

Energy Tidbits

Sept 19, 2021

Produced by: Dan Tsubouchi

India to Expand Natural Gas Distribution to Cover 96% of Population Sets Up Huge LNG Demand Growth in 2020s

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. India to expand natural gas distribution to cover 96% of its population to support doubling natural gas share of energy mix to 15% by 2030. ([Click Here](#))
2. Gazprom Chairman Miller reminds it has 5.3 bcf/d of productive capacity can help relieve Europe winter gas prices. ([Click Here](#))
3. IEA's Oil Market Report estimates OECD July oil inventories were 120.3 mmb below pre-Covid 2015-2019 average. ([Click Here](#))
4. IEA *"It is becoming increasingly clear that weak investment, triggered by the pandemic and the uncertain path of future oil demand growth, is already impacting global supply."* ([Click Here](#))
5. North Dakota estimates wells waiting on completion dropped from 680 in June to 521 in July, that's 112 more than expected after accounting for estimated 47 wells completed in July. ([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](#).

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

Ryan Dunfield
Principal, CEO
rdunfield@safgroup.ca

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

Ryan Haughn
Principal, Energy
rhaughn@safgroup.ca

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Table of Contents

Natural Gas – Natural gas injection of 83 bcf, storage now -595 bcf YoY deficit.....	6
Figure 1: US Natural Gas Storage.....	6
Natural Gas – Looks like warmer than normal winter.....	6
Figure 2: NOAA OND Temperature Probability Forecast.....	6
Figure 3: NOAA DJF Temperature Probability Forecast	7
Natural Gas – La Nina correlations to cold winters are far from 100%	7
Figure 4: Winter (Dec-Feb) Temp in Strong, Moderate And Weak La Ninas 1950 - 2017.....	7
Natural Gas – EIA, US shale/tight natural gas shows marginal increase A/S/O.....	8
Figure 5: MoM Change – Major Shale/Tight Natural Gas Production	8
Figure 6: MoM Change – Major Shale/Tight Natural Gas Production	8
Natural Gas – No surprise with HH \$5, US gas hedging losses are up big to \$14b	8
Figure 7: Hedging Losses on Contracts Aimed at Locking in Prices.....	9
Natural Gas– Cheniere wants to introduce feedgas to Sabine Pass Train 6	9
Figure 8: US Natural Gas Inventory Forecast	10
Natural Gas – RBN: High LNG prices create opportunity for North American LNG.....	10
Figure 9: LNG Feedgas and Capacity vs JKM	11
Natural Gas – RBN: recap of supply pipelines for Coastal GasLink Pipeline	11
Figure 10: Pipeline Connections to Coastal Gas Link Pipeline	12
Natural Gas – India to expand natural gas distribution to cover 96% of population	12
Figure 11: India’s Projected Natural Gas Consumption @15% Of Energy Mix (bcf/d).....	14
Natural Gas – Warm in October in Japan, but not likely a boost to natural gas.....	14
Figure 12: JMA Temperature Probability Forecast for Aug Sept 18 – Oct 15.....	14
Natural Gas – Tohoku (Japan) pays \$29 for Dec LNG delivery	15
Natural Gas – High LNG prices could lead to gas to oil generation switching in Japan	15
Natural Gas – China Aug LNG imports +11.6% YoY, pipeline gas imports +11.3% YoY.....	15
Figure 13: China LNG Imports.....	16
Natural Gas – Equinor sees high gas prices this winter, >2 tcf supply gap thru 2050	16
Figure 14: Global gas demand and supply from existing fields.....	16
Natural Gas – High Europe natural gas prices leading to industrial shut downs	16
Natural Gas –German regulator has 4 months to decide on Nord Stream 2 certification.....	17
Natural Gas – Hmm! Gazprom has 5.3 bcf/d of spare capacity that could pipe to EU	17

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 15: Nord Stream 2, ~5.3 bcf/d Capacity 18

Natural Gas – Uniper CEO: timing for Nord Stream 2 completion is “just perfect” 18

Natural Gas – UK’s careful drafting of its natural gas supply assurance 18

Natural Gas – Reminder why Europe gas storage is the key indicator for LNG markets 19

Natural Gas – LNG flows to NW Europe up 0.45 bcf/d at 2.15 bcf/d from 1.70 bcf in Aug 20

Figure 16: Net LNG Flows to NW Europe 20

Figure 17: Europe LNG’s Premium to Asia Gas 20

Natural Gas – Europe storage 71.26% full vs 5 year average of 87.12% 21

Figure 18: Europe Gas Storage Level 21

Oil – US oil +10 WoW at 411 oil rigs 21

Figure 19: Baker Hughes Total US Oil Rigs 22

Oil – Frac spreads +8 to 252 as of Sept 17 22

Oil – Total Cdn rigs +11 to 154 total rigs and +90 rigs YoY 22

Figure 20: Baker Hughes Total Canadian Oil Rigs 22

Oil – US weekly oil production up +0.100 mmb/d WoW at 10.10 mmb/d 23

Figure 21: EIA’s Estimated Weekly US Oil Production 23

Figure 22: US Weekly Oil Production Source: EIA, SAF 24

Figure 23: YoY Change in US Weekly Oil Production Source: EIA, SAF 24

Oil – EIA DPR continues to estimate relatively flat shale/tight oil production 24

Figure 24: MoM Change – Major Shale/Tight Oil Production 25

Figure 25: MoM Change – Major Shale/Tight Oil Production 25

Oil – North Dakota July oil and natural gas production down MoM 25

Figure 26: North Dakota Oil Production By Month 25

Figure 27: North Dakota Gas-Oil Ratio 26

Oil – North Dakota crude by rail down MoM to 150,416 b/d in July 27

Figure 28: Estimated North Dakota Rail Export Volumes 27

Oil – Michigan seeks end to “unproductive” Line 5 mediation 27

Figure 29: US Propane Prices since 2014 28

Oil – Covid outbreaks in oil sands facilities up from 5 to 7 this week 28

Oil – Refinery inputs +0.899 mmb/d YoY at 14.387 mmb/d, flat WoW 29

Figure 30: US Refinery Crude Oil Inputs (thousands b/d) 29

Figure 31: US Motor Gasoline Supplied (mmb/d) 29

Oil – Biden going after bad actors/pandemic profiteers” on gasoline price fraud 29

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 32: National Gas Price Comparison 2018-2021 as of Sept 13, 2021	30
Oil – US “net” oil imports down -0.330 mmb/d WoW at 3.1.37 mmb/d	30
Figure 33: US Weekly Preliminary Oil Imports By Major Countries	30
Oil – Pemex makes insignificant decrease in 2021 and 2022 oil production forecasts	30
Figure 34: Pemex Total Crude Oil Production Forecast per Sep slide deck.....	31
Figure 35: Pemex Total Export Forecast per Sep 13 slide deck	31
Oil – Maybe Mexico will be able to hit its modest growth with big budget allocation	31
Oil – OPEC MOMR increases 2022 demand growth by +0.9 mmb/d	32
Oil – IEA OMR: OECD inventories 120.3 mmb below pre-Covid 2015-2019 average	33
Figure 36: IEA Global Demand Forecast By OMR Report Month	34
Oil – IEA, increasingly clear low investment is “ <i>already impacting global supply</i> ”	34
Oil – Saudi used 691,000 b/d of oil for electricity in July	35
Figure 37: MoM Saudi Inventories, Production, Direct Use, Refinery Intake & Exports	35
Figure 38: Saudi Arabia Direct Use of Crude Oil For Electric Generation	35
Figure 39: Saudi Arabia Crude Oil Inventories (million barrels)	36
Figure 40: Riyadh Temperature Recaps for July and Aug	36
Oil – Libya oil exports resumed after “young people” sit in resolved.....	36
Oil – China 1 st petroleum reserve auction is 7.38 mmb.....	37
Oil – Vortexa estimates massive -23.63 mmb WoW decline in oil in floating storage.....	37
Figure 41: Vortexa Floating Storage Sept 17, 2021 – Original Est Sat Sept 18	38
Figure 42: Vortexa Floating Storage Sept 17, 2021 – Revised Est Sun Sept 19 4am.....	38
Oil – Bloomberg Oil Demand Monitor, traffic returns to New York.....	38
Figure 43: New York City Congestion returns	39
Oil & Natural Gas – 19 days since Ida, shut in is 0.42 mmb/d & 0.77 bcf/d.....	39
Figure 44: BSEE Platforms/Rigs Evacuated, Shut-in Oil & Gas Production	39
Oil & Natural Gas – Port Fourchon damage slowed down GoM oil & gas recovery	40
Oil & Natural Gas – Just past the historical peak of Atlantic hurricane season	40
Figure 45: Atlantic Peak Hurricane Season.....	40
Oil & Gas – Azerbaijan net exports 0.578 mmb/d of oil and ~1.1 bcf/d of natural gas.....	40
Energy Transition – Canada election day tomorrow, Liberals rallied to be in the lead	41
Figure 46: House of Commons Seats as of Aug 10, 2021	41
Energy Transition – Chevron estimates \$0.5b to build 10 mmcf/d of renewable gas	41
Figure 47: Chevron renewable natural gas	42

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Energy Transition – Many energy transition insights from Chevron..... 42
 Figure 48: Chevron Hydrogen and Carbon Capture fit..... 44
 Energy Transition – Does Biden’s new solar plan reflect 2021/22 cost increases?..... 44
 Figure 49: DOE’s Overnight Capital Cost Assumptions for Solar and Battery Technology 45
 Energy Transition - Record UK power prices in shoulder season with low wind 45
 Figure 50: UK National Grid: Live Status 5am MT Sept 15, 2021 46
 Energy Transition - EPA rates Lucid Air Dream Edition R at 520 miles range..... 46
 Energy Transition – GM tells Chevy Bolt owners to park 50 ft away from other cars 46
 Capital Markets – Foreign investors target Canadian government debt securities..... 47
 Figure 51: Foreign Investment in Canadian debt securities 47
 Twitter – Look for our first comments on energy items on Twitter every day 48
 LinkedIn – Look for quick energy items from me on LinkedIn 48
 Misc Facts and Figures..... 48

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Natural Gas – Natural gas injection of 83 bcf, storage now -595 bcf YoY deficit

The EIA reported an 83 bcf injection (vs 76 bcf injection expectations) for the Sept 10 week, which was above the 5-yr average injection of 79 bcf, and below last year’s injection of 89 bcf. Storage is 3.006 tcf as of Sept 10, increasing the YoY deficit to 595 bcf from 592 bcf last week and storage is 231 bcf below the 5-year average vs 235 bcf below last week. The aftershocks of Hurricane Ida – cooling rains and flooding — appeared to impact demand during the covered week more than expected. That resulted in a solid increase in South Central storage, in addition to gains in the Midwest and East. Note, the US is still on track to fall below 3.5 tcf of storage by October, when injections historically end. Below is the EIA’s storage table from its Weekly Natural Gas Storage Report. [\[LINK\]](#)

YoY storage at -595 bcf YoY deficit

Figure 1: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf)				Historical Comparisons			
	09/10/21	09/03/21	net change	implied flow	Year ago (09/10/20)		5-year average (2016-20)	
					Bcf	% change	Bcf	% change
East	732	703	29	29	822	-10.9	783	-6.5
Midwest	876	842	34	34	979	-10.5	897	-2.3
Mountain	193	191	2	2	220	-12.3	202	-4.5
Pacific	240	243	-3	-3	310	-22.6	291	-17.5
South Central	965	943	22	22	1,271	-24.1	1,064	-9.3
Salt	217	208	9	9	347	-37.5	261	-16.9
Nonsalt	748	735	13	13	924	-19.0	803	-6.8
Total	3,006	2,923	83	83	3,601	-16.5	3,237	-7.1

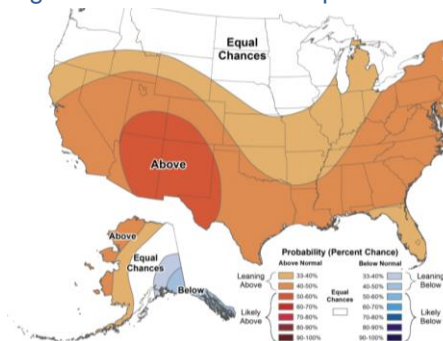
Source: EIA

Natural Gas – Looks like warmer than normal winter

Its still early, but winter is getting closer and NOAA’s new seasonal outlook calls for a warm winter. Last week’s memo noted NOAA is calling for a La Nina winter, so this could be one of those warm La Nina winters. On Thurs, we tweeted [\[LINK\]](#) on NOAA’s update to its seasonal temperature forecasts [\[LINK\]](#). NOAA is calling for a warm start OND to winter and a warm peak winter DJF. On Thursday, we tweeted “Updated @NOAA Dec/Jan/Feb probability outlook is for a warmer than normal DJF. Not likely to impact #NatGas price much right now as storage -595 bcf lower YoY and start up of feedgas for Sabine Pass LNG #6 at 0.7 bcf/d & Calcasieu Pass #LNG at 1.3 bcf/d this winter.” Below are the new NOAA temperature probability maps for Oct/Nov/Dec and for Dec/Jan/Feb.

NOAA forecasts warm fall and winter

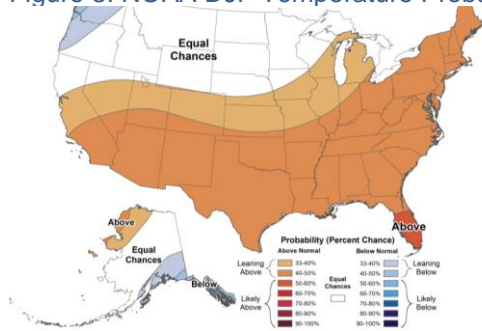
Figure 2: NOAA OND Temperature Probability Forecast



Source: NOAA

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 3: NOAA DJF Temperature Probability Forecast



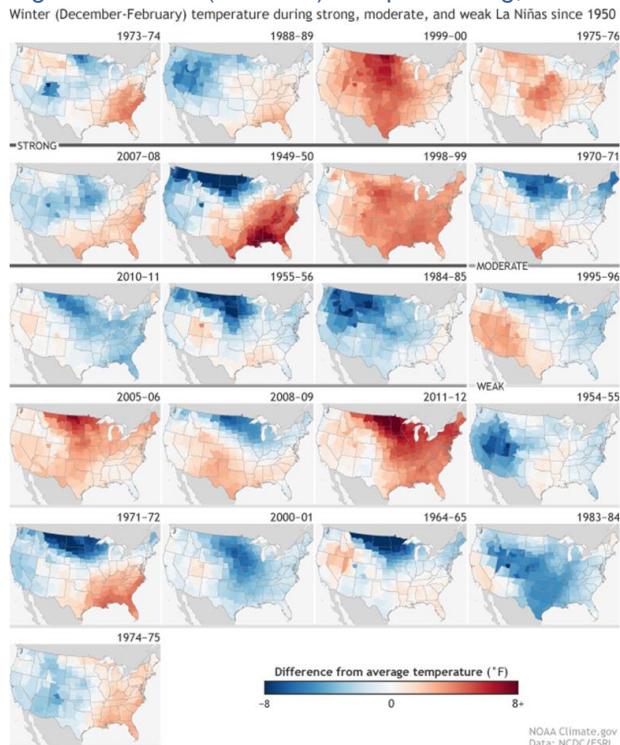
Source: NOAA

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

Last week’s (Sept 12, 2021) Energy Tidbits noted the updated NOAA forecast calling for a La Nina winters. Most normally think of a La Nina winter as one that will be cold, but last week’s memo included our reminder that La Nina winters can also be very warm. We remind of 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. 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 4: Winter (Dec-Feb) Temp in Strong, Moderate And Weak La Ninas 1950 - 2017



Source: CPC

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Natural Gas – EIA, US shale/tight natural gas shows marginal increase A/S/O

On Monday, the EIA issued its Drilling Productivity Report September 2021 [\[LINK\]](#), which is the EIA’s forecast for oil and natural gas production from the major shale/tight oil and gas basins for the current month (in this case Sept) and the next month (in this case Oct). (i) The EIA forecasts Oct at 87.339 bcf/d which is +0.219 bcf/d MoM. (ii) Note US shale/tight gas production is above the all-time peak of 86.884 bcf/d in Nov 2019. (iii) This month, all basins increased except for the Anadarko (-0.037 bcf/d MoM); Haynesville, Permian and Appalachia basins posted the largest increases, up +0.082 bcf/d, +0.073 bcf/d and +0.072 bcf/d, respectively; all other basins remained relatively flat. (iv) All basins are up YoY, save for Anadarko and Niobrara, with most notable YoY changes being Haynesville +1.902 bcf/d YoY, Permian + 1.515 bcf/d YoY, and Appalachia +1.095 bcf/d YoY. Total US shale/tight natural gas production is + 4.421 bcf/d YoY for Oct. (v) Remember US shale/tight gas is ~90% of total US natural gas production. So whatever the trends are for shale/tight gas, are the trends for US natural gas in total. Below is our running table showing the EIA DPR data for the shale/tight gas plays, and the MoM changes in major shale/tight natural gas production. Our Supplemental Documents package includes the EIA DPR.

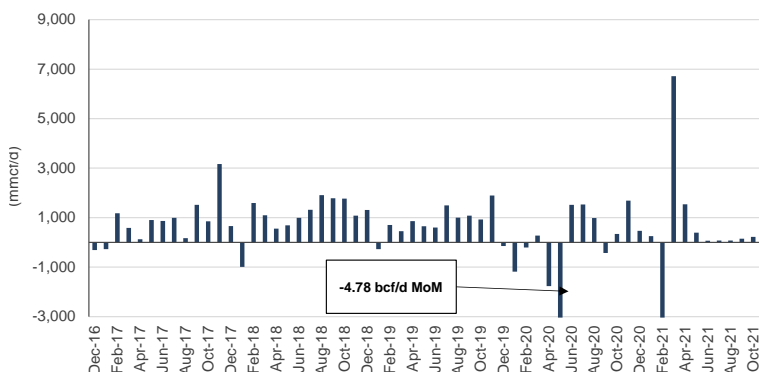
Shale/tight gas up thru Oct

Figure 5: MoM Change – Major Shale/Tight Natural Gas Production

mmcf/d	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	August	Sept	Oct	Oct YoY	Oct less Sept
Anadarko	6,272	6,627	6,598	6,411	5,257	6,163	6,082	5,992	5,919	6,129	6,192	6,139	6,102	-170	-37
Appalachia	33,762	34,829	35,653	35,587	34,894	34,823	34,685	34,619	34,586	34,364	34,366	34,783	34,857	1,095	74
Bakken	2,919	2,919	2,918	2,888	2,747	2,916	2,851	2,787	2,732	2,798	3,005	3,003	3,011	92	8
Eagle Ford	5,761	5,725	5,634	5,729	5,036	5,723	5,660	5,610	5,589	5,842	5,971	5,990	6,000	239	10
Haynesville	11,595	12,099	12,376	12,488	11,302	12,564	12,699	12,826	12,942	13,337	13,413	13,415	13,497	1,902	82
Niobrara	5,360	5,385	5,277	5,211	5,104	5,014	4,967	4,922	4,882	4,960	5,032	5,090	5,109	-251	19
Permian	17,248	17,285	16,902	17,510	14,164	17,461	17,499	17,543	17,602	18,030	17,947	18,700	18,763	1,515	63
Total	82,918	84,868	85,358	85,824	78,503	84,664	84,444	84,300	84,252	85,460	85,926	87,120	87,339	4,421	219

Source: EIA, SAF

Figure 6: MoM Change – Major Shale/Tight Natural Gas Production



Source: EIA, SAF

Natural Gas – No surprise with HH \$5, US gas hedging losses are up big to \$14b

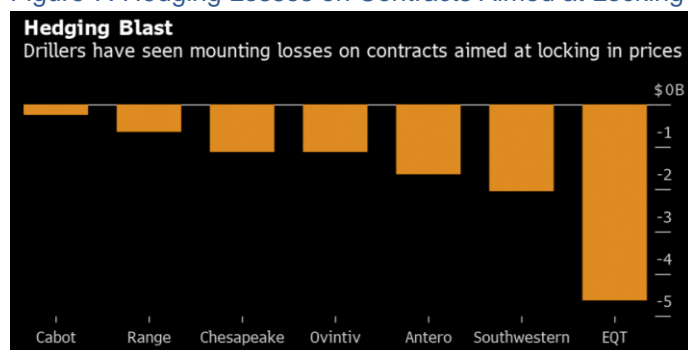
No question that the big surprise in 2021 has not been oil prices but natural gas and LNG prices. And with HH \$5, the US gas hedging losses continue escalate. On Thursday, Bloomberg reported US gas producers are experiencing wrong way bets on increasing prices; this has muted gains and is turning away investors. From the Bloomberg article [\[LINK\]](#), “top natural gas explorers seeking to protect against price declines hedged about 80% of combined output for 2021 and 50% for next year, according to BloombergNEF. As a result, drillers are facing more than \$14 billion in hedging losses through 2022 that will eat away at any profits they make from selling their gas at current prices, BNEF said.” US

Increasing US gas hedge losses

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

natural gas prices have more than doubled over the past year, being the best performance of all widely traded commodities. Bloomberg noted that EQT, the US largest natural gas producer, will lose \$4.5 bn if prices are to remain at current levels; they have hedged output at an average of \$2.89/mmbtu, while gas is priced at \$4.12/mmbtu on the New York Mercantile exchange. Below is a graph depicting the Hedging losses to US top drillers. Our Supplemental Documents package includes the Bloomberg report.

Figure 7: Hedging Losses on Contracts Aimed at Locking in Prices



Source: Bloomberg

Natural Gas– Cheniere wants to introduce feedgas to Sabine Pass Train 6

On Wednesday night, Bloomberg’s Christine Buurma reported “Cheniere’s Sabine Pass LNG terminal in La. requests authorization no later than Sept. 21 to introduce feed gas and refrigerants for Train 6 commissioning, according to FERC filing.” We tweeted [\[LINK\]](#) “Key upside to 2022/23 HH/AECO #NatGas prices. Feedgas start up for Sabine Pass LNG Train 6 (0.7 bcf/d) & Calcasieu Pass LNG (1.3 bcf/d). @business Christine Buurma says \$LNG requested @FERC authorization to start feedgas. #LNG See SAF July 25 Energy Tidbits”. This should not surprise anyone as Cheniere has been clear that it was on track to introduce feedgas well before year-end 2021.

Feedgas soon to Sabine Pass 6

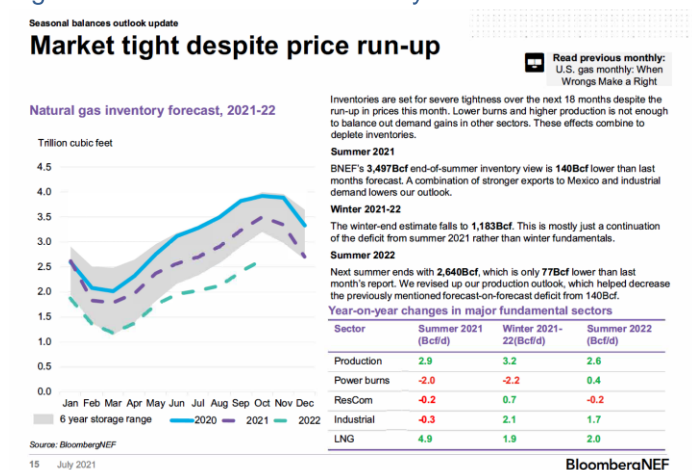
July 25 Energy Tidbits Big potential upside to 2022/23 HH & AECO gas prices

Here is what we put in our July 25, 2021 Energy Tidbits on this subject. “Oil prices have been strong, but the bigger surprise to the upside in 2021 has been global LNG, HH and AECO gas prices. There was an excellent reminder from BloombergNEF’s Monday US Gas Monthly, which is why we tweeted [\[LINK\]](#) that the takeaway therefrom is that there is big potential upside to 2022 and 2023 forward strips for HH (~\$3.40 for 2022 and ~\$2.90 for 2023) and AECO (~C\$3.10 for 2022 and ~C\$2.60 for 2023). BloombergNEF’s forecast for US gas storage for Oct 31/2021 was 3.497 tcf (140 bcf lower YoY) is on the conservative side considering storage is currently 532 bcf lower YoY with expectations for strong US LNG exports in the summer/fall. But then BloombergNEF had a shock forecast for Oct 31/2022 for US gas storage to be 2.640 tcf. This is a hugely bullish storage number, basically at least 1 tcf less than normal and the last time Oct 31 storage was under 3 tcf was Oct 31/2000 when HH went over \$10 the winter 2000/2001. Even if storage is 3 tcf, its hugely bullish for HH and AECO gas prices. The key reason for this hugely bullish storage forecast is simple – BloombergNEF includes the start up of Calcasieu Pass LNG (1.3 bcf/d) and Sabine Pass LNG Train 6 (0.7 bcf/d) around year end 2021. This timing is consistent with Platts recent forecast [\[LINK\]](#). The assumption is that the global LNG markets will

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

absorb this additional LNG volumes of >700 bcf. We want to reiterate even if the global LNG markets don't absorb all the added LNG volumes and BloombergNEF's 2.64 tcf storage forecast isn't met, an Oct 31/2022 US storage forecast in the low 3 tcf's is very bullish to the forward strips of HH and AECO."

Figure 8: US Natural Gas Inventory Forecast



Source: BloombergNEF

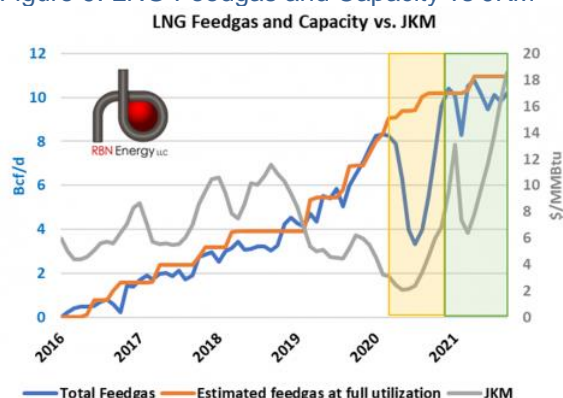
Natural Gas – RBN: High LNG prices create opportunity for North American LNG

RBN continues to post a number of LNG blogs reflecting the improving LNG fundamentals and how that is increasing the potential for North American LNG FIDs. We are fans of the RBN blogs for both their views and the excellent data. On Tuesday, RBN posted its blog “Crossroads - Record Global Gas Prices Signal More Room For North American LNG” [LINK], that discussed trends the North American LNG market will face in coming years. The JKM was at a all time seasonal high amid the extreme undersupply of LNG, averaging above \$18/mmbtu in Sept. US feedgas demand has recovered amid the supply shortages around the world. Delivery to terminals have been at record highs each month, averaging 10 bcf/d from May through August, an increase of +5.5 bcf/d on average YoY. The Sabine Pass Train 6 and Calcasieu Pass train are both currently commissioning and are expected to add 2.25 bcf/d of feedgas demand to the US Gulf Coast. The rapid swing to undersupply and prolonged high gas prices have renewed interest in offtake agreements and new LNG buildouts; however, the contracts underpinning these projects look very different from the first wave of North American LNG amid recent events. LNG indexed a variety of global indices, aside from Henry Hub, with deals offering shorter terms to appeal to offtakers looking to balance long-term uncertainty and reliability, as environmental regulations tighten worldwide. North American LNG has demonstrated resiliency over the past 18 months and has ensured it has not seen its last LNG project take with FID. With Asian demand growing, the next wave of North American LNG is set to explore the Asian market, specifically with Canada and Mexico announcing Pacific coast projects; these projects could move quickly and bypass previously announced Gulf Projects on their way to FID. 2022 could realistically see West and Gulf Coast strategies take to FID. Below is a graph depicting LNG feedgas and capacity against the JKM. Our Supplemental documents package includes the RBN blog.

Opportunity for North American LNG amid high prices

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 9: LNG Feedgas and Capacity vs JKM



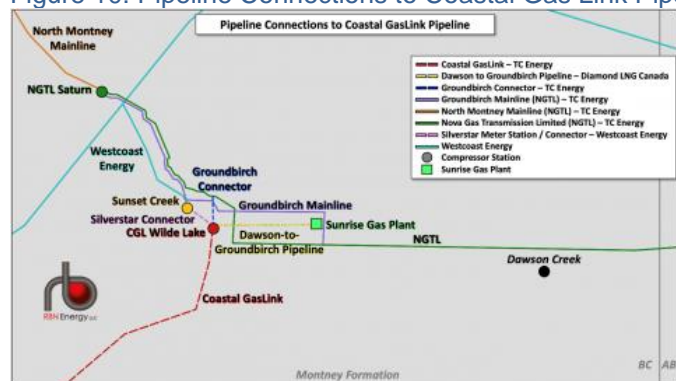
Source: RBN

Natural Gas – RBN: recap of supply pipelines for Coastal GasLink Pipeline

Canada is only a few years away from the first major LNG export project – LNG Canada’s Phase 1. On Monday, RBN posted a good blog “*Reaching Out - The Gathering Pipes That Will Supply The Coastal GasLink Pipeline*” [\[LINK\]](#). Unlike US export sites that receive feedgas from multiple basins via their network of trunklines, the LNG plant in Canada will rely primarily on feedgas from the Montney basin and be transported across British Columbia via the Coastal GasLink (CGL) pipeline. Mondays RBN examines the pipelines that will transport feedgas from the Montney basin, to CGL. CGL originates south of Dawsons Creek where gas will enter the pipeline through the Wilde Lake compressor. With rapid expansion of Montney unconventional gas supplies, numerous major pipelines will be able to connect to CGL, with two connections already being approved. The Silverstar connector is the first approved by the Canada Energy Regulator (CER); it is expected to handle up to 1.0 bcf/d, with construction being finished by December. The second connection is the Groundbirch connector that is sized to handle up to 2 bcf/d. This will allow sourcing from TC Energy’s NGTL pipeline that crosses the provincial boundary from Alberta. The sum of these two connections is more than the 2.1 bcf/d needed for CGL, though it remains unclear which pipeline connections will be utilized with each equity partner. It will be an advantage in times of maintenance and unforeseen outages to have ample upstream supply capacity and sourcing flexibility if LNG Canada is to run as consistently as possible. With each member of the LNG Canada consortium tentatively laying out plans as to how they intend to connect their respective shares of gas supplies to CGL, the connectors provide an array of options for them to meet their equity share of supply. Below is a map depicting the CGL pipeline and its connectors. Our Supplemental documents package includes the RBN blog.

**Coastal GasLink
feeder pipelines
get approval**

Figure 10: Pipeline Connections to Coastal Gas Link Pipeline



Source: RBN

Natural Gas – India to expand natural gas distribution to cover 96% of population

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

India to expand city gas distribution

Modi’s 75th independence speech, India “should be a gas based economy”

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

Recall Petronet sees India LNG imports +13 bcf/d to 2030 to meet gas targets

Our June 20, 2021 Energy Tidbits highlighted Petronet’s bullish view for India’s increasing LNG demand. At that time, we wrote “There was an even better reminder on Friday from India on how their plan to increase natural gas to 15% of its energy

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

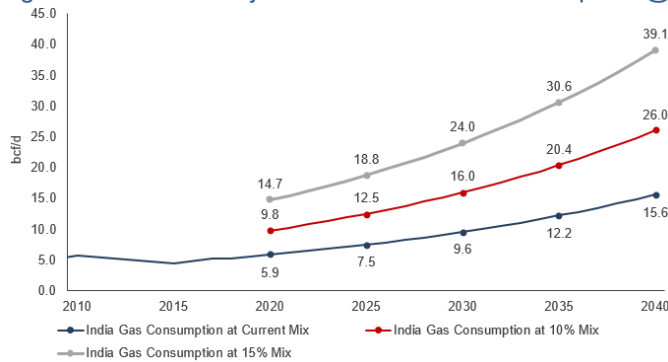
mix will be a major catalyst to LNG markets in the 2020s. Recently our June 6, 2021 Energy Tidbits noted the June 4 tweet from India's Energy Minister Dharmendra Pradhan [\[LINK\]](#) "We are rapidly deploying natural gas in our energy mix with the aim to increase the share of natural gas from the current 6% to 15% by 2030. One Nation, One Gas Grid is being implemented to remove regional imbalances in access to natural gas. #IndiasGreenFuture." Pradhan didn't give a forecast of what this meant for increased bcf/d of natural gas and LNG imports. But this week Petronet CEO AK Singh gave a specific forecast. Reuters report "LNG's share of Indian gas demand to rise to 70% by 2030: Petronet CEO" [\[LINK\]](#) included Petronet's forecast if India is to hit its target for natural gas to be 15% of energy mix by 2030. Singh forecasts India's natural gas consumption would increase from current 5.5 bcf/d to 22.6 bcf/d in 2030. And LNG shares would increase from 50% to 70% of natural gas consumption ie. ~3 bcf/d to 15.8 bcf/d in 2030. Singh did not specifically note his assumption for India's natural gas production, but we can back into the assumption that India natural gas production grows from ~3 bcf/d to 6.8 bcf/d. Our Supplemental Documents package includes the Reuters report."

Petronet's natural gas demand forecast is in line with our Oct 2019 forecast

Our June 20, 2021 Energy Tidbits also compared the Petronet June LNG forecast to our Oct 2019 forecast. At that time, we wrote "It was good to finally see India come out with a specific forecast for 2030 natural gas consumption and LNG imports if India is to get natural gas to 15% of its energy mix in 2030. Petronet's Singh forecasts India natural gas consumption to increase from 5.5 bcf/d to 22.6 bcf/d in 2030. This forecast is pretty close to our forecast in our Oct 23, 2019 blog "Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030". Here is part of what we wrote in Oct 2019. "It's taken a year longer than we expected, but we are finally getting visibility that India is taking significant steps towards India's goal to have natural gas be 15% of its energy mix by 2030. On Wednesday, we posted a SAF blog [\[LINK\]](#) "Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030". The blog noted comments from earlier on Oct, when India Oil Minister Dharmendra Pradhan said that there are \$60 billion of natural gas infrastructure and LNG import terminals that are "under execution". He said "I am not talking about potential investment. This number relates to the project that are under execution". In the blog, we said "Natural gas consumption in India is only now back to 2011 levels at 5.6 bcf/d and represents only 6.2% of its energy mix. If India hits its 15% target of its energy mix by 2030, it would add natural gas demand, on average, of >1.5 bcf/d per year. At the same time India's domestic natural gas production peaked in 2010 at 4.6 bcf/d, but has been flat from 2014 thru 2018 at ~2.7 bcf/d, which means the big winner will be LNG. The most important factor driving this expectation for natural gas consumption growth is likely price. Asian LNG landed prices are down about 50% YoY and, more significantly, the expectation is for future Asian LNG prices to be at lower levels than prior cycles. India, by itself, may not be a LNG global game changer, but it is another positive support for why we believe LNG markets will rebalance sooner than expected ie. in 2022/2023". We projected how much India's natural gas consumption would increase if it can hit its target of 15% of total energy mix in 2030. BP data shows India's natural gas consumption in 2018 was 5.6 bcf/d and natural gas was only 6.2% of total energy mix. BP also estimates India's total energy consumption grew at a rate of 5.2% per year for the 2007 – 2017 period, but energy consumption growth increased to +7.9% in 2018 YoY vs 2017. But if we only assume a 5% growth in total energy mix to 2030, then if natural gas is 15% of India's

energy mix, it would be 18.8 bcf/d in 2025 and 24.0 bcf/d in 2030 ie. growth of +13.2 bcf/d to 2025 and +18.4 bcf/d to 2030. India may not be a global LNG game changer by itself like China, but it does support the call that LNG markets rebalance sooner than expected. Our blog also includes our table of LNG projects for 2019 and 2020, which reinforce the potential for LNG growth post 2020. Below is our projection of India’s natural gas consumption @15% of Energy mix, and our Supplemental Documents package has our India blog.” Our Supplemental Documents package includes our Oct 23, 2019 blog.

Figure 11: India’s Projected Natural Gas Consumption @15% Of Energy Mix (bcf/d)



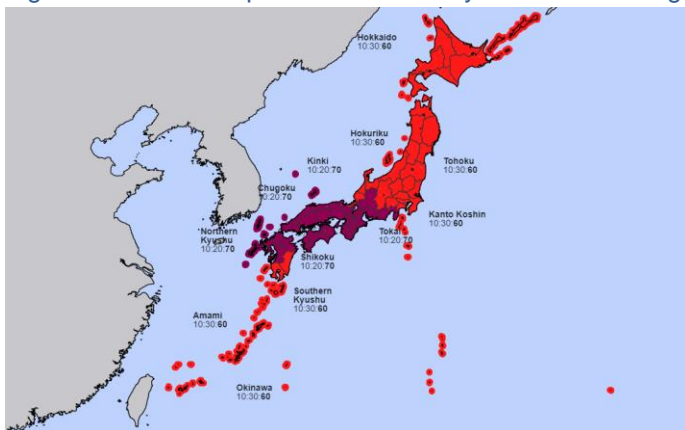
Source: BP, SAF

Natural Gas – Warm in October in Japan, but not likely a boost to natural gas

Still warm in Japan

It was a warm to hot summer in Japan and the warm weather is expected to continue thru mid-October. Weather always changes and there is no certainty that the forecasts will be accurate. The forecast calls for a warm mid Sept to mid Oct. The northern regions of Japan are expected to cool first with the south following shortly after. But given this is the fall, warm days in Tokyo are more likely around 25° so aren’t expected to lead to a boost in natural gas demand. The Japan Meteorological Agency issued its updated month ahead weather forecast for Sept 18 – Oct 15 on Thursday [\[LINK\]](#). Below is the current JMA forecast for the remainder of Sept, and into Oct.

Figure 12: JMA Temperature Probability Forecast for Aug Sept 18 – Oct 15



Source: JMA

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Natural Gas – Tohoku (Japan) pays \$29 for Dec LNG delivery

One of the daily global energy stories this week was the record LNG prices in Asia and how Asian LNG buyers were having to buy LNG at record prices. And one of the themes seems to be that smaller Asian LNG buyers are being forced to buy at these record prices. We could have noted many of the Asian LNG pricing stories reported by Bloomberg's Singapore based Stephen Stapczynski, but one caught our eye and we tweeted [LINK](#) "Crazy spot #LNG prices. Better hope its not a cold winter in Asia. @SStapczynski reports "Tohoku Elec. purchased an #LNG cargo on a DES basis for Dec. delivery to Japan at about \$29/mmbtu, according to traders with knowledge of the matter." Great finish to 2021 #NatGas prices." Tohoku Electric serves ~8 million customers.

Tohoku pays \$29 for LNG

Natural Gas – High LNG prices could lead to gas to oil generation switching in Japan

Record LNG prices are forcing LNG/natural gas users to look, if possible, for alternative fuel switching, or just forcing demand down. We have already seen Pakistan and Bangladesh keep deferring LNG cargoes due to high spot prices. This week, on Wednesday, Platts reported that Petroleum Association of Japan stated that Japan may see some restarts of oil-fired power generation units this winter [LINK](#), amid high LNG and coal prices. The shift has been proposed as refiners carry out contingency planning in response to tightened power supply and demand. Fuel oil supply was boosted by refiners in January, following an emergency supply request, in wake of LNG shortages from surging power demand from severe cold spells. Fuel oil sales have surged by 43% on the year to 0.179 mmb/d in January. Power utilities are moving early to secure fuels for early winter requirements. With rising LNG spot prices, some power utilities are moving to secure fuel oil domestically. Asia LNG spot prices have surged past \$20/mmbtu on Sept 14, the second highest JKM price spike on record, and a record high for this time of year. Benchmark prices of competing fuels are still much lower than LNG, despite coal at a record \$143.99/mt on the NEAT on Sept 14. Our Supplemental Documents package includes the Platts report.

Oil generation in Japan may restart

Natural Gas – China Aug LNG imports +11.6% YoY, pipeline gas imports +11.3% YoY

For the past two years, we have warned that YoY growth in China LNG imports would be significantly lower due to increasing pipeline imports from Russia from the start up of Gazprom's Power of Siberia natural gas pipeline and, then in the past year, also from increasing China domestic natural gas production. Both of these themes are continuing to play out and why China's LNG import growth is solid but not spectacular. Yesterday, Bloomberg reported "Aug. LNG imports 6.65m tons, +12.7% y/y ** YTD LNG imports rose 23.3% y/y to 51.81m tons * Aug. pipeline natural gas imports 3.79m tons, +11.3% y/y ** YTD pipeline natural gas imports rose 20.1% y/y to 27.5m tons." This is the equivalent of 10.30 bcf/d for Aug, which was also up MoM vs 8.78 bcf/d in July. Note our table shows a 11.6% YoY increase, we checked Aug 2020 Bloomberg data and it as per our table so we aren't certain about the 12.7%. Earlier this morning Xinhua (China) reported [LNK](#) "China reported an increase in its natural gas output in August, official data shows. The country's natural gas output totaled 15.9 billion cubic meters last month, rising 11.3 percent year on year, according to the National Bureau of Statistics (NBS)." This is Aug production of 18.1 bcf/d, or +2.4 bcf/d YoY.

China Aug LNG imports

Figure 13: China LNG Imports

bcf/d	2016	2018	18/17	2019	19/18	2020	20/19	2021	21/20
Jan	3.84	8.03	50.0%	10.20	27.1%	10.31	1.1%	13.15	27.6%
Feb	3.10	6.84	66.9%	7.46	9.1%	7.26	-2.7%	9.52	31.1%
Mar	2.60	5.04	64.5%	6.28	24.8%	6.49	3.3%	8.74	34.6%
Apr	3.00	5.43	57.8%	7.27	34.0%	8.16	12.3%	10.77	32.0%
May	2.20	6.39	41.9%	6.87	7.6%	8.10	18.0%	10.89	34.4%
June	3.51	6.31	30.1%	7.25	14.9%	9.27	27.8%	10.76	16.1%
July	2.46	6.40	33.4%	7.56	18.1%	7.79	3.1%	8.78	12.7%
Aug	3.54	7.26	49.2%	8.04	10.8%	9.23	14.8%	10.30	11.6%
Sept	4.05	7.00	26.3%	8.16	16.7%	9.17	12.4%		
Oct	2.85	7.13	29.6%	6.26	-12.2%	7.78	24.3%		
Nov	4.26	9.59	47.5%	10.42	8.7%	10.58	1.6%		
Dec	5.80	9.75	25.0%	10.01	2.7%	11.76	17.5%		
Full Year Avg.	3.43	7.10	41.2%	7.98	12.5%	8.83	10.6%		

Note: Jan/Feb 2020 figures are averaged. Not applicable for YoY comparison

Source: China General Administration of Customs, Bloomberg

Natural Gas – Equinor sees high gas prices this winter, >2 tcf supply gap thru 2050

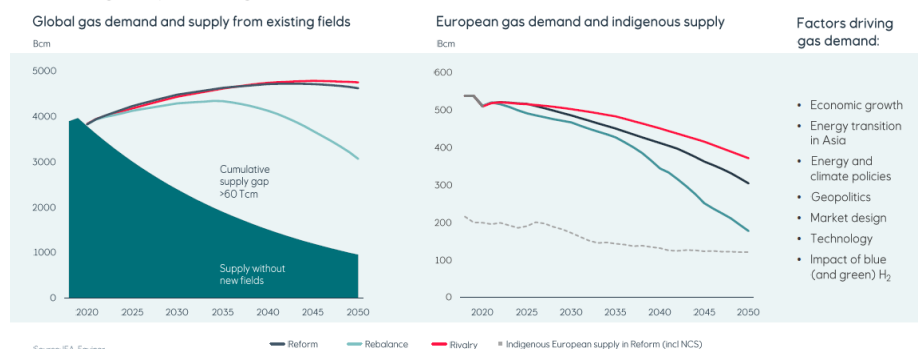
On Wednesday, Equinor posted its IR Gas Market Update slide deck. (i) Equinor warned on high gas prices this winter. We tweeted [\[LINK\]](#) “#Equinor #NatGas market update: high gas prices to continue during winter 21/22, EU storage 70-75% full entering winter "leaves market exposed to high prices when demand rises". notes supply uncertainties on pipeline supply & #LNG supply, but didn't mention #Wind variability.” (ii) For the long term, Equinor raises the big question mark that there is a wide outcome for long term natural gas demand that, under its Rebalance scenario, could see peak natural gas demand in 2035. But they also note the other scenarios that don't see peak natural gas demand until much later. Note there graph below and the interesting aspect of their long term gas demand graph is their remind on that natural gas reserves/production have a natural decline and that there is a “cumulative supply gap of 2.1 tcf to 2050. Our Supplemental Documents package includes excerpts from the Equinor slide deck.

Equinor IR gas market update

Figure 14: Global gas demand and supply from existing fields

Wide outcome space for long-term gas demand – global growth until ~2035

Large investments in all scenarios – Europe still needs imports in Rebalance – matching supply and demand globally a challenge



Source: Equinor

Natural Gas – High Europe natural gas prices leading to industrial shut downs

We expect to see more significant natural gas users follow the lead this week of two nitrogen producers announcing indefinite shut downs due to high natural gas prices. On Wednesday, CF Industries Holdings [\[LNK\]](#) reported “a leading global manufacturer of hydrogen and nitrogen products, today announced that it is halting operations at both its Billingham and

Europe shut downs due to high natural gas prices

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Ince, UK, manufacturing complexes due to high natural gas prices. The Company does not have an estimate for when production will resume at the facilities. " On Friday, Norway's Yara announced [LINK](#) "Record high natural gas prices in Europe are impacting ammonia production margins, and as a result Yara is curtailing production at a number of its plants. Including optimization of on-going maintenance, Yara will by next week have curtailed around 40% of its European ammonia production capacity. Yara will continue to monitor the situation, with the objective to keep supplying customers but curtailing production where necessary."

Natural Gas –German regulator has 4 months to decide on Nord Stream 2 certification

On Monday morning, we tweeted [LINK](#) "Europe better hope its not a cold start to winter. @business @bjennen1 report DE regulator BNA now has 4 mths to review on 5.3 bcf/d #NordStream2 certification. Given high profile, hard to see a quick rubber stamp. if so, NS2 won't bring near term relief to #NatGas #LNG prices." Early Monday morning, Bloomberg reported "Nord Stream 2 has submitted all the necessary documents, triggering the start of the certification process by Germany's Federal network regulator BNA, a spokesman for the agency said by phone. * BNA now has four months to send a decision draft to the European Commission." In theory, there is nothing stopping BNA from a quick certification but, we would assume that, given the high profile of Nord Stream 2, any certification is closer to the 4 months than 1 month.

Waiting German certification for NS2

Natural Gas – Hmm! Gazprom has 5.3 bcf/d of spare capacity that could pipe to EU

If Europe wants to help solve the natural gas shortage for the winter, Gazprom Chairman Miller reminded the world on Friday that Gazprom can quickly crank up natural gas exports. On Friday, we tweeted [LINK](#) on Gazprom Chairman Miller's comments at the International Business Congress. We tweeted "#Gazprom says help can be on the way to lower record #Electricity prices for winter? Gazprom can "sharply increase" #NatGas exports & volume of surplus production capacities for peak demand is ~150 bcm. Hmm! 150 bcm = 5.3 bcf/d, which just happens to be #NordStream2 capacity. #LNG". Our tweet included TASS's reported on Miller's comments "We have the so-called "saw" of Gazprom, and, without a doubt, this is our competitive advantage, that we can work, not just bringing our annual volumes to the market in terms of a certain average monthly volume of gas supplies to the market, but we can to sharply increase the volume of supplies, despite the fact that the production capacity for such a peak daily production for a long period is not in demand at all, "he said. At the same time, Miller added that the volume of surplus production capacities, which Gazprom provides for the peak volumes, is almost 150 billion cubic meters. m of gas." The two items that jumped out were that they can "sharply increase" export volumes and they have surplus production capacity of 150 bcm, which just happens to equal the capacity of Nord Stream 2 of 5.3 bcf/d. Our Supplemental Documents package includes the TASS report.

Gazprom has 5.3 bcf/d spare capacity

Figure 15: Nord Stream 2, ~5.3 bcf/d Capacity



Source: Nord Stream 2

Natural Gas – Uniper CEO: timing for Nord Stream 2 completion is “just perfect”

On Friday, TASS also reported [\[LINK\]](#) on comments from Uniper at the International Business Congress. Uniper was one of the major European lenders to Nord Stream 2. TASS reported [\[LINK\]](#) *“I would like to congratulate Gazprom and Nord Stream 2 AG on the completion of Nord Stream 2. This is certainly great news, and I sincerely congratulate all the participants. Technically, the project has been completed, and, if I may, I would like to add that the timing of the completion is just perfect,” he said.* Uniper’s risk on its loan were primarily for risk Nord Stream 2 was never completed or for US sanctions. It makes sense why the Uniper CEO thought the timing was just perfect given the record Europe natural gas prices and concern that there will be shortages this winter. Our Supplemental Documents package includes the TASS report.

Uniper CEO on
NS2

Natural Gas – UK’s careful drafting of its natural gas supply assurance

It was a big Friday/Saturday for the UK to assure the public not to worry about natural gas this winter in the face of record natural gas prices that are occurring during shoulder season. Record UK natural gas and electricity prices are making headlines every day so we understand the govt wants to assure the public. But our tweets on the situation remind that the govt is using careful drafting and is forgetting to mention the common denominator for bad power days – low wind. (i) Later in the memo, we note our Wed tweet [\[LINK\]](#) on how these record UK power prices are happening in Sept, which is shoulder season and one of the lowest months for UK electricity consumption. (ii) Yesterday morning we tweeted [\[LINK\]](#) on UK Minister Kwarteng’s planned meetings with energy companies and his department’s release of “UK gas supply explainer”. We tweeted *“Read carefully. do not anticipate any “increased” risk of supply emergencies this winter. noted high global spot prices that balance supply/demand, but no mention of affordability is priority ie. inffers will pay up to get supply. Looks like expensive #NatGas #Electricity for UK.”* The unsaid message is that the UK won’t have an “increased” risk of supply emergencies because they will pay up to buy LNG or natural gas. They also carefully interchanged natural gas and energy. They must feel really backed into a corner here as they say *“Energy security is an absolute priority for this government”*. Now we wonder if they will end up saying they meant energy with respect to natural gas. But it didn’t look like it was a specific to natural gas. We think this could come back to bite them if they have reliability issues due to low wind. Energy affordability is not mentioned anywhere. *“We do not anticipate any increased risk of supply emergencies this winter”*. Not sure what their normal supply emergencies are but this is saying won’t be an “increased” risk. They don’t want to say wind could have any role in higher natural gas

UK reassures on
natural gas?

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

demand/prices impact. Rather only say very general comment on weather “*High gas wholesale prices have subsequently driven an increase in wholesale power prices this year. In recent weeks, this trend has been exacerbated by the weather and planned maintenance at some power stations*”. Recall UK wind has been lower in the last month. And the reality is that there is a direct impact of less wind = more natural gas. Below is the graph of the National Grid’s winter 2020-221 fuels and note how wind was below 2019 and was offset by natural gas. (iii) Earlier this morning, we tweeted [\[LINK\]](#) on Kwarteng’s Sat tweet thread post his meetings. Interesting 7-part thread. No mention of affordability. He made a point of highlighting UK is not dependent on Russian oil and gas. Note if they had pipeline gas from Russia, it would be cheaper. The big headline was security of gas supply was not a cause for “*immediate concern*” with the industry. And of course “*underscores importance of our plan to build a strong home-grown renewable energy sector to further reduce our reliance on fossil fuels*”. We couldn’t help tweet that he forgot to mention how critical wind is to winter energy supply and how much natural gas is needed to fill in for low wind generation. We don’t know how he can reassure about natural gas supply security without at least telling what he assumes on wind generation. We tweeted “*Note @KwasiKwarteng thread, no “immediate concern” on #NatGas supply. wonder what he assumes re #Wind generation this winter. @NationalGridESO, low wind was the common denominator on 5 bad power days in winter 20/21. #NatGas #LNG will be needed even if \$\$\$*”. And we also tweeted [\[LINK\]](#) the below National Grid ESO graph that shows how natural gas filled the gap of lower than expected wind generation last winter. Our Supplemental Documents package includes the UK gas supply explainer and the UK gas supply explainer.

Natural Gas – Reminder why Europe gas storage is the key indicator for LNG markets

There shouldn’t be anyone who, after living thru 2021 LNG markets, doesn’t realize the significance of Europe gas storage as the key indicator for LNG markets. For the past 4 years, we have been trying to emphasize the significance of Europe gas storage. This is a concept that Shell clearly laid out in 2017 on how Europe gas storage levels and changes in storage since Nov 1 continues to be an excellent indicator for the strength of global LNG markets. We first highlighted this key concept 4 years ago. On Sept 20, 2017, we posted two related blogs. The first blog was “*Shell: “Every LNG Cargo That Could Technically Be Produced In This World Has Been Produced And Has Found A Well Paying Customer*”, and the second linked blog was “*China’s Plan To Increase Natural Gas To 10% Of Its Energy Mix Is A Global Game Changer Including For BC LNG*”. The concept of the blogs was that the market was understating the fall LNG 2017 market strength, China being serious about increasing natural gas, and the surprising market strength would lead to a BC LNG FID in 2018 ie. LNG Canada. The reason for our believing LNG markets in summer 2017 was due to Shell’s LNG head, Martin Wetselaar) explaining the concept of Europe gas storage. As soon as we heard it, we knew it made sense. And when you look at the Europe gas storage utilization for this winter, it fits to the thesis Wetselaar first outlined in Aug 2017. Long term readers of Energy Tidbits know we think the best insights from companies comes from Q&A, not the slide decks, and that was particularly so in this case. Here is what we wrote in Sept 20, 2017 blog “*The key data support to Wetselaar is that NW Europe storage is not seeing surplus LNG cargos looking for a home. In the Q&A, Wetselaar said the data support for his comment that the market is absorbing all of the new LNG supply is to look at NW Europe storage. Wetselaar did not use the description dumping ground, but it is the right term. Webster’s defines “dumping ground” as “a place to which unwanted people or things are sent”. He noted that if LNG was in oversupply, there would be surplus LNG cargos looking for a home and these surplus LNG cargos would find their way to NW Europe storage. Shell is not seeing any YoY increase in NW Europe storage. Hence, he is firm in his view that demand was absorbing all the new LNG supply in 2017. We pasted the NW Europe storage*

Europe gas storage is key LNG indicator

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

data into the below graph and it shows exactly what Wetselaar said – the monthly YoY changes in storage do not show increases in the net storage withdraw/injections, which implies that there isn't any dumping of surplus LNG cargos in NW Europe storage. We have not been following NW Europe natural gas storage, but now have it on our regular data check list because of Wetselaar's comments." Our Supplemental Documents package includes our Sept 20, 2017 Shell blog.

Natural Gas – LNG flows to NW Europe up 0.45 bcf/d at 2.15 bcf/d from 1.70 bcf in Aug
 High Asian spot LNG prices continue to attract LNG cargos to Asia, and we are seeing this in low LNG flows into NW Europe and US LNG exports moving to Asia instead of NW Europe. In June/July, it was much more profitable to ship US LNG to North Asia due to strong Asia JKM prices (>\$14/mmBtu JKM vs ~\$12.50/mmBtu TTF). However, as of Sept 8, TTF has traded at a premium to JKM, which should start to attract more LNG tankers to Europe for the fall. Historically, LNG flows into Northwest Europe reached recent peaks at ~5 bcf/d in late November to early December, before declining rather quickly through December to mid January, where imports reached a low of 0.90 bcf/d on January 17. Since, LNG flows to Europe have been increased to peak to 8.92 bcf/d on March 22. Daily imports in April averaged 7.05 bcf/d, roughly flat to the March average of 7.08 bcf/d. June and July imports were down 1.4 bcf/d and 1.47bcf/d, respectively. In August, this downward trend continued, as imports decreased another 0.18 bcf/d to only 1.70 bcf/d. Roughly two weeks into Sept, imports are up slightly averaging around 2.15 bcf/d, however still down 3.41 bcf/d from May. European gas storage is at extremely low levels compared to seasonal averages, so LNG flows to Europe remains a key item to watch as we approach the heating season. Below is our graph of Net LNG Flows to NW Europe and Europe LNG's Premium to Asia.

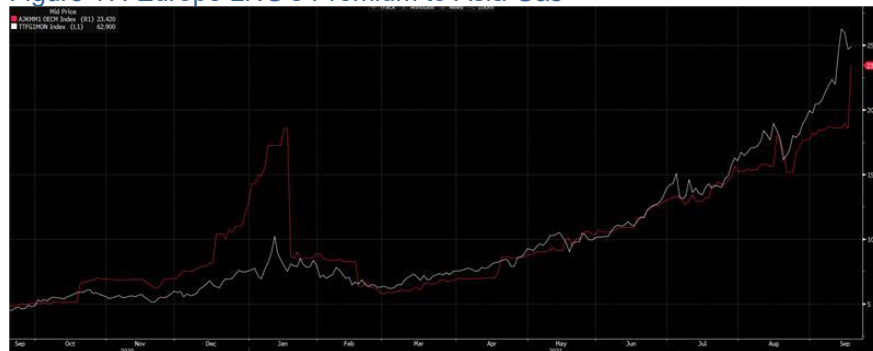
LNG flows to NW Europe +0.45 bcf MoM

Figure 16: Net LNG Flows to NW Europe



Source: Bloomberg

Figure 17: Europe LNG's Premium to Asia Gas



Source: Bloomberg

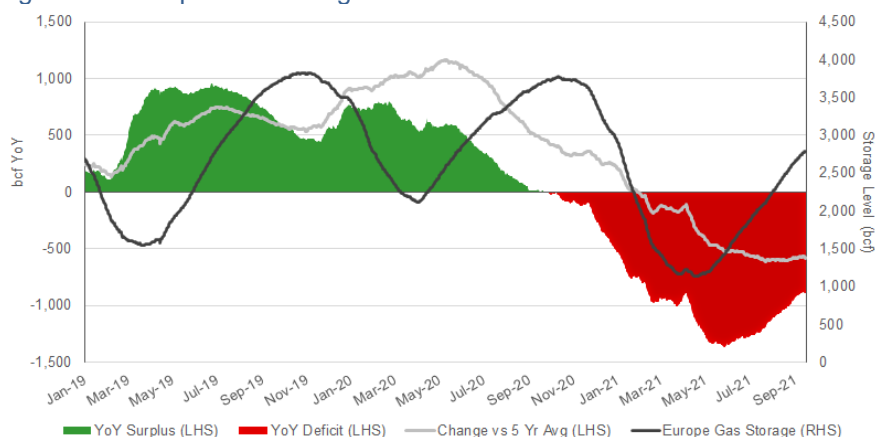
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Natural Gas – Europe storage 71.26% full vs 5 year average of 87.12%

The setup for Europe gas storage for the winter continues to look weak and bullish for winter Europe natural gas prices unless it is a very warm winter. Differentials have been favoring Asia for most of the summer and have only recently flipped to favor Europe. Europe gas storage won't be at normal levels, the question is how much below will it be for the start of winter. Inventories are at their lowest level in more than a decade, after a cold and bitter winter, while supplies from Russia have also been limited. The set up for winter natural gas prices in Europe looks strong. The key indicator for winter Europe natural gas prices and also global LNG prices is Europe storage. Europe gas storage started the winter (Nov 1) at basically full levels at 94.66% and had dropped by 65.77% to be 28.89% at Apr 1. This 65.77% decline since Nov 1, compares to the 5 yr average that would be down 53.99% in the same period or to last winter that was only down 43.29% in the same period. We are now seeing storage start to build, but the build is slow due to the above reasons. Europe storage levels bottomed in late Apr at 29%, which was the lowest level since Apr 2018. Storage as of Sept 16 is 71.26%, which is -22.37% less than last year levels of 93.63% and are -15.86% below the 5-year average of 87.12%. Europe storage levels over the next few weeks will be the key item to watch for indications on LNG markets going into the winter. Below is our graph of Europe Gas Storage Level.

Europe gas storage 71.26% full; lowest levels in a decade

Figure 18: Europe Gas Storage Level



Source: Bloomberg

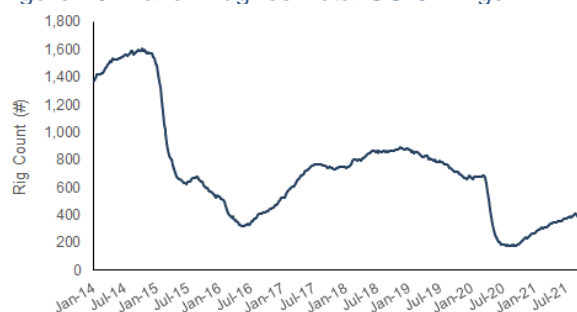
Oil – US oil +10 WoW at 411 oil rigs

Baker Hughes released its weekly North American drilling activity data at 11am today. This week US oil rigs were up +10 rigs WoW at 411 rigs. Oil rigs are +239 off the bottom of 172 in Aug14/2020 week. Permian, which was up +5 this week, has been the oil basin expected to drive growth, so no surprise that seeing increases especially as we near year end as most producers have surplus capex budget. US oil rigs hit their 2020 peak at 683 on March 13 and have since fallen by 272 to 411 oil rigs (-39.8%). The biggest contributor to the decrease is the Permian being down 160 oil rigs from the March 13, 2020 peak (-38.2%), although we are seeing it start to ramp up a bit. Also note the Bakken is down 29 oil rigs to 23 active oil rigs (-55.8% from March 13, 2020). Below is our graph of US oil rigs since 2020, which highlights the big decreases in Permian and Bakken oil rigs.

US oil rigs +10 WoW

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 19: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

Oil – Frac spreads +8 to 252 as of Sept 17

Every week, Mark Rossano (C6 Capital Holdings) posts a YouTube recap of frac spreads for the week on the Primary Vision Network. [LINK](#) US frac spreads were +8 to 252 as of Sept 17. He noted that seeing increases in the Permian, Appalachian, Anadarko and western Gulf (Haynesville for natural gas). He reiterated his bullish view on NGLs, in particular Propane has played out. And like last week, he also highlighted the risk that the US has the ability to throw up a gate (ie. to stop exports) in discussion propane if inventories get too low for winter and that there are mechanisms that can be used to pause, or delay or stop outright exports. Rossano has been expecting to see 254 spreads at end of Sept, and reminds that October will be a very strong month reaching 275 in October/November, and then see some seasonal decline but not to the level as seen in the past. He still expects to see rigs increase at a faster rate than spreads to rebuild DUC inventory. Note he stopped providing his frac spread graphs for free in July. He also then changed the level of detail in his commentary, but he still provides enough color to get insights on US frac spreads.

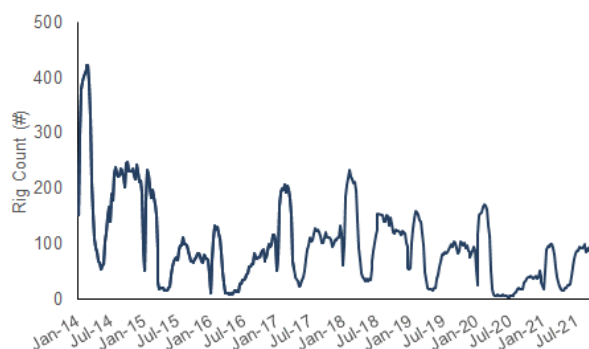
**Frac spreads +8
to 252**

Oil – Total Cdn rigs +11 to 154 total rigs and +90 rigs YoY

Total Cdn rigs were +11 this week to 154 total rigs. Cdn oil rigs were +8 at 95 rigs. Cdn gas rigs were +3 to 59 gas rigs. Total rigs are now +141 since the June 26, 2020 all-time low. We have been expecting an up and down in late Aug/early Sept as per normal seasonal patterns, and then increasing moving into the winter. Cdn drilling has recovered YoY, a year ago Cdn oil rigs were 30 and Cdn gas rigs were 34 for a total Cdn rigs of 64, meaning total Cdn rigs are +90 YoY and total rigs are up +35 vs 2019.

**Cdn rigs +11
WoW**

Figure 20: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

US oil production up WoW

Oil – US weekly oil production up +0.100 mmb/d WoW at 10.10 mmb/d

US oil production was up +0.100 mmb/d to 10.10 mmb/d for the Sept 10 week, driven by Lower 48 production WoW increase of +0.100 mmb/d to 9.700 mmb/d. Next week's reported US oil production will be higher with the continued return of shut-in GoM production post Hurricane Ida. US oil production is down YoY at -0.800 mmb/d, and is down significantly at 3.0 mmb/d since the 2020 peak of 13.1 mmb/d on March 13. Hurricane Ida decimated U.S. crude production, as output fell by -1.500 mmb/d last week, the biggest weekly drop in EIA data going back nearly four decades. Now, offshore producers are still in recovery mode with just 60% of production back. The Sept STEO forecast decreased its US crude expectations thru 2021 by -0.40 mmb/d, nowhere near the Q4/19 peak of 12.88 mmb/d, with Q4/21 US crude of 11.28 mmb/d (down 1.60 mmb/d from peak). In US oil production commentary, the EIA wrote "total U.S. crude oil production averaged 11.3 million b/d in June—the most recent monthly historical data point. We forecast it will remain near that level through the end of 2021 before increasing to an average of 11.7 million b/d in 2022, driven by growth in onshore tight oil production. We expect growth will result from operators beginning to increase rig additions, offsetting production decline rates." The EIA DPR has the effectively flat expectations for Sept/Oct. The EIA Form 914 June actuals were 207,000 mb/d above the weekly estimates average of 11.10 mmb/d for June, following a similar trend from May's +392,000 mmb/d underestimate.

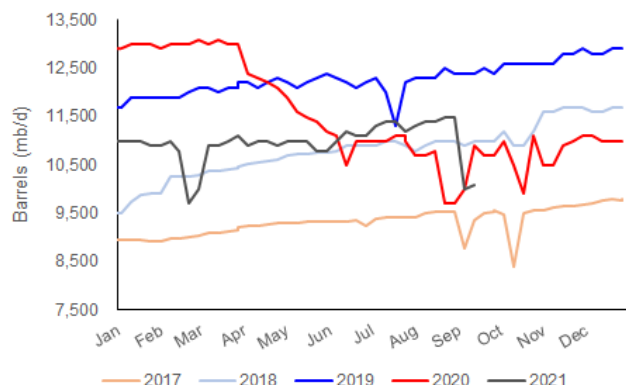
Figure 21: EIA's Estimated Weekly US Oil Production

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						

Source: EIA

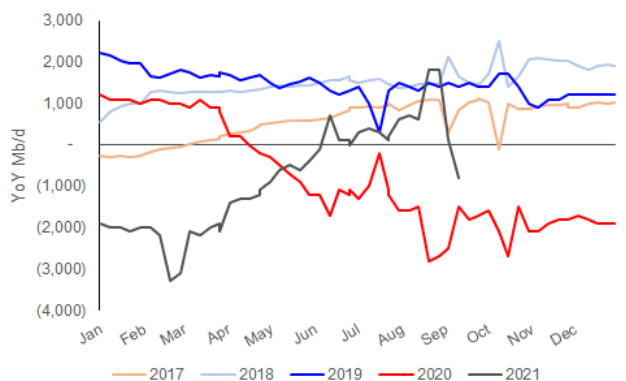
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 22: US Weekly Oil Production



Source: EIA, SAF

Figure 23: YoY Change in US Weekly Oil Production



Source: EIA, SAF

Oil – EIA DPR continues to estimate relatively flat shale/tight oil production

The EIA issued its Drilling Productivity Report Sept 2021 on Monday [\[LINK\]](#), which is the EIA’s forecast for oil and natural gas production from the major shale/tight oil and gas basins for the current month (in this case Sept) and the next month (in this case Oct). (i) The takeaway for shale/tight oil is a revision down for September with a slight increase expected towards year end. (ii) The revision of -17,000 b/d comes from Hurricane Ida incubating refineries along the Gulf Coast. (iii) The EIA forecasts October at 8.135 mmb/d, up +69,000 b/d MoM and 0.285 mmb/d YoY. (iv) Basins continue to be flat this month save for the Permian, up +53, 000 b/d. YoY most basins are down, with Permian continuing to ramp up at +0.496 mmb/d YoY. The total US shale/tight oil production is now +0.285 mmb/d YoY. (v) US shale/tight oil production peaked at 9.158 mmb/d in Nov 2019. (vi) Note that shale/tight oil is approx. ~70% of total US production, so whatever the trends are for shale/tight oil are the trends for US oil in total. Below is our table of running DPR estimates of shale/tight oil production and our graph of MoM changes in major shale/tight oil production. Below is our table of running DPR estimates of shale/tight oil production and our graph of MoM changes in major shale/tight oil production.

US shale/tight oil production

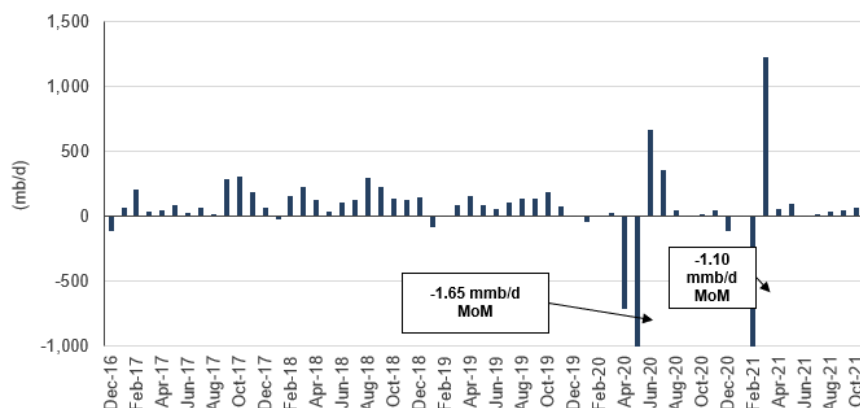
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 24: MoM Change – Major Shale/Tight Oil Production

Thousand b/d	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	August	Sept	Oct	Oct YoY	Oct less Sept
Anadarko	404	444	432	423	309	386	373	361	353	354	370	369	367	-37	-2
Appalachia	130	122	126	128	123	126	126	127	128	131	129	125	126	-4	1
Bakken	1,242	1,237	1,204	1,166	1,106	1,129	1,118	1,108	1,102	1,116	1,139	1,139	1,144	-98	5
Eagle Ford	1,116	1,111	1,075	1,054	882	1,062	1,045	1,032	1,027	1,043	1,054	1,053	1,053	-63	0
Haynesville	34	34	35	34	28	33	33	32	32	34	34	34	34	0	0
Niobrara	594	588	574	571	556	544	534	524	516	540	555	576	585	-9	9
Permian	4,330	4,359	4,308	4,354	3,546	4,471	4,510	4,555	4,607	4,647	4,756	4,773	4,826	496	53
Total	7,850	7,896	7,752	7,729	6,549	7,751	7,739	7,738	7,765	7,865	8,037	8,069	8,135	285	66

Source: EIA Drilling Productivity Report

Figure 25: MoM Change – Major Shale/Tight Oil Production



Source: EIA Drilling Productivity Report

Oil – North Dakota July oil and natural gas production down MoM

On Friday afternoon, the North Dakota Industrial Commission posted its Director’s Cut, which includes July oil and natural gas production data [\[LINK\]](#). The headline on the Aug numbers was that North Dakota July oil production was 1.078 mmb/d, which was down 4.5% MoM but from June 2021 production of 1.128 mmb/d, but +3.4% YoY from July 2020 production of 1.042 mmb/d. North Dakota July natural gas production. Note that the Bismarck Tribune reporting explains why July production was done, but we raise our own questions on the July data and why we should watch North Dakota August data. Our Supplemental Documents package includes excerpts from the Director’s Cut.

North Dakota production down MoM

Figure 26: North Dakota Oil Production By Month

(b/d)	2016	2017	2018	2019	2020	2020/2019	2021	2021/2020
Jan	1,122,462	981,380	1,179,564	1,403,808	1,430,511	1.9%	1,147,377	-19.8%
Feb	1,119,092	1,034,248	1,175,316	1,335,591	1,451,681	8.7%	1,083,554	-25.4%
Mar	1,111,421	1,025,690	1,162,134	1,391,760	1,430,107	2.8%	1,108,906	-22.5%
Apr	1,041,981	1,050,476	1,225,391	1,392,485	1,221,019	-12.3%	1,123,166	-8.0%
May	1,047,003	1,040,995	1,246,355	1,394,648	859,362	-38.4%	1,128,042	31.3%
June	1,027,131	1,032,873	1,227,320	1,425,230	893,591	-37.3%	1,128,185	26.3%
July	1,029,734	1,048,099	1,269,290	1,445,934	1,042,081	-27.9%	1,077,789	3.4%
Aug	982,011	1,089,318	1,292,505	1,480,475	1,165,371	-21.3%		
Sept	971,760	1,107,345	1,359,282	1,443,980	1,223,107	-15.3%		
Oct	1,043,693	1,183,810	1,392,369	1,517,936	1,231,048	-18.9%		
Nov	1,034,484	1,194,920	1,375,803	1,519,037	1,227,138	-19.2%		
Dec	942,322	1,182,836	1,402,741	1,476,777	1,191,429	-19.3%		

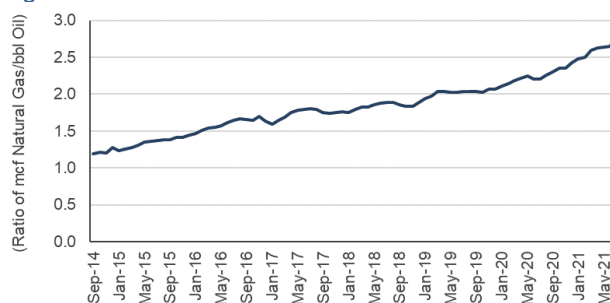
Source NDIC, NDPA

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

North Dakota gas-oil ratio increases as Bakken matures

One of the long-term trends that we have been highlighting for all of the US tight/shale oil plays that produce associated natural gas and NGLs is that, over time, the percentage of natural gas increases in the production. This is the case for all the oil plays with associated natural gas, not just the Bakken. We see this clearly in North Dakota where the gas-oil ratio continues to increase. The gas-oil ratio in July was 2.77, vs July 2020 of 2.21, July 2019 of 2.04, July 2018 of 1.89, and July 2017 of 1.81. Below is our running graph of North Dakota gas-oil ratio updated for the new NDIC April production data.

Figure 27: North Dakota Gas-Oil Ratio



Source: NDIC, NDPA

North Dakota says lower MoM production is due to gas plant maintenance

Every month, we look to the Bismarck Tribune's monthly story on the press conference releasing the Director's Cut as there is always extra color or insight from quotes by NDIC Director Lynn Helms. This month's story was titled "17 carbon storage projects eye North Dakota; state loses status as 2nd-biggest oil producer" [\[LINK\]](#). Helms was not discouraged by the drop in status, as a new carbon storage industry emerges in the state. From the article, "North Dakota produced 1.078 barrels of oil per day in July, the most recent month for which data is available. That marks a 56,000-barrel-per-day or 5% drop from June. Helms anticipates production will grow again in the future, but he attributed the drop to five outages at natural gas processing plants this summer. Those plants were undergoing upgrades or maintenance, as is common in the summer, said Justin Kringstad, director of the North Dakota Pipeline Authority. And although they process gas, not oil, their temporary closures had an impact on the production of both." Our supplemental documents package includes the Bismarck Tribune report.

Aug detailed data raises questions on North Dakota oil production & DUCs

The Bismarck Tribune report seems to explain why July production was down MoM. However, before we saw their report, we looked at the backup detail data and there seems to be more at work or at least the detailed data raises questions about the near term growth potential. On Friday, we tweeted [\[LINK\]](#) "July was not a good mth for #Bakken #Oil. Production -5% MoM to 1.078 mmbd despite all time record high 16,881 wells on production. Big reduction in NDIC est wells waiting on completion - 159 MoM & big increase +243 MoM in inactive wells. See definitions below." The detail shows a big drop in wells waiting on completion and a big increase in inactive wells. June has 20 rigs, July had 23. If we assume 1.5 wells per rig, then call it 30 to 35 wells drilled. Wells completed in July were 47, so in theory, there should have been approx. 12 to 17 decline in DUCs. But NDIC shows wells waiting on completion dropped from 680 in June to 521 in July. That's 159 down MoM, or 142 to 147 bigger

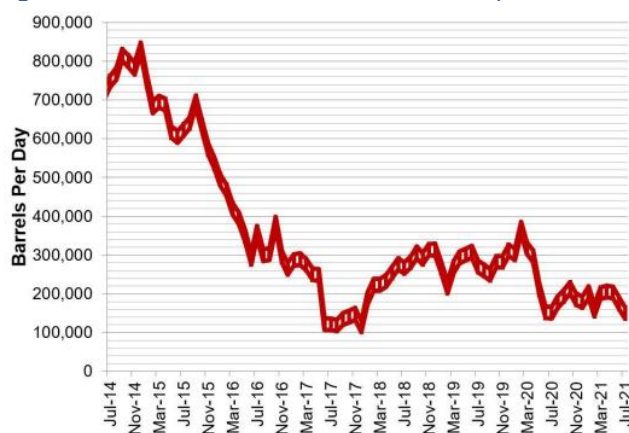
decline in DUCs than expected. The wells waiting on completion are an estimate. Note the NDIC definition of wells waiting on completion is “*The number of wells waiting on completions is an estimate on the part of the director based on idle well count and a typical five-year average. Neither the State of North Dakota, nor any agency officer, or employee of the State of North Dakota warrants the accuracy or reliability of this product and shall not be held responsible for any losses caused by this product. Portions of the information may be incorrect or out of date. Any person or entity that relies on any information obtained from this product does so at his or her own risk*”. However, NDIC increased the number of “inactive” wells by 243 from 1,839 in June to 2,082 in July. Inactive wells includes the total of (i) IA: inactive shut in >3 months and <12 months, and (ii) IB = abandoned (Shut in >12 months). For the month of July, the data suggests the NDIC looked at the wells waiting on completion and moved a lot of them to inactive. This is why we believe we need to keep an eye on North Dakota oil production. At a minimum, reducing the number of wells waiting on completion provides less near term production support.

Oil – North Dakota crude by rail down MoM to 150,416 b/d in July

The North Dakota Pipeline Authority also posted its monthly update “*July 2021 Production & Transportation*” [\[LINK\]](#). Please note that we always go to the backup excel sheets from the North Dakota Pipeline Authority for more detailed numbers of crude by rail out of North Dakota. The NDPA Monthly Update (graph below) report only provides rounded numbers, and these rounded numbers are not accurate enough to match the graphs. In the backup excel, the NDPA estimates crude by rail in July was a low of 135,416 b/d and a high of 165,416 b/d for an average of ~150,416 b/d. This is down from June of the June low of 159,589 b/d to high of 189,589 b/d for an average of ~174,589 b/d. Note that June’s numbers were revised down 2,760 b/d. Below is a chart from the NDPA monthly update showing the crude by rail volumes since 2013. Our Supplemental Documents package includes excerpts from the NDPA monthly update.

**North Dakota
CBR down in July**

Figure 28: Estimated North Dakota Rail Export Volumes



Source: North Dakota Pipeline Authority

Oil – Michigan seeks end to “unproductive” Line 5 mediation

There isn’t any surprise that mediation between Enbridge and Michigan on Line 5 isn’t leading to an agreement. Our expectation has been that mediation wouldn’t result in a deal and that the dispute would move to some sort of court battle. On Thursday, MLive, Michigan news, reported [\[LINK\]](#), that talks between the state of Michigan and Enbridge, concerning

**No Line 5
mediation deal**

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Line 5, were unproductive. In the report, “Michigan Attorney General Dana Nessel asked U.S. District Judge Janet Neff to consider the sessions “completed without a settlement” following a Tuesday motion asking Neff to prohibit mediator Gerald Rosen from including anything in his pending report beyond the participants and whether they reached an agreement.” During the latest mediation session on Sept 9, the state said they had no desire to continue the mediation process as it would be unproductive to them. The state considers Line 5 to be operating illegally as Enbridge continued operations, in defiance of a May 12 deadline to shutdown. Enbridge has filed a counter suit and wants Neff to give a ruling that only the federal Pipeline and Hazardous Materials Safety Administration can order the pipelines closure. Our Supplemental Documents package include the MLive report.

It will be an expensive and potentially cold winter in Michigan if Line 5 is shut

Michigan is trying to get Line 5 shut down right now. If they were to somehow be successful, then Michigan better hope it is a very warm winter. Propane prices are the highest level since 2014. On Thursday, we tweeted [\[LINK\]](#), “better hope for a hot winter in Michigan if [@GovWhitmer](#) succeeds in her effort to shut down [\\$ENB #Line5](#). Otherwise, it won't just be very expensive [#Propane](#) this winter but potentially some propane shortages. Line 5 supplies 65% of Upper Peninsula & 55% of statewide propane [#OOTT](#)”. Our tweet included the Enbridge brief on what happens if Line 5 is shut down. Enbridge noted that Line 5 supplies 65% of propane demand in Michigan’s Upper Peninsula, as well as supplying 55% of Michigan’s statewide propane needs. Below is a graph depicting propane prices since 2014. Our Supplemental Documents package includes the Enbridge impact of a Line 5 shut down.

Figure 29: US Propane Prices since 2014



Source: Bloomberg

Oil – Covid outbreaks in oil sands facilities up from 5 to 7 this week

Wood Buffalo posted a Sept 16 Covid update [\[LINK\]](#). On Wednesday, Alberta declared a state of public health emergency [\[LINK\]](#) regarding Covid and implemented new health measures and restrictions. Covid cases have been increasing much faster in Alberta than other jurisdictions. Given this backdrop of increasing Covid cases in Alberta, we shouldn't be surprised to see that, versus the Sept 9 update, the number of oil sands facilities with Covid outbreaks increased from 5 to 7. The continuing outbreaks are CNRL Albian, CNRL Horizon, CNRL Kirby Jackfish, Private Gathering Area and Suncor Fort Hills. New outbreaks this week were at MEG Christina Lake and Suncor Firebag.

Covid in oil sands

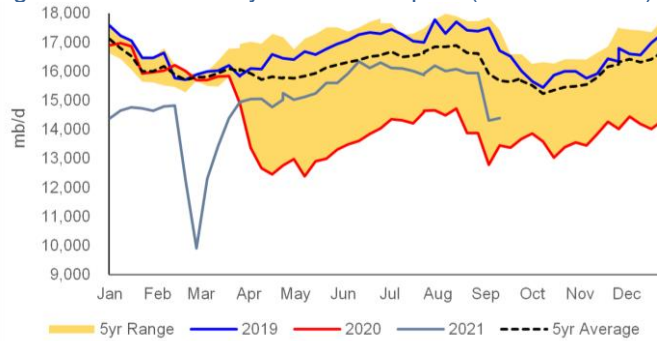
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Oil – Refinery inputs +0.899 mmb/d YoY at 14.387 mmb/d, flat WoW

There wasn't a big change in refinery inputs because there wasn't a big change in Gulf Coast refineries yet to return to full operations post Hurricane Ida. Crude inputs to refineries were effectively flat, up +0.085 mmb/d for the Sept 10 week to 14.387 mmb/d and are +0.899 mmb/d YoY. Refinery utilization was up 0.2% to 82.1%, which is +6.3% YoY. Total products supplied (i.e., demand) was also effectively flat WoW, down -0.042 mmb/d to 19.911 mmb/d. Total demand is +6.114 mmb/d from the April 10, 2020 low of 13.797 mmb/d, and is up +2.885 mmb/d YoY. Motor gasoline was down -0.716 mmb/d at 8.892 mmb/d from 9.608 mmb/d last week. The four-week average of gasoline demand dropped to 9.41 mmb/d, the lowest since June. Not a surprise, with the driving season over, demand tends to fall. Below is our graph of crude inputs to US refineries and our graph of US motor gasoline supplied.

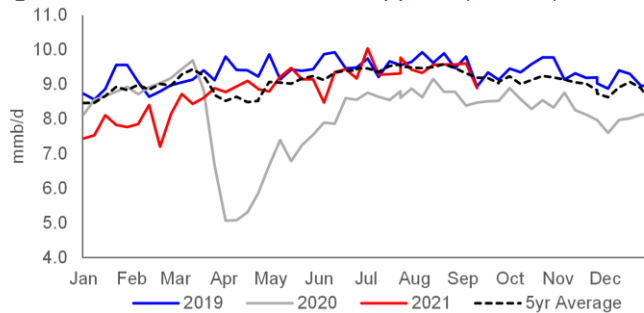
Refinery inputs flat WoW

Figure 30: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA, SAF

Figure 31: US Motor Gasoline Supplied (mmb/d)



Source: EIA, SAF

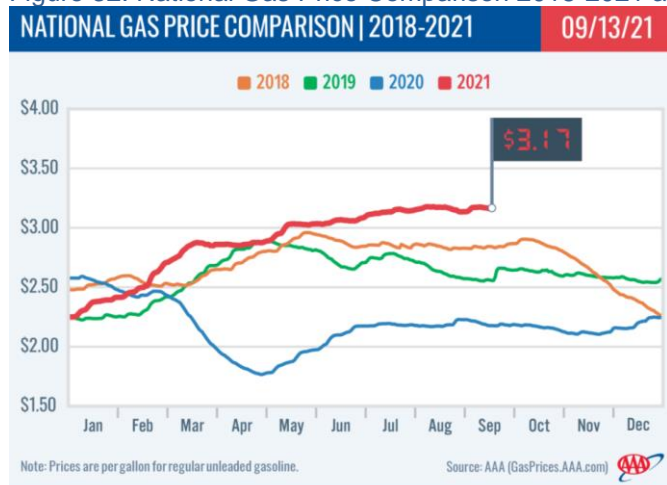
Oil – Biden going after bad actors/pandemic profiteers” on gasoline price fraud

We doubt that any refiners are worried about Biden coming after them, so we aren't sure who Biden will be going after for high gasoline prices. But it was interesting to see Biden use the word fraud. Below is the AAA National Gas Price Comparison as of Sept 13. On Thursday, Biden spoke on middle class economy and Bloomberg transcripts quoted him “*We're also going after the bad actors and pandemic profiteers in our economy. There's lots of evidence that gas prices should be going down, but they haven't. We're taking a close look at that. Taxpayers in this country also have paid for extraordinary effort to keep our country going over the past year or so. Unlike the last administration, which resisted oversight and allowed taxpayers to be victimized by fraud.*”

Biden after “bad actors” on gasoline price

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 32: National Gas Price Comparison 2018-2021 as of Sept 13, 2021



Source: AAA

Oil – US “net” oil imports down -0.330 mmb/d WoW at 3.137 mmb/d

US “NET” imports were down -0.330 mmb/d to 3.137 mmb/d for the Sept 10 week. US imports were down -0.048 mmb/d to 5.761 mmb/d. US exports were up +0.282 mmb/d to 2.624 mmb/d. The WoW decrease in US oil imports was driven by US’s top 10 imports by country, which was down -0.202 mmb/d. Some items to note on the by country data. (i) Canada was down this week by -0.380 mmb/d to 3.200 mmb/d, which is now ~0.500 mmb/d below the average levels in Jan/Feb of 2020. (ii) Saudi Arabia was up +73,000 b/d to 0.396 mmb/d this week. (iii) Colombia was down -145,000 to 0. (iv) Ecuador resumed imports this week, up +174,000 b/d. (v) Iraq was down -56,000 b/d to 50,000 b/d. (v) Venezuela remained at 0 due to US sanctions. (vi) Mexico was up by 166,000 b/d to 0.538 mmb/d.

US “net” oil down WoW

Figure 33: US Weekly Preliminary Oil Imports By Major Countries

US Weekly Preliminary Crude Imports By Top 10 Countries (thousand b/d)													
	July 02/21	July 09/21	July 16/21	July 23/21	July 30/21	Aug 06/21	Aug 13/21	Aug 20/21	Aug 27/21	Sept 03/21	Sept 10/21	WoW	
Canada	3,744	3,480	3,611	3,476	3,228	3,371	3,057	3,555	3,612	3,580	3,200	-380	
Saudi Arabia	316	347	359	363	351	302	363	286	345	296	369	73	
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0	
Mexico	408	648	797	621	634	601	629	595	674	372	538	166	
Colombia	154	140	144	144	141	293	143	370	71	145	0	-145	
Iraq	229	182	480	145	82	120	150	77	174	106	50	-56	
Ecuador	0	95	171	168	46	150	197	261	195	0	174	174	
Nigeria	142	187	195	55	212	150	214	95	43	116	82	-34	
Kuwait	0	0	0	0	0	0	0	0	0	0	0	0	
Angola	0	0	0	0	0	0	0	0	0	0	0	0	
Top 10	4,993	5,079	5,757	4,972	4,694	4,987	4,753	5,239	5,114	4,615	4,413	-202	
Others	882	1,142	1,340	1,535	1,738	1,409	1,597	918	1,226	1,195	1,348	153	
Total US	5,875	6,221	7,097	6,507	6,432	6,396	6,350	6,157	6,340	5,810	5,761	-49	

Source: EIA

Source: EIA, SAF

Oil – Pemex makes insignificant decrease in 2021 and 2022 oil production forecasts

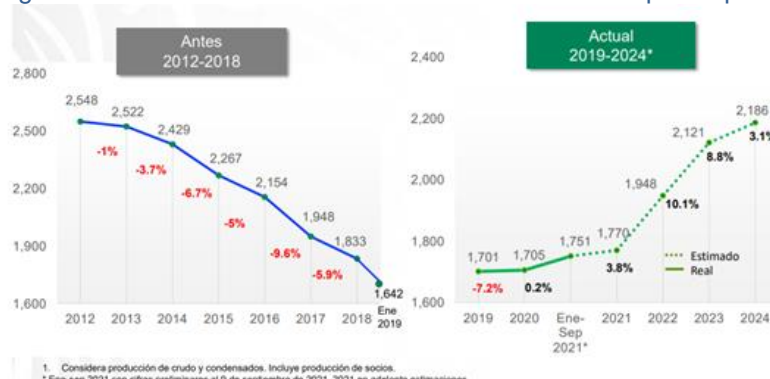
On Monday, Pemex posted a new investor presentation [LINK]. There are only insignificant changes to production forecasts with slight reductions to both 2021 and 2022. Pemex now forecasts 2021 production at 1.770 mmb/d, was 1.801 mmb/d. Pemex now forecasts 2022 production at 1.948 mmb/d, was 1.974 mmb/d. The new slide deck also noted exports were down a bit in August due to the fire, but expected to return in Sept. Separately, Bloomberg reported [LINK], that the country’s finance minister lowered preliminary estimates of output, to 1.857 mmb/d, from 2.027 mmb/d in an April estimate. Bloomberg reported “It seems that they have not learned,” he said, predicting that Pemex will fail to meet the lower target. The

Insignificant changes to Pemex forecast

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

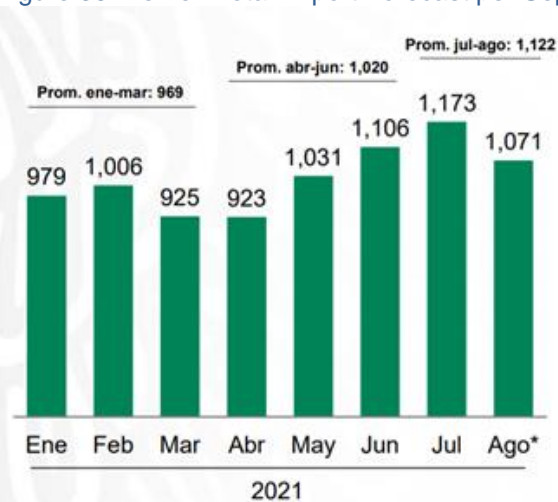
Finance Ministry estimates oil prices will average \$42.10 a barrel next year, up from a preliminary forecast of \$30 a barrel at the start of April. The numbers are part of a budget proposal that would increase Pemex’s spending by just 0.6% next year, to 544.6 billion pesos (\$25 billion). Our Supplemental Documents package includes excerpts from the Pemex Sept 13 slide deck.

Figure 34: Pemex Total Crude Oil Production Forecast per Sep slide deck



Source: PEMEX

Figure 35: Pemex Total Export Forecast per Sep 13 slide deck



Source: PEMEX

Oil – Maybe Mexico will be able to hit its modest growth with big budget allocation

Mexico oil production has been in decline for over 15 years, and is basically half of what it was in 2005. But at least so far in 2021, it looks like Mexico oil production has finally been finding a bottom for production and we have to believe higher oil prices and higher cash flows are providing more capex for production maintenance and development. Pemex only forecasts increasing production in 2022 and 2023. And perhaps they have a chance finally to hit some growth targets given the big budget being put forward by AMLO. On Friday, Bloomberg reported “Mexican President Andres Manuel Lopez Obrador has offered to raise national oil company (NOC) Pemex’s budget for next year to about \$32bn in the hope of

Big budget allocation to Pemex

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

boosting crude production. The company's proposed budget for 2022 would be 17% above the 2021 figure and would include operational spending, according to a Bloomberg report. It earmarks more than half of the total \$32bn, or around \$18bn, for investment in exploration and production, a 26% year-on-year increase, the news agency noted." Our Supplemental Documents package includes the Bloomberg report.

Oil – OPEC MOMR increases 2022 demand growth by +0.9 mmb/d

OPEC released its Monthly Oil Market Report on Monday. OPEC appeared to lower expectations in this month's MOMR which reported a decrease in the oil demand forecast. Notable changes include a +0.9 mmb/d increase in 2022 demand, now above pre-Covid demand. (i) There was no change in 2021 oil demand growth of +6.0 mmb/d YoY but the 2021 average is up to 96.69 mmb/d from 96.57 due to the revision from 2020. Q3/21 demand expectations were revised up, while Q4/21 was revised down with increased risk from Covid-19 Delta Variant clouding demand prospects. (ii) Increased oil demand growth in 2022 by +0.9 mmb/d to +4.2 mmb/d. This brings the 2022 demand average to 100.8 mmb/d, up +0.98 mmb/d from last month's forecast of 99.86 mmb/d, now exceeding pre-pandemic levels; Q4/22 now forecasts 102.81 mmb/d well above Q4/19 demand of 100.79 mmb/d. In a statement, the oil demand forecast was *"revised higher by around 0.9 mb/d compared to last month's report, as the pace of recovery in oil demand is now assumed to be stronger and mostly taking place in 2022. As vaccination rates rise, the COVID-19 pandemic is expected to be better managed and economic activities and mobility will firmly return to pre-COVID-19 levels. The revisions are based in both the OECD and non-OECD regions, with steady economic developments expected to support the partially delayed recovery in oil demand in various sectors"*. As previously mentioned in our August 15th Energy Tidbit, very unusual seasonal demand was evident with Q1/22 down -2.99 mmb/d QoQ. Unsurprisingly, they adjusted the Q1/22 demand up +1.16 vs the Aug MOMR. (ii) OPEC Aug production per "secondary sources" was down 0.15 mmb/d to 26.611 mmb/d, revised from the Aug report of 26.657 mmb/d. Reminder that OPEC+ agreed to a +0.4 mmb/d MoM in Aug. Nothing unusual on the country-by-country basis, Nigeria was down -0.114 mmb/d to 1.271 mmb/d; Iran remained flat at 2.485 mmb/d. Venezuela flat at 0.53 mmb/d, holding steady over 0.5 mmb/d in 2021. Demand for OPEC crude in 2020 is unchanged at 22.75 mmb/d. 2021 was revised +0.03 mmb/d to 27.7 mmb/d, +4.9 YoY. 2022 demand for OPEC crude is +1.1 mmb/d YoY to 28.7 mmb/d. (iii) Non-OPEC supply growth was revised down for 2021, with no change to 2022 +2.99 mmb/d YoY. A minor revision to 2020 demand +0.02 mmb/d to 62.93 mmb/d. 2021 forecast was down from +1.09 mmb/d YoY to +0.92 mmb/d YoY, due to supply interruptions stemming from the Mexican offshore fire, and the impact of Hurricane Ida in the Gulf of Mexico. Key Non-OPEC supply growth for 2021 occurred in Canada +0.32 mmb/d YoY, Russia +0.19 mmb/d YoY, China +0.13 mmb/d, US +0.08 mmb/d, and Norway +0.07 mmb/d YoY. The UK saw the biggest decline of -0.11 mmb/d YoY. 2022 growth was practically flat at +2.95 mmb/d YoY from +2.94 mmb/d. Key YoY growth areas for 2022 are Russia at +1.00 mmb/d, US +0.81 mmb/d, Brazil +0.23 mmb/d, Norway +0.18 mmb/d, Canada +0.17 mmb/d. Biggest YoY decline is Indonesia with -0.06 mmb/d. The US +0.81 mmb/d YoY growth is split tight/shale +0.56 mmb/d, GoM +0.11 mmb/d, conventional crude -0.07 mmb/d, unconventional NGLs +0.20 mmb/d, Conventional NGLs -0.05 mmb/d, and Biofuels/Other liquids +0.07 mmb/d. (iv) OECD commercial oil stocks for July estimates 57.2 mmb below 2015-2019 average. Consequently, July is estimated +10.5 mmb MoM to 2.912 mmb, 122 mmb below 5 yr average and -57.2 below 2015-2019 average. Our Supplemental Documents package includes the OPEC MOMR.

**OPEC increases
2022 demand
forecast**

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Oil – IEA OMR: OECD inventories 120.3 mmb below pre-Covid 2015-2019 average**IEA, Demand rebounds into 2022**

The IEA released its monthly Oil Market Report for September on Tuesday. They only release very limited public info and Bloomberg only provided tables and reporting on some items rather than their normal detailed report. (i) The report was supportive of near-term oil prices with insignificant changes to demand and non-OPEC supply. Good inventory data for July that was 120.3 mmb below the 2015-2019 average. OPEC+ will observe difficulties meeting supply increases, assuming core members remain reasonably disciplined. IEA forecasts strong demand momentum in Q4/21 despite Q3/21 being hit by Delta. (ii) There was no real overall change in 2021 and 2022 combined forecast, growth was revised down for 2021 due to Delta with demand averaging 96.1 mmb/d with YoY demand growth of +5.2 mmb/d. 2022 was revised up to observe the Q4 surge in 2021, set to average 99.4 mmb/d or +3.2 mmb/d YoY. The IEA wrote “*Global oil demand is estimated to have declined for three straight months due to a resurgence of Covid-19 cases in Asia. As a result, 3Q21 has been revised down by 200 kb/d since last month’s Report. Already signs are emerging of Covid cases abating with demand now expected to rebound by a sharp 1.6 mb/d in October, and continuing to grow until end-year.*” (iii) Non-OPEC supply growth was hindered by outages resulting from Hurricane Ida, these were key factors in Aug and Sept supply and demand balance. IEA wrote “*world oil supply fell 540 kb/d m-o-m in August to 96.1 mb/d and is expected to hold steady in September as unplanned outages offset increases from OPEC+. Hurricane Ida shut in 1.7 mb/d of oil production along the US Gulf Coast at end-August, with potential supply losses from the storm approaching 30 mb. An uptrend in supply should resume in October as OPEC+ continues to unwind cuts, outages are resolved, and as other producers increase.*” US DOE announced Aug 23 the sale of 20mmb from the SPR; China is also tapping into its strategic reserve to dampen inflationary pressures. The 2021 average was revised down by 0.2 mmb/d to 63.7 mmb/d from 63.85 mmb/d. Note that Aug and Sep are normal North Sea maintenance season which is largely responsible for the seven year 0.9 mmb/d low. 2022 non-OPEC growth is revised up +3.0 mmb/d (was +2.95) mmb/d). 2021 average remains unchanged on a rounded basis at 66.7 mmb/d but was likely down marginally. (iv) OPEC+ August production down -0.15 mmb/d MoM. Bloomberg wrote “*total OPEC+ supply fell by 150k b/d to 41.58m b/d, as losses from Kazakhstan, Mexico and Nigeria offset gains from Saudi Arabia, Iraq and Russia.*” Reminder that OPEC+ agreed on +0.4 mmb/d in Aug. Bloomberg wrote on Russia, “*Russia’s crude-only output target for Sept. is 9.704m b/d. * Its August crude-only supply rose by 90k b/d to 9.71m b/d vs. a quota of 9.6m b/d/ * Russia’s total condensate production in August fell to 710k b/d after a fire at Gazprom’s processing plant in West Siberia.* The IEA expects Saudi Arabia and Russia’s major producers to increase production under the new OPEC+ deal. (v) OPEC’s Aug production remained unchanged from July at 26.68 mmb/d with a few immaterial country changes; Nigeria posting the biggest supply drop of 0.8 mmb/d due to operational issues at a terminal. Saudi was +0.1 mmb/d to 9.56 mmb/d, below Aug quota of 9.6 mmb/d. Iraq was +0.1 mmb/d to 4.07 mmb/d, 0.01 mmb/d above the Aug quota. Iran was unchanged at 2.5 mmb/d. Bloomberg wrote “*Angola’s output edged up to 1.13m b/d, but remains 200k b/d below its quota. Libya, also exempt from OPEC+ cuts, curbed output by 40k b/d to 1.14m b/d.*” (vi) Iran could sell off 59 mmb and condensate it’s floating storage and 78mmb if its nuclear deal is revived and sanctions are eased. This could see production ramping up in 2-6 months. (vii) OECD stocks for July estimates are 120.3 mmb below the 2015-2019 average. June was revised up from 2,850 to 2,884.4 mmb. IEA commented on July, “*OECD total industry stocks drew by 34.4 mb in July and stood at 2 850 mb, 185.7 mb lower than the 2016-2020 average and 120.3 mb below the pre-Covid five-year average. Preliminary data for the US, Europe and Japan show industry stocks decreased by a further 31.1 mb while crude oil held in short-term floating storage decreased by 20.3 mb to 101.7 mb in August. As a result, July is estimated at +10.5 mmb MoM to 2.912 mmb, 122 mmb below 5-yr average*

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

and -57.2 mmb below 2015-2019 average for days of forward cover, stand at 63.7 days in July, 11.6 days lower vs 2020, 1.2 days below 5 yr average but 1.5 days above 2015-2019 average. (viii) Call on OPEC crude for 2022 was revised to 27.2 mmb from 27.1 mmb/d; 2021 saw a call to 27.2 mmb/d from 27.0 mmb/d. Our Supplemental documents package includes the IEA release and the Bloomberg report.

Figure 36: IEA Global Demand Forecast By OMR Report Month

mmb/d	2019	2020	20-19	Q1/21	Q2/21	Q3/21	Q4/21	2021	21-20	Q1/22	Q2/22	Q3/22	Q4/22	2022	22-21
Sep 21	99.7	91.0	-8.7	93.4	95.1	97.2	98.8	96.2	5.2	98.2	98.9	100.3	100.7	99.5	3.3
Aug 21	99.7	91.0	-8.7	93.4	94.9	97.4	98.9	96.2	5.2	98.0	98.8	100.1	100.2	99.3	3.1
July 21	99.7	91.0	-8.7	93.6	94.7	98.1	99.4	96.4	5.4	98.2	98.7	100.3	100.6	99.5	3.1
June 21	99.7	91.0	-8.7	93.3	94.9	98.0	99.3	96.4	5.4	98.3	98.6	100.3	100.6	99.5	3.1
May 21	99.7	91.0	-8.7	93.1	94.6	98.3	99.6	96.4	5.4	-	-	-	-	-	-
Apr 21	99.7	91.0	-8.7	93.7	95.1	98.3	99.5	96.7	5.7	-	-	-	-	-	-
Mar 21	99.7	91.0	-8.7	93.9	95.0	97.8	99.2	96.5	5.5	-	-	-	-	-	-
Feb 21	99.6	91.0	-8.6	93.7	94.9	97.9	99.2	96.4	5.4	-	-	-	-	-	-
Jan 21	99.9	91.2	-8.7	94.1	95.2	98.1	99.0	96.6	5.4	-	-	-	-	-	-
Dec 20	99.9	91.2	-8.7	94.7	95.4	98.0	99.2	96.9	5.7	-	-	-	-	-	-
Nov 20	99.9	91.3	-8.6	94.9	95.8	98.4	99.1	97.1	5.8	-	-	-	-	-	-
Oct 20	99.9	91.7	-8.2	95.6	96.1	98.2	98.8	97.2	5.5	-	-	-	-	-	-
Sept 20	99.9	91.7	-8.2	95.6	95.8	98.2	98.9	97.1	5.4	-	-	-	-	-	-
Aug 20	99.9	91.9	-8.0	95.4	95.8	98.6	98.7	97.1	5.2	-	-	-	-	-	-

Source: IEA, SAF

Oil – IEA, increasingly clear low investment is “already impacting global supply”

We were bullish on oil in the 2020s before Covid and even more bullish since Covid has been a catalyst for taking capital away from oil investment for the 2020s. There is no question governments and capital providers are ensuring that oil investment is less than expected and that has to impact supply in the 2020s. We do not have access to the full IEA Oil Market Report so only have the IEA press release and Bloomberg’s tables and stories on the OMR. However, Bloomberg’s Javier Blas tweeted [\[LINK\]](#) on a key IEA warning that wasn’t in the free info. Blas tweeted “OIL MARKET: And an interesting tidbit from the @IEA monthly report, with the agency warning about “weak investment” in oil projects “already impacting global supply” | #OOTT #DeclineRatesMatter”. His tweet included the excerpt from the IEA OMR that said “It is becoming increasingly clear that weak investment, triggered by the pandemic and the uncertain path of future oil demand growth, is already impacting global supply.” We suspect the IEA doesn’t want to blame governments since they are aligned with governments pushing to reduce investment in oil. Regardless, it’s a reminder of why we see the bullish oil outlook for the 2020s.

IEA low investment already impacting supply

Chevron raises lack of investment risk

Its tough for many to appreciate that the lack of capex in oil in 2019, 2020 and 2021 has to lead to less oil supply in the future. There is an underlying decline rate to all oil production and capex is needed to arrest declines, and replace declines. Bloomberg interviewed Chevron CEO Wirth on Thursday [\[LINK\]](#). At the 17:40 min mark, Bloomberg asks do you think we are going to see a supply gap that OPEC can’t plug at some point? We made a transcript and Wirth replied “I think that’s an issue to watch. I think, in the short to medium term, we’ve still have OPEC and OPEC+ bringing production back. Longer term if we get strong demand growth, strong economic growth and we don’t have reinvestment to bring new supply to the market, we could see a tighter market.” Earlier in the memo, Wirth say they model “modest oil prices, I mean oil prices that look no higher than we have today, and similar for gas”. Bloomberg then asks if its \$55 to \$75? Wirth replies “that’s a reasonable fairway”

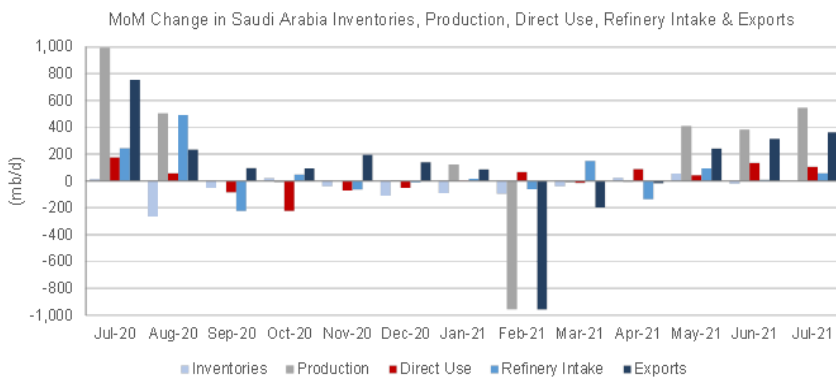
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Peak Saudi oil for electricity season

Oil – Saudi used 691,000 b/d of oil for electricity in July

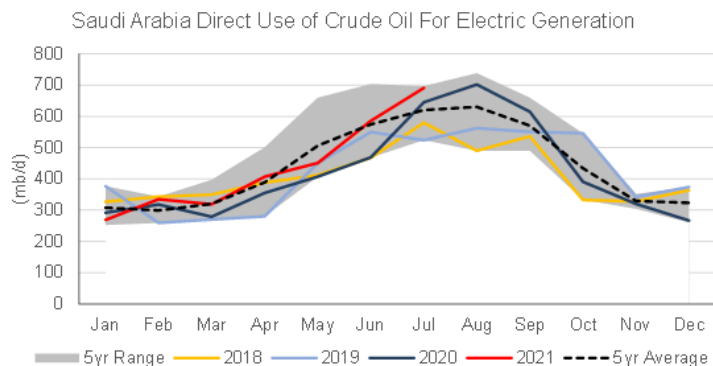
The JODI data for July was updated on Thursday [\[LINK\]](#). Saudi continued to increase oil production. Saudi’s direct use increased in July as the country enters its peak period for use of oil for electricity; this typically peaks in August. There was +20,000 b/d of unaccounted supply and 0 b/d of unaccounted demand. There was an immaterial draw to inventories, down 10,000 b/d this month. (i) Production was +547,000 b/d MoM to 9.474 mmb/d, with the continued gradual return from its voluntary 1 mmb/d production cuts. Exports also rose, but at a slower rate than production, being + 362,000 b/d MoM to 6.327 mmb/d. Direct use for electricity was up +105,000 b/d to 691,000 b/d. (ii) Inventories decreased slightly down - 10,000 b/d from 135,139 b/d to 135,105 b/d. Inventories remain at historically low levels, sitting below 150 mmb for the first time since Apr 2004, which was 149.8 mmb. (iii) Saudi Arabia has entered its peak months of using oil to generate electricity. As expected, Saudi used more oil for electricity in Jul vs Jun, with large increases resulting from the higher-than-average temperatures for the month. Jun was 586,000 b/d (vs Jun 2020 of +469,000 b/d), and Jul was 691,000 b/d (vs Jul 2020 of 645,000 b/d). Jul was below the latest 5 yr average of 697,000 b/d. Below are the AccuWeather Temp maps for Riyadh for July, Aug and Sep MTD. Careful they are different scales but look for oil for electricity to remain relatively flat as we continue in peak season. Below are our updated graphs for the Saudi JODI data for July.

Figure 37: MoM Saudi Inventories, Production, Direct Use, Refinery Intake & Exports



Source: JODI, Bloomberg

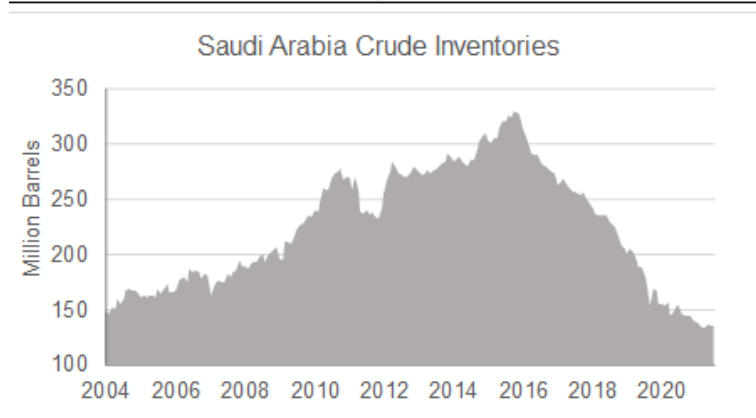
Figure 38: Saudi Arabia Direct Use of Crude Oil For Electric Generation



Source: JODI

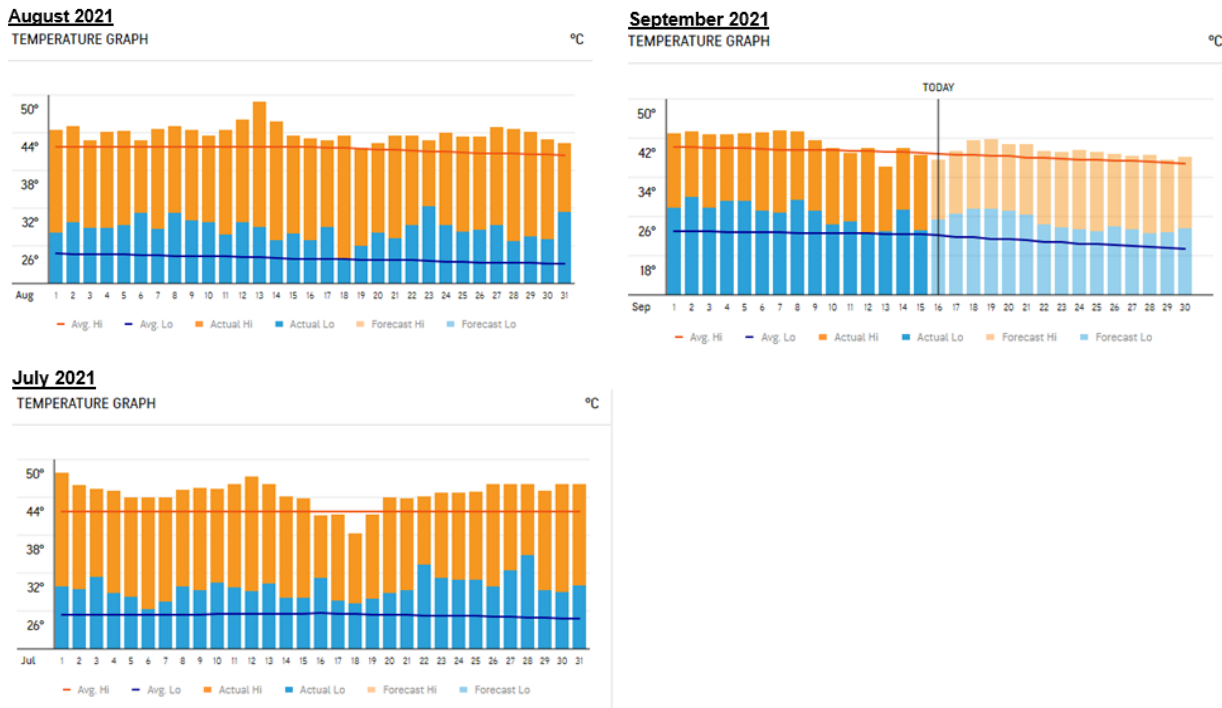
The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 39: Saudi Arabia Crude Oil Inventories (million barrels)
Jan 1, 2004 to Present



Source: JODI

Figure 40: Riyadh Temperature Recaps for July and Aug



Source: AccuWeather

Oil – Libya oil exports resumed after “young people” sit in resolved

We can’t help but wonder what is actually going on in Libya after seeing the two Libya National Oil Corporation press releases about the resumption of exports. The NOC says exports were reportedly held up by three separate sit-ins of young people at the major ports looking for jobs. We could believe another situation of oil workers wanting their back pay but we have to wonder if there was more than looking for jobs/education from these “young people”. The NOC wrote [LINK](#) “The National Oil Corporation (NOC) announces the

Libya oil exports resumed

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

resumption of crude oil export operations at the ports of Sidra and Ras Lanuf after a group of young people ended their sit-in inside the ports, which lasted for days. This came after Mr. Mustafa Sanalla, Chairman of the Board of Directors of the National Corporation, communicated with the notables and wise men in the region, who in turn intervened urgently to end the sit-in. They urged the protestors to engage in the programs of preparing and qualifying graduates, which the General Department of Human Resources Development at the National Oil Corporation supervises to implement in the near future.” The other NOC release [\[LINK\]](#) wrote “The National Oil Corporation announces the resumption of crude export operations at Al Hariga Oil Port after a group of young people ended their sit-in inside the port, which lasted for days. This came after a meeting held by the Chairman of the Board of Directors of the National Oil Corporation, Mr. Mustafa Sanalla and Mr. General Manager of Human Resources Development Department at NOC with a representative of the youth carried out a sit-in at the port. The National Oil Corporation has listened to all the demands of the protesting youth, which were represented in their request to obtain suitable job opportunities. NOC has expressed its understanding of the legitimacy of the demands, and its reservations about the means by which their demands were expressed, explaining to the youth the great technical and economic consequences of the oil closure. At the same time, NOC emphasized its full support for the peaceful demands and its keenness to provide suitable job opportunities for these young people and other graduates in all parts of the country, through the programs for preparing and qualifying graduates, which the management of the National Oil Corporation supervises to implement during the coming period.”

Oil – China 1st petroleum reserve auction is 7.38 mmb

China made the headlines with the confirmation that it will make its first sale from the petroleum reserves on Sept 24 to ease inflationary pressure [\[LINK\]](#). These are the Chinese equivalent to the US Strategic Petroleum Reserves. Notwithstanding, this being the first ever sale, markets didn't look at it as a game changer to near term oil prices. The initial auction will be for 7.38 mmb of crude with grades including Qatar Marine, Forties, Oman, Muban and Upper Zakum; these were stored in tanks last year. The announcement saw the Brent dip initially but recover to \$74/bbl. According to the agency' statement, participating companies must comply with national refinery industry policy, and have a sufficient import quota. This unprecedented move by China draws increased interest in future interventions to combat inflation; Bloomberg states, “China is signaling it's willing to use its reserve to try to influence the market.” Our Supplemental Documents package include the Bloomberg report.

China to hold 1st petroleum reserve auction

Oil – Vortexa estimates massive -23.63 mmb WoW decline in oil in floating storage

Sometime overnight, Vortexa revised their estimate for crude oil in floating storage as of Sept 17 versus the original estimate that was posted on the Bloomberg terminal at least up until ~9pm MT last night. It is still a massive WoW decline and we believe markets will be looking for other floating storage estimates (ie. Kpler) for their views prior to overnight trading of oil markets tonight. Earlier this morning, we tweeted [\[LINK\]](#) “Still massive -23.63 mmb WoW drop in floating #Oil storage to 67.30 mmb on Sept 17 in REVISED @Vortexa today vs Originally estimated yesterday 64.40 mmb. Still scramble to get other floating views before trading tonight. Bullish if no more changes. Thx @Vortexa @TheTerminal #OOTT.”

Vortexa floating storage

Sometime overnight, Vortexa revised its estimate but not by a huge amount. Bloomberg terminal posts the Vortexa Friday data on Saturdays. We were surprised by the massive draw and waited a couple of hours to see if any revisions were coming. Our first tweet was at 4:52pm Sat [\[LINK\]](#) “Scramble for #Oil markets to get other floating oil storage views before Sun night trading. @Vortexa estimates massive -26.21 mmb WoW to 64.40 mmb on 09/17. Back to 03/13/19 of 62.37 mmb. So massive made me look twice. Very bullish if no change.”

Thx @TheTerminal @Vortexa #OOTT". But even with the revised Sept 17 estimate of 67.30 mmb, its still a massive WoW decline of 23.63 mmb. And, at 67.30 mmb, this is the lowest floating oil storage level since 66.24 mmb on March 27, 2020. It is also well below the recent trough of 80.39 mmb on June 25, 2021. And is down 153.26 mmb vs the peak of 220.56 mmb on June 26, 2020. Below is the Bloomberg graph of the Vortexa data as originally estimated on Sat and as revised as of 4am MT this morning.

Figure 41: Vortexa Floating Storage Sept 17, 2021 – Original Est Sat Sept 18



Source: Bloomberg, Vortexa

Figure 42: Vortexa Floating Storage Sept 17, 2021 – Revised Est Sun Sept 19 4am



Source: Bloomberg, Vortexa

Oil – Bloomberg Oil Demand Monitor, traffic returns to New York

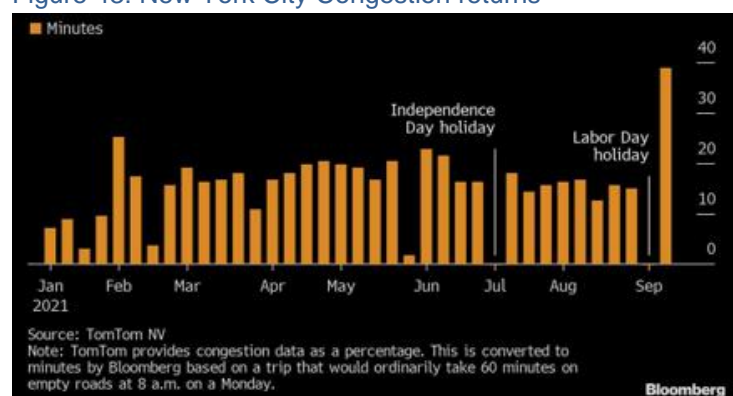
We recommend reading the weekly Bloomberg terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. Congestion is returning to cities around the world. New York City reported a +210% MoM gain in congestion with the highest traffic levels so far this year, returning to pre-Covid levels. Congestion was more intense around the world with increases in Tokyo, Los Angeles, Rome, Madrid and Mexico City while London and Paris surpassed 2019 levels. US demand for gasoline was 2% below 2019 levels, further indicating a return to normal in American driving habits. Toll data from Atlantis Group indicate France has surpassed traffic volumes, up 54% from the 2019 equivalent week, joining the other 5 monitored nations with a YoY increase. 11 of the 20 major markets reported WoW increases in seat capacity. Jet fuel demand gradually recovered though US seat capacity still struggled to remain above 2mm passengers per day. Exolum reported Spanish jet fuel consumption up 77% from August 2020, still down 41% from 2019.

Bloomberg's Oil Demand Monitor

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Worldwide seat capacity was 79 mm, down -31% from 2019. The increase continues to be driven by China’s domestic market recovery. US refinery processing saw a demand dip due to damages from Hurricane Ida along the Gulf Coast. Refinery capacity was utilized by 82% for the week ended Sept 3, down -13% from 2019. Below is a graph depicting New York City congestion levels. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

Figure 43: New York City Congestion returns



Source: Bloomberg

Oil & Natural Gas – 19 days since Ida, shut in is 0.42 mmb/d & 0.77 bcf/d

The latest BSEE shut-in estimates are as of 10:30am MT Sept 17. The BSEE advised that it was not going to be reporting on Sept 18 and Sept 19, but would resume reporting on Sept 20. As of Sept 17, its been 19 days since the peak of GoM shut-in from Hurricane Ida and the BSEE estimates there is 0.42 mmb/d of oil (23.2% of GoM) and 0.77 bcf/d of natural gas (34.4% of GoM) still shut-in production. As of Sept 17, the cumulative shut-in was 28.2 mmb and 35.1 bcf. Below is our running table of BSEE data.

Still big impact from Ida

Figure 44: BSEE Platforms/Rigs Evacuated, Shut-in Oil & Gas Production

Date	Platforms Evacuated		Rigs Evacuated		Oil - Shut-In (b/d)		Gas - Shut-In (mmcf/d)	
	Total	% of GOM	Total	% of GOM	Total	% of GOM	Total	% of GOM
2021-08-27	89	15.89%	1	9.09%	1,064,849	58.51%	1,088.0	48.79%
2021-08-28	279	49.82%	11	100.00%	1,653,335	90.84%	1,892.7	84.87%
2021-08-29	288	51.43%	11	100.00%	1,740,850	95.65%	2,090.7	93.75%
2021-08-30	288	51.43%	11	100.00%	1,721,809	94.60%	2,087.0	93.57%
2021-08-31	278	49.64%	9	81.82%	1,705,095	93.69%	2,107.0	94.47%
2021-09-01	278	49.64%	9	81.80%	1,705,095	93.69%	2,107.0	94.47%
2021-09-02	177	31.61%	6	54.55%	1,702,566	93.55%	2,035.0	91.29%
2021-09-03	133	23.75%	6	54.55%	1,698,557	93.33%	1,990.2	89.25%
2021-09-04	119	21.25%	6	54.55%	1,683,604	92.51%	1,915.4	85.89%
2021-09-05	104	18.57%	5	45.45%	1,607,340	88.32%	1,844.7	82.72%
2021-09-06	99	17.68%	5	45.45%	1,526,409	83.87%	1,801.4	80.78%
2021-09-07	79	14.11%	4	36.36%	1,443,800	79.33%	1,736.8	77.89%
2021-09-08	73	13.04%	4	36.36%	1,399,186	76.88%	1,722.7	77.25%
2021-09-09	71	12.68%	4	36.36%	1,391,865	76.48%	1,722.7	77.25%
2021-09-10	65	11.61%	3	27.27%	1,207,783	66.36%	1,684.7	75.55%
2021-09-11	62	11.07%	2	18.18%	1,121,169	61.60%	1,353.0	60.67%
2021-09-12	63	11.25%	1	9.09%	883,755	48.56%	1,212.9	54.39%
2021-09-13	47	8.39%	1	9.09%	793,522	43.60%	1,151.0	51.61%
2021-09-14	39	6.69%	0	0.00%	720,217	39.57%	1,074.8	48.20%
2021-09-15	36	6.43%	0	0.00%	537,193	29.52%	878.7	39.40%
2021-09-16	42	7.50%	0	0.00%	513,878	28.24%	878.6	39.40%
2021-09-17	41	7.32%	0	0.00%	422,078	23.19%	765.5	34.43%
Cumulative (mmb and bcf)					28.2		35.1	

Note: 09-01 was corrected, originally reported 249 platforms, 1,455,279 b/d, 1,8772 bcf/d shut in

Source: BSEE

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Oil & Natural Gas – Port Fourchon damage slowed down GoM oil & gas recovery

On Tuesday, we tweeted [LINK](#) on a great reminder Bloomberg report “Here’s why U.S. oil supplies took such big hit from Ida” that highlighted the key role Port Fourchon plays in the supply chain for the offshore GoM services. We tweeted “Good reminder why taking longer for #Oil #NatGas to recover from #HurricaneIda. #PortFourchon was hit hard by Ida and it is the primary jump off point helicopters/vessels to service offshore GoM platforms. Thx @DavidWethe @SergioChapa #OOTT.” Bloomberg wrote “After Ida, that wasn’t remotely possible. The monster storm’s direct hit on Port Fourchon a few hours before sundown on Aug. 29 completely disabled the primary jumping-off point for helicopters and vessels that service hundreds of offshore platforms and rigs. Even the lone road connecting Port Fourchon to the rest of the state -- Louisiana Highway 1 -- was knocked out of commission by Ida’s massive wall of sea water and the tons of sand it swept ahead. “When Port of Fourchon is out of service, it breaks a link in the chain,” said Winders, a Louisiana native who’s been working in the oil industry for four decades.” Our Supplemental Documents package includes the Bloomberg report.

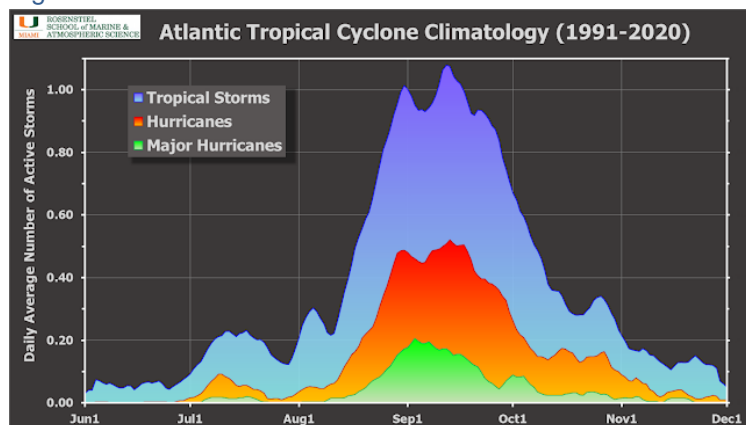
Port Fourchon is key GoM supply base

Oil & Natural Gas – Just past the historical peak of Atlantic hurricane season

Last week, Brian McNoldy (University of Miami’s Rosenstiel School of Marine and Atmospheric Science) posted his blog “When is the peak of hurricane season?” [LINK](#). He included the below graph based on the new normal 30-year period of 1990 – 2020. McNoldy wrote “one common metric would be the daily average of named storm (NS) activity. Using the new 1991-2020 “climate normal”, that peaks on September 12th, with a secondary peak on August 31st. But the daily average of major hurricanes peaks on September 3rd, and one might argue that those are much less prone to being over/under counted and are definitely more impactful when close to land.” McNoldy’s graph also reminds that we may be past the absolute normal peak, but we are still in the very active part of the Atlantic hurricane period thru mid-Oct. Our Supplemental Documents package include the McNoldy blog.

Just past the peak of Atlantic hurricane season

Figure 45: Atlantic Peak Hurricane Season



Source: Brian McNoldy, University of Miami’s Rosenstiel School of Marine and Atmospheric Science

Oil & Gas – Azerbaijan net exports 0.578 mmb/d of oil and ~1.1 bcf/d of natural gas

We continue to recommend adding the EIA’s country analysis briefs to reference libraries as good quick references, in this case its new EIA country executive summary [LINK](#) on Azerbaijan. Azerbaijan tends to go under the radar but it’s a decent size exporter of both oil and natural gas and exports revenue are central to Azerbaijan’s economy and government revenues. Azerbaijan’s crude oil reserves were estimated in January 2021 at 7 bnb. The

EIA’s country brief on Azerbaijan

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

national oil company, the State Oil Company of the Azerbaijan Republic (SOCAR), explores and produces all oil and gas in the country. In 2019 SOCAR produced 0.154 mmb/d accounting for 20% of total output. In 2020 petroleum and other liquids production was estimated to be 0.716 mmb/d with domestic consumption at 0.092mmb/d. Oil production occurs in the Caspian Sea and is exported West. Most oil is transported through the Baku-Tbilisi-Ceyhan pipeline (BTC); BTC runs well below it's capacity of 1.2 mmb/d, with exports averaging 0.578 mmb/d, including oil from Turkmenistan and Kazakstan. Crude exports were estimated at 0.568 mmb/d in 2020, primarily targeting European destinations; Italy received 34% of Azerbaijan's oil exports in 2020. Most of Azerbaijan's natural gas reserves are within the Shah Deniz offshore natural gas and condensate field, estimated at 60 tcf. Natural gas exports totaled 418 bcf (1.1 bcf/d) in 2019, with shipments primarily going through Georgia to southern Europe and a lesser volume going to Iran and Greece. Natural gas travels through Baku-Tbilisi-Erzurum (BTE) pipeline, connecting to the TANAP pipeline crossing Turkey, and the TAP pipeline running along the Adriatic Sea, into southern Europe. Our Supplemental Documents package includes the EIA brief.

Energy Transition – Canada election day tomorrow, Liberals rallied to be in the lead

As of our 7am MT news cut off, it looks like it was a good last 10 days of the election campaign for the Liberals who have moved from behind the Conservatives to in front and looking like poised to win. The current projects are putting them on track for another minority government, but some polls are pointing to still the chance for a majority. The Liberals had started to turn it around and it looks to have been reinforced by the Alberta and Saskatchewan Covid changes. The other interesting dynamic in the last week has been the strength of the NDP and PPC with Liberals concern the NDP will split the vote in some ridings, and the Conservative concern the PPC will do the same in other ridings, in particular Ontario. It seems like it could actually be a night where BC voting may make a difference. The other interesting aspect of the last week is that it hasn't seen many new policy announcements that has fueled the Liberals resurgence. Below is the seat count at the time of the election call. 170 seats are needed to have a majority.

Canada election tomorrow

Figure 46: House of Commons Seats as of Aug 10, 2021

	Lib.	CPC	BQ	NDP	GP	ind	Vacant	Total
Alberta	-	33	-	1	-	-	-	34
British Columbia	11	17	-	11	2	1	-	42
Manitoba	4	7	-	3	-	-	-	14
New Brunswick	7	3	-	-	-	-	-	10
Newfoundland and Labrador	6	-	-	1	-	-	-	7
Northwest Territories	1	-	-	-	-	-	-	1
Nova Scotia	10	1	-	-	-	-	-	11
Nunavut	-	-	-	1	-	-	-	1
Ontario	76	34	-	6	-	4	1	121
Prince Edward Island	4	-	-	-	-	-	-	4
Quebec	35	10	32	1	-	-	-	78
Saskatchewan	-	14	-	-	-	-	-	14
Yukon	1	-	-	-	-	-	-	1
	155	119	32	24	2	5	1	338

Source: House of Commons

Energy Transition – Chevron estimates \$0.5b to build 10 mmcf/d of renewable gas

It was interesting to see Chevron CEO Wirth highlight the lack of transparency for renewable natural gas in his Bloomberg interview on Sept 16. [\[LINK\]](#). At the 5:10 min mark, Bloomberg's Alix Steel asks what is the premium right now the end user is prepared to pay for green energy? We created a transcript of Wirth's response "... renewable natural gas in California, it's substantial BUT it comes via a credit system that is not very transparent to the customer and so the price that we ultimately receive on some of these products is higher than

Renewable gas is hugely expensive

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

it is for conventional natural gas but its not necessarily borne directly by the customer, it comes through a series of tradeable credits and things". Its clear that people don't realize the cost of renewable gas is 20, 30 times, maybe more higher than normal natural gas. This is clear from Chevron's presentation at its Tuesday energy transitions webcast. On Friday, we had a 3 part tweet. Part 1 [\[LINK\]](#) "1/3. Imagine if #NatGas home power/heat bills were going up 20 or 30x? @adsteel asks \$CVX CEO Wirth what is premium end user prepared to pay for green energy? "#RenewableNaturalGas in CA, it's substantial BUT it comes via a credit system that is not very transparent.. #NatGas". Part 2 [\[LINK\]](#) "2/2. ... to the customer and so the price that we ultimately receive on some of these products is higher than it is for conventional natural gas but its not necessarily borne directly by the customer, it comes through a series of tradeable credits and things" Thx @adsteel #NatGas". Part 3 [\[LINK\]](#) "3/3. \$CVX ~\$0.5b to build #RenewableNaturalGas of ~10 mmcf/d in <5 yrs & expect double digit returns. Vs a \$5 million dry #Marcellus #NatGas wells with 1st yr ave production >10 mmcf/d. Costs ultimately flow thru to consumer/taxpayer. #EnergyTransition will be expensive." Chevron says they expect to have double digit returns on their first 10 mmcf/d of renewable natural gas that will require ~\$0.5b. We compared that to the ~\$5 million cost of a Marcellus dry gas well that has 1st year average production of >10 mmcf/d. We believe Wirth is right, consumers don't know how much it costs for RNG to replace conventional natural gas.

Figure 47: Chevron renewable natural gas

Leading in renewable natural gas



Source: Chevron

Energy Transition – Many energy transition insights from Chevron

Chevron held its energy transition spotlight webcast on Tuesday and there were many energy transition insights in addition to the renewable natural gas economics noted above. (i) If we accept the numbers, forecasts and comments, Chevron reinforces the view that the Energy Transition is happening but it will be expensive. (ii) Don't commit to Net Zero and try to be realistic that getting to Net Zero requires technology advancements, ambitious govt policy and development of large offset markets. Rather they commit to "actions expected to drive a 35% reduction in upstream carbon intensity by 2028. Additional abatement projects after 2028 can reduce our emission intensity further. Our ultimate pathway to net zero will require technology advancements, more ambitious government policy and development of large offset markets." (iii) The numbers also show the oil and gas business is generating huge cash flow. Chevron is tripling the lower carbon capex to over \$10b between now and 2028 and was able to do so without taking capex away from their oil and gas businesses. (iv)

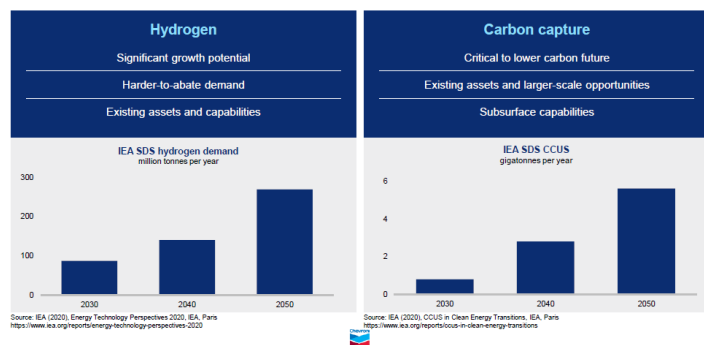
Chevron energy transition insights

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Split of energy transition capex. In the Q&A, mgmt replied *“But on the \$10 billion you can think of that is roughly \$3 billion on carbon capture and storage, and offsets another \$3 billion on renewable fuels, about \$2 billion on hydrogen, and about \$2 billion on greenhouse gas reduction activities within our own portfolio. That’s the view today”*. (v) Expecting double digit returns from their energy transition projects. We really think people are mistaking their use of the word *“competitive”* to say the returns are comparable to oil and gas. Chevron is very careful to say double digit returns without giving any numbers. In the Q&A, mgmt said *“we expect these to be competitive with our other businesses and frankly the kinds of things we’re looking at now, bit renewable, fuels, carbon capture, hydrogen offsets. We’ve got expectations for double-digit returns out of these things.”* (vi) In their opening remarks, we think they clearly indicated that energy transition returns aren’t comparable to oil and gas. they call oil and gas *“high-return”* vs *“profitable”* for the energy transition business. Mgmt said *“A strategy that combines a high-return, low-growth, lower carbon-intensity traditional business together with faster-growing, profitable, lower carbon, new energy businesses that leverage our strengths.”* (vii) Note they say double digits, but also say there are very wide error bars around their estimates. In the Q&A, mgmt said *‘So, over time, we’re going to find out how the returns in these businesses mature and they’ll be a function of the things we’ve already mentions, right, technology advancements, market development, policy, customer demand, and we’ve got assumptions on these things today. We’ve got our best view, but I’ve got to say, the error bars around them are wider than they would be around our traditional business because, these are new businesses, and they’re emerging businesses. And we’re stepping into this with our eyes wide open.’* (viii) Can’t see acceptable returns so won’t go into wind/solar as a business, only if linked to using renewable for operations. This is the issue we have been highlighting for wind and solar. In the Q&A, mgmt said *“If we look at renewable power, it’s hard to find even levered returns that get into the double digits on wind and solar, which is one of the reasons why that’s not part of our strategy. We think there’s plenty of capital. We think there’s plenty of capability and there’s good developers out there. We don’t see the opportunity to create competitive advantage or strong returns that benefit our portfolios.”* (ix) No surprise, focus on methane reduction. This is something that we have highlighted for several years for Cdn oil and gas companies efforts. (x) This is the first we have seen of our concern on keeping track of who is claiming what ie. how many people are claiming the same trees being planted. In the Q&A, mgmt said *“but one of the things we’re finding is, we build out our business in the early days is the ownership of that credit becomes very important, because it allows someone to make progress towards their declared ambition, and so it becomes a pretty important commercial element of any agreement that we enter into. And so, we haven’t necessarily assumed that we retain a 100% of those credits now. So, the -- you know what we’ve defined there, the 30 million tons would be what we think our reasonable expectation of what we can deliver and -- but how -- and there could be more to your point. I hope there is more, but how that gets allocated and who gets to take credit for it remains, I think, to be seen ultimately almost transaction by transaction. And then as you aggregate these things up, the issues of reporting become very real. And I think most of you have probably studied this. And if you have multiple players claiming the same reduction, you didn’t reduce 1 ton of carbon 10 times if you -- just because 10 different people some way can lay claim to that. And so, we’re trying not to -- not to get in a position, where we’ve laid out ambitions that we don’t believe are realistic and deliverable. So, we will continue to say more about that”*. (xi) We will have more in future memos on their focus on hydrogen and CCUS. Our Supplemental Documents package includes the transcript we made of Wirth’s key comments from the Bloomberg interview, excerpts from the Chevron presentation transcript and slide deck.

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

Figure 48: Chevron Hydrogen and Carbon Capture fit
Attractive sectors, strong strategic fit



Source: Chevron

Energy Transition – Does Biden’s new solar plan reflect 2021/22 cost increases?

Last week’s (Sept 12, 2021) Energy Tidbits memo highlighted the new DOE 300+ pages “Solar Futures Study”. (i) Our concern is that this document will be used to justify policy actions to accelerate solar and no one seems to question the economics or justification for why energy costs to customers won’t be higher. Last week’s memo highlighted one of the examples on how the Biden plan to increase it will likely be overlooked that the Biden plan to increase solar under its decarbonization plan involves great uncertainty and makes broad assumptions about advancements. People talk about greenwashing by corporates, but just assume all these broad uncertain assumptions are fine. One example is “Continued technological progress in solar—as well as wind, energy storage, and other technologies—is critical to achieving cost-effective grid decarbonization and greater economy-wide decarbonization. Research and development (R&D) can play an important role in keeping these technologies on current or accelerated cost-reduction trajectories. For example, a 60% reduction in PV energy costs by 2030 could be achieved via improvements in photovoltaic efficiency, lifetime energy yield, and cost.” (ii) Our concern on the DOE report didn’t seem to address the fact 2021 and 2022 solar costs have broken the trend of declining solar costs. IN the DOE report, they say “This scenario assumes more aggressive cost-reduction projections than the Reference scenario for solar as well as other renewable and energy storage technologies”. And then the DOE use the below table for cost assumptions on solar and battery capital costs. These costs are going higher in 2021 and 2022 and not lower. They start with 2020 as a base and then just decrease from there. (iii) On Tuesday, Bloomberg reported “U.S. Solar Gets More Expensive in Threat to Climate Change Fight” “Solar prices are rising for the first time in years in the U.S. amid global supply-chain woes, threatening to undermine efforts to fight climate change. Prices rose in every solar-market segment during the second quarter -- the first time that’s happened since at least 2014, according to a report from Wood Mackenzie and the Solar Energy Industries Association. While many solar developers have sufficient inventory for 2021 projects, they will begin to see cost increases next year, the report said.” Bloomberg notes the higher solar costs in 2021 and that the solar costs are going higher in 2022. Part of the reason for the higher 2022 costs is existing inventories in 2020 help shield costs increases in 2021 to some degree. But as that prior inventory is worked thru, it impacts 2021. Our Supplemental Documents package includes the Bloomberg report.

Biden’s massive solar growth plan

Figure 49: DOE’s Overnight Capital Cost Assumptions for Solar and Battery Technology

2-E: Solar and Battery Technology Cost Assumptions

Technology cost and performance assumptions are primarily based on the NREL ATB 2020 (NREL 2020). These tables summarize those assumptions for solar and battery technologies, and include projections used for the Breakthrough PV and battery case.

Table 2-E-1. Overnight Capital Costs (\$/kW)

		2020	2030	2040	2050
ATB Moderate	Utility PV	1325	819	746	673
	Commercial PV	1701	1013	895	777
	Residential PV	2644	1125	991	858
	Battery – 4 hrs	1455	817	715	613
	CSP – TES 10 hrs	7027	4878	4125	3903
	CSP – TES 14 hrs	7887	5514	4636	4363
ATB Advanced	Utility PV	1312	673	590	507
	Commercial PV	1679	777	675	572
	Residential PV	2620	858	730	602
	Battery – 4 hrs	1203	567	456	345
	CSP – TES 10 hrs	7027	3551	2965	2640
	CSP – TES 14 hrs	7887	3950	3295	2944
Breakthrough	Utility PV	1296	507	447	387
	Commercial PV	1672	654	577	499
	Residential PV	2597	602	541	479
	Battery – 4 hrs	1224	400	300	200

Source: DOE Solar Futures Study

Energy Transition - Record UK power prices in shoulder season with low wind

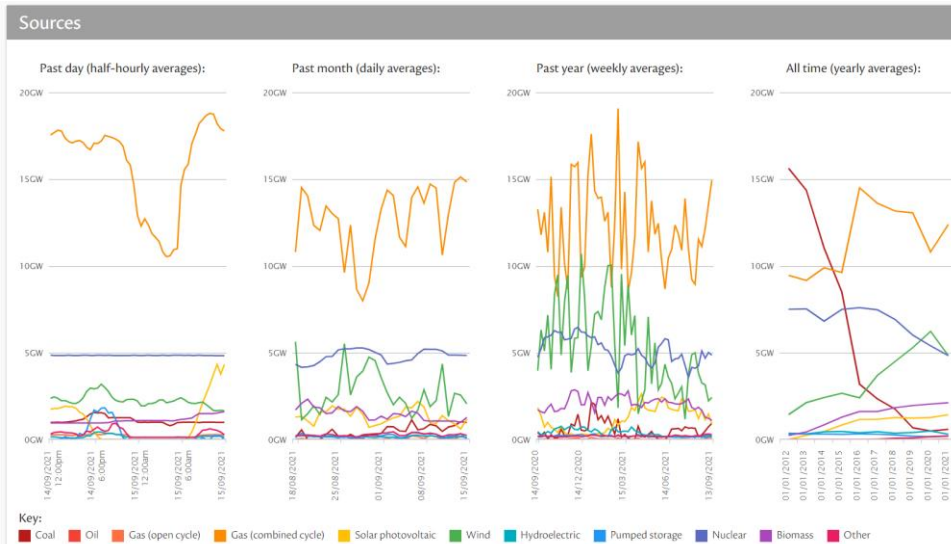
One of the global energy stories every day this week was record power prices in many European countries including the UK. For the UK, we continue to highlight that the common denominator in all the bad power days last winter were low wind generation. We tweeted a couple of times on this subject. (i) The first item that we noted was that its shoulder season. On Monday, we noted a Bloomberg report and then tweeted [\[LINK\]](#) on “Record UK power prices in Sept, a low #Electricity consumption month. @SStapczynski notes below normal wind. Common denominator for #NationalGridESO for their 5 winter 20/21 bad power days was low wind. Replacing 24/7 #coal with intermittent wind/solar brings spikes. Need #NatGas.” Our tweet included the UK National Statistics data for monthly UK consumption of electricity that shows September is one of the lowest months for UK consumption. No question that high natural gas prices are a key factor, but Bloomberg also reminded its been a below normal wind period. (ii) Then on Wednesday there was another record UK power price day and we tweeted [\[LINK\]](#) “Record UK power prices in shoulder season. Yes record #NatGas prices a key factor. But @nationalgriduk data shows #Wind below normal and, that without #NatGas cranking up supply to fill import gap, it would be no power, not high price power. #NatGas #LNG will be needed for longer”. Our tweet included the UK live data that morning that showed how wind generation has been at low levels this month, especially compared to annual averages. (iii) No question people are blaming high natural gas prices for the record power prices in the UK and Europe. Our concern is that governments and national power companies are choosing to blame wind. Its understandable given they don’t want to lose public support for the aggressive push to wind and solar. But our August 1, 2021 Energy Tidbits noted our July 25 tweet [\[LINK\]](#) “Hmmm! Why doesn’t UK #NationalGridESO want to call out #Wind as key wildcard for reliable power? Fcast lower reserve for winter 21/22. “reflecting on last winter” say main issue #Coal #CCGT #NatGas plants. Yet common denominator for their 5 winter 20/21 bad power days is wind?” We were referencing their

UK record power prices in shoulder season

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

June recap of winter 2020/21 that included five case study periods in the winter that had power risks and how the one common denominator of all five case studies was lower wind power generation. Below is the UK National Grid live status energy supply mix that we included in our tweet. Our Supplemental Documents package includes the UK monthly electricity consumption data, and the UK National Grid’s recap of the 5 bad power days from its recap of winter 2020/21.

Figure 50: UK National Grid: Live Status 5am MT Sept 15, 2021



Source: UK National Grid

Energy Transition - EPA rates Lucid Air Dream Edition R at 520 miles range

On Thursday, the EPA released its review of the Lucid Air Dream Edition R [\[LINK\]](#) and the new electric vehicle exceeded expectation with a range of 520 miles off a single charge. This record-breaking achievement marks the first electric car to ever surpass 500 miles of range as rated by the EPA. The Air Dream Edition outpaces the previous record holding electric vehicle, the Tesla Model S Long range, by more than 100 miles. CEO Peter Rawlinson commented on the achievement [\[LINK\]](#), “Our race-proven 900V battery and BMS technology, our miniaturized drive units, coupled with our Wunderbox technology endow Lucid Air with ultra-high efficiency, enabling it to travel more miles from less battery energy. The next generation EV has truly arrived!” Multiple Lucid Air models have received their official EPA range ratings on both 19” and 21” wheels. This positions Lucid Air models in the top 6 spots for overall EPA range ratings among all electric vehicles as well as the highest MPGe ratings in the large-vehicle class. Our Supplemental Documents package includes the EPA rating.

Lucid breaks electric vehicle range record

Energy Transition – GM tells Chevy Bolt owners to park 50 ft away from other cars

Surely we have to be getting near the end of the bad news/reports on the GM Chevy Bolt EV battery problems. Our prior Energy Tidbits have noted they have already recalled all Chevy Bolts due to the risk of the battery fire. And our Sept 5, 2021 Energy Tidbits noted the Detroit Free Press report that week “GM ‘not confident’ LG Chem will build defect-free Bolt batteries”. Not sure what other bad news can pop up. But there is certainly more bad press this week. On Thursday, Consumer Reports reported [\[LINK\]](#) “A GM spokesman told CR that the company is advising customers, “In an effort to reduce potential damage to structures and nearby vehicles in the rare event of a potential fire, we recommend parking on the top floor or

GM Chevy Bolt problems

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

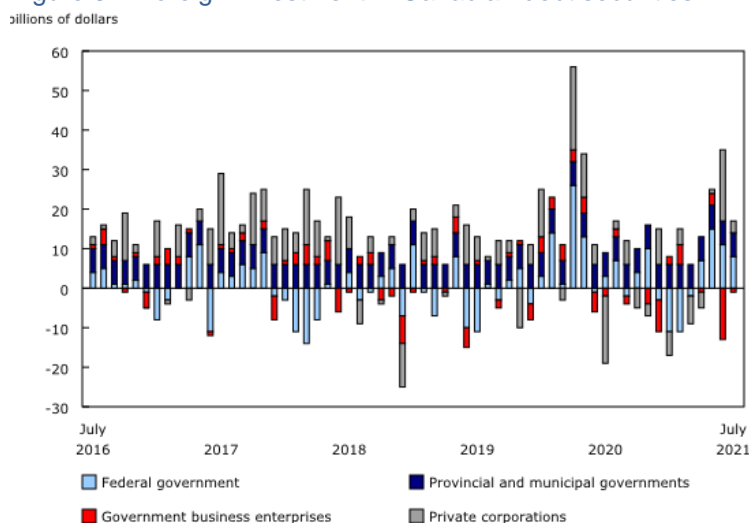
on an open-air deck and park 50 feet or more away from another vehicle. Additionally, we still request you do not leave your vehicle charging unattended, even if you are using a charging station in a parking deck." So where do Chevy Bolt owners park their cars if they live in an apartment or condo or townhome or even in many inner city homes that can have 25 ft wide lots or even regular subdivisions that may only have 50 ft wide lots. It also means that all the rest of people who don't drive Chevy Bolts have to make sure they don't park beside one. Our Supplemental Documents package includes the Consumer Reports report.

Capital Markets – Foreign investors target Canadian government debt securities

Statistics Canada released Canada's international transactions in securities for July 2021 on Thursday [\[LINK\]](#). Foreign investors acquired \$14.2 bn of Canadian securities in July with government debt securities leading purchases. Canadian securities have observed a twelfth consecutive month of investment, with the \$14.2 bn bringing the total invested amount to \$118.1 bn. Federal government debt instruments saw the largest acquisition with \$8.1 bn, followed by \$5.4 bn being allocated to provincial government bonds; non-resident investors acquired \$6.0 bn in corporate bonds, mainly in currency-denominated instruments of chartered banks. Long-term interest rates in July fell by 14 basis points, the largest dip since April 2020. The Canadian dollar depreciated by 0.4 US cents in July. A second divestment in three months by foreign investors, totalling \$1.1 bn, occurred; this was driven mainly by sales of shares on secondary markets, moderated by new issuances from cross border mergers and acquisitions. Canadian investors reduced holdings of foreign securities by \$4.7 bn to follow a record investment of \$28 bn in June. Stated in the report "Canadian investors reduced their exposure to foreign equities by \$5.2 billion in July, their first divestment since March 2020, at the onset of the pandemic. Investors sold \$3.6 billion of US shares and \$1.6 billion of non-US shares in the month. US stock prices, as measured by the Standard and Poor's 500 composite index, were up to record levels by the end of July." Canadian Investors acquired \$1.1 bn of foreign bonds in July, led by non-US foreign bonds (1.9 bn) and US corporate bonds (\$1.3) bn; moderated by sales of \$2.1 bn of US government bonds. US long-term interest rates fell to their lowest levels since February, in July. Below is a graph illustrating foreign investment in Canadian debt securities.

**Statistics Canada:
Canada's
international
transactions in
securities**

Figure 51: Foreign Investment in Canadian debt securities



Source: Statistics Canada

The Disclaimer: Energy Tidbits is intended to provide general information only and is written for an institutional or sophisticated investor audience. It is not a recommendation of, or solicitation for the purchase of securities, an offer of securities, or intended as investment research or advice. The information presented, while obtained from sources we believe reliable as of the publishing date, is not guaranteed against errors or omissions and no representation or warranty, express or implied, is made as to their accuracy, completeness or correctness. This publication is proprietary and intended for the sole use of direct recipients from Dan Tsubouchi and SAF Group. Energy Tidbits are not to be copied, transmitted, or forwarded without the prior written permission Dan Tsubouchi and SAF Group. **Please advise if you have received Energy Tidbits from a source other than Dan Tsubouchi and SAF Group.**

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.

Wonder if Boeing has a Friday night special issue

We couldn't help remember some stories about automaker assembly lines in the 70s when we saw the WSJ report "*Tequila Bottles Found on New Boeing Air Force One Jet in Development*" [\[LINK\]](#). WSJ wrote "*Two empty liquor bottles were found this month on one of Boeing Co. 's new Air Force One planes under development in San Antonio, people familiar with the matter said. The discovery of miniature bottles of tequila on one of the future U.S. presidential jets is under investigation by the company, these people said. It couldn't be determined where on the plane the bottles were discovered. While Boeing has had problems in recent years with tools, rags and other factory garbage left on commercial and military aircraft, this incident is particularly serious because it involves alcohol and highly classified jets, which will be known as Air Force One when the commander-in-chief is on board.*" It reminded of some of the stories we heard about working the assembly line in some of the automakers in Ontario in the 70s and how those workers would always try to avoid Friday night specials cars. Cars that came off the line on a Friday night, especially before a long summer weekend. The theory was that some unusual little things might be more likely to happen to these Friday night specials.

Blue Jays in tight last 2 week race for wildcard spot

Rogers Centre must be crazy these days. I haven't been in Toronto for a Toronto Blue Jays game since game 2 of the 1993 world series (Jays lost to Phillies that night). I was in the oilpatch for institutional investor meetings and an investment dealer took us to the game. That was the year of the famous Joe Carter walk off home run in game 6. But in watching the Jays Aug/Sept run, it looks like the fans are going crazy in the Rogers Centre. No one predicted the amazing 17-5 run that has put the Jays tied with the Red Sox for the two wildcard spots with 2 weeks to go. But they are only 1/2 game up on the Yankees and 2 games up on the A's. Its going to be crazy in the Rogers Centre. Its looking like the Jays last 3 games of the season will be the key – and it's a closing home 3-game series with the Yankees on Sept 28-30! I bet if it comes to the last game, I wouldn't be surprised to see Joe Carter in the stands.

Knock Knock joke for those who are travelling now

We were thinking about heading to Vancouver after Labour Day for one of our food feast long weekends to dine twice at Miku and once at Blue Water Café but, fortunately, spoke to one of my friend who just got back from staying in Vancouver. They stayed at one of the top hotels in Vancouver, paid what sounded like a regular pre Covid room rate and he was telling me how there was no room service, no housekeeping, no nothing in the deal other than the room. Like us when we go for a weekend, we don't mind paying but just want all the hotel services. Needless to say, I told Diane and she said no way to a trip and passed on her Covid knock knock joke. A guest at a top hotel hears "knock knock", asks "who's there", and the reply "not housekeeping".

It was a big week for cheeseburger lovers

We heard a shout out on cable news this week for National Cheeseburger Day was yesterday on Sept 18, so looked it up and then were surprised to find that Sept 15 was National Double Cheeseburger Day. Two days to celebrate cheeseburgers in one week. National Day Calendar wrote [\[LINK\]](#) "*National Cheeseburger Day on September 18th honors America's favorite sandwich with a slice of cheese. A few days ago, we celebrated National Double Cheeseburger Day. This food holiday is the lighter version. While only a single stack, this tasty burger still earns a celebration! There are many theories to the beginning of the cheeseburger dating back to the 1920s. One story suggests that Lionel Sternberger invented the cheeseburger in 1926 while working at his father's Pasadena, California sandwich shop, The Rite Spot. During an experiment, he dropped a slice of American cheese on a sizzling hamburger.*"