded with an expectation that rigs will catch up to frac spreads. Mgmt noted "*I think things are normalizing back to a level where we have a normal number of rigs in front of the spreads. And so, even though, yes, drilling efficiency is improved but also frack efficiency is improved. So, I think we'll get back to the normal number of rigs in front of the spreads that we've had in the past pre-'20, because we've had improvements -- efficiencies in both, but I think we get back to those same levels."* Our Supplemental Documents package includes the Patterson UTI Q1 call.

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Precision – Canadian drilling way up through spring break, increases in Q3
Precision held its Q1 call on Friday. (i) Their call reinforces the same trend as other service companies, as there is a tightening in the market for the super spec rigs which is most evident in the lower 48 states where it has led to a step change in rig rates in the quarter leading edge rates excluding Alpha for our hundred rigs equipped to drill long reach horizontal wells have trended into the low 30s, US $30,000/d range. Precision continues to see growth in US rigs over the remainder of 2022. (ii) They highlighted two great points on Canadian drilling being way up, with more drilling through the spring break and Q3 expected to surpass normal peak winter rigs. Mgmt commented" *Turning to Canada for the first quarter, we experienced strong customer demand matching 2018, activity level. Importantly, our customers extended the winter drilling program is well into the traditional spring breakup period driving first quarter activity up almost 50% from last year. Even today, in the midst of spring break-up, we have 33 rigs operating compared to 21 this time last year continuing the trend."* (iii) We think the takeaway is that NE BC players are worried about rig availability so are having no choice but to put in reservations for rigs even without knowing when Blueberry First Nations will be resolved. We interpret from Precision's comments, *"While we see some rigs did see some rigs relocate from the BC side to Alberta due to the blueberry First Nations really we have indications from our customers, the BC could see rig activity rebound later this year and it's next putting further demand on the Super triples. This is a very tight market with strong customer demand and look at it limited rig supply."* (iv) Lack of labour continues to be a hurdle for drillers, with Precision noting that they had demand approximately 10-20 rigs greater than their ability to crew. Precision announces that they have substantially improved their recruiting efforts and have recently announced an hourly wage increase. (v) They are cautious to not look beyond 12-months as E&P drillers are still being disciplined with their capital. Mgmt. noted *"I'd say that there's still a fair amount of just Carey caution around again not making huge capital commitments on this in huge contract commitments that might extend out kind of too far in the future. So I just read it as capital discipline is still quite important across the E&P space and certainly it is for us and that's certainly is holding that customers contracting two years of their budgets aren't approved yet."* Our supplemental Documents package includes the Precision Q1 call.

Oil & Natural Gas – Granholm, Admin has called on & encouraged higher production

Granholm at House committee this week

Energy Secretary Granholm appeared before the House Energy and Commerce Committee, Energy Subcommittee on the DOE budget on Thursday. Like any House or Senate meeting, it's her fellow Democrats setting her up for her preferred lay-up and the Republicans looking for that gotcha moment. There didn't seem to be any big new ideas or big slip-ups from Granholm. We have to give Granholm credit because she is very good at messaging a theme without getting the Biden administration in trouble with its key left support on energy. She wants to leave the general public the impression they are doing all they can to support higher oil and gas industry, but then be able to say to her left supporters that they really didn't take any specific actions to do so. In her committee appearance, Granholm replied to Republican Palmer saying "*We have done everything we can to encourage the oil and gas community to increase supply at this moment. We've called upon them to do it. We have issued more permits under this administration".* She is saying they encouraged the industry

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and called upon them to produce more but also doesn't say the Administration has implemented any new regulations, laws or other items to support the oil and gas sector to produce more..

Oil & Natural Gas – TIPRO Texas oil natural and gas jobs up for 11th straight month

TIPRO March jobs update

No one should be surprised that the expectation for continued high oil and natural gas prices is driving increasing Texas oil and gas employment. The Texas Independent Producers and Royalty Owners Association (TIPRO) updated their employment figures for the Texas upstream sector for March [LINK]. The release noted that employment for March totalled 184,700, marking an increase of 4,300 jobs from the revised February numbers. It was the 11th consecutive month of job growth in the industry since April. The release stated, *"Texas upstream employment for March 2022 totaled 184,700, an increase of 4,300 jobs from February numbers, subject to revisions. Texas upstream employment in March 2022 represented an increase of 21,700 positions compared to March 2021, including an increase of 3,600 positions in oil and natural gas extraction and 18,100 jobs in the services sector."* There has been strong job posting data for March in upstream, midstream, and downstream sectors, showing a continued demand for talent in the Texas oil and natural gas industry. From the release *" TIPRO once again noted strong job posting data for upstream, midstream and downstream sectors for the month of March in line with rising employment, showing a continued demand for talent and increasing exploration and production activities in the Texas oil and natural gas industry. According to the association, there were 11,433 active unique job postings for the Texas oil and natural gas industry in March of 2022, a 14 percent increase compared to February. TIPRO also highlighted that in February a record number of drilling permits for new wells were issued in the Permian Basin as producers respond to higher commodity prices and the call to increase domestic production to address global supply shortages."* Our Supplemental Documents package includes the TIPRO release.

Oil & Natural Gas– Great cash flows in Cdn E&P Q1, should be even higher in Q2

Expect record Q1 cash flows

Q1reporting has just started for the Cdn oil and gas companies and, as expected, they are reporting great cash flows, lower debt and higher dividends. On April 1, we tweeted [LINK] that Cdn E&P should report record Q1/22 cash flows. Cash flows will be up huge YoY and also big QoQ. Edmonton par oil prices in Q1/22 were If we use Ed Par oil prices, WCS oil prices and AECO natural gas prices, Q1/22 Ed Par prices of US$93.66/b were +72.9% YoY and +26.8% QoQ. Q1/22 WCS prices of US$82.51/b were +80.0% YoY and +35.3% QoQ. Q1/22 AECO prices of $4.51 were +43.9% YoY and +0.6% QoQ. And based on April prices and April 29 closing prices, it looks like Q2 will be even higher cash flows. On Friday, WTI closed at $104.69, Ed Par at $110.19, WCS at $91.64 and AECO at $6.39. Below is our updated table of quarterly oil and natural gas prices.

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Figure 30: Oil and Natural Gas Prices

Quarter	Brent US$	WTI US$	EdPar US$	WCS US$	HH US$	AECO C$
Q1/18	$67.00	$62.86	$57.19	$37.11	$3.09	$2.06
Q2/18	$74.41	$67.83	$60.78	$49.88	$2.84	$1.23
Q3/18	$75.27	$69.69	$59.81	$42.32	$2.92	$1.25
Q4/18	$68.18	$59.41	$36.53	$25.63	$3.78	$1.62
Q1/19	$62.91	$54.49	$50.28	$43.79	$2.92	$2.55
Q2/19	$68.58	$59.96	$54.41	$47.46	$2.55	$1.13
Q3/19	$61.95	$56.48	$52.43	$43.91	$2.37	$1.00
Q4/19	$62.51	$56.83	$50.61	$37.98	$2.36	$2.46
Q1/20	$51.28	$46.73	$39.75	$28.55	$1.91	$2.04
Q2/20	$31.14	$27.67	$21.84	$18.02	$1.70	$2.00
Q3/20	$42.70	$40.87	$36.83	$31.13	$1.98	$2.26
Q4/20	$44.47	$42.67	$37.92	$31.34	$2.47	$2.65
Q1/21	$60.51	$57.75	$54.17	$45.83	$3.39	$3.13
Q2/21	$68.44	$65.90	$61.94	$53.11	$2.89	$2.95
Q3/21	$72.95	$70.57	$66.90	$57.65	$4.28	$3.41
Q4/21	$79.43	$77.31	$73.84	$60.96	$4.74	$4.49
Q1/22	$99.08	$94.79	$93.66	$82.51	$4.61	$4.51

Source: Bloomberg

Energy Transition – Reality check, Biden is backing off climate change ambitions

Biden backing off climate change ambitions

It's call reality check, the reality check that the Biden administration has to back off its climate change ambitions if it wants to avoid an energy crisis for most of the 2020s. You have to give the Biden administration credit because when they decide to change their messaging on key items, they get out there and start with the messaging. But let's be clear, they don't come out and say they can't achieve something or are reducing their goals, rather they just all start to message a new message. (i) Last week's (April 24, 2022) Energy Tidbits highlighted how Biden is changing his messaging on Europe cutting off Russian oil. On Aug 21, we couldn't help tweeting [LINK] "*Can't make this stuff up. US been trying to get EU to stop importing RUS #Oil, now @SecYellen "we need to be careful when we think about a complete European ban on, say oil imports"from RUS "would clearly raise global oil prices". Thx @TheAmaraReport @aduehren #OOTT".* The Biden administration has been leading the push to stop Russian energy imports. But then on Thursday comes Treasury Secretary Yellen warning Europe to be careful about doing so and that it "*would clearly raise global oil prices".* Surely, the Biden administration knew that higher oil prices would be the result of their push to ban Russian oil imports. How could they not? if so, is this just a case of the Biden administration wanting to be on the record warning about higher prices are coming after pushing countries to cut Russian imports. Energy Secretary Granholm echoed the Yellen warning this week. (ii) But the big change in messaging was first from Granholm and then by Climate Change Envoy Kerry and that was Biden is backing off his emissions and climate goals/targets. On Monday, we tweeted [LINK] "*1/2. Big change in #Biden climate change messaging. @MorganLBrennan interview with @SecGranholm, who follows @SecYellen (see below) warning EU ban on #Oil imports from RUS will send prices higher & impact US. Note the big shift/reality check in #ClimateChange ambitions ... #OOTT"* and [LINK] "*2/2 New reality, decarbonize not get rid of #FossilFuels. "administration's ultimate goal, of course in the medium & long term to continue to de-carbonize our fossil fuel industry & move to cleaner sources of energy. But of course that is in the medium to long term" #OOTT #NatGas."* Very interesting Granholm is talking about their medium and long term

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goal is to de-carbonize the fossil fuel industry, not get rid of it. (iii) Then on Tuesday, we tweeted [LINK] "*First @SecGranholm, now @ClimateEnvoy, #Biden moving to salvage as much as possible of #ClimateChange aspirations. But won't directly say it also means #Oil #NatGas #LNG are needed for longer to avoid energy crisis. #OOTT Thx @Jess_Shankleman.*" Bloomberg reported "*Countries must fulfill their green goals to limit global warming to at least 1.8 degrees Celsius, U.S. climate envoy John Kerry said Monday, despite his previous assertion that the threshold is insufficient.*" The Biden administration won't/can't admit their plans are changing, but that is their clear messaging. Our Supplemental Documents package includes the transcript we made of the Granholm comments and the Bloomberg reporting on the Kerry comments.

Energy Transition – Ford CEO warns EV trucks aren't for all pickup truck uses

Ford CEO warns on Lightning use

We thought there was a throwing water on the fire reality check on EV trucks from Ford CEO Jim Farley on Tuesday. We had missed his comments but one of our Twitter followers flagged it for us after seeing our Wednesday morning tweet [LINK] "*GM #SilveradoEV truck will have 400 miles of range & that is only a year away, @mtbarra just said to @tomkeene on @bsurveillance. #EV range is no longer a reason not to buy. Can they get the prices down?? #OOTT.*" We thought 400 miles of range was a pretty good number, even if it gets hammered down in cold Cdn winters. But then we went to search out the Ford CEO interview on the Ford F150 Lightning EV. As everyone knows, Ford dominates the pickup truck market with the F150. But clearly Farley threw some cold water on the fire. We were surprised at the bluntness of his warning on EV pickup truck uses. We tweeted [LINK] "*#EV trucks #F150Lightning are not good for heavy users ie. ranchers, contactors. But perfect for urban cowboy & commuting to work, so will need mix of #ICE & #BEV says #Ford CEO to @sonalibasak..So why feature towing so prominently in commercials? Thx @kropija for flagging. #OOTT.* Farley is basically saying the F150 Lightning is best suited for commuters and what Texans call "all hat, no cattle" pickup truck drivers. We created a transcript of Farley's comments [LINK]. Bloomberg's Sonali Basak. "*Jim, look out into the future for a second here, can you see all the F150's going electric? And what would it take for that to happen*?" Farley "*No way. I don't see that happening. If you're towing a fifth wheel in Wyoming, or you know with a horse trailer, there is no way. An electric vehicle is not a good solution for super duty customers. We're 50% of all commercial light duty vehicles in the US so we know. And the technology is not right for that. For retail customer who is doing some light towing or commuting to work, it's perfect. But for heavy duty usage, it's not the right solution. So you're going to see a mix of ICE and BEV*." After listening to Farley, we looked at the Ford F150 Lightning promotion video [LINK] and couldn't help notice how prominently Ford featured towing in its commercials.

Capital Markets – USDA consumer price index for food +8.8% YoY

USDA consumer price index for food

The USDA's food price data keeps going up, but it is nowhere what we believe people are feeling when they go to the grocery stores in the US. So whenever we see the US government food price data, we still keep asking our friends who live in the US if they believe their food bills are only up, in this case 8.8% YoY. We still have yet to hear any of our US friends say their food costs are up single digit % YoY. Rather most think its more like 20% YoY. We had some good real life feedback on food costs in San Diego and were surprised to see they are way more expensive than in Canada. Regardless, the USDA released its monthly food price index data for Mar on Monday [LINK], and we wanted to hear their

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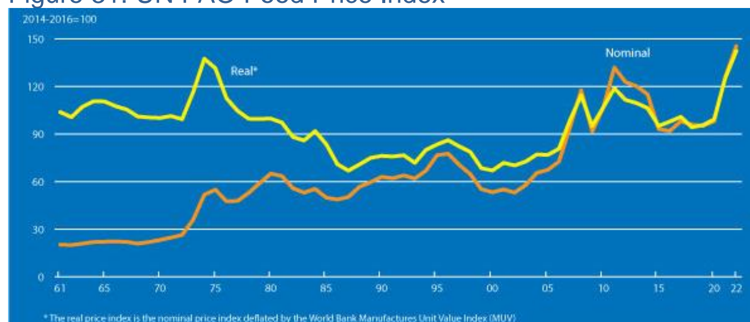
reaction to the USDA numbers. The USDA posted its consumer price index for food data for Mar, which is +1.0% MoM and +8.8% YoY; while this is an increase MoM, it still seems low given the rapidly increasing grocery bills being reported. This is for the overall food price index, which weights various changes like beef/veal +16% YoY, pork +15.3%, eggs +11.2% with changes like fresh vegetables +8.5% YoY, dairy products +7.0% YoY and cereals & bakery products +9.4% YoY. We also just don't see how the USDA won't be low in their 2022 forecast which predicts price escalation between 5.0-6.0% throughout the year.

Recall UN FAO Food Price Index for Mar was +33.6% YoY

Our Apr 10, 2022 Energy Tidbits highlighted the Apr 8 release of the UN FAO Food Price Index [LINK] titled *"The FAO Food Price Index makes a giant leap to another all-time high in March."* Note this is on a real price basis. And we highlighted that this is before the impact of items like Indonesia's export ban on palm oil. The FFPI averaged 159.3 points for Mar 2022, which was +12.6% MoM and +23.6% YoY. All food categories registered monthly increases. The Cereal Price Index was +3.0% MoM and +17.1% MoM and Dairy Price Index that was +2.6% MoM and +23.6% YoY. The Vegetable oil Index was up 23.2% MoM marking an all time high. We were surprised to see that the Meat Price Index was one of the lowest YoY price increase areas, up 4.8% MoM. Below is the all time FFPI graph. Below is the all time FFPI graph.

Figure 31: UN FAO Food Price Index



Source: UN

Capital Markets – IFIC: Mutual funds and ETF assets +0.2% in March

Mutual Fund & ETF assets increase MoM

On Wednesday, the IFIC (Investment Funds Institute of Canada) reported [LINK] mutual funds and ETF sales for March. IFIC does not provide any commentary on the numbers but there should be no surprise that the assets are down. Energy stocks had another good month in March, and broad markets were up in March ie. Nasdaq -3.3%. So market price decreases accounted for majority of the overall decrease in net assets as Russia invaded Ukraine. For March, the IFIC reported "*Mutual fund assets totalled $2.002 trillion at the end of March 2022. Assets increased by $4.1 billion or 0.2% compared to February 2022. Mutual funds recorded net sales of $0.9 billion in March 2022. ETF assets totalled $324.7 billion at the end of March 2022. Assets increased by $7.5 billion or 2.4% compared to February 2022. ETFs recorded net sales of $4.6 billion in March 2022.* Our Supplemental Documents package includes the IFIC release.

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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.

Surprised only 3 Canadians picked in NFL draft

We were surprised to see only 3 Canadians selected in the 2022 NFL Draft – University of Alabama wide receiver John Metchie III from Brampton, Ontario in the 2nd round, #44 overall by the Houston Texans, Old Miss cornerback Deane Leonard from Calgary in the 7th round, #236 overall by the Los Angeles Chargers, and Penn State linebacker Jesse Luketa from Ottawa in the 7th round, #256 overall by the Arizona Cardinals. The Texans traded up to get Metchie, who likely would have been drafted earlier if he hadn't suffered a season ending ACL tear in the Dec 4 Alabama/Georgia game. Leonard played with the University of Calgary Dinos in 2019 before transferring to Old Miss. The reason he transferred was that the Canadian university football season was cancelled for 2020 with Covid and Leonard made the decision to transfer to the US. His dad, Kenton Leonard, was as star with Calgary Stampeders in the 1990s and made Calgary his home post his playing career.

Some people don't realize what an accomplishment it is to be drafted by NFL

We recognize that people are, to the most part, just having fun, but we get a little annoyed by the mocking of the 262nd player in the NFL draft as being Mr. Irrelevant. We don't know what it takes, but we can certainly appreciate that it takes the unique combination of skills, football sense, desire and potential for any player to hear their name called in the NFL draft. This year, the last pick in the NFL draft was the 7th round, #262 overall being Iowa State quarterback Brock Purdy by the San Francisco 49ers. We have to believe there are hundreds of college players with a shot of having a professional career who would love to have been drafted. Getting drafted by the NFL is an incredible accomplishment for any potential football player. We have to believe Purdy's family, friends, coaches, teammates, etc are pretty proud for him to be drafted and realize it means that he is viewed as having potential to make it in the NFL. Kudos to Purdy and all the players drafted by the NFL.

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Kudos to Speaker Pelosi for meeting in Kyiv with Zelensky today

We recognize how divided the US is in its politics, but we have to believe most Americans will give kudos to Speaker Nancy Pelosi for meeting in Kyiv today with President Zelensky. And not for the fact that she is 82 years old. But the fact that she went there knowing what happened in Kyiv on Friday, when Russia acknowledge they launched missiles at Kyiv to coincide with UN Secretary General Guterres meeting in Kyiv with Zelensky. We have to believe many politicians would have found a way to cancel their trip following the Russia missile attack. So kudos to Pelosi, and in also making sure she wore the blue color of Ukraine.

Figure 32: Speaker Pelosi meeting President Zelensky in Kyiv today

Source: LA Times

Some major lasting brands – Anheuser-Busch and Coors

I was reminded of the 70s in St. Louis when I saw the Nature World Today *"Famous Brands from Each US State*" map. [LINK] The two that jumped out were Anheuser-Busch in Missouri and Coors in Colorado. These brands have lasted for a long time and still going strong. Although in the 70's, it was Busch and not Anheuser-Busch. No surprise, Busch beers, in particular Budweiser, dominated St. Louis markets. And the Busch family were huge for the community. But in the 70's, Coors beer had zero presence in St. Louis because, in those days, it wasn't sold east of Kansas. That unavailability made Coors into a bit of a cult status east of Kansas. So whenever a fellow student from Kansas drove the 250 miles to go home for Thanksgiving or Xmas or any other time, he would inevitably bring back a car load of Coors beer in exchange for people all chipping in for his gasoline bill.

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Figure 33: Famous Brands from Each State

Source: Nature World Today

Sasaki's streak of perfect innings ended on his 1st pitch of his Apr 24 start

We had an early news cut off last weekend of Sat 10pm MT so we could give an update on Chiba Lotte pitcher, 20 year old Roki Sasaki's streak of 17 perfect innings. Recall that Sasaki threw a perfect game on April 10 against the Orix Buffaloes, and then, in his April 17 start, threw 8 perfect innings before his manager pulled him after 8 due to his pitch count, He could have been the first professional pitcher to ever throw two consecutive perfect games. Sasaki's streak of perfect innings came to an end on the first pitch of his Aprill 24 start at against the Orix Buffaloes. We still can't believe his manager pulled him after 102 pitches in his April 17 start. And couldn't imagine such a move being done in US MLB.

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