

Energy Tidbits

Dec 12, 2021

Produced by: Dan Tsubouchi

Time for 2022 Predictions: Our #1 is More Leaders Have a #MacronMoment & Admit Energy “Transition” Needs Changes

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. 2022 Prediction #1 is more world leaders/capital providers admit the energy “transition” plan isn't working and needs to be changed ([Click Here](#))
2. No surprise, Saudi Aramco CEO says stakeholders say in private the energy transition plan isn't working ([Click Here](#))
3. The big message from World Petroleum Congress in Houston was oil demand will be back to pre-Covid levels in 2022 ([Click Here](#)).
4. We wonder if the West's urgency warnings/threats are to try to force Iran to give in before the US gives in? ([Click Here](#))
5. Qatar signed long term LNG supply deals with two different Chinese LNG buyers. ([Click Here](#))
6. Please follow us on Twitter at [LINK](#) for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK](#).

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Table of Contents

Natural Gas – Natural gas draw of 59 bcf, storage now -356 bcf YoY deficit	5
Figure 1: US Natural Gas Storage.....	5
Natural Gas – Some record high temperatures this week.....	5
Figure 2: US Natural Gas Storage.....	5
Natural Gas – 100% probability for La Nina/Neutral for winter season	5
Figure 3: Early-Dec NOAA El Nino/La Nina Outlook	6
Natural Gas – So far, Dec is not what most expected from a typical La Nina winter	6
Figure 4: Typical Winter La Nina Pattern.....	6
Natural Gas – But La Nina correlations to cold winters are far from 100%.....	7
Figure 5: Winter (Dec-Feb) Temp in Strong, Moderate And Weak La Ninas 1950 - 2017.....	7
Natural Gas – EIA forecasts US gas production growth in 2022.....	7
Figure 6: EIA STEO US Natural Gas Supply Forecasts by Forecast Month.....	8
Figure 7: EIA STEO US Natural Gas Supply Forecasts By Forecast Month	8
Natural Gas – EIA forecasts Nov 1/22 storage to only be -55 bcf YoY	8
Figure 8: EIA STEO forecast US gas storage	9
Natural Gas – Freeport LNG, market flipped on a dime to long term LNG supply deals	9
Natural Gas – Venture Global already thinking about a big LNG expansion	10
Figure 9: CP Express Pipeline Proposed Pathway	10
Natural Gas – Reminder of BC's shorter LNG tanker days to China	10
Figure 10: Comparative LNG tanker shipping days to China	11
Figure 11: Comparative LNG tanker shipping days to China	11
Natural Gas – Another big OPM deal, Aramco's \$15b gas infra deal with BlackRock	11
Natural Gas – JERA investing in Barossa gas field to keep gas supply to Darwin LNG	12
Natural Gas – Japan forecasts warm start to December then turning colder mid month	13
Figure 12: Japan Temperature Probability Forecast Dec 11 – Dec 17	13
Figure 13: Japan Temperature Probability Forecast Dec 18 – Dec 24	14
Natural Gas – Qatar signs two more long term LNG supply deals to China buyers	14
Figure 14: Long Term Asian LNG Supply Deals since July 1, 2021	15
Natural Gas – Europe storage 63.67% full vs 5 year average of 80.77%.....	16
Figure 15: Europe Gas Storage Level	16
Natural Gas – Bloomberg: Europe is burning thru its natural gas reserves too fast	16

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Figure 16: Europe Gas Storage Level	17
Oil – US oil +4 WoW at 471 oil rigs	17
Figure 17: Baker Hughes Total US Oil Rigs	17
Oil – US frac spreads down 4 to 267 for week ended dec 10	17
Oil – Total Cdn rigs -3 to 177 total rigs and +66 rigs YoY	18
Figure 18: Baker Hughes Total Canadian Oil Rigs	18
Oil – US weekly oil production up at 11.7 mmb/d	18
Figure 19: EIA's Estimated Weekly US Oil Production	19
Figure 20: US Weekly Oil Production	19
Oil – EIA STEO increasing its forecast for US oil production growth to Q4/22	19
Figure 21: Estimated US Crude Oil Production By Forecast Month	20
Figure 22: Estimated US Crude Oil Production By Forecast Month	20
Oil – Trans Mountain should return to normal levels any day now	20
Oil – Refinery inputs +0.154 mmb/d YoY at 15.785 mmb/d	21
Figure 23: US Refinery Crude Oil Inputs (thousands b/d)	21
Oil – US “net” oil imports up 0.329 mmb/d WoW at 4.229 mmb/d	21
Figure 24: US Weekly Preliminary Oil Imports by Major Countries	21
Oil – Sounds like Mexico/Pemex will miss its 2022 oil production forecast	22
Figure 25: Pemex Oil Production Forecast Oct 28, 2021	22
Oil – Pemex oil exports expected down 0.2 to 0.3 mmb/d starting Q1/22	22
Figure 26: Gulf Coast PADD 3 Crude Oil Imports From Mexico	24
Figure 27: Gulf Coast PADD 3 Crude Oil Imports From Canada	24
Oil – Venezuela oil production up with higher oil prices and Iran diluent	24
Oil – Saudi says it intercepted a Houthi ballistic missile launched at Riyadh on Tues	25
Figure 28: Houthi Reported Missile Launch Capability Range	25
Figure 29: Saudi Arabia Major Oil and Natural Gas Infrastructure	26
Oil – WSJ Saudi pleads for missile defense resupply as arsenal runs low	26
Oil – Guess Saudi won't be putting a nuclear waste dump by Qatar	26
Figure 30: MBS and Qatar Emir Sheikh Tamim bin Hamad al-Thani	27
Figure 31: Saudi Arabia and Qatar	27
Oil – Will Biden be successful in getting some form of JCPOA done before Jan 20?	27
Oil – JCPOA, are the West's urgency threats for Iran to give in before the US gives in?	28
Oil – Iran/Venezuela sanctions are tools if Biden wants lower gas price for mid terms	29

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Oil –Cenovus reminds global oil production declines at ~6% per year	29
Figure 32: Global Energy Demand Will Continue to Require Oil.....	30
Exxon highlighted the global oil decline challenge in June 2019	30
Figure 33: Exxon Estimated Oil Supply/Demand	31
Oil – Oil sector overwhelmingly sees demand back to pre-Covid levels & then growing.....	31
Oil – Investors also now mostly see peak oil demand after 2030	34
Figure 34: When Will Global Oil Demand Peak?.....	34
Oil – Dr. Fauci got the oil market moving last Sunday night.....	34
Oil – Vortexa est 88.75 mmb at Dec 10, +5.79 mmb WoW vs upward revised Dec 3	35
Figure 35: Vortexa Floating Storage Dec 10, Posted on Bloomberg 3pm MT Sat.....	35
Oil – Bloomberg Oil Demand Monitor, Europe air travel lags further behind 2019	35
Figure 36: European Average Weekly Air Travel	36
Oil – US overall vehicle miles for Nov 29 - Dec 5 week was +1.2% vs 2019.....	36
Figure 37: All vehicles, passenger vehicles and truck vehicle miles travelled vs 2019 levels	36
Oil & Natural Gas – Liberals hard targets for oil & gas emissions reductions by Mar 31	37
Oil & Natural Gas – other tidbits from World Petroleum Congress in Houston	37
Energy Transition – 2022 Prediction, leaders admit energy transition isn't working	39
Energy Transition – Aramco, stakeholders privately say energy transition isn't ready	41
Energy Transition – Diamondback reminds reducing emissions is straightforward	42
Energy Transition – How long will it take for average income to buy EVs, not ICE?	42
Figure 38: New Battery Electric Vehicle Buyers by Household Income	43
Energy Transition – Greece “investing in natural gas is both rational and unavoidable’	43
Energy Transition – Greece adding back coal, Sweden starts up backup oil power	43
Capital Markets – Several oil & gas co's added to TSX Composite Index for Dec 20	44
Capital Markets – Canada food price report predicts higher cost in 2022	44
UN FAO Food Price Index hits highest levels since June 2011	45
Figure 39: UN FAO Food Price Index.....	45
Demographics– 2022 World Inequality report	45
Twitter – Look for our first comments on energy items on Twitter every day	46
LinkedIn – Look for quick energy items from me on LinkedIn	46
Misc Facts and Figures.....	46

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Natural Gas – Natural gas draw of 59 bcf, storage now -356 bcf YoY deficit

US natural gas storage is starting winter 210 bcf lower YoY. The EIA reported a 59 bcf draw (vs 55 bcf draw expectations) for the Dec 3 week, which was below the 5-yr average draw of 55 bcf, and below last year's draw of 91 bcf. Storage is 3,505 tcf as of Dec 3, increasing the YoY deficit to -356 bcf, from 375 bcf last week and storage is 90 bcf below the 5-year average vs 58 bcf below last week. The EIA STEO estimates Dec 31/21 storage at 2,962 bcf, which is 379 bcf lower YoY vs 3,341 bcf at Dec/20. Below is the EIA's storage table from its Weekly Natural Gas Storage Report [\[LINK\]](#).

**YoY storage at
-356 bcf YoY
deficit**

Figure 1: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf)				Historical Comparisons			
	12/03/21	11/26/21	net change	implied flow	Year ago (12/03/20)		5-year average (2016-20)	
					Bcf	% change	Bcf	% change
East	843	867	-24	-24	918	-8.2	859	-1.9
Midwest	1,019	1,043	-24	-24	1,099	-7.3	1,036	-1.6
Mountain	206	206	0	0	233	-11.6	213	-3.3
Pacific	266	263	3	3	313	-15.0	294	-9.5
South Central	1,171	1,185	-14	-14	1,299	-9.9	1,192	-1.8
Salt	328	335	-7	-7	362	-9.4	342	-4.1
Nonsalt	842	851	-9	-9	937	-10.1	850	-0.9
Total	3,505	3,564	-59	-59	3,861	-9.2	3,595	-2.5

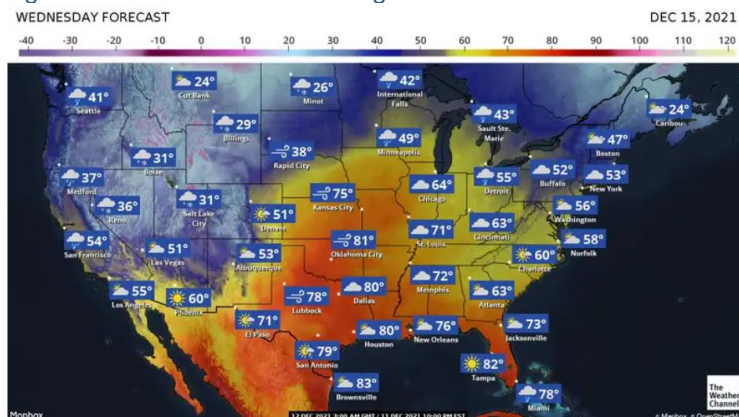
Source: EIA

Natural Gas – Some record high temperatures this week

It's been a tough month for natural gas with the warm start to winter and Dec being one of the key months for natural gas consumption. And it will be tough for markets to feel bullish on natural gas this week with some record high temperatures expected on Wednesday. Below is The Weather Channel's Saturday forecast for Wed Dec 15 temperatures. [\[LINK\]](#)

**Some record
temperatures on
Wed**

Figure 2: US Natural Gas Storage



Source: The Weather Channel

Natural Gas – 100% probability for La Nina/Neutral for winter season

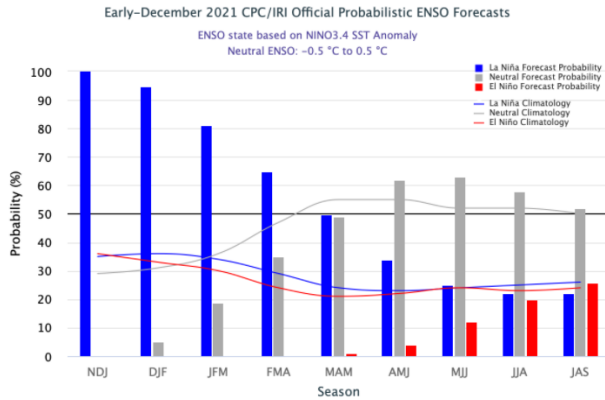
The CPC/IRI released its updated monthly El Niño/La Niña outlook, which is issued on the 2nd Thurs of every month [\[LINK\]](#). Its December and winter has begun; the El Niño/La Niña focus turns to the peak winter period of Dec/Jan/Feb. The forecasts have been basically unchanged for the past few months – its going to be a La Niña winter. Indicated by below average sea surface temperatures. The concern is always if its an El Niño winter that bring the risk (not 100% though) of a warm winter. Whereas most associate La Niña winters with

**100% La
Nina/Neutral
conditions winter
season**

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the probability for a colder winter, although that is also far from 100% correlations as noted in the below item. This new Dec/ Jan/Feb probability forecast is 95% La Nina (was 92%), 5% Neutral (was 8%) and 0% El Nino (was 0%).

Figure 3: Early-Dec NOAA El Nino/La Nina Outlook



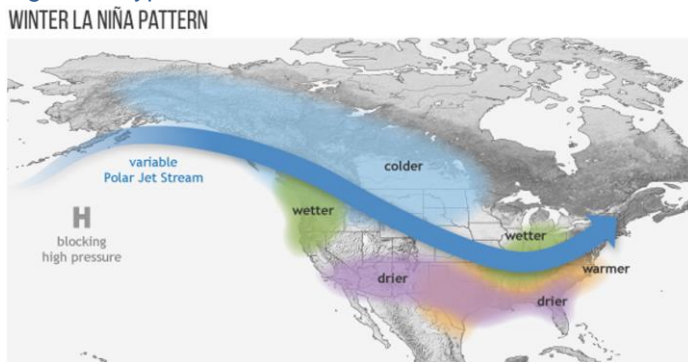
Source: NOAA

Natural Gas – So far, Dec is not what most expected from a typical La Nina winter

Recall that most of the pre winter forecasts calls for a colder than normal winter based on the expectation for a La Nina winter. December hasn't started out that way, but, for reference perspective, we remind of what most expect from a typical La Nina winter. On July 27, 2021, NOAA updated its "How El Nino and La Nina affect the winter jet stream and U.S. climate" [\[LINK\]](#), which included the below graphic for a typical La Nina winter. NOAA wrote "These maps illustrate the typical impacts of El Niño and La Niña on U.S. winter weather. During La Niña, the Pacific jet stream often meanders high into the North Pacific and is less reliable across the southern tier of the United States. Southern and interior Alaska and the Pacific Northwest tend to be cooler and wetter than average, and the southern tier of U.S. states—from California to the Carolinas—tends to be warmer and drier than average. Farther north, the Ohio and Upper Mississippi River Valleys may be wetter than usual. During El Niño, these deviations from the average are approximately (but not exactly) reversed".

Typical La Nina winter

Figure 4: Typical Winter La Nina Pattern



Source: CPC

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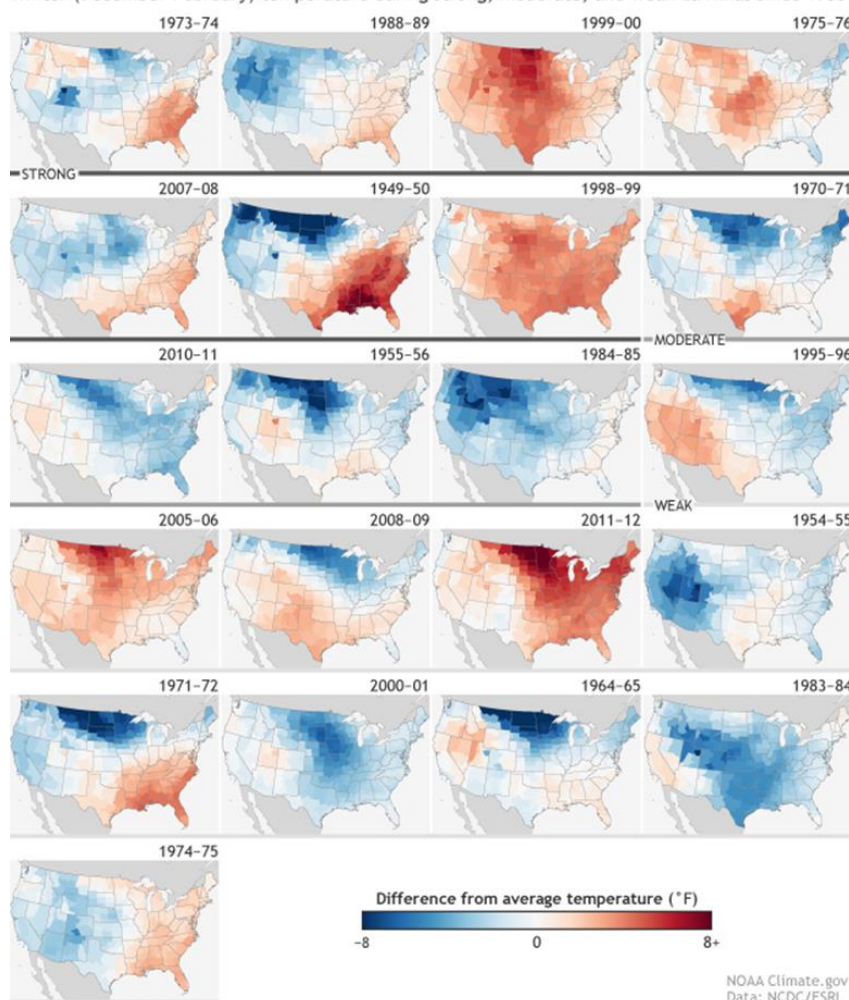
Natural Gas – But La Nina correlations to cold winters are far from 100%

La Nina winters are more often normal to colder than normal than a warmer winter. But we remind of a Oct 6, 2017 NOAA brief *“Temperature patterns during every La Niña winter since 1950”*, which looked at all La Nina winters from 1950 thru 2016/17, classified them as strong, moderate or weak La Ninas, and then showed the average winter (Dec thru Feb) temperature map. However, La Nina winters are far from 100% correlated to a cold winter. We checked this weekend and the link still works [\[LINK\]](#). The bottom line is that it may slightly favor a normal to colder than normal winter, but there have some been near record high temperature La Nina winters. Below is the NOAA graphic.

La Nina winters are unpredictable

Figure 5: Winter (Dec-Feb) Temp in Strong, Moderate And Weak La Ninas 1950 - 2017

Winter (December-February) temperature during strong, moderate, and weak La Niñas since 1950



Source: CPC

Natural Gas – EIA forecasts US gas production growth in 2022

No surprise that, with continued stronger than expected natural gas prices, the EIA increased its US natural gas production forecasts for 2021. However, what is different this time is that the increase isn't from associated natural gas from oil plays but from dry gas plays. The EIA released its monthly Short Term Energy Outlook December 2021 [\[LINK\]](#). The EIA revised

EIA sees U.S. gas production +2.65 bcf/d YoY in 2022

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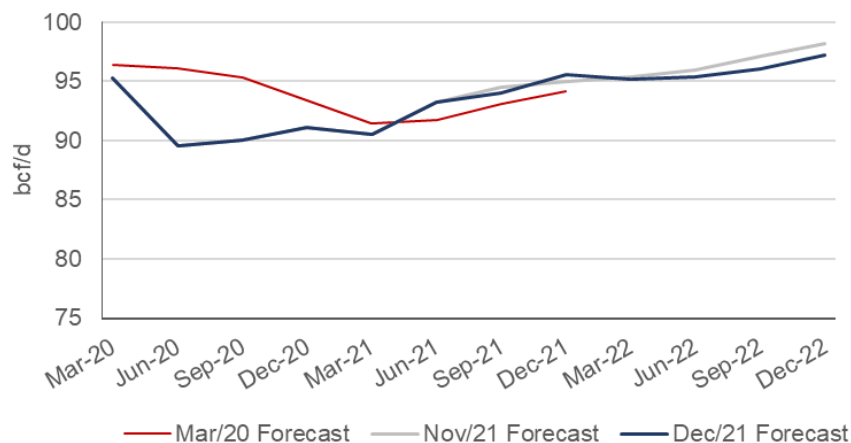
upwards its 2021 forecast and revised down its 2022 forecast for US natural gas production. (i) EIA forecasts that US natural gas production will be up +1.58 bcf/d from the Q4/19 peak of 96.60 in Q4/22. (ii) EIA revised down the third quarter of 2021 before switching to an upwards revision in Q4/21. US 2021 natural gas production forecast to average 93.32 bcf/d (up from 93.29 bcf/d previously). (iv) 2022 US natural gas is forecasted to average 95.97 bcf/d (96.68 bcf/d previously), up 2.65 bcf/d YoY. (v) The EIA wrote, “we estimate dry U.S. natural gas production averaged 96.1 Bcf/d in the United States in November, up 1.0 Bcf/d from the average in October. Production in November was up from an average of 91.9 Bcf/d in 1H21. Natural gas production in the forecast rises to an average of 95.3 Bcf/d during the rest of this winter (December–March) and averages 96.0 Bcf/d for all of 2022, driven by natural gas and crude oil price levels that we expect will be sufficient to support enough drilling to sustain production growth.” Our Supplemental Documents package includes excerpts from the EIA STEO.

Figure 6: EIA STEO US Natural Gas Supply Forecasts by Forecast Month

bcf/d	Q1/19	Q2/19	Q3/19	Q4/19	2019	Q1/20	Q2/20	Q3/20	Q4/20	2020	Q1/21	Q2/21	Q3/21	Q4/21	2021	Q1/22	Q2/22	Q3/22	Q4/22	2022
Dec 2021	89.80	91.26	93.77	96.60	92.86	95.29	89.59	89.99	91.14	91.50	90.48	93.20	94.01	95.59	93.32	95.22	95.35	96.1	97.21	95.97
Nov 2021	89.80	91.26	93.77	96.60	92.86	95.29	89.59	89.99	91.14	91.50	90.48	93.20	94.52	94.94	93.29	95.41	96.00	97.12	98.18	96.68
Oct 2021	89.80	91.26	93.77	96.60	92.86	95.29	89.57	89.99	91.14	91.50	90.30	92.89	93.32	93.65	92.54	94.38	95.41	97.12	98.69	96.40
Sept 2021	90.01	91.57	94.01	96.58	93.06	94.80	89.68	89.83	91.15	91.36	90.30	93.05	92.64	92.70	92.18	93.17	94.54	96.25	97.59	95.40
Aug 2021	90.01	91.57	94.01	96.58	93.06	94.79	89.68	89.83	91.15	91.35	90.29	92.49	92.67	93.11	92.15	93.34	94.15	95.51	96.47	94.88
July 2021	90.01	91.57	94.01	96.58	93.06	94.79	89.68	89.83	91.15	91.35	90.31	92.88	93.17	93.80	92.55	93.65	94.10	95.16	95.82	94.69
June 2021	90.01	91.57	94.01	96.58	93.06	94.79	89.68	89.83	91.15	91.35	90.53	92.26	92.63	93.26	92.18	93.13	93.48	94.31	94.81	93.93
May 2021	90.01	91.57	94.01	96.58	93.04	94.79	89.68	89.83	91.15	91.35	90.09	90.75	91.34	92.03	91.06	91.97	92.54	93.60	94.36	93.12
Apr 2021	90.01	91.57	94.00	96.58	93.04	94.79	89.68	89.83	91.18	91.36	90.82	90.90	91.59	92.31	91.41	92.23	92.75	93.76	94.39	93.29
Mar 2021	90.01	91.57	94.00	96.58	93.04	94.79	89.68	89.82	91.08	91.34	90.50	91.04	91.71	92.13	91.35	91.87	92.25	93.28	93.90	92.83
Feb 2021	90.01	91.57	94.00	96.58	93.04	94.79	89.68	89.82	90.89	91.29	90.88	90.17	90.40	90.54	90.50	89.95	90.18	91.41	92.26	90.96
Jan 2021	90.01	91.57	94.00	96.58	93.04	94.79	89.67	89.87	88.73	90.76	87.48	87.54	88.54	89.11	88.17	88.54	88.86	90.17	91.02	89.66
Dec 2020	90.01	91.57	94.00	96.58	93.04	94.79	89.67	89.72	89.36	90.88	87.65	87.25	88.13	88.61	87.91					
Nov 2020	90.01	91.57	94.00	96.58	93.06	94.85	89.73	90.14	89.29	90.99	87.50	87.10	88.16	88.86	87.91					
Oct 2020	90.01	91.57	94.00	96.58	93.06	94.48	89.44	89.81	88.86	90.64	86.56	86.02	87.04	87.58	86.81					

Source: EIA STEO

Figure 7: EIA STEO US Natural Gas Supply Forecasts By Forecast Month



Source: EIA STEO

Natural Gas – EIA forecasts Nov 1/22 storage to only be -55 bcf YoY

It's not clear if the EIA has reflected a warm December into its Dec STEO forecast. The EIA wrote “After rising in recent months, natural gas prices declined in November amid mild weather across much of the country that resulted in less natural gas used for space heating than expected. Decreased demand for natural gas also contributed to inventory levels

EIA STEO storage forecast

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moving closer to the five-year (2016–20) average.” Vs the Nov STEO, the EIA reduced its Q4/21 natural gas consumption for residential from 16.38 bcf/d to 15.98, and for commercial from 11.01 bcf/d to 10.64 bcf/d. Those reductions are modest so we suspect they haven’t built in a warm December to their forecast. The EIA used Oct 31/21 gas storage at 3,644 bcf. The EIA forecasts end of winter Mar 31/22 storage at 1,660 bcf (was 1,623 bcf), which is -141 bcf (was -178) lower YoY vs 1,801 bcf at Mar 31/21. And the EIA forecasts Oct 31/22 storage at 3,589 bcf (was 3,576 bcf), which is only -55 bcf lower YoY (was -70 bcf). Based on Dec weather, the more likely adjustment next month is to increase the Oct 31/22 storage forecast.

Figure 8: EIA STEO forecast US gas storage

	US Working Natural Gas in Storage (billion cubicFeet)					
	Storage Level	2016-2021				
		Low	High	Range	Average	Deviation
Mar 2016	2486.3	1184.9	2486.3	1301.4	1835.6	35.4%
Oct 2016	4012.7	3236.3	4012.7	776.4	3624.5	10.7%
Mar 2017	2062.5	1184.9	2486.3	1301.4	1835.6	12.4%
Oct 2017	3816.5	3236.3	4012.7	776.4	3624.5	5.3%
Mar 2018	1390.3	1184.9	2486.3	1301.4	1835.6	-24.3%
Oct 2018	3236.3	3236.3	4012.7	776.4	3624.5	-10.7%
Mar 2019	1184.9	1184.9	2486.3	1301.4	1835.6	-35.4%
Oct 2019	3762.0	3236.3	4012.7	776.4	3624.5	3.8%
Mar 2020	2029.4	1184.9	2486.3	1301.4	1835.6	10.6%
Oct 2020	3928.5	3236.3	4012.7	776.4	3624.5	8.4%
Mar 2021	1800.6	1184.9	2486.3	1301.4	1835.6	-1.9%
Oct 2021	3643.6	3236.3	4012.7	776.4	3624.5	0.5%
Mar 2022	1659.5	1184.9	2486.3	1301.4	1835.6	-9.6%
Oct 2022	3588.5	3236.3	4012.7	776.4	3624.5	-1.0%

Source: EIA

Natural Gas – Freeport LNG, market flipped on a dime to long term LNG supply deals

On Monday, we had a couple tweets on Freeport LNG CEO Michael Smith’s Monday interview with Bloomberg’s Alix Steel and Guy Johnson. [\[LINK\]](#). (i) In our July 14 blog, we used the term abruptly in our title “Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs”. Smith described it a little differently by saying “*the market just flipped on a dime. And now customers are out looking for 20-year contracts*”. The concept is identical. It’s the best validation for a much stronger than expected LNG market thru 2030. Here is the transcript we created. “At 2:50 min mark. Steel asks how much of Train 4 is sold and when do you think you can reach FID for that. Smith “*We have not made any announcements. I am not going to tell you where we are in negotiations. We are optimistic we will get it sold sometime next year and be able to construction by early 2023. You have to understand, I mentioned the two facilities that are under construction, there have been no real long term contracts signed to build a new facility until recently. The whole world thought that when we finished the new construction of our plant and Cameron’s plant, it was the end of the first wave of US LNG facilities. That the market was going to be glutted with LNG for years and what we found out is that we didn’t have enough last winter. And the market just flipped on a dime. And now customers are out looking for 20-year contracts instead of living on spot prices, which have gone up to \$30. And you can’t live on spot prices, you have to make the investment long term so people can build more terminals.*” (ii) Reminds of why natural gas is here to stay. Here is the transcript we created. At 4:40 min mark, Johnson asks if we are going to be still heavily using LNG in 20 years time. Smith “*We are going to be heavily using LNG for the next 30 to 50 years. The energy transition is important. I’d love to see as much green energy as possible. but the amount of energy that is consumed in this world is so vast, and there are so many developing countries with over a billion people that do not even have electricity yet. We need more clean energy, and I know that some people do not think that natural gas*

**LNG market
flipped on a dime**

is clean enough because it is a fossil fuel but it still cuts the CO2 emissions by half over coal. And does not have any of the pollutants that coal has when it's burned. So there is no question, it makes a huge difference. And green energy, until we get different battery technology is intermittent. And natural gas is the only fuel source that can be turned on quick enough when the wind doesn't blow, or there are clouds or snow covering the solar panels"

Natural Gas – Venture Global already thinking about a big LNG expansion

Venture Global announced on December 2 [\[LINK\]](#), the proposed plans to develop the CP2 LNG export facility and CP Express pipeline in Louisiana. The Venture Global release did not say FID so, at least for now, this is a proposed project. Venture Global and Louisiana governor said the company will invest \$10bn to develop the fourth LNG export facility in the state, located in Cameron Parish. CP2 will have a nameplate export capacity of 2.63 bcf/d and a peak capacity of 3.15 bcf/d. The CP Express project is projected to run 85.1 miles long and will connect the CP2 terminal to the natural gas pipeline grid in east Texas and southwest Louisiana. The announcement brings Venture Global's capital investment in the Louisiana to more than \$20bn; CP2 is expected to bring thousands of jobs and an estimated \$2bn in revenue for the local region during the lifetime of the project. Venture Global's CEO commented *"Venture Global is proud to continue our expansion in Louisiana with the launch of our next project, CP2 LNG. CP2 will be located in Cameron Parish, adjacent to our existing Calcasieu Pass terminal. These two projects, combined with our Plaquemines LNG facility now under construction, represent more than \$20 billion of investment in the State of Louisiana and will create thousands of jobs—including both permanent and construction jobs."* Below is a map of the planned pipeline route to the export facility. Our Supplemental Documents package includes the Venture Global press release and page 1 of their project fact sheet [\[LINK\]](#).

**Big potential
LNG in Louisiana**

Figure 9: CP Express Pipeline Proposed Pathway



Source: Venture Global

Natural Gas – Reminder of BC's shorter LNG tanker days to China

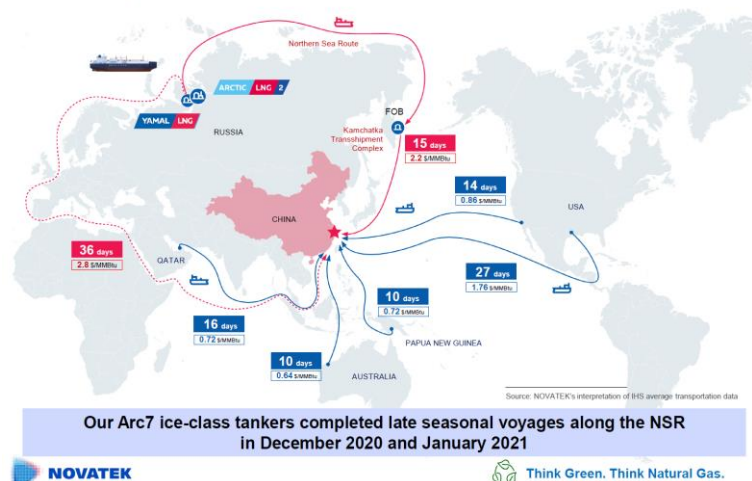
On Twitter, we saw someone tweet a Novatek slide with the only attribution being the Novatek name on the slide. We dug out the source being a Novatek May 2021 slide deck *"Unlocking Our Arctic Resources: Decarbonizing Our Footprint"*. It was noting the advantage

**LNG voyage days
to China**

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in terms of shorter LNG tanker days to reach key China markets. The below map also reinforced the much shorter shipping days for LNG tankers from LNG Canada vs US Gulf Coast LNG. Note that Novatek uses 14 days for LNG Canada to reach China, which is only 1 day shorter than its 15 days for Novatek's LNG to reach China via the Northern sea route. But we should point out that LNG Canada's stated time is 12 days for LNG tankers to reach China. Novatek uses 27 days for LNG from the US Gulf Coast to reach China. Below we put the Novatek May 2021 map and the Platts 2018 LNG voyage days table that we first used in our August 5, 2018 Energy Tidbits.

Figure 10: Comparative LNG tanker shipping days to China
LNG Logistics to Asia



Source: Novatek

Figure 11: Comparative LNG tanker shipping days to China

	Japan/Korea	SChina/ Taiwan	West India	Southwest Europe	Northwest Europe	Northeast US	Argentina	Brazil	Egypt
Middle East	15	13	3	13*	16*	22*	21	24	8
Australia	9	7	9	21*	24*	29	21	25	15
Trinidad	33*	31*	22*	9	9	5	11	7	14*
Trinidad (via Panama Canal)	22**	27**							
Trinidad (most economic)	lower of above 2								
Nigeria	26	23	17	9	10	13	11	9	14*
Algeria	24*	22*	13*	1	4	9	14	12	5*
Belgium	28*	25*	16*	3	N/A	8	16	14	8*
Peru	21	24	27	23	24	24	9	14	29
Russia	3	5	15	27*	29*	35*	27	37	21
Spain	25*	22*	14*	N/A	3	7	14	11	5*
Norway	32*	28*	20*	6	3	9	19	18	12*
Sabine Pass (most economic)	lower of below 2, until Panama Canal starts	lower of below 2, until Panama Canal starts	lower of below 2, until Panama Canal starts	12	12	N/A	17	13	
Sabine Pass (via Suez Canal)	36*	32*	24*	N/A	N/A	N/A	N/A	N/A	17*
Sabine Pass (via Cape)	38	35	31	N/A	N/A	N/A	N/A	N/A	31
Sabine Pass (via Panama Canal)	23**	28**	N/A	N/A	N/A	N/A	N/A	N/A	

* Route uses Suez canal, adds one day extra for shipping and 24 cents/MMBtu for canal fees ** Route uses Panama canal, adds 21 cents/MMBtu for canal fees

Source: Platts

Natural Gas – Another big OPM deal, Aramco's \$15b gas infra deal with BlackRock

We continue to believe the primary financial theme for Saudi Arabia in the 2020s is getting Other People's Money to fund as much as possible in the country from helping Saudi Aramco cover its dividends to paying for the hoped for transformation of the country in its Vision 2030. This is the theme for the 2020s. On Monday, we saw another big example of using OPM, when Saudi Aramco announced [\[LINK\]](#) the expected gas pipeline/infrastructure deal to a group led by BlackRock Real Assets and Hassana Investment company. The \$15.5bn lease and leaseback deal marks one of the world's largest energy infrastructure deals and

**Aramco
announces
pipeline project**

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Aramco's second major pipeline transaction in 2021. Aramco noted that they will form a new sub, Aramco Gas Pipelines Company, that will receive a payable tariff for the gas products that will flow through their gas network, backed by minimum commitments on throughput. Aramco holds a 51% majority stake in Aramco Gas Pipeline Company will sell the 49% minority stake to BlackRock and Hassana. Aramco will maintain full control of the pipeline network and the transaction will not impose any restrictions on production volumes. Saudi Aramco CEO commented on the transaction, *"we have reached yet another major milestone in our portfolio optimization program as we build towards a bigger and stronger gas business. It further underscores our commitment to long-term value creation for our shareholders, while bringing in BlackRock and Hassana as partners demonstrates our unique value proposition and ability to attract leading global investors to Saudi Arabia. With gas expected to play a key role in the global transition to a more sustainable energy future, our partners will benefit from a deal tied to a world-class gas infrastructure asset."* Our Supplemental Documents package includes the Aramco release.

Natural Gas – JERA investing in Barossa gas field to keep gas supply to Darwin LNG

There was a good reminder this week of the reality of natural gas supply – it declines, and capex has to be spent to drill new wells or tie in undeveloped gas reserves if natural gas supply is to be maintained. On Wednesday, JERA announced it would acquire a 12.5% stake in the Barossa/Caldita gas field offshore NW Australia and will then participate in the field development. JERA wrote *"JERA participated in the Darwin LNG project in 2003. That project has produced LNG at the Darwin liquefaction plant using natural gas supplied from the Bayu-Undan gas field, located in waters off Timor-Leste, and contributed to the stable supply of LNG for approximately 15 years since production began in 2006. Production at the Bayu-Undan gas field is expected to end within a few years. Development of the Barossa gas field as a successor to supply feed gas to the Darwin LNG liquefaction plant is now underway."* The reminder is that LNG plants have a long life, but eventually the natural gas supply declines and end unless there is a new natural gas supply that can be drilled up to keep LNG production. The supply for the Darwin LNG is going to end in a few years so new reserves have to be developed or no more LNG being produced at Darwin. JERA is the world's largest LNG importer and its release reminded that *"Securing a stable supply of competitive LNG, therefore, is becoming increasingly important"*. Our Supplemental Documents package includes the JERA release.

JERA securing more LNG supply

Did Qatar want tougher terms for a long term extension with JERA?

JERA's press release noting that *"Securing a stable supply of competitive LNG, therefore, is becoming increasingly important"* reminds of an item from our Nov 28, 2021 Energy Tidbits, when reports came of JERA not renewing a 0.7 bcf/d long term supply deal with Qatar. At that time we wrote *"Is Qatar looking for tougher deals on its new long term LNG supply contracts? That isn't the direct message, but we can't help but wonder if that is the real message when see a report on JERA this week that, on the surface, seems to be a 180 from their stated comments last week. Something is off. (i) On Thursday, Platts reported "Japan's JERA will not renew 5.5 mil mt/year of long-term Qatari LNG supply: president" [LINK]. Platts reports "Currently we are not considering contracting [with Qatar] because we find it extremely difficult to extend the existing large contracts timing-wise," Onoda told an online press conference. "As for Qatar, [the contracts] are set to expire at the 25-year contract expiry," Onoda said, explaining that the company's issues with renewing were "due to developments in the global LNG markets, the progress of decarbonization, and the changing position of LNG in Japan because of liberalization of power and gas, among other factors, in the country." JERA, however, does not*

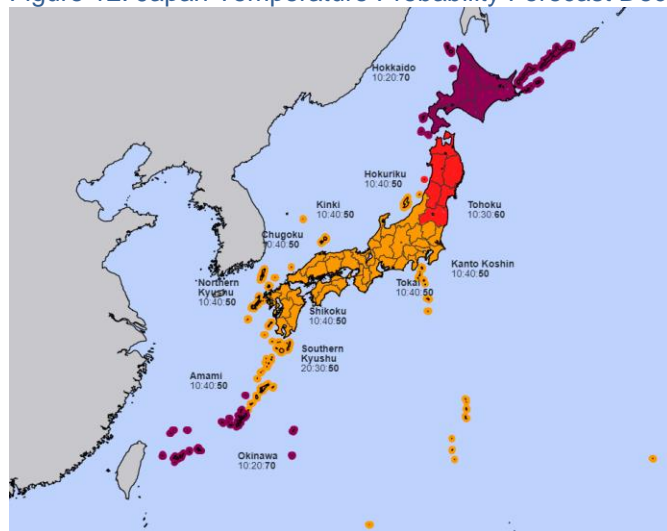
plan to give up all of its long-term LNG supply contracts, Onoda said, adding that its decisions would be based on an overall assessment of contractual terms and the situation when contracts come up for renewal.” The reporting would point to JERA wanting to have less long term LNG contracts. (ii) If so, this would be in direct contrast to last week. Our November 21, 2021 Energy Tidbits JERA’s press release [\[LINK\]](#) for its \$2.5b investment to acquire 25.7% interest in the Freeport LNG operations. In that release, JERA said “As evidenced by the current gas price hikes around the world, securing a stable supply of competitive LNG is becoming increasingly important.” (iii) Qatar has to be one of the most dependable LNG suppliers so not extending would seem to be contrary to what JERA said last week was increasingly important. And then there was one last sentence in the Platts report that makes us wonder. Platts wrote “In the case of the Qatari contracts, “we had no choice but to give it up this time because there was a mismatch in conditions between the Qatari side and what we had requested,” Onoda said.” This is what makes us wonder if this isn’t the issue and if its Qatar wanting tougher terms than previous contracts?”

Natural Gas – Japan forecasts warm start to December then turning colder mid month

The Japan Meteorological Agency posts its weekly temperature probability forecast for the next 4 weeks on Thursday mornings. [\[LINK\]](#). The new forecast stayed the same as last week with the onset of the colder weather not expected to begin until the second half of December. Below is the JMA forecast for the next weeks of the forecast period (Dec 11 – Dec 24) and it expects to see warmer than normal temperatures in the Dec 11 Dec 17 with colder weather settling in from Dec 18 – Dec 24). The beginning of January is expected to return to near normal occurrences.

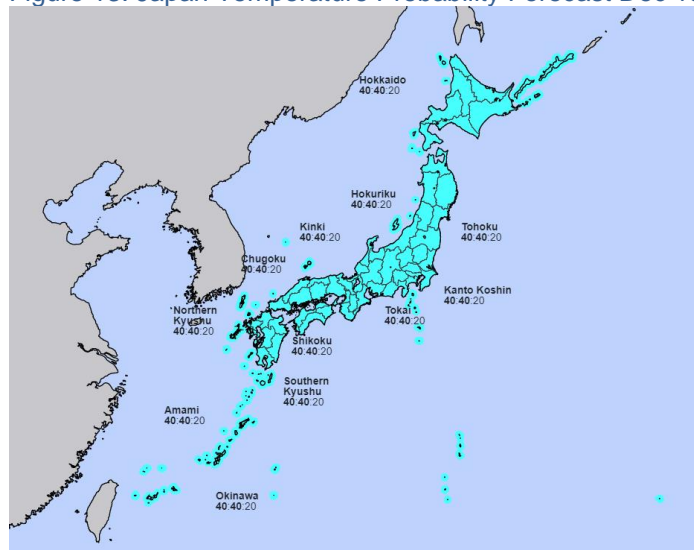
Japan warm to start Dec

Figure 12: Japan Temperature Probability Forecast Dec 11 – Dec 17



Source: Japan Meteorological Agency

Figure 13: Japan Temperature Probability Forecast Dec 18 – Dec 24



Source: Japan Meteorological Agency

Natural Gas – Qatar signs two more long term LNG supply deals to China buyers

Since July 1, 2021, there have been 12 deals of Asian LNG buyers locking up long term LNG supply past 2030. We continue to believe the best validation of a pending LNG supply gap in the 2020s is that more Asian LNG buyers are moving to lock up long term LNG supply thru the 2020s. (i) On Monday, China's Guangdong Energy Group (GEG) entered into a new deal with Qatar Energy; [LINK](#). This 10-year deal sees Guangdong purchasing 0.13 bcf/d from Qatar Energy with deliveries beginning in 2024. Deliveries of LNG under the SPA will utilize Qatar's fleet of conventional, Q-Flex and Q-Max LNG vessels, allowing GEG to receive LNG primarily at the Dapeng and Zhuhai LNG Receiving Terminals. This agreement follows the contract signed between Cheniere and Foran mentioned in our November 28 Energy Tidbits. Qatar Energy's CEO stated in the release, *"We are pleased to enter into this long-term supply agreement with Guangdong Energy Group and look forward to establishing a successful and mutually rewarding relationship. This agreement further demonstrates our commitment to continue to be a trusted and reliable energy partner for the People's Republic of China."* (ii) On Wednesday, Qatar announced a long term supply deal with China's S&T International in a 15-yr period starting in late 2022 for 0.13 bcf/d. Our Supplemental Documents package includes the Qatar press releases.

**Guangdong signs
10-yr deal with
Qatar Energy**

Asian LNG buyers abruptly changed and moved to lock in long term supply

We have been highlighting that the best validation for a LNG supply gap in the 2020s is that Asian LNG buyers have made an abrupt change to their LNG contracting and pivoted to trying to lock in long term LNG supply. On July 14, 2021 we posted our 8-pg *"Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs"*. Here is an excerpt from the blog *"The last 7 days has shown there is a sea change as Asian LNG buyers have made an abrupt change in their LNG contracting and are moving to lock in long term LNG supply. This is the complete opposite of what they were doing pre-Covid when they were trying to renegotiate Qatar LNG long term deals lower and moving away from long term deals to spot/short term sales. Why? We think they did the same math we did in our April 28 blog "Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada"*

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Phase 2?" and saw a much bigger and sooner LNG supply gap driven by the delay of 5 bcf/d of Mozambique LNG that was built into most, if not all LNG supply forecasts. Asian LNG buyers are committing real dollars to long term LNG deals, which we believe is the best validation for the LNG supply gap. Another validation, Shell, Total and others are aggressively competing to invest long term capital to partner in Qatar Petroleum's massive 4.3 bcf/d LNG expansion despite plans to reduce fossil fuels production in the 2020s. And even more importantly to LNG suppliers, the return to long term LNG contracts provides the financing capacity to commit to brownfield LNG FIDs. The abrupt change by Asian LNG buyers to long term contracts is a game changer for LNG markets and sets the stage for brownfield LNG FIDs likely as soon as before year end 2021. It has to be brownfield LNG FIDs if the gap is coming bigger and sooner. And we return to our April 28 blog point, if brownfield LNG is needed, what about Shell looking at 1.8 bcf/d brownfield LNG Canada Phase 2? LNG Canada Phase 1 at 1.8 bcf/d capacity is already a material positive for Cdn natural gas producers. A FID on LNG Canada Phase 2 would be huge, meaning 3.6 bcf/d of Cdn natural gas will be tied to Asian LNG markets and not competing in the US against Henry Hub. And with a much shorter distance to Asian LNG markets. This is why we focus on global LNG markets for our views on the future value of Canadian natural gas." Below is our graphic noting recent Asian long-term LNG supply contracts. Our Supplemental Documents package includes our July 14 blog.

Updated list of new Asian LNG buyer long term contracts

We have now seen 12 deals since July 1, 2021 where Asian LNG buyers locked up long term LNG supply past 2030. Below is the updated table of Asian LNG buyer new long term supply deals since the end of June. This table was in our July 14 blog. Note the below table is for Asian LNG long term supply deals so it excludes a Poland 20 year supply deal, a France 11 year supply deal and JERA \$2.5b investment to buy 25.7% interest in the Freeport LNG supply. Our November 21, 2021 Energy Tidbits highlighted the JERA deal.

Figure 14: Long Term Asian LNG Supply Deals since July 1, 2021

Signed Long-Term Asian LNG Buyer Deals Since July 1, 2021					
Date	Buyer	Seller	Country	Volume	Duration
			Buyer / Seller	(bcf/d)	Years
July 7, 2021	CNOOC	Petronas	China / Canada	0.30	10.0
July 9, 2021	CPC	QatarEnergy	Taiwan / Qatar	0.16	15.0
July 9, 2021	Guangzhou Gas	BP	China / US	0.13	12.0
July 12, 2021	Korea Gas	QatarEnergy	Korea / Qatar	0.25	20.0
Sept 29, 2021	CNOOC	QatarEnergy	China / Qatar	0.50	15.0
Oct 11, 2021	ENN	Cheniere	China / US	0.12	13.0
Nov 4, 2021	Unipet	Venture Global LNG	China / US	0.46	20.0
Nov 4, 2021	Sinopec	Venture Global LNG	China / US	0.53	20.0
Nov 5, 2021	Sinochem	Cheniere	China / US	0.12	17.5
Nov 22, 2021	Foran	Cheniere	China / US	0.04	20.0
Dec 6, 2021	Guangdong Energy	QatarEnergy	China / Qatar	0.13	10.0
Dec 8, 2021	S&T International	QatarEnergy	China / Qatar	0.13	15.0
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				2.87	
*Excludes Asian short term/spot deals					
*Excludes non-Asian long term deals: Poland PGNiG 20-yr deal for 0.26 bcf/d w/ Venture Global					
*Excludes non-Asian long term deals: France Engie 11-yr deal for 0.16 bcf/d w/ Cheniere					

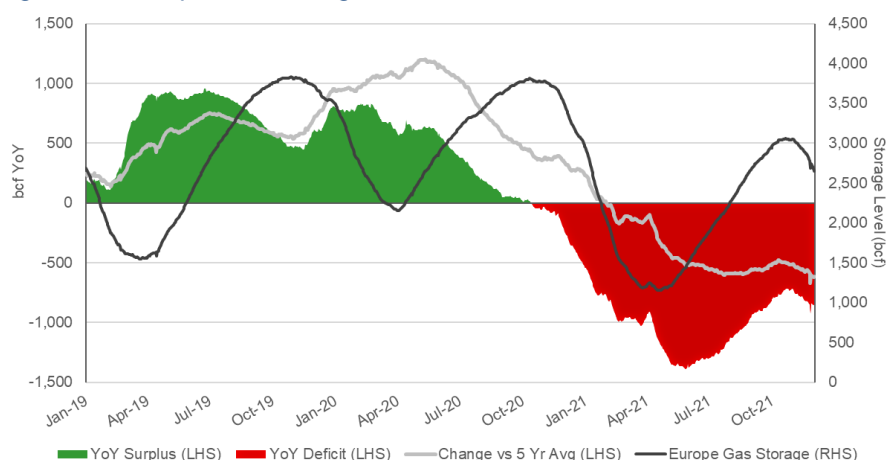
Source: Bloomberg

Natural Gas – Europe storage 63.67% full vs 5 year average of 80.77%

The YoY Europe storage gap has widened a little bit so far in this winter natural gas season. Draws to European gas storage units continued this week. It was a larger draw and marked the seventh consecutive week of draws, indicating winter is underway. 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 widened since Nov 1. Storage as of Dec 9 is 63.67%, which is -19.44% less than last year levels of 83.11% and are -17.10% below the 5-year average of 80.77%. The set up for winter natural gas prices continues to support strong winter natural gas prices. Below is our graph of Europe Gas Storage Level.

Europe gas storage 63.67% full

Figure 15: Europe Gas Storage Level



Source: Bloomberg

Natural Gas – Bloomberg: Europe is burning thru its natural gas reserves too fast

On Tuesday, we tweeted [\[LINK\]](#) on a great reminder table from a Bloomberg report “Europe is burning through its natural gas reserves too fast.” Bloomberg wrote “And it’s not a pretty sight. Since the start of November, storage levels have fallen ~11 percentage points. That’s faster than in any year in the prior decade over the same seasonal period -- bar 2016 and 2017, when the peak was at least 11 points higher. The average drawdown from Nov. 1 to Dec. 7 was just 9.2 ppts.” Our tweet was “Europe better hope this cold spell ends soon. Its only the 1st week of Dec, Europe #NatGas storage started winter low at 77.3% full & dropping fast. Good reminder table from @EdVanDerWalt #OOTT.”

Europe burning thru natural gas reserves

Figure 16: Europe Gas Storage Level



Source: Bloomberg

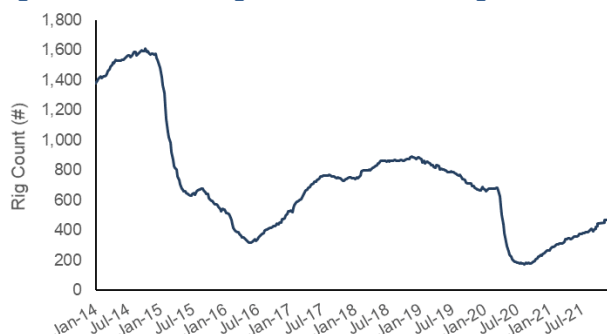
Source: Bloomberg

Oil – US oil +4 WoW at 471 oil rigs

Baker Hughes released its weekly North American drilling activity data on Friday. This week US oil rigs were up WoW at 471 rigs. Oil rigs are +299 off the bottom of 172 in Aug14/2020 week. Permian was up this week and is the oil basin expected to drive growth. US normally reach their seasonal peak around US Thanksgiving and seasonally decline thru year end. However, it seems that the seasonal decline this year will be less with high oil prices and a need to replenish DUCs. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by 216 to 457 oil rigs (-32%). The biggest contributor to the decrease is the Permian being down 135 oil rigs from the March 13, 2020 peak (-32%), although we are seeing it continue to ramp up slightly. Below is our graph of US oil rigs since January 1, 2014.

**US oil rigs up
WoW**

Figure 17: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

Oil – US frac spreads down 4 to 267 for week ended dec 10

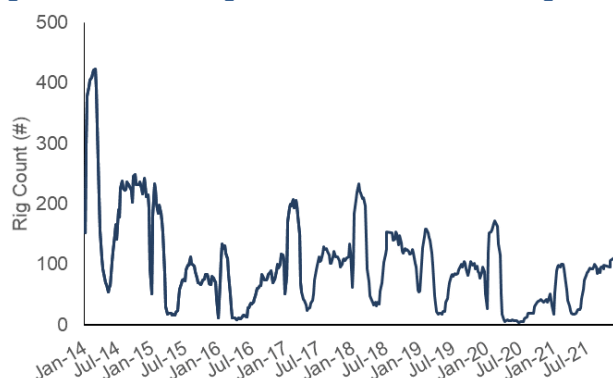
Mark Rossano (C6 Capital Holdings) had his weekly US frac spread recap for week ended Dec 3 on the Primary Vision network. YouTube video at [\[LINK\]](#). US frac spreads were down 4 to 267 for the week ended Dec 10. Decline is in line with normal seasonal drop post US Thanksgiving, and then typically get a strong snapback by the 2nd week of Jan. Typically the 2nd week of Jan should get frac spreads to where they were at the beginning of Dec. Expects the seasonal decline to be about 25 spreads from the peak of about 275. Even though frac spreads were down, there was an increase in the Permian. He expects the Permian to stay strong until right before Xmas. He noted that US rigs were up and expects them to stay elevated thru year end

**Frac spreads
down 4 to 267**

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Oil – Total Cdn rigs -3 to 177 total rigs and +66 rigs YoY

Total Cdn rigs were up -3 this week to 177 total rigs. Cdn oil rigs were -3 at 110 rigs. Cdn gas rigs were increased to 67 gas rigs; although rigs are down, we continue to expect an increase as the typical seasonal run up towards Christmas before dropping over the holidays. Total rigs are now +160 since the June 26, 2020 all-time low. Cdn drilling has recovered YoY, a year ago Cdn oil rigs were 52 and Cdn gas rigs were 59 for a total Cdn rigs of 111, meaning total Cdn rigs are +66 YoY and total rigs are up +24 vs 2019.

Cdn rigs -3 WoW**Figure 18: Baker Hughes Total Canadian Oil Rigs**

Source: Baker Hughes

Oil – US weekly oil production up at 11.7 mmb/d

US oil production are back to pre-Hurricane Ida levels. Weekly production in the US was up this week at 11.7 mmb/d for the week ended Dec 3. Lower 48 production drove total production and was up from last weeks level at 11.2 this week; Alaska was flat as refineries conclude their maintenance season. US oil production is up YoY at +0.600 mmb/d and is still down significantly at -1.4 mmb/d since the 2020 peak of 13.1 mmb/d on March 13. The EIA DPR has expectations of a slight increase for Nov/Dec for the major shale/tight oil plays.

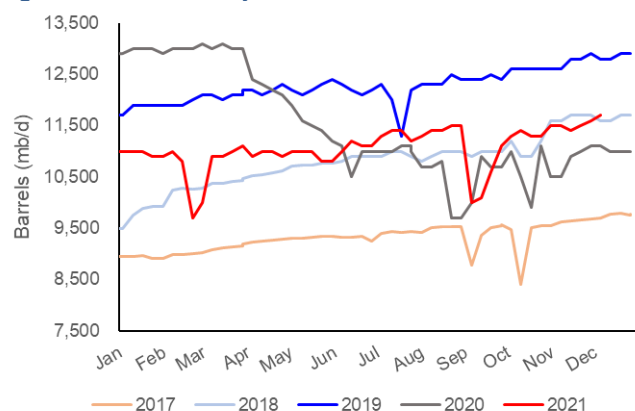
**US oil
production up
WoW**

Figure 19: EIA's Estimated Weekly US Oil Production

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

Source: EIA

Figure 20: US Weekly Oil Production



Source: EIA, SAF

Oil – EIA STEO increasing its forecast for US oil production growth to Q4/22

One of the headlines from the EIA STEO was on its increasing its forecast for US oil production. (i) There was no change to the historical 2019 oil production of 12.29 mmb/d and 2020 at 11.28 mmb/d, down 1.01 mmb/d YoY. (ii) Full year 2021 is increased by +0.05 mmb/d vs November STEO to 11.13 mmb/d, which is down -0.1 mmb/d YoY from 2020. (iii) The EIA forecasts a continued YoY growth in 2022 with production averaging 11.85 mmb/d, +0.67 mmb/d YoY (was 11.90 mmb/d previously), with Q4/22 production of 12.09 mmb/d, is still down -0.79 mmb/d from Q4/19. (iv) In the US oil production commentary, the EIA wrote “Total U.S. crude oil production was an estimated 11.7 million b/d in November. We

**EIA forecasts US
2022 oil exit at
12.09 mmb/d**

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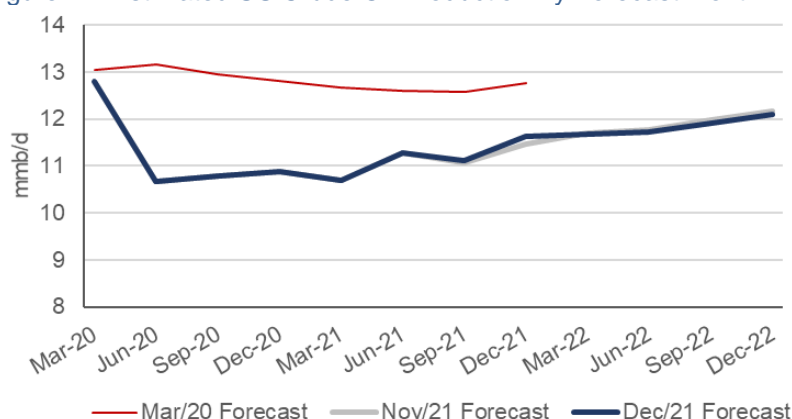
forecast that it will rise to an average of 11.8 million b/d in 2022 and to an average of 12.1 million b/d in 4Q22.”

Figure 21: Estimated US Crude Oil Production By Forecast Month

mmb/d	Q1/19	Q2/19	Q3/19	Q4/19	2019	Q1/20	Q2/20	Q3/20	Q4/20	2020	Q1/21	Q2/21	Q3/21	Q4/21	2021	Q1/22	Q2/22	Q3/22	Q4/22	2022
Dec-21	99.12	99.98	101.25	100.70	100.26	94.94	84.93	92.74	94.59	91.80	93.98	96.07	97.91	99.63	96.90	99.29	100.06	101.15	101.29	100.5
Nov-21	99.98	100.61	102.07	101.61	101.07	95.83	84.9	93.47	95.43	92.42	94.68	96.69	98.59	100.1	97.53	99.83	100.43	101.59	101.64	100.9
Oct-21	100.18	100.7	102.09	101.64	101.15	95.83	84.9	93.47	95.43	92.42	94.66	96.67	98.52	99.98	97.46	99.84	100.57	101.67	101.7	100.95
Sept 21	100.24	100.43	100.21	101.77	101.15	95.83	84.9	93.47	95.43	92.42	94.66	96.49	98.55	99.77	97.38	99.59	100.62	101.79	102	101.01
Aug 21	100.01	100.37	101.83	101.41	100.90	95.59	84.84	93.33	95.38	92.30	94.6	96.71	99.06	100.06	97.63	99.67	100.93	102.06	102.29	101.25
July 21	100.01	100.37	101.83	101.41	100.90	95.59	84.85	93.33	95.39	92.30	94.5	96.74	99.03	100.15	97.63	99.81	101.02	102.13	102.41	101.35
June 21	100.01	100.37	101.83	101.41	100.90	95.4	84.85	93.33	95.39	92.26	94.5	96.86	98.96	100.27	97.67	99.86	101.01	102.05	102.29	101.31
May 21	100.01	100.37	101.83	101.41	100.90	95.41	84.88	93.31	95.42	92.27	94.76	96.96	98.91	100.05	97.69	100.00	101.08	102.19	102.39	101.42
Apr 21	100.23	100.79	102.09	101.68	101.19	95.30	84.78	93.21	95.32	92.17	95.26	96.84	98.71	99.79	97.67	99.90	100.93	102.06	102.34	101.32
Mar 21	100.23	100.79	102.09	101.68	101.19	95.06	84.95	93.25	95.42	92.18	95.19	97.04	98.61	99.12	97.50	99.79	100.94	102.13	102.42	101.33
Feb 21	100.16	100.79	102.09	101.68	101.18	95.20	85.04	93.37	95.51	92.29	95.74	97.20	98.55	99.14	97.67	99.61	100.77	101.96	102.29	101.17
Jan 21	100.16	100.79	102.09	101.68	101.18	95.18	84.97	93.35	95.37	92.22	95.98	97.28	98.58	99.26	97.77	99.67	100.65	101.79	102.17	101.08
Dec 20	100.28	100.84	102.10	101.68	101.23	95.11	84.94	93.53	95.89	92.38	96.26	97.56	99.19	99.61	98.16					
Nov 20	100.57	101.12	102.39	101.98	101.52	95.40	85.34	94.08	96.75	92.91	97.05	98.24	99.65	100.20	98.80					
Oct 20	100.51	101.06	102.32	101.91	101.46	95.01	85.07	94.16	97.05	92.84	97.48	98.72	99.94	100.17	99.09					
Sept 20	100.45	100.99	102.25	101.84	101.39	94.92	85.05	94.72	97.50	93.07	97.95	98.98	100.56	100.87	99.60					
Aug 20	100.32	100.78	102.14	101.71	101.25	94.77	85.01	94.96	97.74	93.14	98.60	99.56	101.10	101.36	100.16					

Source: EIA STEO

Figure 22: Estimated US Crude Oil Production By Forecast Month



Source: EIA STEO

Oil – Trans Mountain should return to normal levels any day now

Last week's (Dec 5, 2021) Energy Tidbits memo noted our Dec 4 tweet [\[LINK\]](#) on Trans Mountain's press release [\[LINK\]](#) "Following the precautionary shutdown of the Trans Mountain Pipeline as a result of heavy rains and flooding, Trans Mountain plans to restart the pipeline tomorrow." And "Subject to CER concurrence and final repair work, the restart will take place during daylight hours tomorrow and the pipe will be closely monitored by our teams in the field and technology systems operated by our Control Centre. Emergency management teams and equipment remain staged in key areas with booms proactively deployed in the unlikely event of a release." Our tweet noted that there was no indication of the expected throughput volumes on restart or any estimate for when Trans Mountain would expect to ramp up throughput back to full volumes. However on Monday, Trans Mountain [\[LINK\]](#) reported "Since re-starting Sunday, as a precaution, the pipeline has been operating at a reduced pressure. It is expected that gasoline and crude oil supply levels to Trans Mountain's customers should return to normal levels within a week."

**Trans Mountain
update**

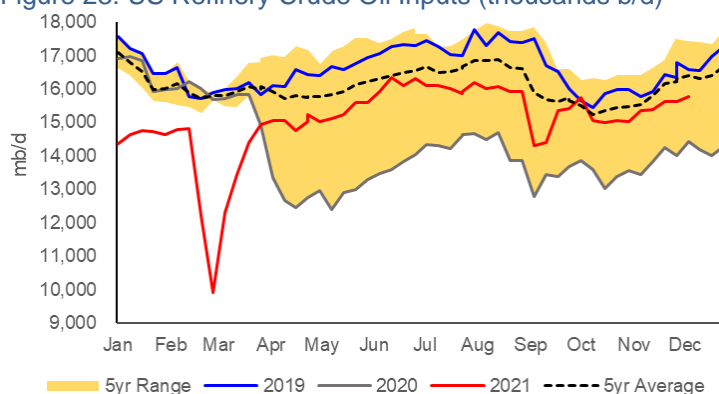
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Oil – Refinery inputs +0.154 mmb/d YoY at 15.785 mmb/d

Refineries normally ramp up oil processing to year end and then decline in the new year. This is what is happening in 2021. Crude inputs to refineries were up +0.154 mmb/d this week to 15.785 mmb/d and are +1.349 mmb/d YoY. Refinery utilization was up +1% to 89.8%, which is still +11.1% YoY with the maintenance season coming to an end across the nation. Total products supplied (i.e., demand) was down -0.385 mmb/d to 19.837 mmb/d. Motor gasoline was up +0.167 at 8.963 mmb/d from 8.796 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 9.083 mmb/d, up from last year.

**Refinery inputs up
WoW**

Figure 23: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA

Oil – US “net” oil imports up 0.329 mmb/d WoW at 4.229 mmb/d

US “NET” imports were up 0.329 mmb/d to 4.229 mmb/d for the Dec 3 week. US imports were down -0.105 mmb/d to 6.499 mmb/d. US exports were down -0.434 mmb/d to 2.270 mmb/d. The WoW decrease in US oil imports was driven by US’s top 10 imports by country were down +0.075 mmb/d from Top 10. Some items to note on the by country data. (i) Canada was up this week by +0.096 mmb/d to 3.869 mmb/d, which is now ~0.230 mmb/d above the average levels in Jan/Feb of 2020. (ii) Saudi Arabia was down 82,000 b/d to 0.393 mmb/d this week. (iii) Colombia was down -0.143 mmb/d to 0.248 mmb/d. (iv) Ecuador decreased imports this week, down 0.112 mmb/d to 0 mmb/d. (v) Iraq was up +27,000 b/d to 248,000 b/d. (vi) Venezuela remained at 0 due to US sanctions. (vi) Mexico was down by 32,000 b/d to 0.625 mmb/d.

**US “net” oil up
WoW**

Figure 24: US Weekly Preliminary Oil Imports by Major Countries

	Sept 24/21	Oct 1/21	Oct 8/21	Oct 15/21	Oct 22/21	Oct 29/21	Nov 5/21	Nov 12/21	Nov 19/21	Nov 26/21	Dec 3/21	WoW
Canada	3,034	4,039	3,441	3,254	3,472	3,685	3,550	3,429	3,559	3,773	3,869	96
Saudi Arabia	561	622	304	319	336	397	598	453	468	475	393	-82
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	764	652	316	462	631	439	365	499	460	657	625	-32
Colombia	255	0	382	211	141	71	121	302	141	214	71	-143
Iraq	0	31	188	239	155	187	51	42	131	221	248	27
Ecuador	235	59	208	0	222	92	117	103	149	112	0	-112
Nigeria	64	133	211	137	0	64	64	1	68	4	175	171
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	4,913	5,536	5,050	4,622	4,957	4,935	4,866	4,829	4,976	5,456	5,381	-75
Others	1,639	1,499	944	1,203	1,297	1,237	1,242	1,362	1,460	1,148	1,118	-30
Total US	6,552	7,035	5,994	5,825	6,254	6,172	6,108	6,191	6,436	6,604	6,499	-105

Source: EIA, SAF

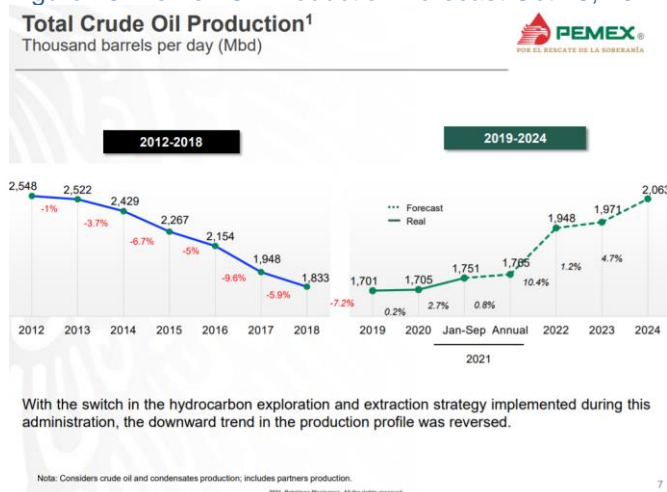
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Oil – Sounds like Mexico/Pemex will miss its 2022 oil production forecast

It's hard to be 100% certain, but it sounds like Mexico Secretary of Energy, Rocio Nahle, is pointing to Mexico/Pemex's current 2022 oil production being too high by ~0.2 mmb/d. No one will be surprised by this as all Mexico has been doing for years is missing its production growth forecast. ON Friday, we tweeted [\[LINK\]](#) on El Economista's Monday report [\[LINK\]](#) "Mexico will keep OPEC + oil production quota in 2022: Rocio Nahle, The Secretary of Energy, Rocio Nahle, told senators that a fundamental part of the policy of this administration is to rescue state companies since the energy sector is in the public interest and not in the private sector. By 2022, Mexico will maintain its oil production quota without cuts, with an extraction volume similar to that agreed to before the Organization of the Petroleum Exporting Countries and unaffiliated producers (OPEC +) for the end of the year: 1,753 million barrels newspapers, said the head of Energy, Rocio Nahle." This is a Google Translate so there is always risk, but what she seems to be saying is Mexico oil production in 2022 will be at their OPEC+ quota. In OPEC's release last week, they noted Mexico's quota is 1.752 mmb/d. Mexico hasn't been at that level. But, 1.752 mmb/d is below the latest Pemex 2022 forecast of 1.948 mmb/d. Our Oct 31, 2021 Energy Tidbits highlighted the then new Pemex Oct 28, 2021 investor presentation. We said there was no surprise, Pemex lowered its oil production forecast. This has been the story for Pemex for the last few years – oil production forecasts aren't met. On Oct 28, we tweeted [\[LINK\]](#) "Positive for Cdn heavy/med oil. New #Pemex slide deck, continues to lower #Oil production forecasts. no change to 2022, but 2023 now 1.971 mmb/d (was 2.121) & 2024 now 2.063 mmb/d (was 2.186). Will help AMLO reach his no exports goal. #OOTT." So no real change for 2021 and 2022 forecasts but lowering 2023 and 2024. Below is the Pemex oil production forecasts from their October 28, 2021 investor presentation. Our Supplemental Documents package includes the El Economista report.

Mexico oil forecast miss again?

Figure 25: Pemex Oil Production Forecast Oct 28, 2021



Source: Pemex

Oil – Pemex oil exports expected down 0.2 to 0.3 mmb/d starting Q1/22

We have been highlighting that a plus to Cdn heavy/medium oil in 2022 will be Pemex will be exporting less oil as the capex put to its existing refineries increases their crude oil throughput and then the second leg with the start up of AMLO's signature project, the 340,000 b/d Dos Bocas refinery in summer 2022 in his home state. The US Gulf Coast is Mexico's primary export market so less Mexico exports are inevitably a positive for Cdn

Mexico oil exports down 0.2 to 0.3 mmb/d in Jan

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heavy/medium oil. On Friday morning, we tweeted [\[LINK\]](#) on a Bloomberg report “*Pemex Plans to Export Less Crude in 2022 to Meet Demand at Home. Petroleos Mexicanos is said to be planning to trim its crude oil exports next year as it cranks up domestic fuelmaking to supply an economy bouncing back from the pandemic. Pemex refineries in Mexico, which have been operating at less than 50% of capacity for seven straight months, plan to process an additional 200,000 to 300,000 barrels of crude a day starting in January, people with knowledge of the situation said. That’s oil that would have otherwise been exported, with Asian refineries expected to bear the brunt of the export cuts. Pemex could potentially also run more Mexican crude at the Houston-area Deer Park refinery once its deal to acquire Royal Dutch Shell Plc’s stake is finalized.*” Our Supplemental Documents package includes the Bloomberg report.

AMLO still plans to stop MX oil exports in H2/22 with Dos Bocas refinery start up

Our October 31, 2021 Energy Tidbits reminded of AMLO’s plan/hope to eliminate all Mexico oil exports. We then wrote “On Wed, we tweeted [\[LINK\]](#) on a big developing upside to Cdn heavy/medium oil starting in H2/22 with the still planned inauguration of the under construction Dos Bocas Refinery that has expected capacity of 340,000 b/d. We tweeted “H2/22 #Oil supply gap >0.5 mmbd heavy/med to PADD 3. #Pemex Dos Bocas refinery start up 07/01/22, AMLO says MX oil prod needed for refineries & to stop exports. Should be upside to Cdn heavy/med. Thx @CarolinaBGP. See SAF Group 12/27/20 Energy Tidbits [\[LINK\]](#) #OOTT.” Bloomberg reported “The government of President Andres Manuel Lopez Obrador is preparing to cancel crude oil export contracts, if necessary, once the new Dos Bocas refinery is launched, local newspaper *El Universal* reported. * “There are instructions from the president to stop exporting to allocate all crude oil to the National Refining System and the new refinery that will be inaugurated on July 2, 2022,” energy sector officials told *El Universal* * With the Dos Bocas refinery, at least 1.5 million barrels of crude oil will be required for domestic consumption each day next year, the sources explained.” For those fluent in Spanish, the *El Universal* 1.39 min video “*Alistan cierre de grifo a exportaciones de crudo por Dos Bocas*” is at [\[LINK\]](#). Dos Bocas alone does not lead to the Pemex refineries having the capacity to process all Mexican oil production. The other part is that focus for Pemex to increase existing refinery utilizations.”

Increasing refinery capacity to zero out exports has been AMLO energy priority

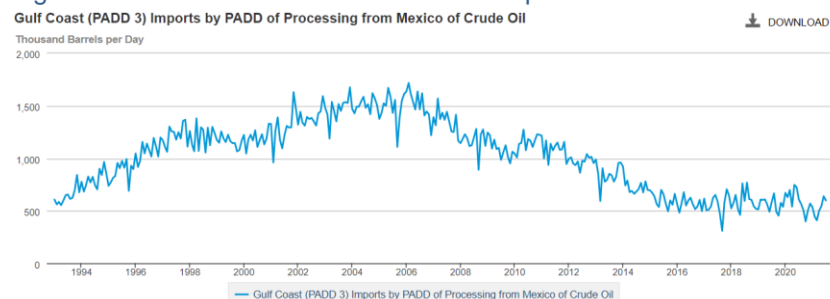
This has been coming since AMLO became President. It also just so happens that the new Dos Bocas refinery is located in his home state of Tabasco. AMLO’s energy priority has been to increase existing refinery utilization and build the new Dos Bocas refinery so Mexico had refinery capacity to process all of its crude oil production. This would eliminate oil exports with the big win being that Mexico would be able to produce the gasoline, diesel, etc it needs and not have to import these petroleum products. Our Oct 27 tweet included the excerpt from our December 27, 2020 Energy Tidbits on this Dos Bocas refinery and the lift to Cdn heavy/medium crude oil.

Creates >0.5 mmb/d heavy/medium supply gap in Gulf Coast PADD 3 refineries

Assuming Pemex can increase its refinery utilization to go along with the new Dos Bocas refinery and Mexico can then stop oil exports in H2/22, this will create a heavy/medium oil supply gap in Gulf Coast PADD 3 refineries. We have been highlighting for years how Cdn heavy/medium crude oil has been the big winner when there are declining US Gulf Coast PADD 3 imports of heavy/medium crude oil from Mexico and Venezuela. And if Mexico stops heavy/medium oil exports in H2/22, Cdn heavy/medium crude stands to be the desired supply. The biggest risk is

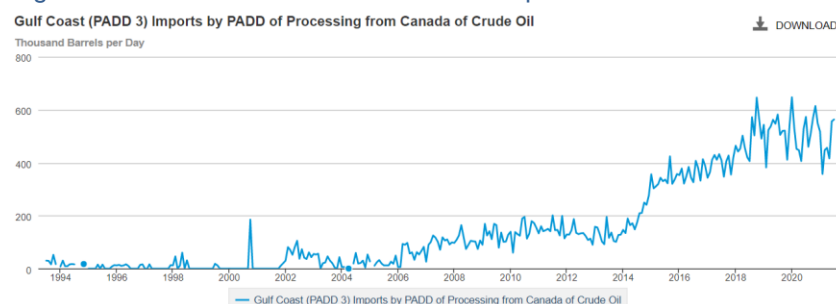
that the US removes Venezuela sanctions and that Venezuela then increase oil production and exports including to the US. Our Oct 27 tweet said it would create a >0.5 mmb/d supply gap. Below are the EIA's current PADD 3 imports of crude oil from Mexico and Canada. Please note the different scales in the graphs.

Figure 26: Gulf Coast PADD 3 Crude Oil Imports From Mexico



Source: EIA

Figure 27: Gulf Coast PADD 3 Crude Oil Imports From Canada



Source: EIA

Oil – Venezuela oil production up with higher oil prices and Iran diluent

The expectation is that Venezuela crude mostly gets snuck into China, but the point to note is that Venezuela is exporting more crude somewhere. On Wednesday, Bloomberg reported [\[LINK\]](#) PDVSA production was now ~908,000 b/d, which is a double vs last year. No surprise, Venezuela is benefiting from higher oil prices increasing cash flow. And more cash flow means Venezuela has more money to put back into the oil sector. The other key factor is Iran continues to provide the diluent/condensate needed to blend with the extra heavy oil to move it to markets. Bloomberg wrote *“With crude near \$75 a barrel, it’s a financial lifeline for a nation hobbled by U.S. sanctions and in the throes of a seven-year recession. To reach that milestone, PDVSA has resorted to desperate measures. According to people with direct knowledge of the matter, it’s handing out contracts to little-known local companies with the promise of payments in scrap metal, or in some cases, backpacks stuffed with U.S. dollars as sanctions limit Venezuela’s access to banks.”* Perhaps the most important validator is that PDVSA is reportedly paying the service companies. Bloomberg wrote *“PDVSA has built new partnerships allowing it to increase production,” said Antero Alvarado, a managing partner at consulting firm Gas Energy Latin America. The cash-strapped company “is also paying service companies. All this amid high oil prices, sanctions and traditional partners unable to collect debts from PDVSA.”* The other key remains that Iran must continue to supply the diluent/condensate needed to blend to move the extra heavy oil. The question is can they maintain or even grow this a bit under the current sanctions. We suspect they should be able

**Venezuela
increases crude
production**

to hold approx. 1 mmb/d with Iran diluent/condensate. Our Supplemental Documents package includes the Bloomberg report.

Oil – Saudi says it intercepted a Houthi ballistic missile launched at Riyadh on Tues

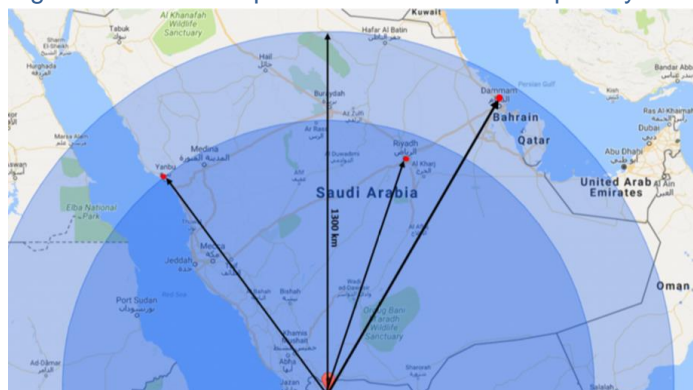
On Tuesday, Saudi Arabia said they intercepted a Houthi ballistic missile over Riyadh. We did not see any confirmation that anything hit Riyadh other than some debris from the Patriot missiles intercepting the Houthi ballistic missile. There were no reports that there was more than the one ballistic missile. There were Twitter clips that purport to be the Patriot missiles intercepting the ballistic missile. What was interesting was the reports that there were four Patriot missiles launched.

**Saudi say
intercepted
missile over
Riyadh**

If Houthis can reach Riyadh, they reach all Saudi oil infrastructure

Whenever we see reports of a Houthi ballistic missile reaching Riyadh, this is a reminder if the Houthi missiles (either ballistic or drones) can reach Riyadh, these Houthi missiles have the range to reach any Saudi oil infrastructure. We have not seen confirmation from exactly where in Houthis territory the ballistic missile was launched, but our below is the 2019 map showing Houthi reported missile range capability should be close. Also below is the EIA Saudi oil and natural gas infrastructure map.

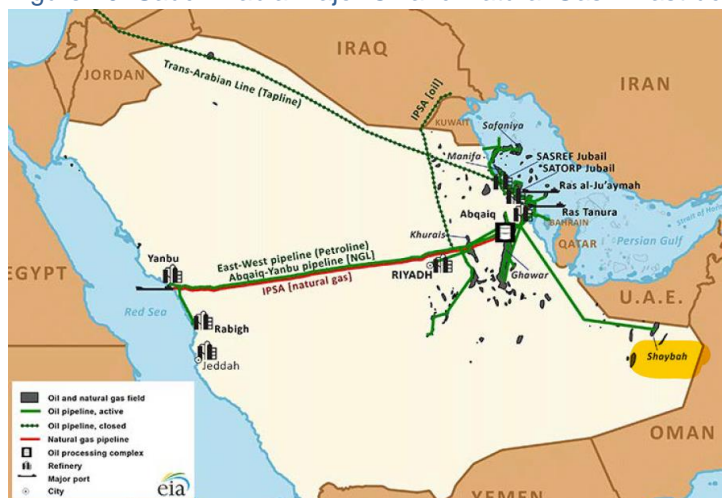
Figure 28: Houthi Reported Missile Launch Capability Range



Source: GoogleMaps, SAF

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Figure 29: Saudi Arabia Major Oil and Natural Gas Infrastructure



Source: EIA

Oil – WSJ Saudi pleads for missile defense resupply as arsenal runs low

On Tuesday, the WSJ reported “*Saudi Arabia Pleads for Missile-Defense Resupply as Its Arsenal Runs Low*” [\[LINK\]](#) And “*Saudi Arabia is running out of the ammunition it uses to defend against weekly drone and missile attacks on its kingdom and is urgently appealing to the U.S. and its Gulf and European allies for a resupply, U.S. and Saudi officials said.*” This report was written before the ballistic missile attack on Riyadh. There is likely no doubt that Saudi needs Patriot missiles. As an example, they used at least four to shoot down the ballistic missile on Tuesday. So no surprise, the WSJ reported Saudi has asked for “*hundreds*” more. Saudi has no choice but to do what it can to get the Patriots from the single seller. So if we assume like people believe that this was the leverage US used to get Saudi to stick with the OPEC+ 400,000 b/d increase for Jan, then it looks like Saudi gave in. That is probably true, But it likely only tells half the story. The WSJ also notes how this the US has been pulling away its support to Saudi under Biden. Ie. it moved a patriot missile defense system out of Saudi. However, we think this move is also a longer term bullish side to this and Saudi and OPEC+ gained a good reinforcement for the mid/long term oil. It reinforces Biden will do anything to avoid having to support or ask the US oil sector to increase oil supply to fix the oil supply shortage risk that Biden blames for gasoline prices. Our Supplemental Documents package includes the WSJ report.

Saudi needs more Patriot missiles

Oil – Guess Saudi won't be putting a nuclear waste dump by Qatar

We aren't certain how the MBS/Qatar meetings will have any near term impact on oil and oil strategies, but it certainly looks like they are returning to a normal relationship after a few years of disagreement. No one could miss the big warm welcome when MBS plane landed in Qatar and he was greeted at the bottom of the airplane steps by Qatar's Emir Sheikh Tamim bin Hamad al-Thani. One of our first thoughts was we guess Saudi Arabia won't be digging a channel to separate Qatar from any land border with Saudi Arabia. This was their big threat or messaging in 2018. Here is what we wrote in our Sept 2, 2018 Energy Tidbits. Note the last part how they also planned to put a nuclear waste dump right by Qatar. “*It sounds like momentum is building within Saudi Arabia for their plan to cut a channel to separate Qatar from Saudi Arabia. This week, there were multiple reports of the tweet by Saud al-Qahtani, a senior adviser to Crown Prince Mohammed bin Salman “I am impatiently waiting for details on the implementation of the Salwa island project, a great, historic project that will change the*

Saudi and Qatar make up

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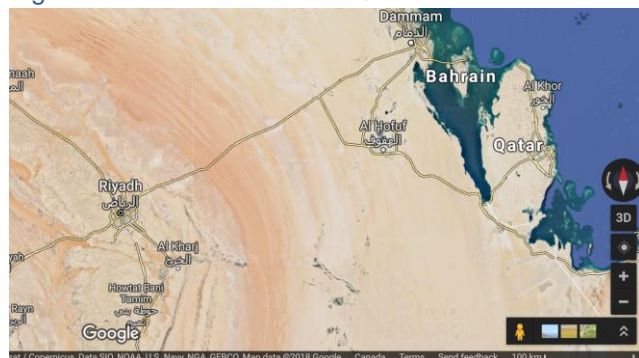
geography of the region". This is not a new concept, rather it first came up in April and we noted in our April 22, 2018 Energy Tidbits, when we wrote "The plan, which would physically separate the Qatari peninsula from the Saudi mainland, is the latest stress point in a 14-month long dispute between the two states. We couldn't help note one of potential actions in the Saudi Arabia/Qatar dispute, the Anadolu Agency (Ankara Turkey news) story "Saudi Arabia to dig canal along Qatar border: Official" [LINK], which noted "A Saudi official has confirmed reports of plans to dig a maritime channel along the kingdom's border with Qatar -- a move that would effectively turn the Qatari peninsula into an island." The plan would reportedly see Saudi Arabia cut a 60km channel 1 km inside their territory line and create a channel separating Qatar. If this ever happens, its more than a strategic move in the dispute, its also cutting off centuries or more of traditional items like Qatari shepherds taking their herds into Saudi Arabia for grazing. And then to make the message even clearer, the plan reportedly includes the potential to build a nuclear waste dump in this area."

Figure 30: MBS and Qatar Emir Sheikh Tamim bin Hamad al-Thani



Source: Al Jazeera

Figure 31: Saudi Arabia and Qatar



Source: GoogleMaps

Oil – Will Biden be successful in getting some form of JCPOA done before Jan 20?

We have to wonder if Biden has a time clock in his mind that he really wants to have some sort of JCPOA done before Jan 20? The economy has been in strong post recovery mode but there were many things that haven't gone as easy as he hoped – inflation highest since 1982, vaccination rates have just now reached 60% and not 70%, still Covid restrictions, Kamela getting more heat in the press, etc. Like it or not, politicians like to talk about their record and we are now just over a month away from the 1 year anniversary of his inauguration on Jan 20, 2001. The parties are nowhere near a deal and the US is further

Biden's 1 year anniversary is Jan 20

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away from a deal than it was in June. But we should keep in mind that, just like his first 100 days accomplishments, he is thinking about what he will get done in the last month before his first year is up.

Oil – JCPOA, are the West’s urgency threats for Iran to give in before the US gives in?

We recognize that this isn’t the common view, but we see the messaging on Iran and the JCPOA this week especially this morning, we have to wonder if all these pressures and threats and creating the sense of urgency from the G7 and Israel are really a push to try to get Iran to give in and return to the JCPOA before the US gives in to a lesser deal? (i) Vienna talks are going nowhere, or have backtracked from where they were before Raisi’s election. Russia Ambassador Ulyanov’s tweet this morning [\[LINK\]](#) “The #ViennaTalks are underway. A number of meetings in various formats are planned for today. Numerous outstanding issues still remain on the agenda but now, after the break last week, they are addressed properly in accordance with norms and rules of multilateral diplomacy.” On Thurs, US special envoy Malley posted a 1 min clip [\[LINK\]](#) saying Iran took all the concessions made to date, walked back all the concessions they made to date, and then asked for more. (ii) Increased G7 message of urgency. At the closing news conference for the G7 Foreign Ministers meeting this morning, UK host Foreign Secretary Liz Truss said it was Iran’s last chance to come to with agreeing to the terms of the JCPOA. There were similar messages this weekend from the other G7 countries. (iii) The US had multiple threats/warnings this week. On Thursday, Press Secretary Psaki said Biden asked his team to be prepared in the event diplomacy failed and the US will have no choice but to put additional sanctions/measures to hurt Iran’s revenues. (iv) Israel is ready for a military strike against Iran. We don’t think its any coincidence that this reporting came out yesterday. Israel has to give a warning to both the US and Iran that it is prepared to take action. Yesterday, Times of Israel reported [\[LINK\]](#) “Defense Minister Benny Gantz said Friday that he notified US officials during meetings this week in Washington that he had instructed the Israel Defense Forces to prepare for a strike against Iran. In a briefing with reporters on the sidelines of the Israeli American Council’s national summit in Florida, Gantz said the order he gave was to “prepare for the Iranian challenge at the operational level.” A senior defense official, speaking on condition of anonymity, indicated that Gantz had presented a timeline for when such an attack might take place during his meetings with US Defense Secretary Lloyd Austin and Secretary of State Antony Blinken, but the source did not specify further. Gantz told reporters Friday that the US and European countries “are losing patience” and are realizing that Iran is trying to drag out the negotiations, despite “playing a bad hand.” (v) There is no question the west is warning and threatening Iran that they have to get serious on returning the JCPOA. And that Iran continues to advance to get closer to be able to have nuclear capability. But it just makes us wonder if the increased threats/warnings are to get Iran to give in before the US has to give in? Our Supplemental Documents package includes the Times of Israel report.

**More warnings
for Iran to get
serious**

Was the US tough talking a smoke screen? Does Israel fear this?

There was a great food for thought NY Times Friday report “Iran’s Nuclear Program Ignites New Tension Between U.S. and Israel”. We think this this article is a good reminder that a message can, in reality, be directed at someone other than the obvious one. The NY Times is saying that the tough talk from the Biden Administration this week on Iran isn’t so much a threat against Iran to back down, but a message to Israel to calm down their fears that the US is going to give to Iran. Surely no one doesn’t think Israel doesn’t see this, which is likely the reason for this report. Is their fear that Biden is one of those type of politicians or people that pride themselves on getting a deal done and that a less than perfect deal is better than no deal at all. Especially because the last thing Biden wants is for the Middle East to

explode into some sort of conflict or series of conflicts that mean he has to send a lot of troops back into the Middle East after he has been focused on reducing troops in the region. The NY Times doesn't say it, but Biden's unspoken plan seems to be to focus his attention on the Far East for his battles and, to do so, he has to try to get to some sort of Middle East lesser commitment. And that can only mean some sort of deal with Iran. Or else, it all falls apart. And Israel knows Biden isn't so much trying to find a deal between him and Iran. Rather he is really trying to find a deal between the democratic party and Iran. He really is the Man in the Middle and not a Principal. Throw in the Times of Israel report that also included the reminder "*The desire is always to coordinate with [the US] what we are doing, but at the end of the day Israel is responsible for its own fate and will protect the security of its citizens, Maj. Gen. Eyal Zamir said during a live interview on Saturday at the Israeli American Council conference.*" We have to believe that, as opposed to the G7 urgency warnings, the Israeli threats/warnings are likely the best support for Biden to try to get Iran back for a JCPOA plus some minor amendments. Our Supplemental Documents package includes the NY Times report.

Oil – Iran/Venezuela sanctions are tools if Biden wants lower gas price for mid terms

Notwithstanding Energy Secretary Granholm's prior comments that the President only has limited tools he can use to lower oil and gasoline prices, she has never mentioned the two biggest tools that he has in his toolkit – the removal of sanctions on Venezuela and Iran. The risk of JCPOA return and a return of all Iran barrels is estimated to bring back another ~1 mmb/d almost immediately and free up Iran barrels stuck in floating oil storage around the world. But there is also Venezuela. Earlier we noted how sanctions are preventing Venezuela are preventing basic international currency transactions, yet Venezuela has brought oil back to ~908,000 b/d. A removal of sanctions would quickly get service companies back in to work on low hanging fruit and a restoration of ravaged well facilities.

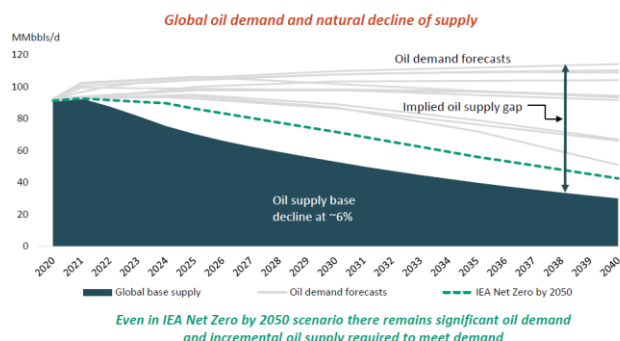
**Biden has
sanctions power**

Oil –Cenovus reminds global oil production declines at ~6% per year

Cenovus held its investor day on Wed and there was a good oil outlook slide right near the start reminding of the challenge to oil supply – there is a base decline of oil of ~6% per year. In mgmt's prepared remarks, they said "*And to be clear, we believe that responsibly produced oil will continue to be necessary to meet the world's energy needs for a very long time to come. And even in the IEA net zero by 2050 scenario, there is a huge implied supply gap between forecast oil supply at base decline rates in the world's energy needs. From our perspective, we think this creates -- represents both a challenge but also creates a tremendous opportunity.*" Cenovus slide notes a ~6% decline rate, which means that, every year, the world needs to add ~6 mmb/d of new production to offset global declines.

**Global oil
declines of ~6%**

Figure 32: Global Energy Demand Will Continue to Require Oil
GLOBAL ENERGY DEMAND WILL CONTINUE TO REQUIRE OIL
 Affordable and reliable energy is critical to global quality of life



Note: See Advisory. Sources: BMO Capital Markets, BP Plc, Equinor, Exxon Mobil, IHS Markit, IEA, OPEC, Shell

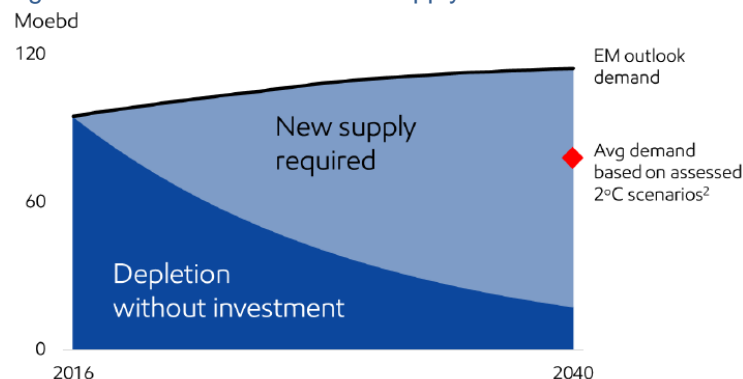
cenovus

Source: Cenovus

Exxon highlighted the global oil decline challenge in June 2019

It will be interesting to see in a few years what the look back impact of Covid was on oil markets. One thing Covid did do was put on hold any focus on the challenge to replace global oil decline in the face of what was already a lower oil and gas industry spend. We highlighted this global oil decline challenge in our June 20, 2019 blog *“Exxon’s Math Calls For Overall Global Oil Decline Rate Of ~7%, A Very Bullish Argument For Post 2020 Oil Prices”* [\[LINK\]](#) based on Exxon’s presentation that week at a US sellside conference. At that time, we wrote *“Its impossible to tell from the small oil supply/demand graph in the slide deck, but Exxon’s spoken words says long term oil demand is 0.7% per year and then “When you factor in depletion rates, the need for new oil grows at close to 8% per year and new gas at close to 6% per year.” Exxon may not specifically say what the global decline rate is, but their math is that the world needs new oil supply to grow annually at close to 8% to meet the 0.7% annual increase in oil demand and offset declines ie. an overall global decline rate of approx. 7%. This is an overall global oil decline rate for OPEC and non-OPEC”. BP’s estimate of overall global oil decline rate is 4.5% and we expect most are probably assuming something around 5%, certainly not above 6%. No one should be surprised by the increased decline rate given that high decline US shale and tight oil have increased by ~2.5 mmb/d in the last ~2 years. But an implied ~7% overall global oil decline rate is way higher than expectations. There is a big difference between needing to offset oil declines of ~7 mmb/d vs declines of ~4.5 mmb/d ie. an additional 2.5 mmb/d of new oil supply every year. Even if the implied difference was to 6%, it would still be an additional 1.5 mmb/d of new oil supply and that would also be very bullish for post 2020 oil. We recognize that the 2019/2020 oil supply demand story is the need for OPEC+ to keep cuts thru 2020, but Exxon’s math implying ~7% overall global oil decline rate sets up a very bullish view for oil post 2020. Its not clear when this ~7% decline really kicks in, it may not be 2020, but it is likely soon thereafter. We believe the reality to replace oil declines sometime post 2020 is overlooked.”* Our Supplemental Documents package includes our June 20, 2019 Exxon blog.

Figure 33: Exxon Estimated Oil Supply/Demand



Source: Exxon Investor Presentation June 2019

Oil – Oil sector overwhelmingly sees demand back to pre-Covid levels & then growing

If there was a key common theme from the wide range of oil industry and oil market participants at the 23rd World Petroleum Congress (WPC) in Houston, it was that oil demand will be back to pre-Covid levels sometime in 2022 and no one is concerned that peak oil demand will be anytime soon. Below are some of the comments from WPC.

WPC comments on oil demand**Baker Hughes – Demand back to 2019 levels by end of 2022**

On Thursday, we tweeted [\[LINK\]](#) on CNBC Brian Sullivan's interview [\[LINK\]](#) with Baker Hughes CEO Lorenzo Simonelli. Simonelli is another who sees a return to pre-Covid oil demand levels by the end of 2022 and also highlighted the continued discipline in oil and gas capex. We created a transcript of Simonelli's key comments. "At 0:30 min mark. Simonelli "I am optimistic and as we continue to look at 2022, we see demand recovery. We see the economies around the world recovering. And by the end of 2022, we think that demand will be back at 2019 levels. And with that also activity will pick up. so we're optimistic we've got tailwind within the oil and gas sector." At 1:10 min mark. Sullivan "is cap spending coming up enough?" Simonelli "we're seeing cap spending coming up, but we're also seeing a divergence. And I think as you've heard from some of the IOCs, they're retaining their capital discipline. They are increasing their spend but I heard you speak to Mike Wirth, and again the returning of cash to shareholders is important for the IOCs is important as well as the continued allocation to not just oil and gas, but also the energy transition. As we look to the privates and we look to some of the independents, you are seeing increased activity. But I'd go more international. When you look at the low cost basins, you look at the National Oil Companies, that's where we're seeing the capital spend. You've seen some of the announcements from Aramco, from ADNOC, also Petrobras with what they're doing. So we see the cost basins internationally seeing positive growth and an increase in capital spending going forward in the next few years." continued allocation to not just oil and gas, but also the energy transition. As we look to the privates and we look to some of the independents, you are seeing increased activity. But I'd go more international. When you look at the low cost basins, you look at the National Oil Companies, that's where we're seeing the capital spend. You've seen some of the announcements from Aramco, from ADNOC, also Petrobras with what they're doing. So we see the cost basins internationally seeing positive growth and an increase in capital spending going forward in the next few years."

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Chevron CEO is bullish on oil demand in 2022

On Tuesday, CNBC Brian Sullivan interviewed Chevron CEO Michael Wirth, who is also bullish on 2022 oil demand. We created a transcript of the key excerpt from the CNBC posted video [\[LINK\]](#). "At 1:50 min mark. Sullivan "At Are you bullish on global demand in 2022, Mike?" Wirth "I am. We see gasoline and diesel demand in much of the world back at pre-pandemic levels already, plus or minus, depends a little bit on what part of the world you are talking. International aviation has been the area that has lagged the most, but those flights are beginning. We've got to deal with this latest variant and understand what it really means. But, broadly speaking, economies have opened up, economies are growing and we are putting this pandemic behind us, month by month, quarter by quarter. And our outlook for economic growth and demand next year is strong."

CNBC Brian Sullivan's gets bullish on global jet fuel demand feedback

Perhaps the best comment came from CNBC's Brian Sullivan, who was speaking to his wide range of contacts. Sullivan responded [\[LINK\]](#) to one of our tweets, tweeting "Everyone we spoke with at the conference was bullish on global jet fuel demand next year. No one really talking about Covid. They see travel booming. (Side note: overall conference attendance ROSE in weeks leading up to event)." We then tweeted [\[LINK\]](#) "don't forget @SullyCNBC will also have the insight from the off the camera chats. as @Aramco ceo nasser reminded people will say more in private than in public. and @SullyCNBC has #OPEC, US E&P and other key oil watchers in his contact circle. #OOTT." Everyone knows there is so much said off-camera or for background or off the record. And Sullivan would have spoke to multiples more contacts at WPC than CNBC put in print or on video.

Haliburton – World entering period of oil scarcity

We couldn't find any video or transcript for Halliburton CEO Jeff Miller's speech on Monday, but he had one of the most reported quotes of the WPC. Bloomberg reported "Halliburton Sees World Headed for Oil Scarcity Amid Spending Cut. Halliburton Co., the biggest provider of fracking, warned that the world is headed into a period of scarcity for oil after seven years of underinvestment following crude's plummet from \$100 a barrel in 2014. "For the first time in a long time, we'll see a buyer looking for a barrel of oil as opposed to a barrel of oil looking for a buyer," Jeff Miller, chief executive officer at the Houston-based oilfield contractor, told an audience at the World Petroleum Congress on Monday."

Pioneer – Oil demand 100-101 mmb/d end of 2022, no OPEC+ spare capacity

On Tuesday, we tweeted on the most bullish oil market comments we heard from the WPC that came from Pioneer CEO Scott Sheffield. We tweeted [\[LINK\]](#) "#OPEC and OPEC+ will be out of supply, they'll be out of extra capacity. So things are going to get very tight, end of 22 going into 23" says @PXDtweets CEO to @SullyCNBC. Keep up the great @23WPC2021 interviews. Squeezing supply but not demand, #Oil looks strong for 2020s #OOTT." Sheffield expects demand to be back to 100 to 101 mmb/d by the end of 2022, but the real bullish comments were that OPEC+ will be out of spare capacity at that time. On Tuesday, CNBC Brian Sullivan interviewed Pioneer CEO Sheffield [\[LINK\]](#). We created a transcript of the key excerpts. "At 0:20 min mark. Sheffield "... we'll be back by the end of 22, to 100 to 101 million barrels per day. You heard amin Nasser speech yesterday. He said it about two weeks ago also. OPEC and OPEC+ will be out of supply, they'll be out of extra capacity. So things are going to get very tight, end of 22 going into 23." At 1:10 min mark.

Sheffield *"I've been saying 80 to 100 bucks, but it will probably exceed 100."* At 1:30 min mark. Sheffield *"Right now oil is cheap. I was surprised by the President with the SPR release. It was a bandaid approach. Oil is moving back up to \$75, Brent is this morning, it will probably be back up to 80, 85 over the next few weeks as demand comes back"* At 2:00 min mark. Sheffield. *"that's right. That's why you got to operate with a zero balance sheet. So for the first time in Pioneer's history, by the end of 22, we're essentially going to have zero debt"*.

Saudi Aramco – running out of spare capacity

In addition to the Saudi Aramco CEO Nasser speech, there was a good CNBC Brian Sullivan interview with Nasser that had more specifics on the 2020 oil outlook. On Wednesday, we tweeted [\[LINK\]](#) that Nasser warns they are seeing a pick up in jet fuel and, if that continues, it will eliminate any spare OPEC capacity. We created a transcript of the key excerpts from the interview. [\[LINK\]](#) At 1:30 min mark. Nasser *"today if you look at spare capacity, you are talking about 3 to 4 million. Compared to pre-pandemic levels, jet fuel is down by around that. So jet fuel picks up because we see pick up on gasoline, we see pick up on diesel compared to pre-pandemic levels. So we are exceeding these levels, pre-pandemic levels. However, the only impact is in jet fuel. Hopefully in 22 with better development of the economies and more pick up on travelling and all of that. If jet fuel pick up, that will slightly impact the spare capacity that is currently available."* At 3:55 min mark. Nasser *".. the industry in the US is picking up in terms of additional barrels that is coming from the unconventional oil and we are seeing that coming more and more. However, you need all energy services, conventional and new sources of energy, to meet the demand that we are talking about. Spare capacity, there is only 3 to 4 million. The lack of investment is really impacting the market. As you said, pick up, we see a pick up in jet fuel and others, there will not be any spare capacity and that will have a serious impact on the global economy and energy security."*

TotalEnergies – Oil might peak one day in 2030, massive lack of oil/gas capex

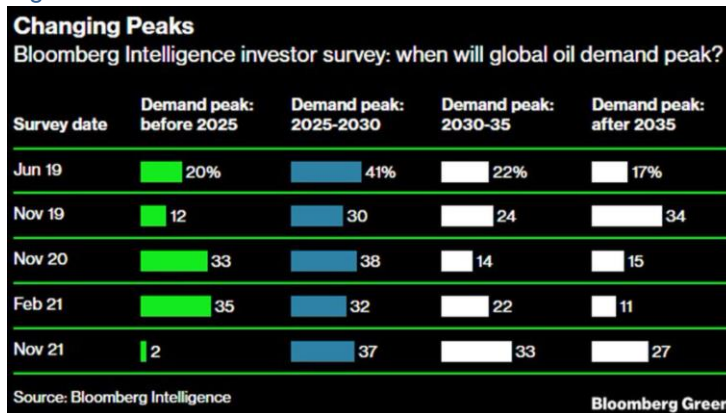
TotalEnergies CEO noted his view that even under the energy transition, he didn't see peak oil demand until at least 2030, and he raised the concern of the lack of oil and gas investment. On Tuesday, we tweeted [\[LINK\]](#) *"oil might peak one day in 2030 & then decline" "If you don't continue to invest while the demand is growing then the price will adapt to demand to the supply" says @PPouyanne to @SullyCNBC. #Oil demand grows until >2030, supply being squeezed, #Oil looks strong for 2020s. #OOTT."* On Tuesday, CNBC Brian Sullivan interviewed TotalEnergies CEO. We created a transcript of the key excerpts on [\[LINK\]](#) At 0:45 min mark. Pouyanne *"... why? Because the energy markets will change. We've seen that with climate change, the share of electricity in the mix will be much higher – this is a growing energy. While at the same time, yes, gas will continue to grow, oil might peak one day in 2030 and then decline"*. At 2:50 min mark. Pouyanne *".. in this transition, in fact fundamentally, the energy markets are becoming more complex, more interconnected. And also there is another message behind that which is supporting this price. There is also a lack of supply somewhere, you know. Supply of oil. Supply of gas. Why? Because you have a pressure on the oil and gas investments. The oil and gas investments have decreased between 2014 and this year, from \$700 billion per year to \$300. That has an impact. If you don't continue to invest while the demand is growing then the price will adapt to demand to the supply."*

Oil – Investors also now mostly see peak oil demand after 2030

Later in the memo, we noted our #1 prediction for 2022 that more leaders come out of the closet that the energy transition plan isn't working and needs to be changed. We don't know if it's a #2 prediction or a sub of #1 prediction, but embedded in our #1 2022 prediction is that there will be an acceptance that peak oil demand isn't likely to come until after 2030. On Friday, we retweeted [\[LINK\]](#) "Big shift, most (>preCovid) now see #PeakOilDemand is post 2030. If so, more will reach a #MacronMoment & realize a "transition" is needed ie. #Oil is needed for longer. Thx @NatBullard #OOTT In line with #2022Predictions tweet [\[LINK\]](#)." Bloomberg reported "In June of 2019, a fifth of those surveyed said that oil demand would peak as recently as February of this year, more than a third of investors said that demand would peak in just a few years, by 2025. In the first four surveys, the majority of respondents said that oil demand would peak within this decade. That is, until Bloomberg Intelligence's most recent survey last month — in which only 2% of investors responding said that oil demand would peak before 2025, and fewer than 40% said that it would peak before the end of the decade. More than a third of investors responding expect demand to peak between 2025 and 2030, but nearly the same number see that peak happening later, between 2030 and 2035." Fortunately, Bloomberg's Chief Content Officer, Nat Bullard, tweeted the table "Bloomberg Intelligence investor survey: when will global oil demand peak?" of the survey results. When you look at the table you can't help but believe the Europe energy crisis and COP26 was a turning point – a turning point where people realize the energy transition isn't working. The Nov 21 survey shows 60% don't expect peak oil demand until after 2030, vs year ago Nov 20 of 29%. And only 2% think peak oil demand is before 2025 vs 33% a year ago.

Peak oil demand after 2030?

Figure 34: When Will Global Oil Demand Peak?



Source: Bloomberg

Oil – Dr. Fauci got the oil market moving last Sunday night

Its unfortunately that we have a 7am MT news cut off or else we will be writing to the last minute. We can pickup overseas items like we do with our favorite Sunday morning Gulf Intelligence podcast, but we can't pick up the Sunday morning US cable news shows. As a result, last week's (December 5, 2021) Energy Tidbits memo did not include Dr. Fauci's comments on CNN's State of the Union that aired at 7am MT. But, after seeing his comments, after Asian markets opened last Sunday, we later tweeted [\[LINK\]](#) "#DrFauci moves #oil markets, +\$1.40 tonight. "though it's too early to really make any definitive statements about it, thus far, it does not look like there's a great degree of severity to it" "But, thus far, the signals are a bit encouraging regarding the severity" #OOTT."

Dr. Fauci drove oil markets

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Oil – Vortexa est 88.75 mmb at Dec 10, +5.79 mmb WoW vs upward revised Dec 3

Note that we are referencing the Vortexa global crude oil floating storage data posted on the Bloomberg terminal as of 3pm MT yesterday and that these estimates often get revised over the weekend, and then again for the next week. Note we do not check daily for the revisions so our comments are compared to the Dec 3 and Nov 26 estimates that were posted on Sat Dec 4 at 3pm MT. Our takeaway is much the same as the last few weeks, there are weekly revisions so its hard to draw clear views based on this week's estimate but, if we look at the trends, global crude oil floating storage is roughly where it was when OPEC+ started its production increases in June ie. the oil has been absorbed by the market and there aren't a lot of extra barrels looking for homes at sea. As of 3pm MT Sat, Bloomberg has posted Vortexa crude oil floating storage as of Dec 10 is estimated at 88.75 mmb, which is +5.78 mmb WoW from the upwardly revised Dec 3 estimate of 82.97 mmb. Dec was originally estimated at 73.08 mmb as of Sat Dec 4 at 3pm MT. As has been seen over the past few weeks, there are upward revisions to the prior week's estimate, in this case the Dec 3 estimate. Last Sat at 3pm MT, it was estimated at 73.08 mmb, which is 9.89 mmb lower than today's 3pm MT revised estimate of 82.97 mmb for Dec 3. There was a smaller upward revision to the Nov 26 estimate. Last Sat at 3pm MT, it was estimated at 87.67 mmb, which is 3.17 mmb lower than today's 3pm MT estimate of 90.84 mmb for Nov 26. Dec 10 estimate of 88.75 mmb, is down 135.27 mmb from the June 26, 2020 peak of 224.02 mmb. Dec 10 estimate of 88.75 mmb is +39.32 mmb vs the pre-Covid 49.43 mmb as of Dec 9, 2019. Below is the Bloomberg posted Vortexa crude oil floating storage data for the past two years as was posted yesterday at 3pm MT.

Vortexa floating storage

Figure 35: Vortexa Floating Storage Dec 10, Posted on Bloomberg 3pm MT Sat



Source: Bloomberg, Vortexa

Oil – Bloomberg Oil Demand Monitor, Europe air travel lags further behind 2019

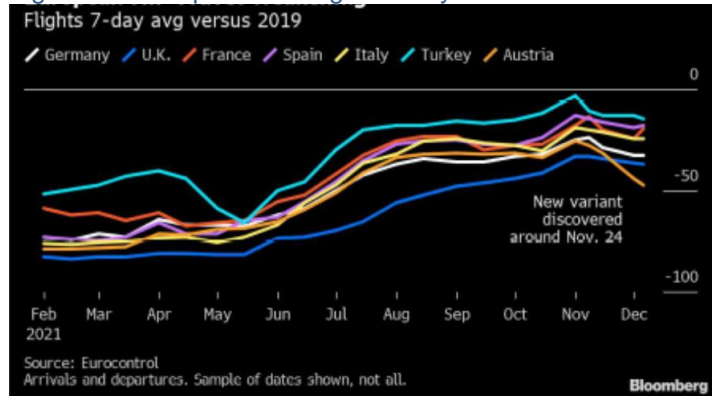
We recommend reading the weekly Bloomberg terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. European air traffic continues to decline in recent weeks and roadway volumes are beginning to decline with them. Eurocontrol reported that the largest declines came from Austria, who went into lockdown on November 22, and Germany who has been in noticeable decline since early November. The Omicron variant continues to raise questions with analysts in regards to the impact it will have on oil demand throughout the holiday season. The spread of the new variant has already impacted consumer behaviour and is likely to lead to government restrictions that will increase demand disappointment in early 2022. Air travel remains stable in the US (-12.4% from 2019), Mexico (-1.9% from 2019) and the partial recovery in China (-13.9% from 2019), though it is unclear how airline schedules in these markets will be affected going forward. Toll traffic data

Bloomberg's Oil Demand Monitor

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revealed that Italy, Spain, and France all had roadway volumes below 2019 levels, which has only happened twice since July. UK gasoline and diesel demand remains within a few percentage points of demand prior to the UK's first lockdown in 2020. Congestion levels remained relatively flat this week with New York, London, Paris and Taipei all above levels from the equivalent week in 2019. Madrid and Mumbai remain well below 2019 levels. US refinery utilization was 88.8% for the week ended Nov 26, down 3.1% from 2019 utilization; US East refinery utilization remain 23% above the equivalent week in 2019. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 36: European Average Weekly Air Travel



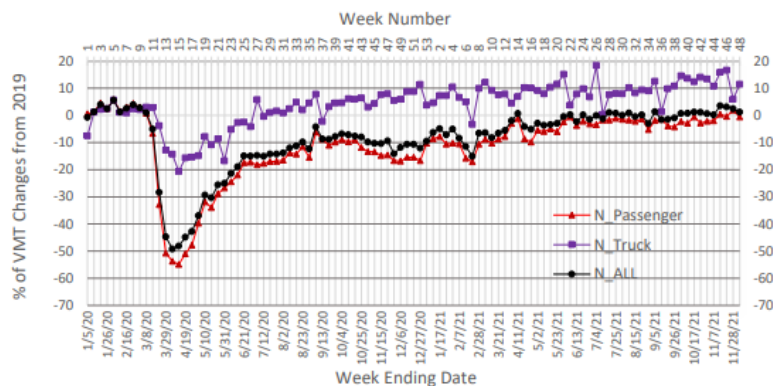
Source: Bloomberg

Oil – US overall vehicle miles for Nov 29 - Dec 5 week was +1.2% vs 2019

Omicron cases may be escalating may be increasing, but the US passenger vehicle miles are now back above 2019 levels. The US Department of Transportation released their weekly traffic volume report for the week of November 29 – December 5 [\[LNK\]](#). The DOT estimates “Vehicle miles traveled by all vehicles on all interstate highways for Week 48, starting Monday, November 29, 2021, ending Sunday, December 5, 2021, are estimated to be 16.3 billion vehicle miles, 1.0% higher than the previous week. VMT for the week is 1.2% higher than the same week of 2019. Passenger vehicle miles traveled on all interstate highways for Week 48 are 0.6% lower than the same week of 2019. Truck vehicle miles traveled on all interstate highways for Week 48 are 11.5% higher than the same week of 2019.”

Trucking saw a better recovery than passenger travel

Figure 37: All vehicles, passenger vehicles and truck vehicle miles travelled vs 2019 levels



Source: US Department of Transportation

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Oil & Natural Gas – Liberals hard targets for oil & gas emissions reductions by Mar 31

The oil and gas sector will know in the next few months what are the hard targets the Liberals are setting for emissions reductions for 2025. Don't forget the Liberals are now legally obligated to check on a year basis that they are on track to hit those hard targets. This is our big concern that the worst is still to come for the oil and gas sector. The Liberals Friday afternoon Dec 3 press release didn't get any coverage so we didn't see it until we did our Sunday afternoon what did we miss search of websites. We take advantage of NFL football for a leisurely afternoon of searching news. And that is when we saw the Liberals Dec 3 release *"Canada to launch consultations on new climate commitments this month, establish Emissions Reduction Plan by the end of March 2022"*. [\[LINK\]](#) (i) ERP is the 2030 Emissions Reduction Plan. Liberals confirmed it will be established by March 31, 2022. This is the plan will set the emissions reductions targets for the oil and gas sector including the 5 year targets for the pace and scale needed to keep the oil and gas sector on track to be net zero by 2030. They previously announced the first hard target is 2025 for how much emission reductions are needed to keep the oil and gas sector on track. This all links to the Canadian Net-Zero Emissions Accountability Act, which also included that there will be yearly checks to make sure they are on track for the 5-yr targets. This remains our big concern – reductions are needed right away. (ii) This progress tracking will be made even stricter. The release said *"Canada's 2030 Emissions Reduction Plan is the first of many requirements under the Canadian Net-Zero Emissions Accountability Act. The Government of Canada is considering more formal, ongoing, and consistent engagement processes for the establishment of future emissions reduction targets, plans, and reports."* (iii) Note the classic political speak saying something that sounds sincere that, in reality, means nothing. *"The ERP will be informed by early consultations on these new commitments."* They will be doing a lot of consultations. But all this means is that they will consult and *"be informed"*. All it does is to tick the box that they consulted and didn't just drive thru what they wanted without consulting. (iv) Positive for CCS. They don't say it, but that is the likely interpretation that they need or CCS. The Liberals are talking about *"net-zero emitting electricity"* vs *"non-emitting electricity"*. There was what looks like a different position in Trudeau's COP26 speech that we did not highlight but jumped out in the Friday release. On Friday, the Liberals said *"At COP26 in Glasgow in November 2021, Prime Minister Trudeau announced on the world stage Canada's commitment to cap and cut emissions from the oil and gas sector and to achieve net-zero emitting electricity in Canada by 2035."* This was shift from their June 11 policy statement [\[LINK\]](#) that said *"Canada's electricity grid is over 80% emissions-free—one of the cleanest in the world—and is on track to meet its goal of having 90% non-emitting electricity generation by 2030."* (v) This release came out on Friday so ahead of the Environment Minister Guilbeault meeting in Calgary with big oil and gas companies. If you haven't heard Guilbeault's interviews, it's worth doing so. He is very smooth at saying things that sound accommodative to industry but, if you listen closely, he does stick to his strong climate views. So if you look at the Friday release, we saw some of this smooth set up in the Friday release as we think this is one of the first Liberal releases (or maybe the first) that they acknowledged the oil sands efforts. The release said *"Many of Canada's oil and gas producers have made their own net-zero commitments. Canadian Natural Resources, Cenovus Energy, Imperial, MEG Energy, and Suncor Energy—collectively accounting for around 90 percent of Canada's oil sands production—have each committed to achieving net-zero emissions from their oil sands operations by 2050."* Our Supplemental Documents package includes the Liberals release.

Liberals oil and gas emissions targets by March 31

Oil & Natural Gas – other tidbits from World Petroleum Congress in Houston

Earlier, we noted some of the comments from the 23rd World Petroleum Congress (WPC) in Houston that were on the big oil theme – demand is getting back to normal in 2022. Below

Comments from WPC

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are some of the other oil and natural gas comments we noted from the speakers. It seemed like many of the world oil leaders were in Houston, although Omicron caused some last minute cancellations of attending in person. Rather some of the world oil leaders like OPEC Secretary General Barkindo made his speech via video. The event featured industry perspectives from expert speakers in effort to deliver insight on the state of the market and give their unique perspective of the direction the energy sector is headed. The key reporting was by CNBC and also Bloomberg.

ConocoPhillips – Too much uncertainty by Biden to crank up investment

On Tuesday, we tweeted [\[LINK\]](#) on two excellent reminder comments from ConocoPhillips CEO Ryan Lance to Bloomberg's Alix Steel and Guy Johnson on Tuesday. Lance reminded that the multitude of items thrown at the oil and gas sector by the Biden administration create enough uncertainty that investment is not going to be there. He also reminded that it takes 6-9 months for the shale sector to deliver volumes once it ramps up activity. We created of Lance's key comments from the interview [\[LINK\]](#). At 4:30 min mark, Johnson "... yesterday, we saw the administration ask the room, ask the industry to pump more oil. the response was a little mixed in terms of how the industry thought about that request, what is your view of what the white house would like to happen here?" Lance "we set up a messy transition, Guy. in effect you know there's a view that demand is going to stagnate over time combined with maybe a lack of spare capacity sitting in the OPEC+ group, combined with the US E&P space having to focus on more returns of capital. So if you're growing at the expense of returns, that's not the right answer. so we are setting up a very messy transition. Nothing can be turned on very quickly is my message back to the secretary of the department of Interior. it takes 6 to 9 months, but we're getting all these pressures coming from the government, it's not one thing, it's the culmination of all these different things that is setting a bad tone and why it's landing with a thud here at the WPC in Houston when they speak in this way. There is no fast way to return supply. but if you get a stable, transparent system that we can think about and manage through the uncertainties. then we will invest to grow. Not at the expense of returns, but there is some growth that can come out of the US unconventional here. So it is a tone thing. And when you are getting all these letters from Senators and these efforts and talking about cancelling exports of crude and gas. and you talk about permitting delays and regulatory overprint. When you get all these things thrown at you. it just creates enough uncertainty that the investment is not going to be there. and when the investment does come, which I think it will, over time, it's still going to be 6 to 9 months before that volume starts to show up in any material way in the global market."

Pioneer – Biden didn't call to ask to add more rigs

Earlier we noted Pioneer CEO Scott Sheffield's very bullish comments on the oil outlook for 2022. Those comments didn't get much attention. Rather, we tweeted [\[LINK\]](#) on the Sheffield comments that received all the attention. We tweeted "Re @turkdm @22WPC2017 comments. @SullyCNBC "do you have an obligation to the public to pump more oil?" \$PXD Sheffield "No. Obviously not, you saw where our President asked #OPEC to increase production. I never received a call from the Administration about adding more rigs" #OOTT". CNBC Brian Sullivan tweeted a different interview excerpt [\[LINK\]](#). We created a transcript of the key excerpt. Sullivan's lead in to the question was on the Deputy Energy Secretary David Turk speech on Monday on the obligation for US shale oil to produce more, Sullivan asks "do you have an obligation to the public to pump more oil?". Sheffield "No. Obviously

not, you saw where our President asked OPEC to increase production. I never received a call from the Administration about adding more rigs or adding more. We can't because we have an investor contract. We can't go back on our word. People have asked me at a \$100 oil, \$150 oil, are you going to grow more than 5% - the answer is No. We're just going to return more cash back to the investor. I just don't think we have an obligation to grow production."

US energy dept – administration not standing in the way of US oil producers

We have to give US Deputy Energy Secretary David Turk credit for his comments at WPC on Monday. But his comments remind that politicians and their officials say things just so they can twist the record to say they supported something or some group. And the reality is that it tends to work. And what they say isn't wrong, but it is misleading. On Monday, we tweeted [\[LINK\]](#) *"The reality is the Biden administration is not standing in the way of increasing domestic oil production to meet today's energy needs" says @turkdm to @23WPC2021. True but trying to make it more difficult, costly, tougher to attract capital, etc to do so. Thx @CrowleyKev #OOTT."* We said it was true what he said, but the reality is that, as ConocoPhillips CEO noted earlier, they are just throwing up a lot of roadblocks to discourage capital investment and attracting capital to the space. So is it a lie or just not the truth? On Monday, Bloomberg [\[LINK\]](#) that the Deputy Energy Secretary was heckled by an audience member during the opening remarks of the conference after proclaiming the Biden administration has done their part to alleviate fuel prices. The secretary commented *"the reality is the Biden administration is not standing in the way of increasing domestic oil production to meet today's energy needs"*, implying that producers must shoulder the burden to combat inflating prices. This prompted an audience member to ask *"Why don't you help us then?"* Our Supplemental Documents package includes the Bloomberg report

Energy Transition – 2022 Prediction, leaders admit energy transition isn't working

Its December and so analysts will soon be coming out with 2022 predictions, so we thought we would beat them with one of our main 2022 predictions. On Thursday, we tweeted [\[LINK\]](#) *"Time for #2022Predictions. My #1 is more #EnergyTransition #NetZero leaders come out of closet, have a #MacronMoment ie. have "transition" not self inflicted shortage so 2021 energy crisis isn't every year. A return to #EnergySecurity = #Oil #NatGas #LNG strong thru 2030. #OOTT."* This should not surprise readers as we have been noting the start of energy transition leaders starting to admit, in a politician's manner, that the energy transition isn't working as per aspirations and energy costs will be a lot higher than aspired. We have said for years that the energy transition will happen, but it will take longer, be bumpy road and cost more than the aspirations. Last week's (Dec 5, 2021) Energy Tidbits wrote on the ADNOC CEO speech *There was much more in the speech, which is why we tweeted [\[LINK\]](#) "If more leaders have a "Macron Moment" in 2022, maybe COP28 UAE in 2023 can be catalyst for getting down to work on practical, commercial, sustainable energy solutions: pro climate/pro growth? See SAF Group transcript of @SultanAhmedalj8 #ADIPEC keynote. #EnergyTransition #OOTT."* We do wonder if we will see more world leaders accept that the energy transition isn't working according to their aspirations and that there is an increasing risk of a decade of energy crisis like seen in Europe in H2/21 unless the world puts in an achievable energy transition plan." We think COP26 will turn out to be turning point, but a turning point to force energy transition leaders into changing their plan. It why we think we will more of the energy transition leaders come out of the closet and admit this in 2022. But what got us to tweet this week was after seeing Saudi Aramco CEO Nasser speech at the WPC in Houston. Nasser said *"There is one more thing that can no longer remain unsaid. A majority*

**2022 Prediction
#1**

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of key stakeholders agree with these realities as much as they believe in addressing climate change. We know this, because they say so in private. They should say it publicly too. I understand their dilemma. Publicly admitting that oil and gas will play an essential and significant role, during the transition and beyond, will be hard for some.” So our #1 2022 Prediction is that we will see leaders come out of the close and admit, in a politician’s way, that the energy transition plan needs to be changed. The key result will be that fossil fuels are needed for way longer and the outlook for oil, natural gas and LNG will be stronger thru 2030 and beyond.

A #MacronMoment can take three forms

We use the term “Macron Moment” and the #MacronMoment as when an energy transition leaders come to the realization that the energy transition will take longer, be bumpy and cost more ie. it just won’t be ready for prime time and they need to change their plans on how quickly they get rid of oil and natural gas. We are already seeing politicians start to publicly have a #MacronMoment but, so far, it has come in three forms of admission as noted below.

First, a direct #MacronMoment clearly saying it isn’t working as planned

We aren’t picking on Macron, but he recently said it the clearest when he warned the energy transition aspiration has to be modified/reduced or else there will be years of an energy crisis. And, even more importantly, he wants to bring a more pragmatic Energy Transition plan to the EU. On Nov 9, we tweeted [\[LINK\]](#) on Macro’s address to the nation [\[LINK\]](#) that closed with his call for a more practical approach to the CO2 emissions and one that will include Europe. Macron said *“But France will not be strong alone. With the European Union: → We will be able to build a credible strategy for reducing our CO2 emissions, compatible with our industrial and technological sovereignty.”* The Macron release had at the bottom a reminder *“Next January, it is a new model of investment and growth that the President will defend with the French presidency of the Council of the European Union.”* The day before COP26 started, we tweeted [\[LINK\]](#) on Macron’s comments to the FT [\[LINK\]](#) that was a clear view on higher fossil fuel prices for the foreseeable future. Macron said *“on demand for fossil fuels isn’t going away for the foreseeable future. Macron said “What is happening now is ironic, because we are building a system where in the medium and long term fossil energy will cost more and more, that’s what we want [to fight climate change].”* he said.” Japan is another calling for a pragmatic time frame ie a change in the plan. Our Supplemental Documents package includes the FT Macron report from Oct 30.

Second, Japan says must have a “pragmatic time frame” for decarbonization

No one should be surprised to see how Japan says their #MacronMoment. They don’t say it isn’t working, they don’t say energy costs are way higher than expected. But they do clearly make the point. They say it important to have a pragmatic time frame for decarbonization. That sounds like Japan-speak for the energy transition aspirations plan isn’t working and needs to be changed. On November 9, Japan and the IEA issued a press release and we tweeted [\[LINK\]](#) *“Today’s Japan “go slow” getting rid of #Oil #NatGas fits Japan’s Nov 9 on acceleration of decarbonization that must have “the importance of measures with pragmatic time frame”. Japan is having a “Macron Moment”. See Nov 9 tweet [\[LINK\]](#) #OOTT.”* On Nov 9, we tweeted [\[LINK\]](#) on Japan’s release [\[LINK\]](#) on its conference with IEA Executive Director Faith Birol. Japan wrote *“The two sides also exchanged views on acceleration of decarbonization efforts following COP26, and shared the importance on measures with pragmatic time frame based on individual circumstances that each countries*

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face including its renewable energy potentials". A pragmatic time frame or a go slow process, whatever you want to call it, it means the same thing – Japan doesn't want to get rid of fossil fuels too quickly. Our Supplemental Documents package includes the Japan/IEA Nov 9 press release.

Third, US doesn't say it isn't working, just higher energy costs for yrs to come

US Energy Secretary Granholm has shown the third way of admitting the energy transition plan isn't working. She doesn't say specifically the energy transition plan isn't working or needs to be changed. She just avoids saying that. But she puts on the record that high energy costs are here for years. No one ever heard the Biden sales pitch on accelerating the push to Net Zero and reducing emissions including the warning that this will mean higher energy prices are here for years. That wasn't in the sale pitch. Here is what we wrote in our November 14, 2021 Energy Tidbits "Last week's (November 7, 2021) Energy Tidbits noted Biden seemed to also acknowledge a longer life for oil and natural gas. On Oct 31, we tweeted [\[LINK\]](#) "Is #Biden following #Macron & finally realizing demand for #Oil #NatGas is going to be more for 2020s than in his #NetZero aspiration? Oops, cancel #KeystoneXL, do zero to support US oil supply growth, etc. 2020s will be very good for #Oil #NatGas prices & #OPEC+. #OOTT." Biden wasn't as direct as Macron the week before on demand (see our Oct 31, 2021 Energy Tidbits), but seemed to be acknowledging demand for oil isn't going away as fast as he had planned. And, as everyone now knows, supply has been hurt by lack of oil investment so its sets up the tighter oil market for the 2020s. In his closing G20 press conference, Biden said "Well, on the surface, it seems like an irony, but the truth of the matter is — you've all known; everyone knows — that the idea we're going to be able to move to renewable energy overnight and not have — from this moment on, not use oil or not use gas or not use hydrogen is just not rational." Energy Secretary Granholm was on MSNBC Morning Joe on Monday. We tweeted [\[LINK\]](#) on her comments and noted she that US/Can voters weren't warned in the recent elections that the Energy Transition will happen but will lead to higher prices on oil, natural gas and electricity for years to come. We created a transcript of her saying "So the long term strategy is that. and yes we have a short term cost issue because the economy is still coming back on. we have a supply, demand that does not, the supply doesn't meet the demand. that is an issue we are going through. The president is all over this both in the short term and in the long term."

Energy Transition – Aramco, stakeholders privately say energy transition isn't ready

On Monday, we tweeted [\[LINK\]](#) "#Oil values to soar when they come out of the closet. "one more thing that can no longer remain unsaid. A majority of key stakeholders agree with these realities as much as they believe in addressing climate change. We know this, because they say so in private" @Aramco CEO. #OOTT". This was our immediate reaction on seeing Saudi Aramco CEO Nasser's WPC speech. His speech highlighted that there isn't a credible energy transition strategy and that "alternatives are nowhere near ready to carry a big enough load, so new and existing energy sources will need to operate in parallel for a long time." This is one of the key points we have highlighted – fossil fuels are needed for a long time. What really caught our attention was his comment that stakeholders admit this in their private discussions. Nasser said "There is one more thing that can no longer remain unsaid. A majority of key stakeholders agree with these realities as much as they believe in addressing climate change. We know this, because they say so in private. They should say it publicly too. I understand their dilemma. Publicly admitting that oil and gas will play an essential and significant role, during the transition and beyond, will be hard for some. But

Aramco CEO on energy transition

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admitting this reality will be far easier than dealing with energy insecurity, rampant inflation, and social unrest if prices become intolerably high. And net-zero commitments by countries may start to unravel.” Our Supplemental Documents package includes the Nasser speech.

Energy Transition – Diamondback reminds reducing emissions is straightforward

One of the points that we have highlighted for several years is that reducing methane emissions in the oil and gas sector is relatively straight forward and can be done with mostly off the shelf equipment. On Wednesday, CNBC Brian Sullivan interviewed Diamondback Energy CEO Travis Stice [\[LINK\]](#). His comments on reducing emissions fit our views on reducing methane emissions in the oil and gas sector. We created a transcript of Stice’s key comments. At 3:25 min mark. Stice “.. we’ve come out with 5 year goals about GHG emissions. We’re going to cut that by 50% from the 2019 levels”. Sullivan “how do you do that?” Stice “For GHG emissions, its primarily around flaring. And flaring has to do with the way you control your business. Now, we’ve actually, there’s two things when you look at flaring. One is what companies like Diamondback are in control of. The second one is what the midstream guys, you know the midstream guys are in control of. 60% of the flaring that Diamondback has had over the last couple years has been because our midstream partners haven’t kept pace with our development. Now we have a responsibility to make sure we’re communicating so they follow. but the first thing for GHG emissions is elimination of flaring. And we’ve come out publicly and said look routine flaring as defined, as we have seen the definitions of, we’re going to eliminate that. and we’re well on the way to doing that. The second thing though Brian is that emissions of methane are the most, that’s the most punitive thing to the atmosphere. Heat retention we all know what the statistics are, but, for Diamondback, we’re going to cut that by 70%. We’re well on our way on doing that. We’re doing it very tactically, very thoughtful. We have 800 tank batteries that we’re systematically going through and changing out pneumatically controlled devices that are operated by natural gas, we’re changing that to air. That’s going to make a dramatic reduction.”

Reducing methane emissions in oil and gas

Energy Transition – How long will it take for average income to buy EVs, not ICE?

The reality is that EVs are the most visible component to reducing emissions and the assumption is that EVs will move from something higher income people own to a broad adoption from middle and even lower income groups. On Friday, we asked the question via a tweet [\[LINK\]](#) “Would there be any new car #EV purchases by <\$50k or <\$75k income if there weren’t purchase incentives? what will it take and how long will it take to get these groups to increase new EV purchases and not new ICE purchases and used car purchases? #OOTT.” Our tweet included the recent Hedge & Company “New Car Buyer Demographics 2022 (Updated)” data [\[LINK\]](#). This is the challenge, there are economic incentives to buy EVs in all states, yet its hard for new EV sales to penetrate less than \$100,000 income groups. Hedges & Company estimates 60% of the new EV buyers have household income >\$100,000. There is going to have be increased regulatory/economic incentives for EVs to penetrate other income groups if EV penetration is going to grow as quickly as NetZero aspirations. And the other reality is that there will be increasing regulatory/economic costs assigned to ICE vehicles. Our Supplemental Documents package includes the Hedge & Company update.

EV purchases by income

Figure 38: New Battery Electric Vehicle Buyers by Household Income

Under \$50,000	20%
\$50,000 to \$74,999	16%
\$75,000 to \$99,000	4%
\$100,000 and up	60%

Source: Hedges & Company

Energy Transition – Greece “investing in natural gas is both rational and unavoidable”

It looks like Greece is another that realizes the energy transition plan needs to be changed or at least be “flexible”. On Tuesday, EURACTIV posted its interview with Alexandra Sdoukou, the Secretary General for Energy and Mineral Resources in Greece. [\[LINK\]](#) (i) The headline of the report was “Greek official: ‘Investing in natural gas is both rational and unavoidable’”. She highlighted that the “an electricity system relying on high penetration of renewables requires stable baseload production as well as increased flexibility.” And “This programme though still has some years until its full completion. Moreover, Greece has no serious alternative to add new dispatchable sources of generation to its production, such as nuclear power or major new hydroelectric generation. To this effect, investing in natural gas as a fuel that will cover baseload demand and will increase flexibility is both rational and unavoidable, at least for the medium term. Having said that, all new natural gas infrastructure to be constructed in Greece, including a much needed strategic gas storage facility, is designed to be hydrogen-ready and able to accommodate low carbon and renewable gases, in order to avoid.” (ii) Note she didn’t specifically say the shift to renewables wasn’t working. She highlighted “Greece will double its wind and solar PV capacity until 2030, with RES contributing up to 64% to the country’s electricity production.” And then she notes there will need to be “increased flexibility”. It means the same thing. (iii) NIMBY is a big issue as they ask areas to “host” wind power. Gotta love her use “host”, its reminds of how Trudeau asks the higher income to pay a little more. She said “In Greece, as well as in most parts of the world where wind power has achieved a mainstream status in electricity production, awareness of this technology increases in the general public. And, as many more people become aware of the many positives of clean and cheap energy from the wind, we also see that “not-in-my-back-yard” concerns also increase. As policymakers, we need to take these concerns into consideration and address them honestly, with fact-based analyses and scientific evidence. We also need to put in place a series of measures that instil trust and incentivize the local populations that are asked to “host” electricity production units.” Our Supplemental Documents package includes the EURACTIV interview.

Greece on natural gas and NIMBY**Energy Transition – Greece adding back coal, Sweden starts up backup oil power**

One of the advantages of following Europe fossil fuel developments is that there are a lot of environmental groups carefully watching to see if any governments or companies do things against Net Zero plans. It’s a good supplement to regular news reporting. There continue to be so many real life examples to reinforce why world leaders, certainly those in Europe, will have to acknowledge the energy transition isn’t ready for prime time either this winter or in future winters. It’s still only the first part of December and the worst of winter in Europe is still to come. Europe better hope for a mild winter. Here are two examples this week that must be tough for Net Zero promoters. (i) Greece has committed to phase out coal power by 2028. But on December 4, Blackout News reported [\[LINK\]](#) “Only a single power plant, which is currently under construction, should be allowed to produce electricity until the end of 2024. That is why the conveyor belts in the Greek open-cast lignite mine have already been shut down and the huge shovel excavators dismantled into their individual parts. Greek regulatory

Greece & Sweden adding back fossil fuels

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authority sees security of supply at risk According to a current study by the Greek electricity regulator RAE, however, security of supply is now at risk in the cold winter months due to the dismantling of coal-fired power plants. Due to high gas prices, already dismantled lignite production facilities were rebuilt. With the rapid shutdown of coal-fired power plants, electricity generation by gas-fired power plants in Greece rose to a total of 42 percent. However, Greece does not have natural gas reserves and therefore has to import the gas at a high price, which means that the price of electricity is becoming more and more expensive and is becoming unaffordable for many Greeks. Now the government is turning around and wants to put the already decommissioned lignite power plants back into operation. That is why she has the conveyor systems that have already been dismantled rebuilt.” (ii) On Monday, Reuters reported “Sweden starts up oil-fired power plant to alleviate Polish crunch” [\[LINK\]](#) “Sweden has started up a back-up oil-fired power plant to help with a looming electricity shortage in neighbouring Poland, Swedish transmission system operator Svenska Kraftnaet (SvK) said on Monday. Analysis has shown that Poland faces a power shortage of up to 1,700 megawatt (MW) on Monday and has requested help from its neighbours, SvK said in a statement. “Therefore Sweden will make the capacity of the Karlshamnsverket power plant available on Poland's behalf,” it added. Although Sweden itself faces high demand on Monday, it will be able to support Poland “if nothing unforeseen happens”, it added. Karlshamnsverket, located in south-eastern Sweden, is operated by utility Uniper (UN01.DE) and has a capacity of 622 MW, of which 562 MW form Sweden's winter reserve every year between Nov. 16 and March 15, according to Uniper's website.” Our Supplemental Documents package includes the Blackout News and Reuters reports.

Capital Markets – Several oil & gas co’s added to TSX Composite Index for Dec 20

Last week’s (December 5, 2021) Energy Tidbits highlighted the December 3 announcement of new stocks being added to the TSX Composite Index. On Dec 3, we tweeted [\[LINK\]](#) on the then just issued S&P TSX press release of the quarterly changes to the TSX Composite Index. The additions are effective Monday December 20. As expected, there were several energy companies added to the TSX Composite Index including Advantage “AAV”, Baytex “BTE”, Energy Fuels “EFR”, Freehold Royalties “FRU”, Peyto “PEY”, Paramount “POU”, Secure “SES”, Topaz “TPZ” and Tamarack “TVE”. Our Supplemental Documents package includes the S&P TSX release. [\[LINK\]](#)

Oil& Gas added to TSX Composite Index

Capital Markets – Canada food price report predicts higher cost in 2022

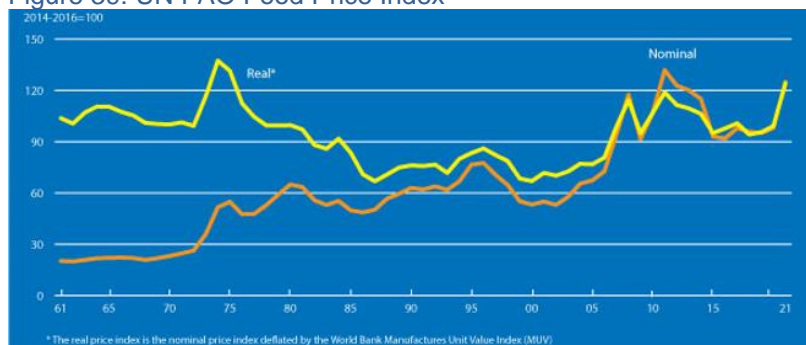
On Thursday, the Canada Food Price Report was released [\[LINK\]](#), and it predicts a cost increase in food in the upcoming year. The report is prepared by Dalhousie University, University of Guelph, University of Saskatchewan and The University of British Columbia. They stated that last years report was accurate in its prediction of a 3-5% increase in food prices and were accurate in several food categories that included fruits, restaurants and seafood. Bakery prices were lower than predicted but we are expecting prices to rise again in the new year due to factors outlined in the 2021 report. For the dairy, meat and other categories, price predictions were lower than what was observed due to global inflationary pressures. The 2022 model predicts a total cost increase of 5-7% in food prices and maintains a similar approach as last year. The report noted, “This year we are predicting, for example, that a family of four, including a man (age 31-50), woman (age 31-50), boy (age 14-18) and girl (age 9-13) will have an annual food expenditure of up to \$14,767, an increase of up to \$966 from what was observed as the total annual cost in 2021.” The report expects that Covid-19 will continue to impact prices but to a lesser extent than in 2021. Food insecurity is expected to increase as a result from rising food costs indicating that food programs will observe increased demand along with theft from food retailers. Our Supplemental Documents package includes excerpts from the Canada Food Price report.

Canada food prices expected to increase

UN FAO Food Price Index hits highest levels since June 2011

We don't do the food price analysis but we have trouble understanding how food price escalation in Canada and the US are so much less than around the world. And whenever we ask any friends what how much they think food prices have escalated in the last year, we have never had anyone say anything less than 10%. There is a major food price issue on a global basis. And there are global concerns that food prices are going to keep higher in 2022 in part of items how high natural gas prices are leading to a massive escalation in ammonia prices that have to flow thru to food prices or lesser harvests. Our fear is that we will keep seeing the same headlines for many months to come. The headline we see each month from the UN FAO Food Price index is the same as last month – the new highest food price since July 2011. On December 2, the UN posted its monthly update of its FAO Food Price Index [\[LINK\]](#) titled “*The FAO Food Price Index at its highest since July 2011.*” Note this is on a Real price basis. The FFPI averaged 134.4 points for Nov 2021, which was +1.2% MoM and +27.3% YoY. All food categories are up big YoY, but led by Cereal Price Index that was +3.1% MoM and +23.2% YoY and Dairy Price Index that was +3.4% MoM and +19% YoY. The Vegetable oil Index was down marginally after a record high register last month. Below is the all time FFPI graph. Our Supplemental Documents package includes the UN FAO Food Price Index update.

Figure 39: UN FAO Food Price Index



Source: UN

Demographics– 2022 World Inequality report

The World Inequality Database released its annual Inequality report on December 7 [\[LINK\]](#). There aren't any surprises, rather the new report shows the continuation of the trend for a widening gulf between the wealthiest and poorest. This has been exacerbated by Covid. The gaps between the wealthiest 10% of individuals and the bottom 50% has doubled in recent years, indicating that despite economic catchup, the world remains unequal today. The WID report notes that the private sector controls majority of global wealth, with public actors holding close to zero in rich countries; this trend has been amplified by Covid-19 during which government borrowed 10-20% of GDP from the private sector. The wealthiest 1% of individuals seized 38% of all additional wealth accumulated since the mid 1990s while the bottom 50% have accumulated just 2%. Global gender inequalities remain prevalent with the overall women's share of income from work neared 35% this year as opposed to 50% in a gender equal world. Addressing the inequalities in carbon emissions is essential for tackling climate change. The top 10% emits five to ten times the annual emissions of the bottom 50%. The large inequalities suggest that climate policies should be skewed to target wealthy polluters. The report recommends that wealth redistribution and investment in shrinking the inequality gaps are essential to a sustainable future. The report suggests a system

Wealthiest 10% holds 76% of global wealth

resembling the welfare states of the early 20th century are essential in addressing the challenges associated with the 21st century.

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.

IKEA Germany's advertisement on Angela Merkel's last day

We saw the below image on Twitter on Dec 8, Angela Merkel's last day as Chancellor, and immediately thought it must be a fake picture. However, we went to the official IKEA Germany Twitter account [\[LINK\]](#) and saw their tweet [\[LINK\]](#) with the image and the tag line "*Finally at Home*". So it looks real. We kept wondering if this is the right account as there are only 7,434 followers, which seemed low.

Figure 40: "Finally at Home"



Source: IKEA Deutschland Twitter

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“Perfect”, a great story about Canada’s 2016 synchronized swimming team

It doesn't make what sport you competed but I always find it compelling to see the story of how athletes train, sacrifice, dedicate 24/7 to reach their goal, especially in a team sport that athletes have to rely on each other. There was still a couple hours to close before the close on Friday, I made the mistake of flipping a documentary channel and it just happened to have “Perfect”, a 60-min documentary about the Canadian synchronized swimming team quest for the 2016 Olympics. It is one of the Olympic events I try to watch because one of our good friends is Cari Read, who was a member of Canada’s silver medal team at the Atlanta 1996 Olympics. It may have been called a documentary, but it was really an amazing story of these athletes and their dedication/sacrifice to a common goal. I can't believe there is any other sport that is so reliant on teammates working closing together. And as one of the swimmers called it – a contact sport and rightly so when you hear multiple concussions are the norm for swimmers. Unfortunately, it wasn't a happy ending because the team just missed the final qualifying spot for the Rio Olympics. And you can't help but feel for any athletes shooting for the Olympics because its four years (this time five with Covid) and many of them didn't qualify for the 2021 Tokyo team that finished 6th. There is a short 1:30 min trailer at [\[LINK\]](#)

Gotta love Detroit Lions owner Sheila Ford Hamp

Like many NFL fans, we watched the Lions beat the Vikings for their first win of the season with a game winning TD pass on the last play of the game. We didn't see the video of the after the win celebration in the Lions dressing room and tweeted [\[LINK\]](#) *“Gotta love @Lions owner Sheila Ford Hamp “that was un-fricken-believable” congratulating Coach Campbell. And how she was into his speech incl during the F bomb. Another reminder some good people in @NFL with their moral support to Oxford High School victims/families.”* Below is a picture from the Lions 2 min video that included their captioning.

Figure 41: Detroit Lions owner Sheila Ford Hamp congratulates Coach Campbell



Source: Detroit Lions

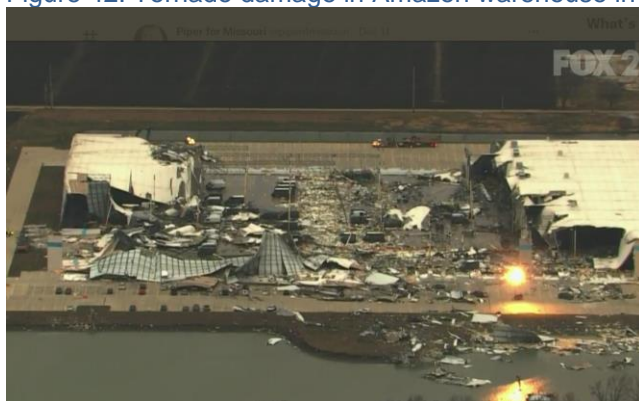
Devastating loss of life from tornados this weekend

As of our 7am MT news cut off, it looks like over 80 people were killed in the sweep of tornados that hit six states on Friday/Saturday. Kentucky was hammered with at least 70 deaths including one candle factor that is feared to have dozens of deaths.

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It was a terrible. And we pass on our condolences to all of the families and friends of those who lost their life. CNN meteorologists said a stretch of >250 miles from Arkansas to Kentucky may have been hit by one, long-track twister. That is unbelievable. One of the publicized property damage was to the Amazon warehouse in Edwardsville, Illinois, just across the Mississippi River from St. Louis. It reminded me of going to college in St. Louis and, every now and then, looking out the dorm window to see a tornado in the distance.

Figure 42: Tornado damage in Amazon warehouse in Edwardsville, Illinois



Source: FOX2now

Jetson One flying personal aerial vehicle to hit market in H2/22

What a great name for a flying personal aerial vehicle – the Jetson One. Even though the Jetsons were a baby boomer cartoon in the early 60s, it seems like most people know of the Jetsons. Jetson writes “*Jetson is a Swedish company with a mission to change the way we travel. We aim to make the skies available for everyone with our safe personal electric aerial vehicle. Our prototype “proof of concept” was finished in the spring of 2018, and until now we have been very busy working on a consumer friendly version. That project resulted in Jetson ONE, a commercially available personal electric aerial vehicle that you can own and fly. Jetson was founded by Peter Ternström and Tomasz Patan in 2017. We intend to make everyone a pilot.*” [\[LINK\]](#) They are selling these now at US\$92,000 with first deliveries in H2/22. All 2022 deliveries have been taken and next slots are now in 2023. They do not call this a flying car, rather it’s a flying personal aerial vehicle. Our first thought was that this would be great in Mexico. As a recreational vehicle in the dunes of the Baja instead of a dune buggy. And perhaps even some commercial use as better than mules for cross border “traffic”. The 3 min official launch video is at [\[LINK\]](#).

Figure 43: Jetson One



Source: Jetson

Not the product placement Peleton was expecting in Sex and the City

Who would have thought the Sex and the City reboot would be one of the lead stories on Bloomberg Surveillance on Friday morning. But it was especially after Peleton made a statement following the first episode of the Sex and the City reboot on Thursday night that shocked the audience with the surprise of Big dying following a Peleton ride. At that time, Peleton was down 3% in the pre-market, but ended down 5.4% on Friday when US stocks indices were up. Peleton was apparently aware of the product placement and the use of one of their instructors, but wasn't aware it would lead to Big's death. And Peleton reported issued a statement to US Weekly, who wrote *"the company stated in a statement from Dr. Suzanne Steinbaum to Us Weekly. 'These lifestyle choices and perhaps even his family history, which often is a significant factor, were the likely cause of his death. Riding his Peloton bike may have even helped delay his cardiac event.' The cardiologist and member of Peloton's Health & Wellness Advisory Council, also highlighted that 'more than 80 percent of all cardiac-related deaths are preventable' through 'lifestyle, diet and exercise' changes. 'While 25 percent of heart attacks each year are in patients who already had one (like Mr. Big), even then they are very, very treatable,' she told Us. 'It's always important to talk to your doctor, get tested, and have a healthy prevention strategy. The good news is Peloton helps you track heart rate while you ride, so you can do it safely.'*

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