

Energy Tidbits

February 12, 2023

Produced by: Dan Tsubouchi

Is Russia's Voluntary 500,000 b/d Cut Because the Oil isn't Profitable?

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. Our target is to write on 48 to 50 weekends per year and to post by noon MT on Sunday. The Sunday noon timing was because PMs said they didn't have research to read on Sundays and Sundays are a day when they start to think about the investing week ahead.

This week's memo highlights:

1. We have to wonder if Russia's voluntary 500,000 b/d cut to oil production is because the oil isn't profitable with the discount to price, increased shipping & insurance costs from sanctions ([Click Here](#)).
2. TotalEnergies says security is okay but won't restart Mozambique LNG if contractors don't keep to the same costs ([Click Here](#)).
3. Yesterday, PHMSA official said it would take "a number of months" for Freeport LNG to return to full operation ([Click Here](#)).
4. BP's strategy update sees an additional \$1b per year for oil & gas capex to lead to big increases in EBITDA ([Click Here](#)).
5. PrairieSky highlights multi-zone Mannville oil in west-Central Sask as the hot new oil play ([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
Chief Market Strategist
dtsubouchi@safgroup.ca

Ryan Dunfield
CEO
rdunfield@safgroup.ca

Aaron Bunting
COO, CFO
abunting@safgroup.ca

Ryan Haughn
Managing Director
rhaughn@safgroup.ca

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Natural Gas – 217 bcf draw in US gas storage; now 233 bcf YoY surplus

It was a hot Jan that drove a widening YoY gas storage surplus and HH below \$3, But it turned colder than normal the last week of Jan running into the start of Feb. So for the week of Feb 3, the EIA reported a -217 bcf draw (vs expectations of -199 bcf), a -2% decrease from the -222 bcf draw reported for the week of Feb 4 last year. This compares to last weeks draw of -151 bcf, and the 5-year average draw of -171 bcf. Total storage is now 2.366 tcf, representing a surplus of +233 bcf YoY compared to a deficit of -417 bcf last year and is +117 bcf above the 5-year average vs +163 bcf above last week. Below is the EIA’s storage table from its Weekly Natural Gas Storage Report [\[LINK\]](#).

YoY storage at 233 bcf YoY surplus

Figure 1: US Natural Gas Storage

Region	Stocks billion cubic feet (Bcf)				Year ago (02/03/22)		5-year average (2018-22)	
	02/03/23	01/27/23	net change	implied flow	Bcf	% change	Bcf	% change
East	529	578	-49	-49	493	7.3	513	3.1
Midwest	641	708	-67	-67	561	14.3	600	6.8
Mountain	120	132	-12	-12	123	-2.4	128	-6.3
Pacific	124	140	-16	-16	183	-32.2	206	-39.8
South Central	951	1,025	-74	-74	774	22.9	803	18.4
Salt	271	297	-26	-26	210	29.0	236	14.8
Nonsalt	680	728	-48	-48	563	20.8	567	19.9
Total	2,366	2,583	-217	-217	2,133	10.9	2,249	5.2

Source: EIA

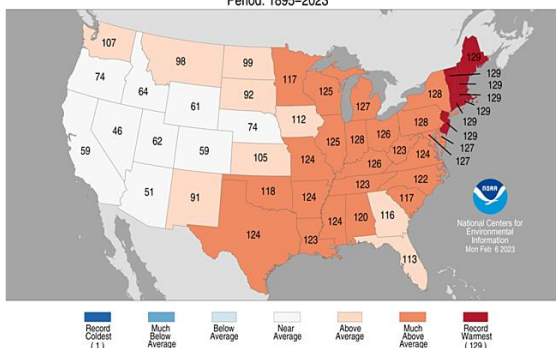
Natural Gas – NOAA Jan weather in US was the 6th hottest in last 129 years

On Wednesday, we tweeted [\[LINK\]](#) “No wonder HH #NatGas prices crashed in Jan. @NOAA says Jan 2023 was 6th hottest Jan in last 129 years. Never good for HH when it’s hot in Jan as Jan (see 📌 01/08/23 tweet/table) is the most important month for winter temperature driven res/com #NatGas consumption. #OOTT. All of the populous eastern half of US was well above normal temps in Jan with the northeast experiencing some of the hottest temps on record. No surprise, HH prices crashed thru Jan with HH prices falling from \$7 just before Xmas to \$2.68 on Jan 31, a +60% decline in less than six weeks. Our tweet Wednesday included NOAA’s below Jan average temperature ranks.

Jan was 6th hottest month in 129 years

Figure 2: NOAA historical US temperate ranks by state

Statewide Average Temperature Ranks
January 2023
Period: 1895–2023



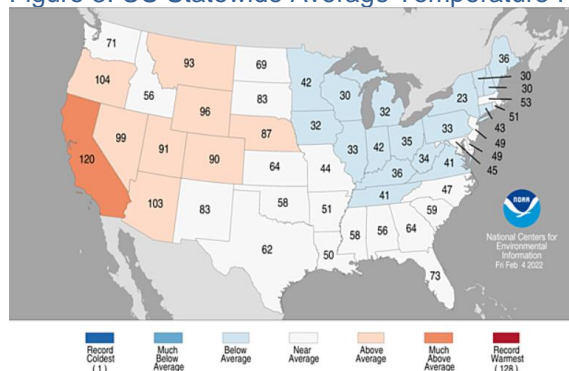
Source: NOAA

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Near record Jan 2023 temps compared to normal temps in Jan 2022

There was a big narrowing of the YoY gas storage changes in Jan with the 6th warmest January in the last 129 years because it was compared vs a relatively normal temperature January 2022. NOAA's recap of Jan 2022 [\[LINK\]](#) was the 58th warmest in the last 127 years ie. More or less normal. The NE US saw slightly below average temperatures in January while the western states were warmer. The average temperatures across all lower 48 states was 31.0 degrees F, 0.9 degrees F above the 20th century average for January. Below is a graphic depicting the state average temperature ranks.

Figure 3: US Statewide Average Temperature Ranks January 2022



Source: NOAA

Natural Gas – AGA heating degree days, Jan 2023 was 18.1% warmer than normal

HH gas prices fell below \$3 on Jan 25 and continue to languish. As noted above, NOAA ranked January 2023 was the 6th warmest in the last 129 years. Every Monday, the AGA issues the weekly heating degrees data for the week ended the prior Saturday. In this case, it was the HDD data for the week ended Feb 4, which was the first colder than normal week (10.6% colder than normal) since the week ended Dec 31. Since then, week ended Jan 7 was 31.8% warmer than normal, week ended Jan 14 was 20.8% warmer than normal, week of Jan 21 was 20.9% warmer than normal, and week of Jan 28 was 9.0% warmer than normal. As a result, the AGA notes the month of Jan was 18.1% warmer than normal. Our Supplemental Documents package includes the full AGA HDD recap. [\[LINK\]](#)

January was 18.1% warmer than normal

Figure 4: Excerpt AGA weekly heating degree days data by month

MONTHLY COMPARISON

Month Ending	2022/2023	2021/2022	Normal	% Change: 22/23 from 21/22		% Change: 22/23 from Normal	
September	66	42	87	57.1	Colder	24.1	Warmer
October	299	205	310	45.9	Colder	3.5	Warmer
November	588	677	676	13.1	Warmer	13.0	Warmer
December	883	688	884	28.3	Colder	0.1	Warmer
January	811	1003	990	19.1	Warmer	18.1	Warmer

Source: AGA

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Jan is the big month for natural gas demand

Natural Gas – A hot vs cold month can be a swing of ~500 bcf of consumption

Jan is now over and, as noted above, the AGA heating degree days data says January was 18.1% warmer than normal. And a warm Jan is never good for HH gas prices. Jan is normally the peak weather temperature driven natural gas consumption month. So no surprise, HH gas prices crashed below \$3 on Jan 25 and remain there given the warmer than normal temperatures across most of the US thru Jan. On Jan 7, we tweeted [LINK](#) on the below data on why temperature is key for winter natural gas demand and prices. It's why warm weather in the winter, especially in Jan, is never a positive for natural gas prices. There can be huge swings in residential/commercial natural gas demand depending if it's hot, normal, or cold. The different between a hot and cold month can be almost 500 bcf in a month. Below is a table we have previously posted that shows these swings. It shows AGA heating degree days vs US total natural gas consumption and US residential/commercial natural gas consumption. (i) Residential/commercial demand is normally >40% of total US natural gas consumption in DJF. (ii) For the last 10 year average, Jan was 46.7 bcf/d, Feb 43.4 bcf/d, and Dec 38.0 bcf/d. (iii) The high to low swings for Dec can be up to 12.6 bcf/d, Jan can be up to 9.8 bcf/d, and Feb can be up to 17.2 bcf/d. (iv) The biggest months over the past 10 winters were Jan 2014 at 51.9 bcf/d, Feb 2015 at 50.9 bcf/d, and then Dec 2017 at 49.5 bcf/d.

Figure 5: US Winter Natural Gas Consumption vs Heating Degree Days

US Winter Natural Gas Consumption vs Heating Degree Days													
Heating Degree Days By Month													
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	10 Year Average	
	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	%	
Oct	308	303	265	257	200	218	306	307	308	205	332	280	7%
Nov	572	623	658	484	459	542	650	636	469	539	597	569	14%
Dec	763	920	763	649	856	873	789	778	804	696	876	807	20%
Jan	918	1,019	967	935	843	963	941	808	899	1005		921	23%
Feb	795	903	955	718	597	699	810	760	896	790		793	20%
Mar	827	831	738	511	618	660	804	555	572	638		680	17%
Oct 1 - Mar 31	4,183	4,599	4,346	3,554	3,573	3,955	4,300	3,844	3,948	3,873	1,805	4,050	100%

Note: Oct includes Sept if applicable. March includes Apr if applicable.
Source: AGA, SAF

Total US Consumption													
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	10 Year Average	
	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	%	
Oct	61.3	60.2	61.7	64.3	62.1	65.5	73.7	75.1	74.9	73.0	76.4	67.2	13%
Nov	72.3	77.2	78.6	75.2	72.1	78.6	90.5	92.6	81.3	89.8		80.8	15%
Dec	80.8	94.0	86.4	83.6	92.5	99.5	96.8	101.6	101.9	97.0		93.4	18%
Jan	92.8	103.4	100.5	100.0	93.3	107.8	110.0	106.3	106.0	115.9		103.6	20%
Feb	91.6	97.9	104.5	91.8	82.9	96.8	107.5	108.3	108.5	109.3		99.9	19%
Mar	81.3	82.5	83.6	76.3	81.1	90.2	93.8	87.4	84.1	89.8		85.0	16%
Average	80.0	85.9	85.9	81.9	80.7	89.7	95.4	95.2	92.8	95.8	76.4	88.3	100%

Source: EIA, SAF

US Residential & Commercial Demand													
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	10 Year Average	
	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	bcfd	%	
Oct	14.6	13.9	13.4	12.8	12.2	13.1	15.9	14.4	14.4	12.6	15.1	13.7	7%
Nov	26.3	28.8	30.2	23.0	22.0	26.3	32.8	32.6	24.4	27.3		27.4	14%
Dec	34.2	43.0	36.9	30.4	40.5	42.2	39.5	39.0	40.1	34.5		38.0	19%
Jan	47.0	51.9	47.4	45.0	42.4	49.5	48.6	42.2	44.1	48.8		46.7	23%
Feb	42.3	48.0	50.9	38.4	33.7	39.8	45.7	42.0	48.2	45.1		43.4	22%
Mar	34.3	36.2	33.1	24.4	30.8	34.8	35.9	27.8	29.7	31.5		31.8	16%
Average	33.1	37.0	35.3	29.0	30.3	34.3	36.4	33.0	33.5	33.3	15.1	33.5	100%

Source: EIA, SAF
Data source EIA Natural Gas Monthly
Source: EIA, AGA, SAF

Natural Gas – NOAA still expects very warm eastern half of US to end Feb

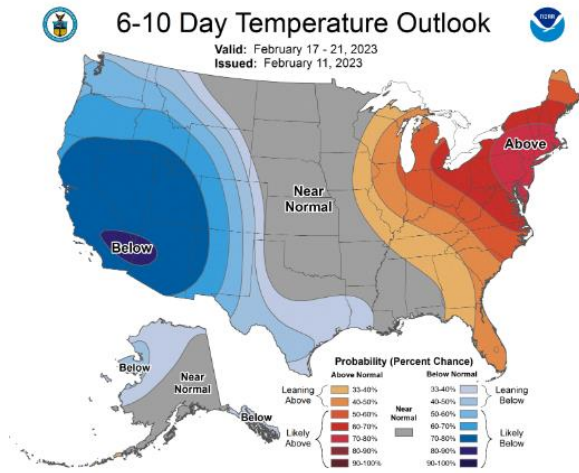
Yesterday, we tweeted [LINK](#) "unfortunately for #NatGas, the cold in the west isn't expected to carry thru to the populous eastern half of US. see 📌 updated @NOAA 6-10, 8-14 day temperature probability forecasts thru Feb 25. #OOTT." We didn't include in our tweet our normal commentary that Feb is the 2nd most significant month for temperature driven residential and commercial natural gas demand. So Feb is almost just as significant as Jan

NOAA 6-10 & 8-14 day temp outlook

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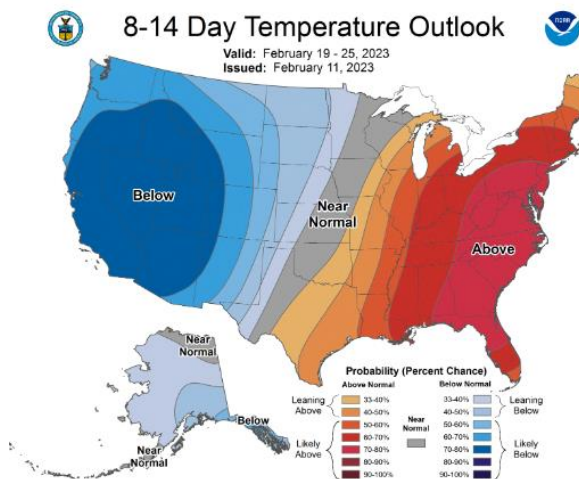
for temperatures. Our tweet yesterday included NOAA's below Feb 4 updated 6-10 day and 8-14 day outlook that run up thru Feb 25.

Figure 6: NOAA 6-10 day temperature outlook as of Feb 11



Source: NOAA

Figure 7: NOAA 8-14 day temperature outlook as of Feb 11



Source: NOAA

Natural Gas – EIA forecast US gas production +2.2 bcf/d in 2023, +1.40 b bcf/d in 2024

One of the big US natural gas stories in 2022 has been that US dry natural gas production is up approx. 3.5 bcf/d YoY in 2022. This growth was more than expected coming into 2022. US dry natural gas production is expected to continue to have strong, but lesser, YoY growth in 2023 and in 2024. The EIA released its monthly Short Term Energy Outlook for Feb 2023 [\[LINK\]](#). (i) The EIA revised its price expectations from the Jan STEO as warmer winter

EIA US natural gas production forecast

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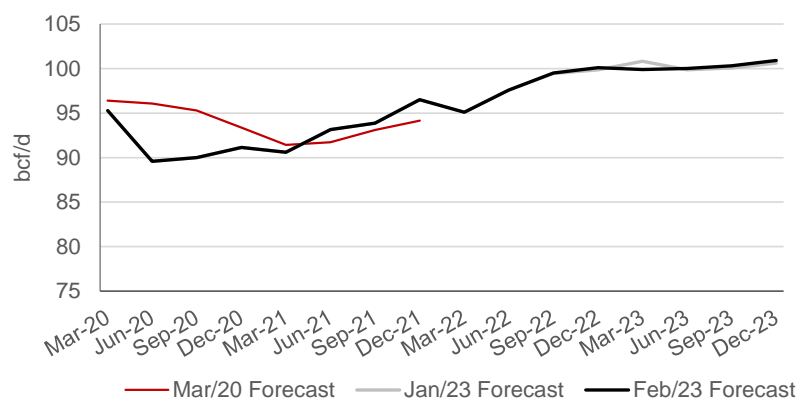
weather in January led to lower-than-normal consumption of natural gas and pushed inventories above the 5-year average levels. The EIA expects US gas production to decline in Q1/23 to 99.90 bcf/d after revisions to its forecast. The EIA Feb STEO revised its 2022 US gas production forecast from 98.02 bcf/d to 98.10 bcf/d ie. more momentum leaving 2022. This is still up 3.53 bcf/d YoY. (ii) US dry natural gas production is forecasted to average 100.30 bcf/d in 2023 (100.34 bcf/d previously), a +2.2 bcf/d increase YoY. (iii) The EIA wrote *“U.S. natural gas production growth has been outpacing demand growth the past several months, helping reduce natural gas prices. We estimate that dry natural gas production in the United States established a new record in January at 100.2 Bcf/d. We forecast dry natural gas production to continue to hover around 100 Bcf/d for most of this year; overall, we expect dry natural gas production to average between 100 Bcf/d and 101 Bcf/d in 2023”* (iv) The EIA revised down its 2024 forecast by 0.59 bcf/d to 101.70 bcf/d vs 102.29 bcf/d for the Jan STEO. But 2024 is still +1.40 bcf/d YoY. Our Supplemental Documents package includes excerpts from the STEO.

Figure 8: EIA STEO US Natural Gas Supply Forecasts by Forecast Month

bcf/d	2021	Q1/22	Q2/22	Q3/22	Q4/22	2022	Q1/23	Q2/23	Q3/23	Q4/23	2023	Q1/24	Q2/24	Q3/24	Q4/24	2024
Feb-2023	94.57	95.10	97.60	99.50	100.10	98.10	99.90	100.00	100.30	100.90	100.30	101.20	101.60	102.00	101.90	101.70
Jan-2023	94.57	95.10	97.59	99.44	99.87	98.02	100.82	99.87	100.08	100.62	100.34	101.12	101.75	102.72	103.57	102.29
Dec-2022	93.55	95.08	97.58	99.22	100.5	98.11	99.87	99.52	100.5	101.6	100.4					
Nov-2022	93.55	95.08	97.58	99.43	100.11	98.05	99.00	99.42	99.99	100.33	99.68					
Oct-2022	93.55	95.08	97.55	98.48	99.06	97.54	99.19	99.57	99.73	100.00	99.62					
Sep-2022	93.55	94.60	96.87	97.85	98.99	97.08	99.65	100.51	100.59	100.67	100.36					
Aug-2022	93.55	94.60	96.61	97.02	98.09	96.59	98.90	100.13	100.52	100.51	100.02					
Jul-2022	93.55	94.61	95.51	96.88	97.89	96.23	98.40	99.62	100.60	101.25	99.98					
Jun-2022	93.55	94.61	95.48	96.90	98.94	96.50	99.94	101.30	102.33	102.66	101.57					
May-2022	93.55	94.66	95.82	97.17	99.14	96.71	100.25	101.55	102.42	102.42	101.71					
Apr-2022	93.57	95.41	97.01	97.94	99.23	97.41	99.72	100.56	101.41	101.72	100.86					
Mar-2022	93.54	95.69	96.09	96.97	98.00	96.69	96.11	98.75	99.60	100.10	98.64					
Feb-2022	93.57	95.43	95.54	96.26	97.12	96.09	97.11	97.57	98.34	98.84	97.97					

Source: EIA STEO

Figure 9: EIA STEO US Natural Gas Supply Forecasts by Forecast Month



Source: EIA STEO

Natural Gas – EIA STEO forecasts Nov 1, 2023 storage at 3.82 tcf, +0.249 tcf YoY

The EIA STEO also forecasts US gas storage. No surprise, the higher actual storage levels in Nov and Dec led the EIA to increase its forecasts once again for storage levels at the end of

EIA STEO storage forecast

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the 2022/23 winter season. With the warmer than average start to winter 2022/23 natural gas withdraw season, the EIA now forecasts storage to end the winter at 1.809 tcf on April 1, which is +0.407 tcf YoY and +0.102 tcf vs its Dec STEO forecast. For winter 2023/24, the EIA now forecasts Nov 1 storage at 3.818 tcf, which is +0.249 tcf YoY, a upward revision from 3.661 tcf in the Dec STEO forecast.

Figure 10: EIA STEO forecast US gas storage

	(billion cubic feet)					
	Storage Level	2016-2024				
	Low	High	Range	Average	Deviation	
Mar 2016	2,486.3	1,184.9	2,486.3	1,301.4	1,835.6	35.4%
Oct 2016	4,012.7	3,236.3	4,012.7	776.4	3,624.5	10.7%
Mar 2017	2,062.5	1,184.9	2,486.3	1,301.4	1,835.6	12.4%
Oct 2017	3,816.5	3,236.3	4,012.7	776.4	3,624.5	5.3%
Mar 2018	1,390.3	1,184.9	2,486.3	1,301.4	1,835.6	-24.3%
Oct 2018	3,236.3	3,236.3	4,012.7	776.4	3,624.5	-10.7%
Mar 2019	1,184.9	1,184.9	2,486.3	1,301.4	1,835.6	-35.4%
Oct 2019	3,762.0	3,236.3	4,012.7	776.4	3,624.5	3.8%
Mar 2020	2,029.4	1,184.9	2,486.3	1,301.4	1,835.6	10.6%
Oct 2020	3,928.5	3,236.3	4,012.7	776.4	3,624.5	8.4%
Mar 2021	1,801.2	1,184.9	2,486.3	1,301.4	1,835.6	-1.9%
Oct 2021	3,665.4	3,236.3	4,012.7	776.4	3,624.5	1.1%
Mar 2022	1,401.5	1,184.9	2,486.3	1,301.4	1,835.6	-23.6%
Oct 2022	3,569.4	3,236.3	4,012.7	776.4	3,624.5	-1.5%
Mar 2023	1,809.0	1,184.9	2,486.3	1,301.4	1,835.6	-1.4%
Oct 2023	3,818.8	3,236.3	4,012.7	776.4	3,624.5	5.4%
Mar 2024	1,608.6	1,184.9	2,486.3	1,301.4	1,835.6	-12.4%
Oct 2024	3,966.9	3,236.3	4,012.7	776.4	3,624.5	9.4%

Source: EIA

Natural Gas – PHMSA: take “a number of months” before Freeport LNG back to normal

There are two items that aren’t yet clear: when will Freeport LNG get back to full commercial operations and what will a partial restart look like in terms of LNG production and shipments.

(i) Freeport is reportedly about to load a tanker, but from LNG out of storage. On Friday, Bloomberg’s Stephen Stapczynski tweeted [\[LINK\]](#) “The idled Freeport LNG plant is VERY CLOSE to resuming exports us 🇺🇸 🇬🇧 A vessel docked at Freeport for the first time since a fire shut the plant in June ⚠️ NOTE: This cargo will be filled with gas in storage from before the fire. Still not clear when LNG production will restart.” (ii) The loading out of storage but not resuming LNG production was consistent with Bloomberg’s Thursday reported “The Federal Energy Regulatory Commission granted approval to return to service LNG Loop 1 Circulation and Dock 1 Ship Loading, it said on Thursday. “This does not grant authorization to place the liquefaction trains including rundown piping to tanks, or other remaining facilities back into service,” the regulator said. Still, loading the first cargo from the plant since June is a milestone for the project.” (iii) PHMSA says it will take a number of months before a return to normal operations. There was no indication of what a partial restart will be in terms of volumes. Yesterday, we tweeted [\[LINK\]](#) on Reuters reporting of the PHMSA public briefing yesterday on Freeport LNG. The meeting was held. Yesterday, Reuters reported [\[LINK\]](#) “Bryan Lethcoe, a regional director of regulator Pipeline Hazardous Materials Safety Administration (PHMSA), said it would take “a number of months” for Freeport LNG to return to full operation. PHMSA officials declined to provide an exact estimate.” Our Supplemental Documents package includes the Reuters report.

Freeport LNG

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Natural Gas – Drilling companies are seeing some pull back in US gas rigs

This shouldn't have an immediate impact on US gas production but there should be some trailing impact into H2/23 from some pulling back in natural gas rigs. No one should be surprised to see comments from the oil and gas services companies indicating they are seeing some pull back in US natural gas drilling activity. We have been highlighting how HH crashed from ~\$7 in early Dec to under \$3 with the extremely warm January weather. And no one is expecting a big jump back in the next few months. This week we saw a couple of comments on pulling back on US gas rigs. (i) Nabors held its Q4 call on Wed and said *"We did see some weakness in gas markets with multiple rigs returned by smaller players. However, we were able to place these rigs expeditiously with other customers for predominantly oil-focused activity."* And then in the Q&A, mgmt. said *"I would say that those fluctuations are more in connection with the private operators', the smaller guys who come onto the market quickly and also exit quickly."* (ii) Precision reported Q4 on Thursday and noted some modest weakening in the US gas rigs. Precision said *"In the U.S., we have 61 rigs active today, a 17% increase from this time last year. We expect weak natural gas prices could modestly impact industry rig demand over the coming weeks, but expect oil related activity to remain firm as customers continue to look to replace lower performing rigs and work to balance depleted drilled but uncompleted well inventories."*

US gas rigs being pulled back

Natural Gas – Key Cdn natural gas rigs like Montney aren't impacted by low gas prices

On Thursday, we tweeted [\[LINK\]](#) *"Big advantage of Montney & other key Cdn #NatGas plays - most are #NatGas but have high value condensate to drive IRRs so keep drilling even with low gas prices. Vs weak gas prices could modestly impact US industry rigs. See 📌 \$PD CEO comments. #OOTT."* In Precision's Q4, right after noting the modest impact of low gas prices on US gas rigs, Precision noted its Cdn natural drilling was going strong. Precision said *"In Canada, we have 78 rigs active today, representing an 18% increase over the same time last year. We expect demand to remain at high levels through the first part of March and are already observing better than expected bookings through spring breakup and into the second half of the year. Natural gas liquids production, recent northeastern British Columbia access resolution, and LNG related activity will continue to drive Super Triple demand in Canada, of which Precision's fleet is 100% utilized today."* Followers of the Montney know that most of the Montney has high liquids, in particular high value condensate, which means the wells get drilled even in the face of very low natural gas prices.

Cdn liquids rich natural gas plays

Natural Gas – Another long-term LNG deal: Mexico Pacific & Exxon sign two LT SPAs

There was a significant slowdown in long-term LNG deals in since the end of H1/22 compared to the activity seen from July 1, 2021 thru June 30, 2022. That's because most, if not all the available long term LNG supply available before 2026 was locked up in the July 1, 2021 thru June 30, 2022 rush. Rather, the long-term deals now being done are generally for long term supply starting in 2026 or later. There was one long term LNG deal announced last week. On Tuesday, Mexico Pacific announced that it executed two long-term Sales and Purchase Agreements (SPAs) to supply ExxonMobil LNG Asia Pacific with a combined 0.26 bcf/d over 20 years [\[LINK\]](#). The two SPAs stipulate Exxon's purchase of LNG on a free-on-board basis from the first two trains of Mexico Pacific's anchor export facility, with the option for Exxon to purchase an additional 0.13 bcf/d over the same period. Mexico Pacific CEO, Ivan Van der Walt said, *"We have reached a critical point on contract volumes required for FID on our first two trains and will now shift focus to close contracting on the significant*

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commercial momentum in place for a subsequent Train 3 FID.” Quantum Energy CEO, Wil Vanloh added, “Mexico Pacific’s unparalleled project fundamentals and highly experienced leadership team have established it as a premier LNG solution for customers and Permian producers to provide reliable and cost-effective LNG...”. Mexico Pacific’s anchor project, the Saguaro Energia LNG Facility, is a 3 train, 1.88 bcf/d LNG export facility located in Puerto Libertad, Sonora, Mexico. The facility has significant advantages including the lowest landed price of North American LNG into Asia, leveraging low-cost natural gas sourced from the nearby Permian Basin. Our Supplemental Documents package includes the release.

Asia was early to secure long term LNG supply

Our March 13, 2022 Energy Tidbits memo noted that Europe LNG buyers were starting 9 months behind the wave of Asian LNG buyers who started to lock up long term LNG supply starting in July 2021. The LNG supply crunch is not a 2022 development. Rather, it was clear in H1/21 that there was a major sea change in LNG outlook. We turned very bullish on LNG outlook for the 2020s once TotalEnergies went force majeure on its Mozambique LNG in April 2021. We posted our April 28, 2021 blog *“Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?”* as we thought the market had overlooked that this force majeure backed up 5.0 bcf/d of Mozambique LNG that was originally planned to start in phases in 2024. And that this would create an earlier and larger LNG supply gap in the mid 2020s. Then we started to see validation of this view when Asian LNG buyers in July made an abrupt change to their LNG contracting and pivoted to trying to lock in long term LNG supply. On July 14, 2021 we posted our 8-pg *“Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs”*. Here is an excerpt from the blog *“The last 7 days has shown there is a sea change as Asian LNG buyers have made an abrupt change in their LNG contracting and are moving to lock in long term LNG supply. This is the complete opposite of what they were doing pre-Covid when they were trying to renegotiate Qatar LNG long term deals lower and moving away from long term deals to spot/short term sales. Why? We think they did the same math we did in our April 28 blog “Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?” and saw a much bigger and sooner LNG supply gap driven by the delay of 5 bcf/d of Mozambique LNG that was built into most, if not all LNG supply forecasts. Asian LNG buyers are committing real dollars to long term LNG deals, which we believe is the best validation for the LNG supply gap. Another validation, Shell, Total and others are aggressively competing to invest long term capital to partner in Qatar Petroleum’s massive 4.3 bcf/d LNG expansion despite plans to reduce fossil fuels production in the 2020s. And even more importantly to LNG suppliers, the return to long term LNG contracts provides the financing capacity to commit to brownfield LNG FIDs. The abrupt change by Asian LNG buyers to long term contracts is a game changer for LNG markets and sets the stage for brownfield LNG FIDs likely as soon as before year end 2021. It has to be brownfield LNG FIDs if the gap is coming bigger and sooner. And we return to our April 28 blog point, if brownfield LNG is needed, what about Shell looking at 1.8 bcf/d brownfield LNG Canada Phase 2? LNG Canada Phase 1 at 1.8 bcf/d capacity is already a material positive for Cdn natural gas*

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producers. A FID on LNG Canada Phase 2 would be huge, meaning 3.6 bcf/d of Cdn natural gas will be tied to Asian LNG markets and not competing in the US against Henry Hub. And with a much shorter distance to Asian LNG markets. This is why we focus on global LNG markets for our views on the future value of Canadian natural gas.” Our Supplemental Documents package includes our April and July blogs.

There have been 13.53 bcf/d of long-term LNG supply deals since July 1, 2021

We first highlighted this abrupt shift to long term LNG supply deals in our July 14, 2021 8-pg “*Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs*”. We included a table of the deals done in that short two week period. We continue to update that table, which now shows 13.53 bcf/d of long term LNG deals since July 1, 2021. 65% of the deals have been by Asian LNG buyers, but we are now seeing rest of world locking up long term supply deals post Russia/Ukraine. Note in our non-Asian LNG deals will major LNG players (ie. Chevron, Shell, etc) buying for their LNG portfolio supply. China has been particularly active in this space, accounting for 75% of all Asian LNG buyers in long term contracts since July 1, 2021. Below is our updated table of Asian and Europe LNG buyers new long term supply deals since July 1, 2021.

Figure 11: Long Term LNG Supply Deals since July 1, 2021

Long-Term LNG Buyer Deals Since July 1, 2021							
Date	Buyer	Seller	Country	Volume	Duration	Start	End
	Buyer / Seller		Buyer / Seller	(bcf/d)	Years		
Asian LNG Deals							
Jul 7, 2021	CNOOC	Petronas	China / Canada	0.30	10.0	2022	2032
Jul 9, 2021	CPC	QatarEnergy	Taiwan / Qatar	0.16	15.0	2022	2037
Jul 9, 2021	Guangzhou Gas	BP	China / US	0.13	12.0	2022	2034
Jul 12, 2021	Korea Gas	QatarEnergy	Korea / Qatar	0.25	20.0	2025	2045
Sep 29, 2021	CNOOC	QatarEnergy	China / Qatar	0.50	15.0	2022	2037
Oct 7, 2021	Shenzhen	BP	China / US	0.04	10.0	2023	2032
Oct 11, 2021	ENN	Cheniere	China / US	0.12	13.0	2022	2035
Nov 4, 2021	Unipec	Venture Global LNG	China / US	0.46	20.0	2023	2043
Nov 4, 2021	Sinopec	Venture Global LNG	China / US	0.53	20.0	2023	2043
Nov 5, 2021	Sinochem	Cheniere	China / US	0.12	17.5	2022	2040
Nov 22, 2021	Foran	Cheniere	China / US	0.04	20.0	2023	2043
Dec 6, 2021	Guangdong Energy	QatarEnergy	China / Qatar	0.13	10.0	2024	2034
Dec 8, 2021	S&T International	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 10, 2021	Suntien Green Energy	QatarEnergy	China / Qatar	0.13	15.0	2022	2037
Dec 15, 2021	SPIC Guangdong	BP	China / US	0.03	10.0	2023	2033
Dec 20, 2021	CNOOC Gas & Power	Venture Global LNG	China / US	0.26	20.0	2023	2043
Dec 29, 2021	Foran	BP	China / US	0.01	10.0	2023	2032
Jan 11, 2022	ENN	Novatek	China / Russia	0.08	11.0	2024	2035
Jan 11, 2022	Zhejiang Energy	Novatek	China / Russia	0.13	15.0	2024	2039
Feb 4, 2022	CNPC	Gazprom	China / Russia	0.98	30.0	2023	2053
Mar 24, 2022	Guangdong Energy	NextDecade	China / US	0.20	20.0	2026	2046
Mar 29, 2022	ENN	Energy Transfer	China / US	0.36	20.0	2026	2046
Apr 1, 2022	Guangzhou Gas	Mexico Pacific Ltd	China / Mexico	0.26	20.0	n.a.	n.a.
Apr 6, 2022	ENN	NextDecade	China / US	0.26	20.0	2026	2026
Apr 22, 2022	Kogas	BP	Korea / US	0.20	18.0	2025	2043
May 2, 2022	Gunvor Singapore Pte	Energy Transfer LNG	Singapore / US	0.26	20.0	2026	2046
May 3, 2022	SK Gas Trading LLC	Energy Transfer LNG	Korea / US	0.05	18.0	2026	2042
May 10, 2022	Exxon Asia Pacific	Venture Global LNG	Singapore / US	0.26	n.a.	n.a.	n.a.
May 11, 2022	Petronas LNG	Venture Global LNG	Malaysia / US	0.13	20.0	n.a.	n.a.
May 24, 2022	Hanwha Energy	TotalEnergies	Korea / France	0.08	15.0	2024	2039
May 25, 2022	POSCO International	Cheniere	Korea / US	0.05	20.0	2026	2036
June 5, 2022	China Gas Holdings	Energy Transfer	China / US	0.09	25.0	2026	2051
Jul 5, 2022	China Gas Holdings	NextDecade	China / US	0.13	20.0	2027	2047
Jul 20, 2022	PetroChina	Cheniere	China / US	0.24	20.0	2026	2050
Jul 26, 2022	PTT Global	Cheniere	Thailand / US	0.13	20.0	2026	2046
Jul 27, 2022	Exxon Asia Pacific	NextDecade	Singapore / US	0.13	20.0	2026	2046
Sep 2, 2022	Woodside Singapore	Commonwealth	Singapore / US	0.33	20.0	2026	2046
Nov 21, 2022	Sinopec	QatarEnergy	China / Qatar	0.53	27.0	2026	2053
Dec 26, 2022	INPEX	Venture Global LNG	Japan/US	0.13	20.0	n.a.	n.a.
Dec 27, 2022	JERA	Oman LNG	Japan/Oman	0.11	10.0	2025	2035
Jan 19, 2023	ITOCU	NextDecade	Japan / US	0.13	15.0	n.a.	n.a.
Feb 7, 2023	Exxon Asia Pacific	Mexico Pacific Ltd	Singapore / Mexico	0.26	20.0	n.a.	n.a.
Total Asian LNG Buyers New Long Term Contracts Since Jul/21				8.85			
Non-Asian LNG Deals							
Jul 28, 2021	PGNIG	Venture Global LNG	Poland / US	0.26	20.0	2023	2043
Nov 12, 2021	Engie	Cheniere	France / US	0.11	20.0	2021	2041
Mar 7, 2022	Shell	Venture Global LNG	US / US	0.26	20.0	2024	2044
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
Mar 16, 2022	NFE	Venture Global LNG	US / US	0.13	20.0	2023	2043
May 2, 2022	Engie	NextDecade	France / US	0.23	15.0	2026	2041
May 17, 2022	PGNIG	Sempra Infrastructure	Poland / US	0.40	20.0	n.a.	n.a.
May 25, 2022	RWE Supply & Trading	Sempra Infrastructure	Germany / US	0.30	15.0	n.a.	n.a.
Jun 9, 2022	Equinor	Cheniere	Norway / US	0.23	15.0	2026	2041
Jun 21, 2022	EnBW	Venture Global LNG	Germany / US	0.20	20.0	2026	2046
Jun 22, 2022	INEOS Energy	Sempra Infrastructure	UK / US	0.21	20.0	2027	2047
Jun 22, 2022	Chevron	Venture Global LNG	US / US	0.26	20.0	n.a.	n.a.
Jun 22, 2022	Chevron	Cheniere	US / US	0.26	15.0	2027	2042
Jul 12, 2022	Shell	Mexico Pacific Ltd	US / Mexico	0.34	20.0	2026	2046
Jul 13, 2022	Vitol	Delfin Midstream	US / US	0.07	15.0	n.a.	n.a.
Aug 9, 2022	Centrica	Delfin Midstream	UK / US	0.13	15.0	2026	2041
Aug 24, 2022	Shell	Energy Transfer	US / US	0.28	20.0	2026	2046
Oct 6, 2022	EnBW	Venture Global LNG	Germany / US	0.26	20.0	2022	2042
Dec 6, 2022	ENGIE	Sempra Infrastructure	France / US	0.12	15.0	n.a.	n.a.
Dec 20, 2022	Galp	NextDecade	Portugal / US	0.13	20.0	n.a.	n.a.
Dec 20, 2022	Shell	Oman LNG	UK/Oman	0.11	10.0	2025	2035
Jan 25, 2023	Sempra	PKN ORLEN	US / EU	0.13	20.0	2027	2047
Jan 30, 2023	BOTAS	Oman	Turkey / Oman	0.13	10.0	2025	2035
Total Non-Asian LNG Buyers New Long Term Contracts Since Jul/21				4.68			
Total New Long Term LNG Contracts since Jul/21				13.53			

*Excludes Asian short term/spot deals
 *on Dec 20, CNOOC also agreed to buy an additional 0.13 bcf/d from Venture Global for an undisclosed shorter period
 Source: Bloomberg, Company Reports
 Prepared by SAF Group <https://safgroup.ca/news-insights/>

Source: Company reports, SAF Group

Natural Gas – Will rising capex hold back TotalEnergies Mozambique LNG restart?
 After seeing TotalEnergies CEO Pouyanne’s comments in the Q&A of the Q4 call on Wed, it doesn’t seem like there will be as quick a restart to resuming construction at the Mozambique LNG project as we thought last week. (i) Last week’s (Feb 5, 2023) Energy Tidbits memo noted Pouyanne making his first trip to the Mozambique area. TotalEnergies stopped the

**TotalEnergies
 Mozambique LNG**

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project due to area violence and Pouyanne had previously there couldn't be a restart decision until he could travel there. He did and TotalEnergies post trip release seemed to indicate that they were now comfortable with the security situation. And this was why they stopped. (ii) TotalEnergies had their Q4 call on Wed and. Pouyanne dealt with Mozambique in the Q&A. We tweeted [\[LINK\]](#) “. @PPouyanne 📌 on MZ #LNG restart. security conditions are okay. will execute recommendation on human rights. BUT "one key condition to restart will be to maintain the costs that we had. If i see the costs going up & up, we'll wait... & the contractors will wait as well". #OOTT.” (iii) What won't hold up a restart is security in the region.. He signaled this last week by going there, he signaled to everyone what he was comfortable the security situation was acceptable so a go ahead could happen. Security, violence and killing was why they called force majeure and stopped the project almost two years ago. But that is not an issue. Pouyanne said “He said “so there the security conditions, I Think are okay”. (iv) The second issue they are waiting on is human rights within Mozambique. They hired someone to give them a report and they said they would follow his recommendations. We do not see this as any item to hold up the project. Rather it will be just things they will do for the regions. Pouyanne said ‘The two next steps. It varies and because there are some, I would say controversies about human rights about the project around the project, not because of us we inherited that from the Anadarko acquisition. So I want a clear view on these human rights issues, which is a salient issue for me, it's important, I have given a mission to a specialist of human rights, a very well known Dr in France. Mr. Rufin, who has accepted, He is making his job so I'm waiting to see his report to understand exactly what is, I would say what are these issues. if are things to be done, we will execute the recommendation.” (v) But Pouyanne raised a third issue that we don't believe was raised before. And we think has the potential to cause a delay to a restart decision. Pouyanne gave a big warning to contractors that they better not have changed their costs. And that he is prepared to wait them out if they have cranked up their costs in the last two years. We have trouble he is saying zero cost change given what has happened in the world in the last two years on inflation and interest rates. And believe he will allow some sort of cost inflation. But even still if he wants no or very little cost increases, we have to believe this causes some sort of delay. Here is what Pouyanne said on costs. “And there is a third step, which I can use this question to deliver is that, of course, we have to reengage with the contractors. And one key condition to restart will be to maintain the costs that we had. if I see the costs going up and up. We'll wait . We have wait, we can continue to wait and the contractors will wait as well. So I'm not really in this condition to restart don't.” (vi) And his overall assessment in the Q&A, Pouyanne said ‘So there are the security conditions I think are okay. Human rights and there is a report. Costs, I will need another report from my teams. We will ask them to reengage but smoothly. No hurry. Again I can wait on Mozambique LNG. If costs increase, we will review it. And we'll take the time. So that's where we are on these projects.”

A TotalEnergies restart will set in motion 5 bcf/d of Mozambique LNG

It is important to remember that a restart of TotalEnergies Mozambique Phase 1 is more than a restart of the 1.7 bcf/d for Phase 1 – it's really sets in motion 5.0 bcf/d of Mozambique LNG. This is why we have highlighting TotalEnergies force majeure on its Mozambique LNG Phase 1 for the past 21 months as the game changing event for LNG markets. TotalEnergies Mozambique Phase 1 at 1.7 bcf/d is significant, but our view has been because TotalEnergies delaying Phase 1 of 1.7 bcf/d is actually

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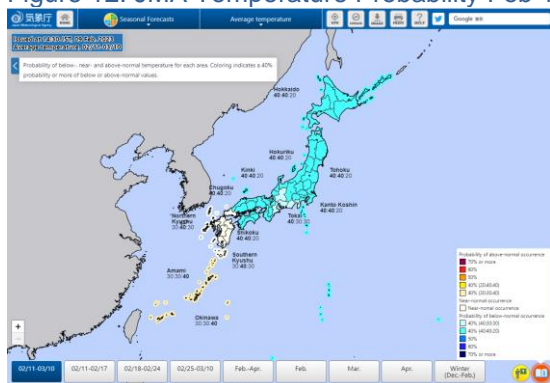
leading to a delay of 5.0 bcf/d. This was the reason why, on April 28 2021, we posted a 7-pg blog “Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?” [LINK](#) We thought, and still think, there has been a major change to the outlook for LNG supply in the 2020s and one that is still being overlooked – there is a big new LNG supply gap starting around 2025 that is hitting faster and bigger than anyone expects. We saw Total’s April 27, 2021 announcement of force majeure at its Mozambique Phase 1 LNG of 1.7 bcf/d was much more significant that viewed. We just didn’t see market focused on the fact that this situation backs up an additional 3.3 bcf/d of LNG supply that is also being counted on in all LNG supply forecasts. Total’s Phase 2 of 1.3 bcf/d was to follow, and Exxon’s Rozuma Phase 1 of 2.0 bcf/d was originally expected to go FID in 2019 but is now not expected to have a FID decision until 2022 at the earliest. Mozambique is considered a premium LNG supply region for Asia and is in LNG supply forecasts. Total’s original in service for Phase 1 is 2024. We had been warning that Mozambique has a major LNG market impact and its why we posted the April 28 blog. Its also why earlier we said that this is starting the clock running for other LNG projects wanting to go FID to make their mind up ie. like LNG Canada Phase 2.”

Natural Gas – Japan weather forecast now pointing to a colder end to Feb

Japan near-term weather forecasts continue to bounce around week to week. Last week’s (Feb 5, 2023) Energy Tidbits memo noted the Japan Meteorological Agency’s near term forecast for a warmer than normal Feb. There was a big change in their new weekly forecast. On Thursday, the Japan Meteorological Agency updated its 30-day outlook [LINK](#) and is forecasting colder than normal weather for the most of the country, which represents another forecast reversal. However, the end of Feb is near the end of winter so being colder than normal is not a huge boost to electricity demand. For example, AccuWeather forecasts for Tokyo near the end of Feb looks like a range between a nighttime low of ~5C and daytime high of ~10C.

Japan expects a colder than normal end to Feb

Figure 12: JMA Temperature Probability Feb 11 – Mar 10



Source: Japan Meteorology Agency

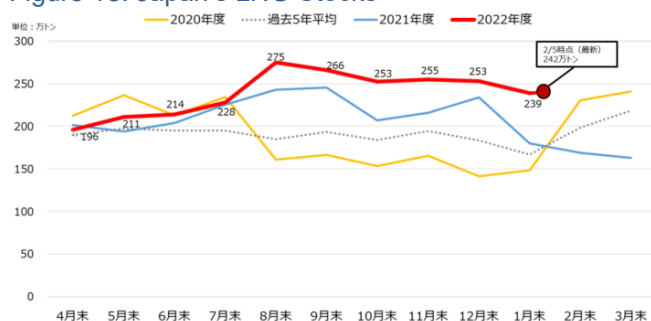
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Natural Gas – Japan’s LNG stocks down -4.4% WoW to 116 bcf

It looks like the recent colder weather in Japan led to some draws on their LNG stocks. But generally, it has been milder winter, so Japan’s LNG stocks are at high levels. It means that Japan is in pretty good shape to avoid LNG shortages in the winter. Especially since Europe is still warm. We always warn that Japan’s LNG stockpiles are not huge relative to LNG imports that have ranged from 7 to 14 bcf/d since Jan 1, 2021. LNG stockpiles held by Japanese power producers continue to exceed both last year’s level and the 4-year average. Japan’s METI weekly LNG stocks data was released on Wednesday [\[LINK\]](#). LNG stocks at Feb 5 were ~116 bcf -4.4% WoW from Jan 29 of ~122 bcf but above the 5-yr average of 95 bcf. Below is the LNG stocks graph from the METI weekly report.

**Japan LNG stocks
-4.4% WoW**

Figure 13: Japan’s LNG Stocks



Source: METI

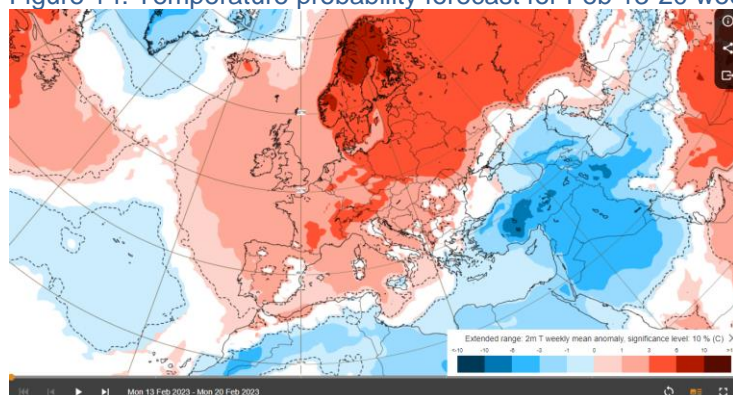
Natural Gas – Winter looks more or less done in Europe

The big global natural gas and LNG story this winter was it was warmer than normal in many key areas of the world, but, in particular, Europe. And there is no change to the forecasts calling for a warm end to winter in Europe. Every Monday and Thursday, the European Centre for Medium-Range Weather Forecasts updates its near-term forecasts. The forecasts normally are released in early afternoon MT. The ECMWF updates call for warmer than normal temperatures across all of Europe for Feb 13-Feb20, and Feb 20-27 weeks. [\[LINK\]](#) Red is never good for natural gas in a temperature forecast for winter.

**Winter is more or
less done in
Europe**

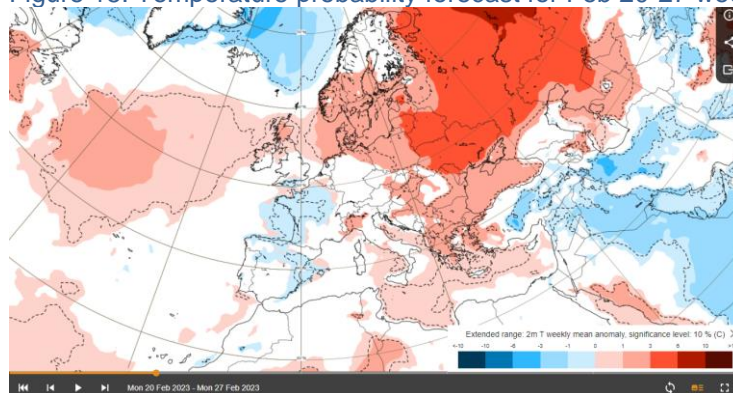
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Figure 14: Temperature probability forecast for Feb 13-20 week



Source: ECMWF

Figure 15: Temperature probability forecast for Feb 20-27 week



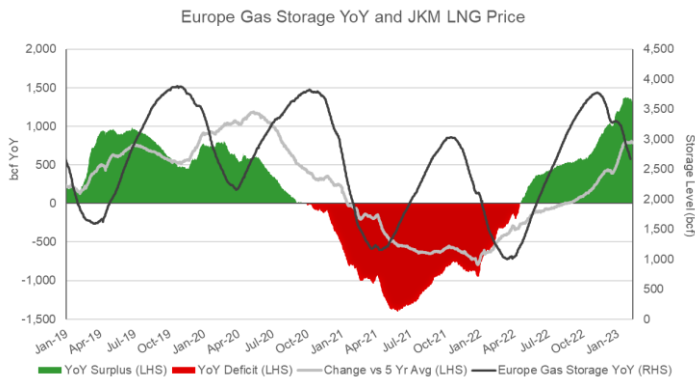
Source: ECMWF

Natural Gas – Europe storage is now +33.08% YoY ie. 67.51% full vs 34.43%

It's been a great winter so far for Europe in that, other than for a short period, it has been well above normal for most of continental Europe. Our Jan 8, 2023 Energy Tidbits noted that there has been negligible weather driven demand for natural gas, which along with the continued industrial demand destruction, means storage levels are at very high levels. This winter (Nov 1/22) began with gas storage at 94.94% capacity, up 17.86% YoY and is now a YoY surplus of 33.08%. However, temperatures dropped this past week resulting in storage falling -3.64% WoW to 67.51% on Feb 9. Storage is now +33.08% greater than last year levels of 34.43% and is +19.71% above the 5-year average of 47.80%. Below is our graph of Europe Gas Storage Level.

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Figure 16: Europe Gas Storage Level



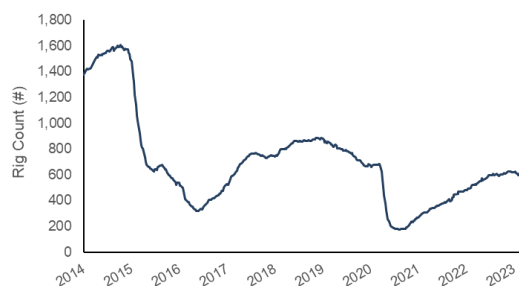
Source: Bloomberg

Oil – US oil rigs up +10 rigs to 609 oil rigs on Feb 10

Baker Hughes released its weekly North American drilling activity data on Friday. Last week's rigs were -10 and we thought that was likely due to HH pricing moving down below \$2.50 and WTI falling to just above \$70. This week, total US oil rigs were back up +10 to 609 rigs as of Feb 10, with rig additions seen at basins such as the Woodford, Permian and Others. We think the increase in oil rigs was for two reasons – as the service companies have been noting some rigs that were drilling for natural gas have switch to drilling for oil, and there may be some reclassification of some Permian rigs that showed natural for the past two weeks to be oil rigs. The total US oil rig count is now at 609 rigs, up +93 YoY, +128 from the 2022 low of 481 rigs in January and +437 since the 2020 low of 172 rigs on Aug 14. US gas rigs were down -8 WoW to a total of 150 rigs, an increase of +32 rigs YoY. Below is our graph of total US rigs.

**US oil rigs up +10
WoW**

Figure 17: Baker Hughes Total US Oil Rigs



Source: Baker Hughes

Oil – Total Cdn rigs up +1 WoW to 250 total rigs, +31 rigs YoY

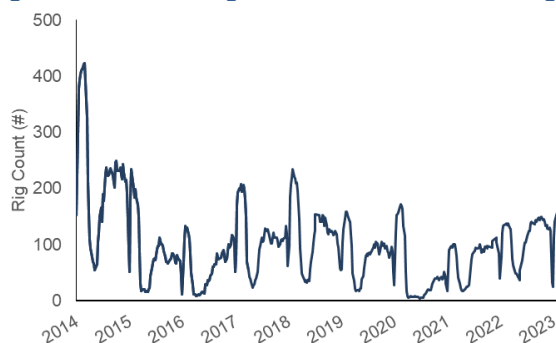
There was the traditional big ramp up in Cdn rigs in Jan post Xmas/New Years holiday, but that ramp up is over, but we are seeing the peak of winter drilling program in Feb so any other increases are likely to be modest at most. One key reason for modest increases is that NE BC drillers are trying to catch up now that the BC/Blueberry River First Nations deal was reached. BC rigs were +1 this week to 19, up 6 from 13 rigs in middle January. Total Cdn

Cdn rigs +1 WoW

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rigs were +1 WoW to 250 rigs as of Feb 10. As noted in last weeks memo, the modest increase in rig count is no surprise as the holiday season officially wrapped up. However, we do not expect the Cdn rig count to increase much further as the end of winter drilling is now only a few weeks away. Notably, the week of Feb 10 saw a +2 rig increase in SK, while AB saw a decline of -1 rig. There is now a total of 250 rigs, +74 vs the comparable Covid period of 176 rigs on Feb 12, 2021. Cdn oil drilling rigs have increased to 161, up +24 YoY from 137 rigs a year ago and Cdn gas rigs were down -1 rig WoW at 89 rigs. Below is our graph of total Cdn oil rigs.

Figure 18: Baker Hughes Total Canadian Oil Rigs



Source: Baker Hughes

Oil – US weekly oil production up to 12.3 mmb/d with North Dakota back on

It looks like North Dakota oil production has been restored by the EIA's estimate that there was a 0.1 mmb/d increase in production, which remained in limbo for the week of Jan 27. The EIA estimates US oil production was up slightly WoW to 12.3 mmb/d for the week ended Feb 3 with lower 48 production up and Alaska production flat WoW. US oil production, based on the weekly estimates, has been mostly range bound between 11.9 to 12.1 mmb/d since the 2nd week of May. But broke above 12.1 mmb/d to 12.2 mmb/d for the week ended Jan 6 as well as five weeks ago, the first time since it touched 12.2 mmb/d in the 1st week of August. Lower 48 production was up slightly WoW at 11.8 mmb/d this week and Alaska was flat at 0.5 mmb/d WoW. US oil production is up +0.700 mmb/d YoY at 12.3 mmb/d but is still down significantly at -0.900 mmb/d since the 2020 peak of 13.1 mmb/d on March 13.

**US oil production
up WoW**

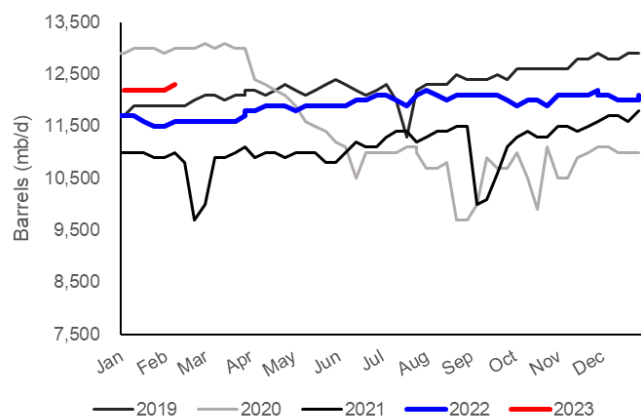
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Figure 19: EIA's Estimated Weekly US Oil Production

Year-Month	Week 1		Week 2		Week 3		Week 4		Week 5	
	End Date	Value	End Date	Value	End Date	Value	End Date	Value	End Date	Value
2021-Jan	01/01	11,000	01/08	11,000	01/15	11,000	01/22	10,900		
2021-Feb	02/05	11,000	02/12	10,800	02/19	9,700	02/26	10,000		
2021-Mar	03/05	10,900	03/12	10,900	03/19	11,000	03/26	11,100		
2021-Apr	04/02	10,900	04/09	11,000	04/16	11,000	04/23	10,900	04/30	10,900
2021-May	05/07	11,000	05/14	11,000	05/21	11,000	05/28	10,800		
2021-Jun	06/04	11,000	06/11	11,200	06/18	11,100	06/25	11,100		
2021-Jul	07/02	11,300	07/09	11,400	07/16	11,400	07/23	11,200	07/30	11,200
2021-Aug	08/06	11,300	08/13	11,400	08/20	11,400	08/27	11,500		
2021-Sep	09/03	10,000	09/10	10,100	09/17	10,600	09/24	11,100		
2021-Oct	10/01	11,300	10/08	11,400	10/15	11,300	10/22	11,300	10/29	11,500
2021-Nov	11/05	11,500	11/12	11,400	11/19	11,500	11/26	11,600		
2021-Dec	12/03	11,700	12/10	11,700	12/17	11,600	12/24	11,800	12/31	11,800
2022-Jan	01/07	11,700	01/14	11,700	01/21	11,600	01/28	11,500		
2022-Feb	02/04	11,600	02/11	11,600	02/18	11,600	02/25	11,600		
2022-Mar	03/04	11,600	03/11	11,600	03/18	11,600	03/25	11,700		
2022-Apr	04/01	11,800	04/08	11,800	04/15	11,900	04/22	11,900	04/29	11,900
2022-May	05/06	11,800	05/13	11,900	05/20	11,900	05/27	11,900		
2022-Jun	06/03	11,900	06/10	12,000	06/17	12,000	06/24	12,100		
2022-Jul	07/01	12,100	07/08	12,000	07/15	11,900	07/22	12,100	07/29	12,100
2022-Aug	08/05	12,200	08/12	12,100	08/19	12,000	08/26	12,100		
2022-Sep	09/02	12,100	09/09	12,100	09/16	12,100	09/23	12,000	09/30	12,000
2022-Oct	10/07	11,900	10/14	12,000	10/21	12,000	10/28	11,900		
2022-Nov	11/04	12,100	11/11	12,100	11/18	12,100	11/25	12,100		
2022-Dec	12/02	12,200	12/09	12,100	12/16	12,100	12/23	12,000	12/30	12,100
2023-Jan	01/06	12,200	01/13	12,200	01/20	12,200	01/27	12,200		
2023-Feb	02/03	12,300								

Source: EIA

Figure 20: US Weekly Oil Production



Source: EIA, SAF

Oil – EIA STEO increases 2023 oil production based on its increase to Q4/22

The EIA posted its February Short-Term Energy Outlook on Tuesday [\[LINK\]](#). (i) The EIA increasing its 2023 oil production forecasts based on higher Q4/22 exit production i.e. the EIA revised up its 2023 by 80,000 b/d but increased its forecast for Q4/22 by 130,000 b/d. (ii) The EIA revised up its Q4/22 forecast to 12.36 mmb/d in Feb STEO vs 12.23 mmb/d in Jan STEO. This increased its average 2022 oil production forecast from 11.86 mmb/d to 11.90 mmb/d, which is +0.65 mmb/d YoY vs 11.25 mmb/d in 2021. (iii) STEO 2023 average forecast is 12.49 mmb/d, which is up 80,000 b/d vs its Jan STEO of 12.41 mmb/d. The YoY growth is +590,000 b/d YoY vs 2022. As noted above, this is less than the EIA’s increase to its Q4/22 forecast of +130,000 b/d. (iv) The EIA is forecasting 2024 oil production to increase modestly to 12.65 mmb/d which is a YoY increase of +0.16 mmb/d.

EIA increases 2023 oil production forecast

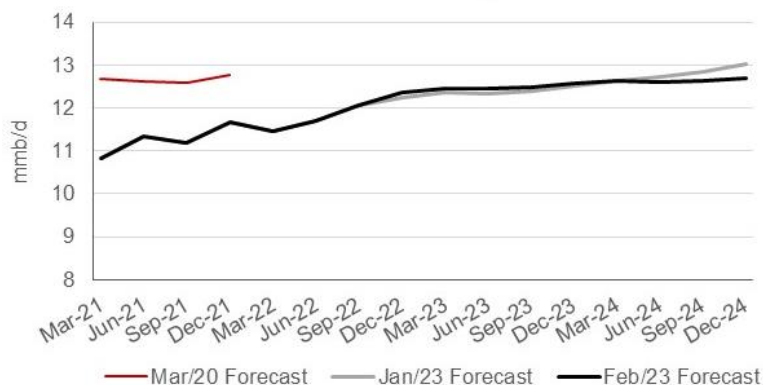
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Figure 21: Estimated US Crude Oil Production By Forecast Month

(million b/d)	Q1/21	Q2/21	Q3/21	Q4/21	2021	Q1/22	Q2/22	Q3/22	Q4/22	2022	Q1/23	Q2/23	Q3/23	Q4/23	2023	Q1/24	Q2/24	Q3/24	Q4/24	2024
Feb-2023	10.82	11.34	11.18	11.66	11.25	11.47	11.70	12.06	12.36	11.90	12.44	12.46	12.49	12.56	12.49	12.63	12.62	12.65	12.70	12.65
Jan-2023	10.82	11.34	11.18	11.66	11.25	11.47	11.70	12.05	12.23	11.86	12.37	12.34	12.40	12.51	12.41	12.63	12.72	12.86	13.03	12.81
Dec-2022	10.82	11.34	11.18	11.66	11.25	11.46	11.70	12.03	12.29	11.87	12.24	12.24	12.34	12.51	12.33					
Nov-2022	10.82	11.34	11.18	11.66	11.25	11.46	11.70	11.99	12.15	11.82	12.22	12.24	12.32	12.48	12.31					
Oct-2022	10.82	11.34	11.18	11.66	11.25	11.46	11.70	11.83	11.99	11.74	12.27	12.29	12.36	12.50	12.35					
Sep-2022	10.82	11.34	11.18	11.66	11.25	11.47	11.70	11.81	12.16	11.79	12.42	12.55	12.70	12.87	12.63					
Aug-2022	10.82	11.34	11.18	11.66	11.25	11.46	11.69	12.01	12.28	11.86	12.39	12.50	12.82	13.10	12.70					
Jul-2022	10.69	11.28	11.13	11.63	11.19	11.46	11.75	12.08	12.34	11.91	12.45	12.58	12.87	13.17	12.77					
Jun-2022	10.69	11.28	11.13	11.63	11.19	11.45	11.71	12.08	12.43	11.92	12.64	12.82	13.07	13.33	12.97					
May-2022	10.69	11.28	11.13	11.63	11.19	11.42	11.78	12.07	12.35	11.91	12.56	12.71	12.94	13.18	12.85					
Apr-2022	10.69	11.28	11.13	11.63	11.19	11.52	11.90	12.15	12.46	12.01	12.73	12.88	13.02	13.17	12.95					
Mar-2022	10.69	11.28	11.13	11.62	11.18	11.59	11.89	12.15	12.48	12.03	12.75	12.91	13.06	13.24	12.99					
Feb-2022	10.69	11.28	11.13	11.69	11.20	11.67	11.86	12.06	12.27	11.97	12.46	12.54	12.63	12.75	12.60					
Jan-2022	10.69	11.28	11.12	11.54	11.16	11.58	11.70	11.88	12.05	11.80	12.26	12.33	12.46	12.58	12.41					
Dec-2021	10.69	11.28	11.11	11.63	11.18	11.67	11.72	11.91	12.09	11.85										
Nov-2021	10.69	11.28	11.07	11.47	11.13	11.69	11.77	11.97	12.16	11.90										
Oct-2021	10.69	11.28	10.98	11.13	11.02	11.54	11.64	11.78	11.96	11.73										
Sep-2021	10.69	11.28	11.06	11.28	11.08	11.42	11.58	11.81	12.06	11.72										
Aug-2021	10.69	11.22	11.26	11.30	11.12	11.46	11.62	11.86	12.11	11.77										
Jul-2021	10.70	11.20	11.17	11.34	11.10	11.54	11.72	11.95	12.20	11.85										
Jun-2021	10.70	11.04	11.17	11.38	11.08	11.55	11.67	11.88	12.05	11.79										
May-2021	10.65	10.97	11.12	11.34	11.02	11.51	11.68	11.96	12.21	11.84										
Apr-2021	10.75	10.93	11.13	11.35	11.04	11.54	11.74	11.99	12.18	11.86										

Source: EIA STEO

Figure 22: Estimated US Crude Oil Production By Forecast Month



Source: EIA STEO

Oil – Plains forecasts Permian oil +500,000 b/d exit 2022 to 6.150 mmb/d at exit 2023

The big question for US oil production is how much will it grow in 2023 and, we think it's fair to say that most believe there will be growth but at a lower growth rate. The key to US oil growth is always the Permian. Plains All American held its Q4 call on Wed and highlighted its view for continued growth in Permian oil production in 2023 and beyond. For 2023, Plains said "we anticipate 2023 Permian crude oil production to grow plus or minus 500,000 barrels a day exit to exit based on an assumed 2022 exit production level of approximately 5.65 million barrels a day. Our updated forecast assumes an average horizontal oil count rig of -- rig count of 340 consistent with current levels, as part of our routine fundamentals forecasting process, we'll continue to monitor our assumptions regarding natural gas takeaway capacity and commodity prices as the year progresses." Plains seems pretty clear that this is "crude

**Permian
+500,000 b/d
YoY in 2023**

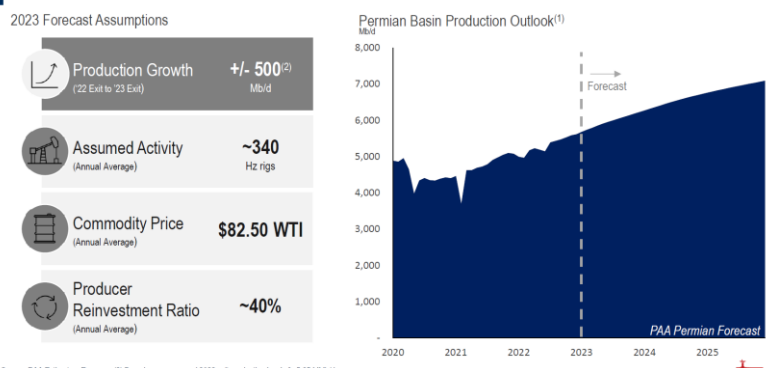
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oil” growth and not “boe” growth. Plains did not give an estimate for Permian oil growth in 2024, but, in just looking at their below forecast, it looks like slightly lower YoY growth in 2024. In the Q&A, mgmt. was asked if this was lower than their prior forecast for 2023 growth, which mgmt. said was +600,000 b/d and said “So we think the cadence is consistent.”

Figure 23: EIA Form 914 US Oil Production

Permian Basin Growth Continues in 2023

Current producer activity & demonstrated performance driving growth



⁽¹⁾ Source: PAA Estimates. Enverus. ⁽²⁾ Based on an assumed 2022 exit production level of ~5.65 MMBbl/d
Source: EIA

Oil – NOV sees emerging constraints to US oil growth

NOV is the old National Oilwell Varco, a large oilfield services company. On Tuesday, NOV held its Q4 call. Mgmt didn't give any estimates, but they are clearly in the camp that expects lessening US oil production growth over the coming years. We remind that people aren't calling for a near-term decline in US oil production but just a lesser rate of oil production growth and at higher cost. Here are a couple of NOV mgmt. quotes “Dwindling Tier 1 drilling location inventory and reversal a double-digit well productivity gains in terms of barrels per foot of lateral that fueled the rapid run up in US shale production several years ago are also emerging as constraints to production growth and like the international markets capital is scarce and expensive. Even though rising equipment utilization across North America in 2022 brought mercifully higher pricing enabling land drilling contractors and pressure pumpers to begin earning much improved returns on capital, the industry is hesitant to invest. For instance US high spec land rig day rates around \$40,000 a day can generate 20% capital returns on new bill rigs for efficient contractors. However, new capacity additions so far have been scarce going to capital, labor and supply chain constraints.” And “Given the Myriad of constraints, 2022 has exposed. It's no surprise that year-over-year US production growth fell well short of the 2016 to 2019 era and even fell short of greatly reduced expectations despite a massive drawdown in Duck inventory. Now, add to the constraints, I mentioned the emerging North American gas oversupply caused by constrained LNG export capacity out of the US and rising gas oil ratios in shelf basins as they mature and we foresee additional pressure on EMP economics and diminishing urgency to drill in North America. Our pricing across the board, will likely still lead to an overall increase in year-over-year E&P spending. But our outlook for 2023 North American land remains a little cautious in contrast to offshore and international land markets, where investment urgency utilization and pricing are rising.

NOV see more constraints on US oil growth

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Longer term we're bullish on all basins, in all areas including North America as a serious global structural shortfall and production becomes more evident. This returns me to where I started, constraints are everywhere in this industry years of limited exploration and reserve replacement now restrain the industry's ability to ramp production quickly, as a pipeline of developments has dwindled, FIDs in 2020 and 2021 are down 80% from 2009 peaks."

Oil – Biden still wonders why US oil companies don't invest in wells & refineries

One of the advantages of watching (and taping) Biden's State of the Union is that we can see what the White House transcript doesn't include and they made some big exclusions this week, including Biden's comments on needing oil for at least a decade. On Tuesday night, we tweeted [LINK](#) "*slip of tongue? "when i talked to a couple of them they say we're afraid you're going to shut down all the oil wells, all the refineries anyways so why should we invest in them. i say we're going to need oil for at least another decade" [laughter so adds] "and beyond that" #OOTT.*" Our tweet included the video clip we made of Biden's comments that were not in the White House posted SOTU transcript. Environmentalists jumped on him for saying oil will be needed for well beyond a decade. These were apparently ad lib comments and Biden only add the "*and beyond that*" after the laughter at him saying we're going to need oil for at least another decade. He must have realized that he was making the oil companies case on why they don't invest if they can only count on oil being used for another decade. There is no oil company that would invest in a refinery or other infrastructure if they thought they only had a decade to make their returns. But, to be fair, if companies thought oil was finished in a decade, they would rush to drill up short cycle wells to get some return.

Biden on oil

Who are the oil CEOs that are talking to Biden?

We also tweeted [LINK](#) "*hmm! wonder who "couple of them" are? the big oil ceo's have said they have only met with officials or cabinet and not Biden.*" As noted above, Biden said "*when I talked to a couple of them....*" We have never seen any reports of Biden speaking to oil company CEOs. We have only heard oil company CEOs say they have spoken to or met with Administration officials or cabinet ministers like Energy Secretary Granholm. We find these comments annoying no different than we would find Trump's comments annoying when he would say some people tell me or I hear. And, unfortunately, it makes the comments seem made up.

Oil – TC provides initial investigation findings on Keystone oil pipeline leak in Dec

On Thursday, TC Energy released [LINK](#) "*TC Energy shares initial investigation findings, revised release volume and actions.*" We did not see if they have publicly posted the full investigation. This release was items that TC says were "*the following updates of note*". TC wrote "*We have advanced our root cause investigation with the completion of an independent mechanical and metallurgical analysis of the failed pipe. The analysis concludes that the failure occurred due to a combination of factors, including bending stress on the pipe and a weld flaw at a pipe to fitting girth weld that was completed at a fabrication facility. Although welding inspection and testing were conducted within applicable codes and standards, the weld flaw led to a crack that propagated over time as a result of bending stress fatigue, eventually leading to an instantaneous rupture. The cause of the bending stress remains under investigation as part of the broader third-party root cause failure analysis. The metallurgical analysis identified no issues with the strength or material properties of the pipe or manufactured fitting. The pipeline was operating within its operational design and within*

TC's initial findings on Keystone leak

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the pipeline design maximum operating pressure. Our focus continues to be the safe operation of the pipeline system. Additional operational mitigations, such as reduced operating pressure, are in place to support the safe operations of our system while we continue our response and investigation. Our team is progressing a remediation plan, including an analysis of other areas with potentially similar conditions, the use of additional in-line inspections, and further operational mitigations.” Our Supplemental Documents package includes the TC release.

Hard to tell if exactly same risks as in GAO’s July 21 report on Keystone links

In the Thursday release, TC noted *“The analysis concludes that the failure occurred due to a combination of factors, including bending stress on the pipe and a weld flaw at a pipe to fitting girth weld that was completed at a fabrication facility. Although welding inspection and testing were conducted within applicable codes and standards, the weld flaw led to a crack that propagated over time as a result of bending stress fatigue, eventually leading to an instantaneous rupture.”* TC notes this weld flaw at a fabrication facility. TC did not note any issues on carrion. But the reason why we wish there was the detailed investigation is to see if they are talking about the same risks as per the US Government Accountability Office July 2021 report *“Pipeline Safety: Information on Keystone Accidents and DOT Oversight”*. [\[LINK\]](#). We highlighted this report in our Dec 19, 2022 Energy Tidbits. In that memo, we wrote *“After reading the GAO report, we have to wonder if there is the risk that the restart of the Affected Segment won’t be raised back above the 80% limit at restart. And we also wonder if it will take longer than expected for a restart of the Affected Segment. (iv) One thing that has missing from the Keystone oil leak is that it seems there hasn’t been the expected big uproar by Democrat politicians to shut it down permanently given the history of prior Keystone leaks. Especially since the GAO report was July 21 ie. during the Biden Administration. (v) In addition to the thickness/corrosion issues highlighted in the NGL report, we thought there were other fundamental issues from the GAO report. One that jumped out at us is the issue of quality and construction issues that were noted before the thinness issue. On the opening paragraph of the problems, the GAO wrote “In response to each of Keystone’s four largest spills, PHMSA issued Corrective Action Orders requiring TC Energy to investigate the accidents’ root causes and take necessary corrective actions. These investigations found that the four accidents were caused by issues related to the original design, manufacturing of the pipe, or construction of the pipeline. PHMSA also issued other enforcement actions and assessed civil penalties to TC Energy for deficiencies found during inspections, such as inadequate corrosion prevention and missing pipeline markers.” (vi) We assume the issue of quality may be linked to the timing of the leg south being with steel/pipe ordered during the big economy boom prior to the 2008 crash. (vii) Our concern is that the GAO report identified issues with Keystone and then the biggest oil leak happens 17 months after this report, it just makes wonder if the issues from the GAO July 2021 report get readdressed and stepped up a level in terms of corrective/preventative requests, which adds to the time to restart the Affected Segmetn. The GAO report highlights the PHMSA gave special approval for Keystone to operate at higher levels. This is from day 1, not the recent temporary higher levels. It’s a good report. Our*

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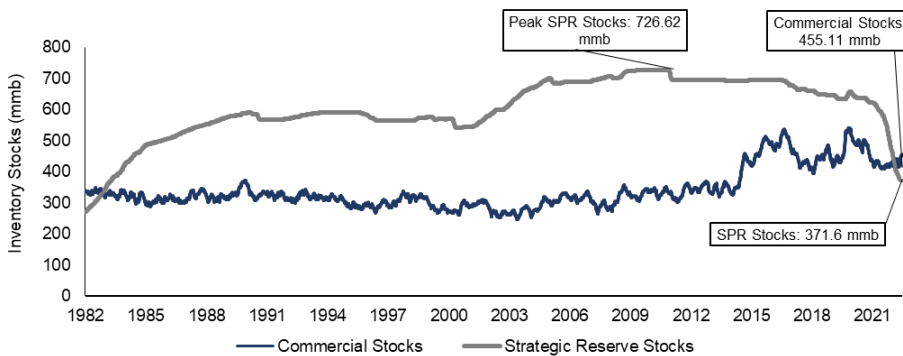
Supplemental Documents package includes the NGI report and excerpts from the GAO July 2021 report.”

Oil – US SPR reserves now -83.5 mmb lower than commercial crude oil reserves

Oil in US Strategic Petroleum Reserves (SPR) moved below total US commercial crude oil reserves in the Sept 16 week for the first time since 1983, with the deficit widening again this week due to the big build in commercial oil stocks that was primarily driven by another drop in US oil exports during the cold weather in the Gulf Coast. The EIA’s new weekly oil data for Feb 3 has SPR reserves at 371.6 mmb vs commercial crude oil reserves at 455.1 mmb. The below graphs highlight the difference between commercial and SPR stockpiles.

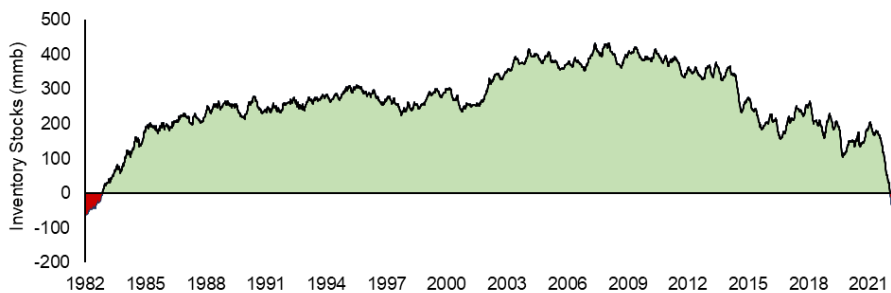
SPR reserves remain lower than commercial

Figure 24: US Oil Inventories: Commercial & SPR



Source: EIA

Figure 25: US Oil Inventories: SPR less commercial



Source: EIA

Oil – Any refilling of SPR should help narrow Cdn oil differentials

Maybe it’s because very few believe Biden will ever refill the Strategic Petroleum Reserve, but there is an overlooked positive for Cdn oil if he ever does move to refill the SPR. On Thursday, we tweeted [\[LINK\]](#) “Will Biden refill the SPR ? 266.4 mmb incl 183 mmb heavy pulled out since 01/01/21. If so, should help narrow Cdn heavy/medium differentials to WTI. \$PAA reminds ~70% of the SPR sales were heavy and "that more impacted imports from

SPR refills will help Cdn oil

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Canada & imports from other locations". #OOTT.” Our tweet included a table that showed there has been 266.4 mmb taken out of the SPR since Jan 1, 2021, which included 183.0 mmb of heavy sour and 83.4 mmb of sweet. Plains All American held its Q4 call on Wed and, in the Q&A, mgmt. highlighted how the SPR releases hurt Cdn oil into the Gulf Coast because 70% of the SPR releases are heavy that compete against Cdn oil. And Plains also noted that any refilling would therefore benefit Cdn oil. Mgmt said “Because last year lite crude imports -- exports increased by just a bit more than light crude production growth from the Permian -- from the like basins including the Permian. The SPR was 70% heavy, and that more impacted imports from Canada and imports from other locations. So the real need for replacement from those refineries, the roughly the average of 450,000 barrels a day of SPR releases over the calendar year is going to be on the heavy side. They're going to need to find replacements for that distillate yield. So it's really not a replacement and yields there. We look at that more of an impact to the heavy markets than it is to the light markets.” Our Supplemental Documents package includes the full Plains comment, the SPR reserves as of Dec 31, 2020 and Feb 3, 2023 as per the US Department of Energy.

Figure 26: SPR releases since Jan1, 2021 (million barrels)

	Sweet	Sour	Total
31-Dec-20	252.0	386.0	638.0
03-Feb-23	168.6	203.0	371.6
Change	-83.4	-183.0	-266.4

Source: US Dept of Energy

Oil – Cdn oil differentials down to \$18.65 at close on Feb 10

Note that we would expect to see a narrowing of Cdn oil differentials as normally happens every spring. Five weeks ago, the WCS-WTI differential was \$26.60 on Jan 6, but narrowed to \$23.00 on Jan 13, bounced up and down to close at \$23.75 on Jan 27, down last week to close at \$22.50 on Feb 3, and then down this week to close at \$18.65 on Feb 10. For perspective, a year ago, the WCS-WTI differential was \$13.50 on Feb 10, 2022. Below is Bloomberg’s current WCS–WTI differential as of Feb 10, 2023 close.

WCS less WTI differentials

Figure 27: WCS less WTI oil differentials including Feb 10 close



Source: Bloomberg

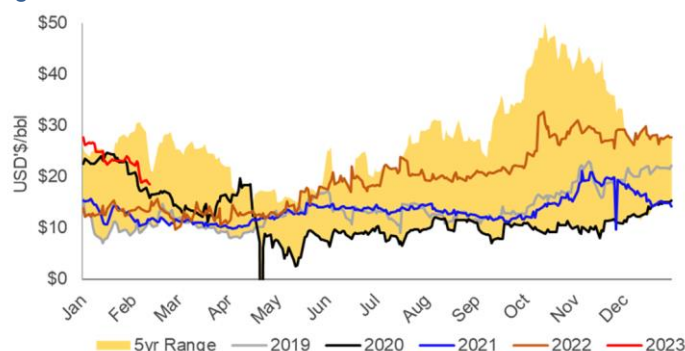
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Oil – Moving into normal season narrowing of Cdn heavy oil differentials

Unfortunately, there are often items like Keystone pipeline outage that impact Cdn heavy oil differentials. And the huge item, the release of mostly medium oil out of the SPR. It's not just unplanned events, but there are many items that impact Cdn heavy oil differentials, but we remind that we are just moving into the time of the year that normally sees Cdn heavy oil differentials narrow. This is the time of year, when refineries tend to maximize production of asphalt ahead of the annual summer paving season. As is said in Canada, there are two seasons in Canada – winter and paving season. Below is graph showing WCS-WTI differentials that shows this normal seasonal trend of narrowing WCS-WTI differentials from Feb thru May.

WCS differentials normally narrow in spring

Figure 28: WCS less WTI oil differentials



Source: Bloomberg

Oil – PrairieSky highlights west-central Sask Mannville heavy/light oil wells

We continue to be very bullish on the potential for Cdn conventional oil plays (ie. do not need fracking) to be extremely economic using the new-style fishbone drilling. Last week's (Feb 5, 2023) Energy Tidbits memo highlighted the biggest oil play in this category – the Clearwater heavy oil play. That is just one example. On Tuesday, PrairieSky held its Q4/22 call. In their prepared comments, mgmt. said *"The Mannville was the most active player with 48 heavy and light oil wells spud followed by the Viking with 46 wells spud and the Clearwater with 43 wells."* The accompanying map (see below) highlighted the west-central Sask area for these Mannville wells. Any oil person who was involved in the 80s and 90s knows these Mannville oil plays in west-central Sask. These plays were drilled up but weren't the greatest on the then technology of vertical wells, but there is huge well control in these multi-zone areas. The key here is that oil people know where the conventional oil is and are trying the new fishbone drilling technique to see the math and the math looks very strong. But PrairieSky said more when asked about the most active areas. In the Q&A, mgmt. replied *"I guess there was a certain focus on the kind of new multilateral opportunities within the Mannville stack in the heavy oil regions. And that's where we saw a number of new discoveries in a number of different zones, including Waseca, the Sparky, the upper and lower coming, so pretty interesting new developments there."* Our comment on this is that there are other Mannville oil zones not mentioned by PrairieSky, we suspect for competitive reasons. We expect to see lots of drilling in these Mannville oil zones in west-central Sask.

West central Sask oil plays

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Figure 29: WCS less WTI oil differentials



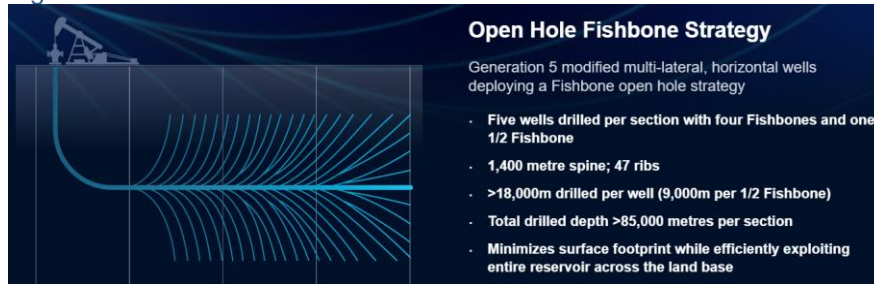
Source: PrairieSky

Best disclosure of this Mannville fishbone success is Lycos Energy

We have recently seen public disclosure in this west-Central Sask Mannville heavy/light oil area highlighted by PrairieSky. On Jan 16, the recently new public oil company, Lycos Energy, released the following *"Lycos is extremely optimistic about the results of its first multi-leg "fishbone" well drilled at 08-33-043-22W3. This 100% working interest well has been on production since late November 2022. The well achieved an average 30-day production ("IP30") rate of 149 boe/d and is currently producing 150 boe/d (100% oil). At recent strip pricing of USD 50\$/bbl WCS, the well is expected to achieve payout in less than 10 months."* And *"Based on the results of these two wells, Lycos has confirmed that the increased reservoir contact provided by the "fishbone" design appears to provide superior capital efficiency with an approximate 60% increase in productivity with a 10%-15% increase in capital expenditures, compared to single and multi-leg wells drilled in the vicinity."* This specific well location is within Lycos core area map, which is basically an overlay to where PrairieSky highlights above. We do not know if the Lycos disclosed wells are or are not on PrairieSky lands. Lycos did not disclose the specific layer of the multi-zone Mannville section, but we remind that there are more Mannville layers with oil than the Waseca and Sparky specifically mentioned by PrairieSky. No one who knows the Lycos CEO, Dave Burton, is surprised they are an early successfully player in the area highlighted by PrairieSky given his ~30 years experience drilling wells including in this part of Sask.

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Figure 30: About the Fishbone



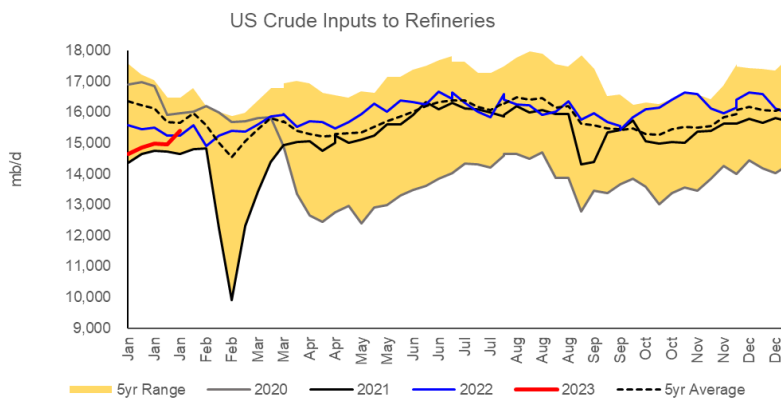
Source: Lycos

Oil – Refinery inputs up +0.429 mmb/d WoW to 15.410 mmb/d as weather warms

Refinery crude oil inputs recovered this week after being relatively flat following a partial recovery two weeks ago from the cold weather in the Gulf Coast four weeks ago that led to some temporary refinery impacts. On Wednesday, the EIA released its estimated crude oil input to refinery data for the week ended Feb 3. The EIA reported crude oil inputs to refineries were up +0.429 mmb/d WoW to 15.410 mmb/d, which is -0.167 mmb/d YoY from 15.577 mmb/d for the week ended Feb 4, 2022. There may still be some modest increases, but Feb/early March is normally when refineries move into some seasonal maintenance in Feb/early March for the switch to more summer fuels ie a period of declining crude oil inputs to refineries. This week’s refinery utilization was up to 87.9%, which is +2.2% WoW and -0.3% YoY. Total products supplied (i.e., demand) increased WoW, up +0.430 mmb/d to 20.536 mmb/d, and Motor gasoline was down -0.063 mmb/d to 8.428 mmb/d from 8.491 mmb/d last week. The 4-week average for Motor Gasoline was down -0.241 mmb/d YoY to 8.279 mmb/d. The 4-week average of Total demand was down -1.085 mmb/d YoY to 20.101 mmb/d.

Refinery inputs up WoW

Figure 31: US Refinery Crude Oil Inputs (thousands b/d)



Source: EIA

US “net” oil imports up WoW

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Oil – US “net” oil imports up +0.367 mmb/d WoW to 4.158 mmb/d

US “NET” imports were up +0.367 mmb/d to 4.158 mmb/d for the Feb 3 week. US imports were down -0.225 mmb/d to 7.058 mmb/d. US exports were down -0.592 mmb/d to 2.900 mmb/d. The WoW decrease in US oil imports was driven mostly by Top 10 with a decrease of -0.322 mmb/d. Some items to note on the by country data. (i) Canada was up this week +0.269 mmb/d to 3.856 mmb/d. (ii) Saudi Arabia was down -0.256 mmb/d to 0.384 mmb/d. (iii) Colombia was down -0.146 mmb/d to 0.070 mmb/d. (iv) Ecuador was down -0.036 mmb/d to 0.207 mmb/d. (v) Iraq was down -0.239 mmb/d to 0.230 mmb/d. (vi) Mexico was up +0.155 mmb/d to 0.913 mmb/d.

Figure 32: US Weekly Preliminary Oil Imports by Major Countries

US Weekly Preliminary Crude Imports By Top 10 Countries (thousand b/d)														
(thousand b/d)	Nov 11/22	Nov 18/22	Nov 25/22	Dec 2/22	Dec 9/22	Dec 16/22	Dec 23/22	Dec 30/22	Jan 6/23	Jan 13/23	Jan 20/23	Jan 27/23	Feb 3/23	WoW
Canada	3,076	3,844	3,354	3,423	3,795	3,066	3,504	2,949	3,737	3,707	3,419	3,587	3,856	269
Saudi Arabia	211	685	338	274	317	513	473	479	464	453	433	640	384	-256
Venezuela	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	528	495	300	585	602	632	581	428	668	909	511	758	913	155
Colombia	143	170	290	292	248	71	353	357	246	245	244	216	70	-146
Iraq	141	385	363	252	282	227	289	354	150	201	195	469	230	-239
Ecuador	101	42	242	159	157	70	274	87	137	0	69	243	207	-36
Nigeria	181	43	50	159	171	136	66	141	143	211	114	317	248	-69
Kuwait	0	0	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	0	0
Top 10	4,381	5,664	4,937	5,144	5,572	4,715	5,540	4,795	5,545	5,726	4,985	6,230	5,908	-322
Others	1,178	1,399	1,100	868	1,295	1,104	712	917	805	1,135	920	1,053	1,150	97
Total US	5,559	7,063	6,037	6,012	6,867	5,819	6,252	5,712	6,350	6,861	5,905	7,283	7,058	-225

Source: EIA

Source: EIA

Oil – Colombia oil production still below pre-Covid, Dec was 0.784 mmb/d

Despite stronger oil prices, the past two years saw Colombia oil production stuck at levels below 0.750 mmb/d up until September when it reached 0.754 mmb/d. Following MoM increases of +0.44% and +1.85% in October and November, December’s oil production increased +1.73% MoM to 0.784 mmb/d, which is the highest level seen since 0.796 mmb/d in April 2020. On Feb 6, Reuters reported [LINK](#) Colombia oil production in December was up +5.2% YoY to 0.784 mmb/d vs 0.771 mmb/d in November. December’s data brings average 2022 production to 0.754 mmb/d, up +2.37% YoY from 2021’s 0.736 mmb/d but production remains -14.92% below pre-Covid levels of 0.886 mmb/d in 2019. Reuters also reported “Natural gas output in December was 1.06 billion cubic feet per day... Gas production for the year averaged 1.07 billion cubic feet per day, down 1.29% versus 2021, when gas production hit almost 1.09 cubic feet per day”.

Colombia
December oil &
gas production

Figure 33: Colombia Oil Production

mmb/d	2015	2016	2017	2018	2019	2020	2021	21/20	2022	22/21
Jan	1.036	0.986	0.860	0.860	0.899	0.884	0.745	-15.7%	0.740	-0.7%
Feb	1.030	0.955	0.864	0.823	0.893	0.878	0.746	-15.1%	0.740	-0.8%
Mar	1.023	0.917	0.804	0.856	0.885	0.857	0.745	-13.0%	0.751	0.8%
Apr	1.029	0.915	0.857	0.865	0.891	0.796	0.745	-6.4%	0.751	0.8%
May	1.027	0.904	0.851	0.866	0.895	0.732	0.703	-3.9%	0.746	6.1%
June	1.010	0.888	0.857	0.864	0.892	0.730	0.694	-4.9%	0.752	8.4%
July	0.947	0.843	0.856	0.860	0.869	0.735	0.731	-0.5%	0.748	2.3%
Aug	0.968	0.827	0.858	0.866	0.883	0.742	0.748	0.8%	0.749	0.1%
Sept	1.009	0.859	0.851	0.869	0.879	0.749	0.744	-0.7%	0.754	1.3%
Oct	1.005	0.846	0.864	0.879	0.883	0.751	0.740	-1.5%	0.757	2.3%
Nov	0.990	0.855	0.851	0.883	0.880	0.761	0.747	-1.9%	0.771	3.2%
Dec	0.999	0.837	0.870	0.889	0.882	0.759	0.745	-1.8%	0.784	5.2%

Source: Bloomberg, Colombia Ministry of Mines and Energy, SAF Group

Source: Bloomberg, Colombia Ministry of Mines and Energy, Reuters

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Oil – “Russia in March will voluntarily reduce production by 500,000 barrels per day”

Early Friday morning, we tweeted [LINK](#) on the breaking news “Brent +\$2 to \$86.50. “Russia in March will voluntarily reduce production by 500,000 b/d. This will contribute to the restoration of market relations” says Novak. This is a cut in crude oil, does not impact condensates. #OOTT.” TASS had just reported on comments by Russia Deputy Prime Minister Novak ““ To date, we fully sell the entire volume of oil produced, however, as was stated earlier, we will not sell oil to those who directly or indirectly adhere to the principles of the “price ceiling”, he said. “In this regard, Russia in March will voluntarily reduce production by 500 thousand barrels per day. This will contribute to the restoration of market relations,” Novak added. The representative of Novak said that the reduction in production will affect only oil, excluding gas condensate. According to a TASS source in the industry, the reduction in production will be counted from the real level of production, and not from Russia’s quota under the OPEC + deal. He said that Russia made this decision on its own, there were no consultations with OPEC+.” Our Supplemental Documents package includes the TASS report. [LINK](#)

Russia to reduce production by 500,000 b/d

Oil – Was Russia’s voluntary 500,000 b/d cut because the oil isn’t profitable?

Our follow up tweet on Russia’s voluntarily reducing oil production by 500,000 b/d in March was [LINK](#) “Voluntary = non-profitable? Russia’s “voluntary” reduction of 500,000 b/d. Makes sense, See 📌 09/02/21 & 01/27/21 tweets, admitted had a lot of marginal #Oil. Then add forced price discount & higher shipping, insurance costs from sanctions. #OOTT”. We just wonder if the voluntary cut isn’t really a voluntary cut but just an acknowledgement that some of its oil production wasn’t profitable given the impact of forced price discount, added shipping and insurance costs from sanctions. Long before sanctions, Russia openly acknowledged, at least in Russia press, that half of its reserve weren’t profitable at \$50. Now that was referring to reserves and not necessarily production, but given how Russian oil exports are being hit by price discounts, higher shipping and insurance costs, we have to wonder if the 500,000 b/d is really just shutting in production that isn’t profitable.

Voluntary or non-profitable oil

Sept 2, 2021, Russia said only half of its oil reserves were profitable at \$50

Our Friday tweet linked to a Sept 2, 2021 tweet [LINK](#) “Only half of Russia’s #Oil reserves are profitable at \$50 says Deputy Energy Minister Sorokin. Fits Jan 27 linked tweet. Bullish for mid/long term oil prices. Detailed comment in SAF Group Jan 27, 2021 Energy Tidbits memo <https://safgroup.ca/news-insights/> #OOTT.” Our Sept 5, 2021 Energy Tidbits memo was titled “Only Half of Russia’s Oil Reserves are Profitable at \$50 says Deputy Energy Minister Sorokin.” We then wrote ““ We will ask the same rhetorical question as we did in our Jan 31, 2021 Energy Tidbits – imaging what markets would say if Exxon were to come out in their year end reporting and say only 50% of its existing oil reserves are profitable at \$50? On Thursday, we tweeted [LINK](#) “Only half of Russia’s #Oil reserves are profitable at \$50 says Deputy Energy Minister Sorokin. Fits Jan 27 linked tweet. Bullish for mid/long term oil prices. Detailed comment in SAF Group Jan 27, 2021 Energy Tidbits memo”. There was a typo in the tweet as we should have said the Jan 31, 2021 Energy Tidbits memo that was titled “Russia Says Increasing Water Cut, Deteriorating Development, Etc Mean Only 36% of Its Oil Reserves are Profitable.” This week, Russia’s Deputy Energy Minister Sorokin came out with almost identical comment as he did on Jan 27, 2021 saying “even in our current structure of reserves, a significant part of it is unprofitable

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at a price of \$50 – about half there. There is a very large layer of opportunities for working with the current resource base: with small fields, with depleted, with tailing assets, with deeper and more difficult layers. What you need to concentrate on”. Sorokin’s Jan 27 comments were basically overlooked as they were only in the TASS Russian news version. But we thought then and still think know that this is a significant admission from Russia as to the mid/long oil supply and we believe a bullish comment for oil in the 2020s. One difference is that Sorokin gave much more insight into the uneconomic oil reserves in his Jan 27 comment in Russia. Below is what we wrote in our Jan 31, 2021 Energy Tidbits on his comments. Our Supplemental Documents package includes the TASS Sept 2 report on Sorokin’s comments.”

Jan 27, 2021, Sorokin said 64% of oil reserves not profitable

Our Friday tweet also linked to a Jan 27, 2021 tweet. Here is what we wrote in our Jan 31, 2021 Energy Tidbits memo on that tweet. “Imagine what markets would say if Exxon were to come out in their year end reporting and say that 64% of its existing oil reserves are not profitable at >\$50 oil. The stock would be creamed as markets would think Exxon wouldn’t have oil growth potential and its oil production had likely peaked. This is what Russia said this week for their oil reserves. We were surprised by a TASS Russian news story on Wed morning and would have thought it was a fake if it wasn’t on TASS as we would never have thought Russia’s #2 oil official (after Novak) would be saying what he did. We tweeted [\[LINK\]](#) “1/2. must read, bullish for oil @tass_agency story “only 36% of oil reserves in Russia are profitable”. multiple indicators of maturing oil supply ie. deeper, smaller pools, etc. Effectively says RUS has more or less reached peak oil supply unless #Oil prices are higher #OOTT ..” and [\[LINK\]](#) “2/2. surprising RUS lays this out, but fits to Novak’s Dec comments and why they would want higher oil prices for 2020s sooner. see SAF Group blog Russia Says its a Price Taker at \$45 in 2021, May Be the New Strategy Needed for OPEC+ to Fix Post Covid Oil Prices For 2020s. #OOTT”. TASS wrote “Only 36% of 30 billion tons of oil reserves in Russia are profitable, which is associated with the deterioration of development conditions and a drop in the quality of reserves, writes the Deputy Minister of Energy of the Russian Federation Pavel Sorokin in an article for the Energy Policy magazine. “According to the data of the inventory of the economics of field development, carried out on behalf of the Russian government, out of 30 billion tons of recoverable oil reserves in Russia, only 36% is profitable in the current macroeconomic conditions. This is due to the deterioration of development opportunities: an increase in water cut, the need to permeability and compartmentalization of reservoirs, withdrawal into marginal zones and strata with small thicknesses, and so on, “Sorokin explained.” This is significant, Sorokin is basically saying Russia has more or less reached peak oil supply, or at least peak oil supply unless prices are going higher. Maybe there is some growth but Russia has to first arrest declines. This is very different than what we see in the Middle East. Russia is saying its maturing oil production/reserves base needs higher oil prices as its oil base is maturing and they are going after smaller pools (higher cost per barrel), deeper zones (higher costs per barrel) and need new technology (we wonder if this means shale, although Putin has been negative). And also very different than Saudi Arabia. Their costs are going up to, but they aren’t saying their oil

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production/reserves needs higher oil prices to be economic. Rather they and others like we saw with Kuwait this week need higher oil prices to balance their govt budget. They don't say they need higher oil prices to develop its oil reserves. One reminder, producing oil reserves isn't like drinking a glass of water, where you turn the cup down and the water flows out at the same rate until the glass is empty. As oil reserves produce more from a reservoir that is economic today, the oil recovery rate declines over time and the future barrels become more expensive to produce. This is more than food for thought. If peak oil demand isn't here until 2030, then its bullish for oil post Covid. Even if oil demand only recovers to pre Covid, its bullish or at least supportive of higher prices. Our Supplemental Documents package includes the Google Translate version of the TASS Russian story."

Oil – Russia oil & LNG sales to India, US says “not looking to sanction India”

On Thursday, The Hindu reported [\[LINK\]](#) on the US, once again, confirming that they are not going to sanction India for its oil and LNG purchases from Russia. India has been clear that they will buy oil from whoever they want. They reported “*Not looking to sanction India, our relations are most consequential: U.S.*” “U.S. Assistant Secretary of State for European and Eurasian Affairs Karen Donfried on Wednesday said that the U.S. is comfortable with the approach India has taken in buying oil from Russia and added that her country is not looking to sanction New Delhi as the relations between the two countries are most consequential. Image for representational purposes only. U.S. Assistant Secretary of State for European and Eurasian Affairs Karen Donfried on Wednesday said that the U.S. is comfortable with the approach India has taken in buying oil from Russia and added that her country is not looking to sanction New Delhi as the relations between the two countries are most consequential.”

**US won't
sanction India
on Russia oil**

India told US in Oct it will buy oil from anyone, its priority is energy security & affordability

India has told the US it will be buying oil from anyone. Here is what we wrote in our Oct 9, 2022 Energy Tidbits. “*It got very little press but US Energy Secretary Jennifer Granholm met in Washington with India oil minister Hardeep Singh Puri. The US Dept of Energy released a joint ministerial statement from the ministers that does not even note their names or quotes. Not the norm. And, to no surprise, it made zero mention of oil, LNG or Russia. We did see the photo-op but didn't see a joint press conference as is normally the case. No surprise why it looks like they didn't have a joint press conference based Puri's comments at a subsequent press conference in Washington. We watched multiple ANI (Indian news) video clips and their posted stories hit the highlights. (i) Russian oil. We tweeted [\[LINK\]](#) “1/3. Great @ANI reporting on clear India energy position from @HardeepSPuri post @SecGranholm meeting. “Have I been told by anyone to stop buying Russian oil? The answer is a categorical No”. #OOTT #NatGas #LNG”. (ii) India will buy oil from anyone. We tweeted [\[LINK\]](#) “2/3. “India will buy oil from wherever it has to for the simple reason that this kind of a discussion cannot be taken to the consuming population of India” says @HardeepSPuri. #OOTT @ANI.” (iii) Priority is energy security/affordability. We tweeted [\[LINK\]](#) “3/3. “If you are clear about your policy, which means you believe in energy security, energy affordability you will buy from wherever you have to. Our energy purchases from sources hitherto unheard of, we are in discussion with them.” @HardeepSPuri. Thx @ANI. #OOTT.” (iv) India has been able to keep prices down.*”

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Puri also noted that they have been able to keep oil price impact low. ANI wrote ““In terms of petrol and diesel, if the increases in North America are 43-46 per cent, in India we allow prices to go up by only 2 per cent or so. In terms of gas, global benchmarks went up by 260-280 per cent and our own ability to contain gas price increases was something around 70 per cent,” Puri told reporters in Washington DC.” (v) There are other items in the ANI reports.”

Oil – 44th anniversary of Iran’s Islamic Revolution was yesterday

Yesterday was the 44th anniversary of an event that changed the world and still so to today – the Islamic Revolution on Feb 11, 1979 that led to the formation of the Islamic Republic of Iran. Iran’s PressTV wrote [\[LINK\]](#) “*The Iranian nation overthrew the despotic regime of Pahlavi, which was fully supported by the United States in the winter of 1979. The struggle against the shah regime reached full fruition on February 11, 1979. By December 1978, millions of Iranians had taken to the streets in protest against the policies of the shah – Mohammad Reza Pahlavi – on a regular basis. Imam Khomeini returned to Iran from exile on February 1, 1979. He was received by millions of people weeks after the departure of the shah in mid-January 1979. The collapse of the Pahlavi regime became certain on February 11 when the military renounced its loyalty to the shah and joined the Revolution.*”

Iran’s Islamic Revolution Feb 11, 1979

And led to the Iran hostage crisis that started Nov 4, 1979

Above we say that the revolution changed the world because the revolution led to the Iran hostage crisis nine month later. US sanction on Iran have been in place for over 40 years. The game changing event of the US/Iran relationship happened on Nov 4, 1979, when what was called a group of Iranian militant students stormed the US embassy and took 52 Americans as hostage. The hostages were held for 444 days (Nov 4, 1979 to Jan 20, 1981). It also led to the six fortunate American diplomats who were able to escape to the Canadian embassy and eventually, posing as Canadians, were able to get out of Iran on Jan 27, 1980. We are sure that most of seen some of the movies on the Canadian Caper. Iran was a big news item for all of 1979 when the Shah of Iran fled Iran on Jan 16, 1979 and then to the forming of the Islamic state created by the Ayatollah Khomeini. The Shah of Iran was considered the #1 US ally in the Persian Gulf. Iran became an Islamic Republic on Apr 1, 1979. International concerns and tensions were escalating in the seven months before the hostage taking. Algeria played the role as mediator. Carter got wiped out in the Nov 1980 election by Reagan. And the hostages were released after the signing of the Algiers Accord, minutes after Reagan was sworn in. And then it led to the start of US sanctions against Iran that have more or less been in place since then.

Over 70% of Iran’s population was born after the revolution

We have to believe the key reason why outsiders believe change could come in Iran even before any eventual passing of Ayatollah Khamenei (83 years old) is the demographics of Iran. Over 70% of Iran’s population was born after the 1979 revolution. As of 2021, 36.8% of males and 35.5% of females for a total of 72.3%. And all the young people in their early 20s were born to parents who were likely young children at the time of the revolution. So these 20 somethings are children whose parents really didn’t fight for and live in the revolution.

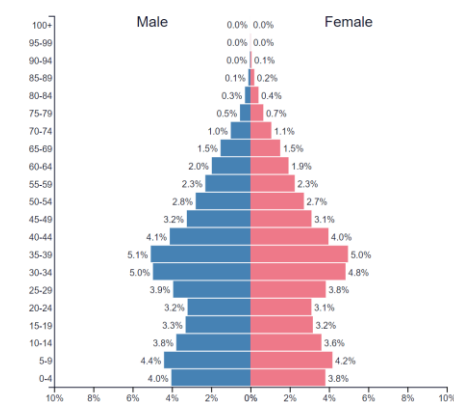
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Figure 34: Iran's Population Pyramid as of 2021

Iran (Islamic Republic of) ▼

2021

Population: 87,923,432



Source: PopulationPyramid.net

Oil – Birol seemed to signal IEA will be increasing its 2023 oil demand forecast

The IEA posts its monthly Oil Market Report on Wed Feb 15. Last Sunday afternoon, we tweeted [\[LINK\]](#) "Hmmm! Maybe an increase to @IEA 2023 #Oil demand in Feb OMR? @fbirol "i look at the #JetFuel demand in China, it is growing very, very strongly. if the rebound continues at this pace, we may see definitely upward pressure on the demand side". Thx @menakadoshi. #OOTT." IEA Executive Director Fatih Birol was interviewed on Bloomberg last Sunday afternoon. And he seemed to signal that the IEA will be increasing its oil demand growth forecast for 2023, at least for China. He was asked about the biggest uncertainty for the near term for oil said it was China, both for oil and natural gas. He referenced the IEA current forecast assumes China is half of the global oil demand increase in 2023 and that was assuming a moderate recovery. And a stronger recovery would put upward pressure on demand and prices. He specifically noted jet fuel demand was growing "very very strongly" and if that continues, hen may see definite upward pressure. Our tweet included the transcript of his response. Here is what he said 'Birol "there are many uncertainties as we have been discussing since a year. Oil markets are always seeing a lot of uncertainties, but in the year 2023. If you ask me to choose the most important uncertainty, it is for me, China. Both for oil and gas markets. Because last year, 2022, Chinese oil and gas consumption, domestic consumption, declined for the first time since 40 years. We have never seen Chinese oil and gas demand decline since 40 years. And if we consider that China is the #1 oil importer of the world, top LNG importer of the world. If Chinese economy rebounds, rebounds strongly, this will have important implications for the oil and LNG markets. Because even current situation if we see a moderate rebound of Chinese economy, we expect this year about half of the growth in global oil demand will come from China only. But this is moderate and maybe as some international financial institutions claim, Chinese economic rebound may be much stronger than expected. This will put some higher upward pressure on the demand side and therefore on the prices unless OPEC+ countries take steps to comfort the market. But the same applies to LNG markets as well." Bloomberg's Doshi "I am going to ask you to answer the OPEC question in just a bit.

IEA's Birol on
China

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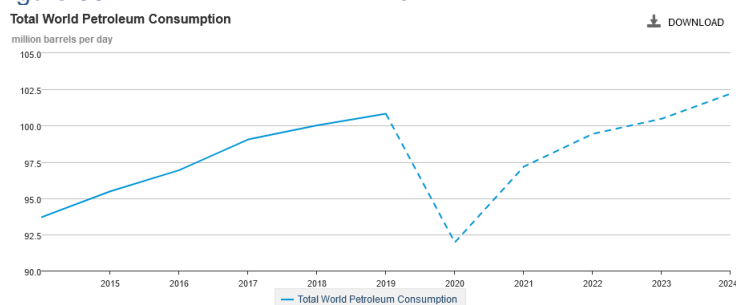
But before that Mr. Birol, why haven't we seen any feed in yet of the China recovery process into prices yet. Do you think because it's just too nascent?" Birol "It is just starting, For example before coming here, I look at the jet fuel demand in China, it is growing very, very strongly. If the rebound continues at this pace, we may see definitely upward pressure on the demand side."

Oil – EIA sees record petroleum demand in 2024 with upside from China reopening

The new EIA Short Term Energy Outlook February 2023 only made an immaterial increase to its 2024 global petroleum consumption forecast to +1.79 mmb/d YoY to reach 102.26 mmb/d (was 102.20 mmb/d. This is a new record level of global petroleum production. The EIA's STEO January 2023 report was when they introduced their first forecasts for global petroleum consumption for 2024. At that time, on Jan 10, the EIA tweeted the below graph [\[LINK\]](#) saying "Our first forecasts for 2024: We expect record global petroleum consumption in 2024, with lower global crude oil prices. #STEO." That was in the STEO January and the STEO February is marginally higher. But the EIA STEO February also noted there is potential upside to their oil demand forecasts depending on the China reopening. This week, the EIA wrote "liquids fuel consumption in the forecast increases from an average of 99.4 million barrels per day (b/d) in 2022 to 102.3 million b/d in 2024, driven primarily by growth in China and other non-OECD countries. However, significant uncertainty around our demand forecast remains based on possible outcomes for the evolving global economic conditions and China's pivot away from a zero-COVID strategy. We forecast that the reversal of restrictions will contribute to oil demand in China increasing by 0.7 million b/d in 2023 and by 0.4 million b/d in 2024."

EIA sees record oil demand in 2024

Figure 35: EIA's first forecast for 2024 is record oil demand



Source: EIA STEO January 2023

Oil – China domestic flights 10.9% WoW after Lunar New Year celebrations are over

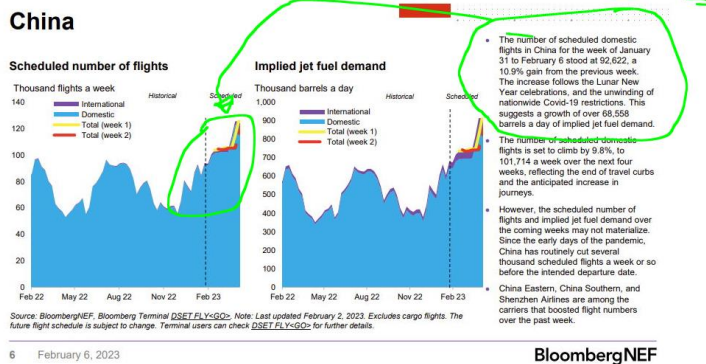
Last week's (Jan 29, 2023) Energy Tidbits memo noted how the ramp up in China domestic flights following the reopening had switch to a 9% WoW decline that coincided with the Lunar New Year celebrations during which people typically travel less. We said that should mean a bounce back week and there was. Following the -9% WoW decline in the Jan 24-30 week, Chinese scheduled domestic flights were +10.9% for the Jan 31-Feb 6 week. On Monday, we tweeted [\[LINK\]](#) "China domestic flights back up now Lunar New Year celebrations are over. China domestic flights: Jan 31-Feb 6: +10.9% WoW. Jan 24-30: -9% WoW. Jan 17-23:

China domestic flights

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+7% WoW. Jan 10-16: +20% WOW. China international flights continue to ramp up. Thx @BloombergNEF Claudio Lubis. #OOTT #Oil."

Figure 36: China scheduled domestic flights.



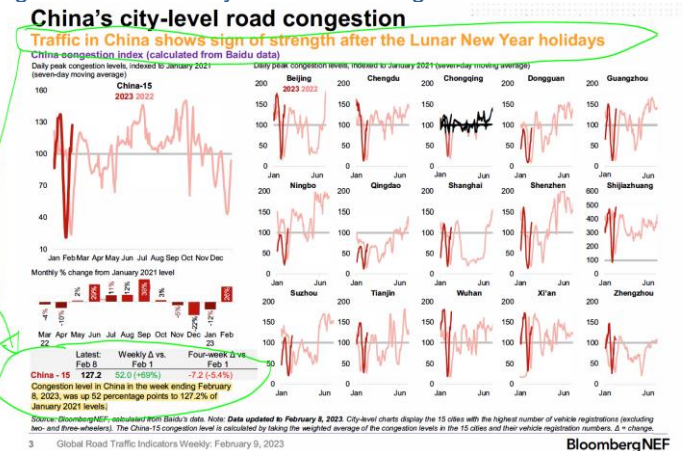
Source: BloombergNEF

Oil – China’s city level road congestion up strong post Lunar New Year holidays

There has been a strong increase in China city level road congestion post the Lunar New Year holidays. On Thursday, we tweeted [LINK](#) “China reopening. China city-level road congestions (Baidu data) up big post Lunar New Year holiday. +52% for wk ending Feb 8 to 127.2% of Jan 21 levels. +50% for wk ending Feb 1 (New Year was Jan 22) to 75.2% of Jan 2021 levels. Thx @BloombergNEF. #OOTT.” Our Jan 29, 2023 Energy Tidbits memo had highlighted how China’s had plunged 87.8% for the week ended Jan 25 (New Year was Jan 22) as China was in the full blown holiday mode. As noted in our Thursday tweet, that has been more than made up in the two subsequent weeks. Our tweet included the below BloombergNEF graphic that shows Baidu data for road congestion in China’s major cities.

China’s city road congestion up strong

Figure 37: China city-level road congestion for week ended Feb 8



Source: BloombergNEF

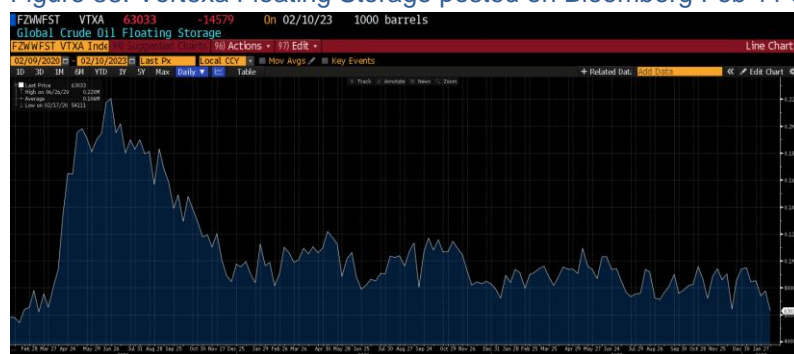
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Vortexa crude oil floating storage

Oil – Vortexa crude oil floating storage 63.03 mmb, -14.58 mmb WoW

We are referencing the Vortexa global crude oil floating storage data posted on the Bloomberg terminal as of 10am MT yesterday. Note that these estimates get revised over the course of the week and the revisions can go back months. We do not check daily for the revisions, so our comments on the new estimates are compared to the prior week's Vortexa estimates posted on Bloomberg on Feb 4 at 10am MT. (i) As of 10am MT yesterday, Bloomberg posted Vortexa crude oil floating storage estimate for Feb 10 at 63.03 mmb, which is down -14.58 mmb vs revised up Feb 3 of 77.61 mmb. Note Feb 3 was revised +5.82 mmb vs 71.79 mmb originally posted on Bloomberg as of 10am MT on Feb 4. (ii) Other than the Feb 3 upward revision, the prior several weeks were a mix of up and down revisions but not big in either direction. (iii) What still isn't clear is now the increasing number of dark tankers moving Russian oil is impacting the Vortexa estimates. (iv) The revisions from the estimates posted yesterday at 10am MT vs the estimates posted on Bloomberg at 10am on Feb 4 are as follows: Feb 3 revised +5.82 mmb. Jan 27 revised +1.01 mmb. Jan 20 revised -0.92 mmb. Jan 13 revised -1.21 mmb. Jan 6 revised --.11 mmb. Dec 30 revised -2.49 mmb. Dec 23 revised -2.38 mmb. (v) There is still a wide range of floating storage for the past several weeks, but a simple average for the past seven weeks is 81.92 mmb, which is down vs last week's 85.15 mmb with the dropping of a big week and inclusion of this week's 63.03 mmb. (vi) Also remember Vortexa revises these weekly storage estimates on a regular basis and we do not track the revisions through the week. (vii) Feb 10 estimate of 63.03 mmb is down -157.04 mmb vs the post-Covid peak on June 26, 2020 of 220.43 mmb. (vi) The below graph goes back 3 years and not just 2 years as floating oil storage was in the big ramp up period in Q2/20 as Covid started to have a huge impact. Feb 10 estimate of 63.03 mmb is +5.08 mmb vs Pre-Covid of 57.95 mmb as of Feb 10, 2020. Feb 10 estimate of 63.03 mmb is -28.02 mmb YoY vs Feb 11, 2022 of 91.05 mmb. (vii) Below are the last several weeks of estimates posted on Bloomberg as of 10am MT on Feb 11. 10 am on Feb 4 and 10am on Jan 28.

Figure 38: Vortexa Floating Storage posted on Bloomberg Feb 11 at 10am MT



Source: Bloomberg, Vortexa

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Figure 39: Vortexa Estimates Posted Feb 11 10am MT, Feb 4 10am MT, Jan 28 10a MT

Posted Feb 11, 10am MT							Feb 4, 10am MT							Jan 28, 10am MT						
FZwWFST VTXA Inde 941 Su							FZwWFST VTXA Inde 941 Su							FZwWFST VTXA Inde 941 Su						
ID	3D	1M	6M	YTD	1Y	5	ID	3D	1M	6M	YTD	1Y	5	ID	3D	1M	6M	YTD	1Y	5
Date							Date							Date						
Last Px							Last Px							Last Px						
Fr	02/10/2023						Fr	02/03/2023						Fr	01/27/2023					
Fr	02/03/2023						Fr	01/27/2023						Fr	01/20/2023					
Fr	01/27/2023						Fr	01/20/2023						Fr	01/13/2023					
Fr	01/20/2023						Fr	01/13/2023						Fr	01/06/2023					
Fr	01/13/2023						Fr	01/06/2023						Fr	12/30/2022					
Fr	01/06/2023						Fr	12/30/2022						Fr	12/23/2022					
Fr	12/30/2022						Fr	12/23/2022						Fr	12/16/2022					
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Fr	12/16/2022						Fr	12/09/2022						Fr	12/02/2022					
Fr	12/09/2022						Fr	12/02/2022						Fr	11/25/2022					
Fr	12/02/2022						Fr	11/25/2022						Fr	11/18/2022					

Source: Bloomberg, Vortexa

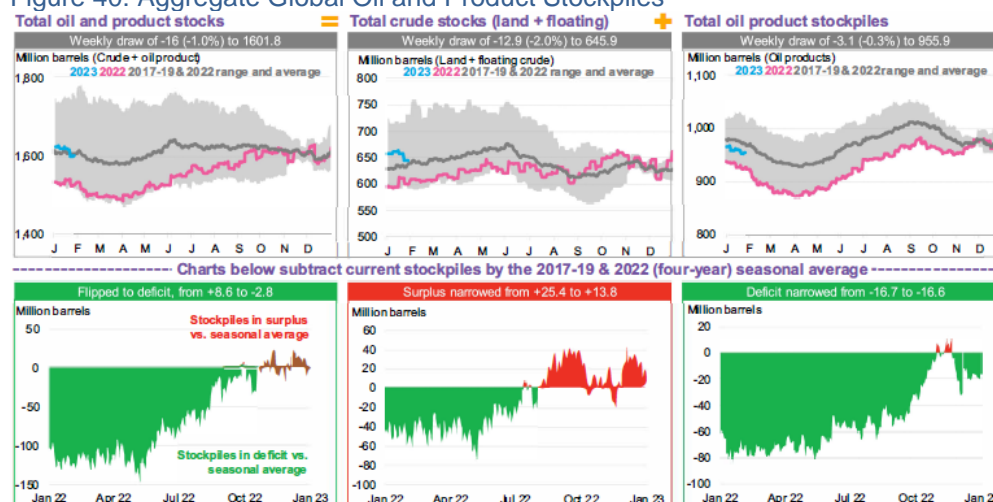
Oil – BNEF: global oil and product stocks deficit flips to -2.8 mmb deficit

For those with a Bloomberg terminal we recommend flipping through BloombergNEF’s “Oil Price Indicators” weekly that came out on Monday as it provides good charts depicting near-term global oil demand and supply indicators. The global stockpile for crude oil and products fell by -1.0% WoW resulting in a -2.8 mmb deficit for the week of Jan 27, compared to a +8.6 mmb surplus the prior week. Crude oil inventories were relatively flat WoW at 572 mmb, further widening the deficit against the five-year average (2016-2019, 2022) by -0.4 mmb to -6.6 mmb. Total crude inventories (incl. floating) decreased -2.0% WoW to 572 mmb, narrowing the surplus from 25.4 mmb to 13.8 mmb. Product stocks were down slightly by -0.3% WoW while the stockpile deficit against the 4-year average (2017-2019,2022) narrowed from 16.7 mmb to 16.1 mmb. Gas, oil, and middle distillate stocks have narrowed against the four-year average deficit from 32.6 mmb to 30.1 mmb. Jet fuel consumption by international departures for the week of Feb 13 is set to increase by 22,000 b/d WoW to 5.50 mmb/d, while consumption by domestic and international passenger departures will increase by 1,800 b/d and 22,300 b/d WoW, respectively. Below is a snapshot of aggregate global stockpiles. Our Supplemental Documents package includes excerpts from the BloombergNEF report.

BNEF’s global oil inventories

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Figure 40: Aggregate Global Oil and Product Stockpiles



Source: BloombergNEF

Oil – Bloomberg Oil Demand Monitor: 2023 early data shows increased China demand

We recommend reading the Bloomberg Terminal Oil Demand Monitor for a good recap of key oil demand indicators around the world. Early 2023 has shown promising signs of a coming rise in oil consumption, but economic headwinds may impede growth. No surprise, the Oil Demand Monitor noted China's covid uptick, a return of city traffic congestion in major cities, and increased fuel consumption in India. The term "wildcard" was previously used to describe how China plays into forecasting Oil Demand for 2023 as an upward tick in Covid cases may bring back restrictions. However, China's dropping of its Zero-Covid policies has led to an increase in economic activity and jet fuel consumption. These indicators translate into a potential catalyst for global oil demand as the article suggests that China's growth will increase faster than prior expectations and is forecasted to account for roughly half of the increase in global demand this year. As China's strict Covid-Zero comes to an end, early data shows it is translating into increased road activity according to BloombergNEF Baidu data. Of the 13 metropolitan centres regularly tracked every Monday by the Oil Demand Monitor, only London, Los Angeles, Paris, Berlin, and Taipei showed congestion marginally above 2019 pre-covid levels. In India, gasoline and diesel sales were up 18% YoY with jet fuel demand increasing by 45% YoY. All flights combined domestically and internationally are up 15% YoY, 6% MoM, and 13% above 2019 levels. Our Supplemental Documents package includes the Bloomberg Oil Demand Monitor.

**Bloomberg Oil
Demand Monitor**

Oil – International air passenger Dec travel continues to show YoY strength

We remind that the IATA air passenger data is for December and before China reopened in January, which means the data should start to a little bit of that factor for January and moreso in February and March. The International Air Transport Association (IATA) announced passenger data for December 2022 on Monday [\[LINK\]](#). Total traffic in December 2022, measured in revenue passenger kilometers, rose 39.7% YoY. Globally, traffic is now at 76.9% of December 2019 levels. Domestic traffic for December 2022 was up 2.6% YoY and was at 79.6% of December 2019 levels. International traffic increased 80.2% YoY, with

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December 2022 reaching 75.1% of December 2019 levels. All markets continued reporting strong growth, led by Asia-Pacific. IATA's Director General Willie Walsh stated, "Over the past year, re-openings in many economies of the Asia Pacific region allowed for passengers and airlines to return to the skies, greatly accelerating traffic growth in both domestic and international markets." Our Supplemental Documents package includes the IATA release.

Figure 41: December 2022 Air Passenger Market

	World share ¹	December 2022 (% year-on-year)			
		RPK	ASK	PLF (%-pt) ²	PLF (level) ³
TOTAL MARKET	100.0%	39.7%	23.0%	9.7%	81.1%
Africa	2.1%	108.0%	72.5%	13.1%	76.9%
Asia Pacific	22.4%	63.3%	31.9%	14.8%	77.2%
Europe	30.4%	38.8%	18.9%	11.9%	83.6%
Latin America	6.4%	16.2%	20.0%	-2.6%	78.5%
Middle East	9.8%	65.1%	35.9%	14.1%	80.0%
North America	28.8%	18.4%	11.8%	4.7%	84.2%

Source: IATA

Oil – Air cargo demand softens in December

We remind that the IATA air cargo data is for December and before China reopened in January and also before the US dollar weakened in late Jan. The International Air Transport Association (IATA) announced on Monday [\[LINK\]](#) that global demand in air cargo markets weakened in December 2022. Global demand, measured in cargo tonne-kilometres, fell 15.3% YoY compared to December 2022, but -15.8% for international operations. IATA's Director General Willie Walsh said, "The industry did not perform as well as expected in a traditional peak season due to multiple headwinds in the current global economy... Inflation remains high, curtailing the spending capacity of households. The ongoing war in Ukraine disrupts trade flows, and the unusual strength of the US dollar makes commodities traded in US dollars more expensive in local currency terms." Asia-Pacific airlines saw their air cargo volumes decrease by 20.4% in December 2022 YoY. Airlines in Asia-Pacific suffered from supply chain disruptions and reduced trade and manufacturing activity largely in part to rising Covid cases. North American carriers posted an 8.5% decrease in cargo volumes in December 2022 YoY. European carriers saw a 17.9% decline in cargo volumes in December 2022 YoY, largely due to the ongoing war in Ukraine. Middle Eastern carriers experienced a 14.4% YoY decrease in December 2022. Latin American carriers reported an increase of 2.2% in cargo volumes in December 2022 YoY. Our Supplemental Documents package includes the IATA release.

Air cargo demand softens again in December

Figure 42: December 2022 Air Cargo Market

	World share ¹	December 2022 (% year-on-year)			
		CTK	ACTK	CLF (%-pt) ²	CLF (level) ³
TOTAL MARKET	100.0%	-15.3%	-2.2%	-7.3%	47.2%
Africa	2.0%	-10.0%	1.3%	-5.4%	43.2%
Asia Pacific	32.4%	-21.2%	-3.9%	-11.6%	52.8%
Europe	21.9%	-17.4%	-7.0%	-7.0%	55.9%
Latin America	2.7%	0.0%	27.6%	-8.9%	32.2%
Middle East	13.0%	-14.4%	2.8%	-9.2%	45.4%
North America	28.0%	-8.5%	-2.9%	-2.5%	40.6%

Source: IATA

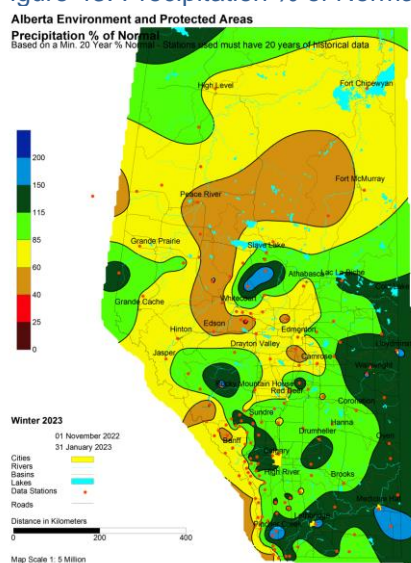
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Oil & Natural Gas – Low snowfall means risk for a quick end to winter drilling

The good news for the Cdn oil and gas sector is that, over the past few years, they have been able to set up more drilling programs that can be continued to thru spring road bans. But still probably the majority of programs are impacted by the end of winter drilling and the start of spring road bans. One of the items we have followed for decades is how much accumulated snowfall there is over the winter. The deeper the snowfall, the more snow there is insulate the frozen ground for longer as the temperatures warm. Whereas when there is low accumulated snowfall, it means that is less of an insulating blanket to keep the ground frozen as temperatures change. This week, Alberta updated its accumulated precipitation maps for Jan including the accumulated precipitation from Nov 1 thru Jan 31. And most of the province has seen less than normal precipitation this winter. It sets up the potential for a quicker end to winter drilling and the start of spring road bans if there is warm temperatures.

Low accumulated snowfall this winter

Figure 43: Precipitation % of Normal for Nov 1 thru Jan 31



Source: Alberta

Oil & Natural Gas – sector/play/market insights from Q4 calls

Once again, we ran out of time this weekend to write up all the Q4 calls that we reviewed. Q4 calls have ramped up and should be another big week this week. This is our favorite time each time of each quarter as it is quarterly reporting and this is when we get the best insights into a range of oil and gas themes/trends, sectors and plays. As a reminder, our Energy Tidbits memo does not get into the quarterly results, forecasts, or valuation. Rather the purpose of highlighting a company is to note themes/trends and plays that will help shape a reader's investment thesis to the energy sector. In the conference calls, we also tend to find the best insights from the Q&A portion as opposed to the prepared remarks. Plus, we tend to get the best E&P sector insights from services, pipelines, refineries, and utilities

Sector insights from Q4 calls

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Nabors – Continued competition for high end rigs

Nabors held its Q4 call on Wednesday. (i) Earlier in the memo, we noted how Nabors see some pullback in natural gas rigs from privates and smaller players but the rigs are getting picked up and moved to oil or liquids rich plays. (ii) Nabors also reminded why there is competition for the existing super spec rigs – the costs to reactive idle rigs is significant so limits supply. Mgmt said *“We have a material portion of the fleet remaining to reprice to the current market. Therefore, we expect daily revenue and margins to continue to climb. We, and the Lower 48 industry have inventories of high-spec rigs, which can be reactivated. Importantly, the cost to reactivate these rigs is significant. For our idle rigs, we received total reactivation spending of more than \$2 million for the next seven or so units. For the following eight, that price tag moves up to about \$6 million. We believe the Lower 48 drillers have a limited appetite to incur this level of expense speculatively. This puts a lid on the ready supply of additional rigs.”* (iii) Nabors survey of Lower 48 clients that account for 34% of rig count points to essentially flat thru end of Q1 but potentially growth in 2023.. Mgmt said *“Once again, we surveyed the largest Lower 48 clients at the end of the fourth quarter. This group accounted for approximately 34% of the working rig count. In our survey, adjusted for one outlier in a special situation indicates essentially net flat activity for the group through the end of the first quarter. We believe this trend primarily reflects some weakness in natural gas prices. Despite the resulting market churn, we have been able to shift return rigs from gas to oil drilling. Further, inquiries for additional rigs in the Permian Basin, have been increasing. These positive signals along with refreshed budgets and better availability of casing suggest potential growth in 2023.”*

Plains – Corpus oil export port yields a premium

Plains All American held its Q4 call on Wed. (i) Earlier in the memo, we noted Plains forecast for Permian oil growth of +500,000 b/d from exit 2022 to exit 2023 at 6.150 mmb/d. (ii) Earlier in the memo, we noted Plains comment on Cdn oil differentials should win if Biden refills the Strategic Petroleum Reserve. (iii) Corpus Christi is the advantaged oil export port vs Houston. In the Q&A, mgmt replied that they do not see near term expansions of export capacity at Corpus. But mgmt. highlighted the advantages of Corpus vs Houston for oil exports. Mgmt said *“But this to point the most efficient dock from a quality and a logistics standpoint is Corpus and it yields a premium to the other market. So if it's an export barrel, it's going to look to price into that market, but there's an overflow capacity into the others and you'll see pull into those other markets. But for purely just logistics and quality reasons and pricing, you'll see Corpus pull that export barrel.”*

Precision Drilling –Modestly increasing activity levels for foreseeable future

Precision Drilling reported Q4 on Thursday. (i) Earlier in the memo, we noted their view that low natural gas prices would have a modest impact on US gas drilling. (ii) Earlier in the memo, we noted their view that Cdn natural gas rigs were still going strong in great part due to the high NGLs/condensate. (iii) Precision is much like all the other big service companies seeing a multi year positive oil and gas cycle. Precision said *“Notwithstanding near-term commodity price volatility, constructive long-term oil and gas industry fundamentals combined with well-defined capital*

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discipline commitments from both customers and oilfield service providers support steady and modestly increasing activity levels for the foreseeable future.”

Energy Transition – TotalEnergies farm down renewables to get >10% IRR

TotalEnergies held its Q4 call on Wednesday and there were two good reminders on the reality of renewable (solar and wind) returns. We should note that we love the TotalEnergies calls because they have the longest Q&As and CEO Pouyanne tends to be blunt in his answers. (i) We tweeted [\[LINK\]](#) “Economics of #RenewableEnergy reminder from @PPouyanne in Q4 call Q&A. Need to farm-down to get >10% returns. See 📌 09/28/22 tweet, it's what he has always said. Financial players will pay up to buy into renewable. Sold 50% of France solar/wind portfolio at 16x EBITDA! #OOTT.” (ii) The only way TotalEnergies can get to >10% returns is to start off at 100%, develop and then farmout so they can promote a financial buyer to pay up so that TotalEnergies can get their >10% return. Pouyanne said this is what they have always said and that is correct. (iii) Financial investors will pay up big time to buy into developed renewable projects. Pouyanne noted how they sold 50% of their onshore solar in France at 16x EBITDA to Credit Agricole Assurance. (iii) Our tweet included the transcript we made of Pouyanne's reply in the Q&A. “Question: “The first is you press released last week that you had, farmed down a position in the renewable power assets at a high multiple, but it was a low overall cash contribution. One that I wouldn't have guessed reached the materiality of press releasing a few hundred million dollars and I'm wondering why you decided to press release this given the thought was you had been farming down these assets all along. And if that potentially indicates that given the market environment, you're possibly accelerating the farm downs of the developed renewable power business over the next year and what type of cash flow contribution that could bring.” Pouyanne: “Jason you have complex question but easy to answer. First, no, there is no acceleration at all, we have been always very clear, that to reach the double-digit profitability we want to have in renewables, we have to integrate farm downs. It's part of the business model. This is why we have some goals, capacity objectives and it's 35-gigawatt growth but at the end, we'll keep more or less half of it. This is very clear. We stated that three or five years ago, when we begin the strategy and we implemented. So there is no acceleration, it came on our desk. There were some assets in France, which were part of what have to be farmed down, it has been done in very good way. And thanks to this farmout. We are, we have on these assets more than a double-digit return much better, we don't, we don't give out the details because there are also counterpart but that's clear. So to be clear. And we have embedded in the strategy is the fact, that maybe we develop at 100% project, but when we farm down and by the way, I always explained to you several times, not only a matter for me of profitability, it's a matter of managing [??]. I prefer to have two times 50% of total projects than one times 100%. It's just a matter of things could happen. So that's yes, I can tell you, by the way it was 16 times EBITDA. If somebody give me an indication 16 times EBITDA. So, I think 16 times EBITDA, I can tell you, no problem. I can continue to develop my renewable with this type of returns of 50% of my, of my portfolio. And this gives us the cash also to re-circulate the cash and the rest of project. So, I think it's a smart way and will stick on this strategy.”

Need to farm down renewables

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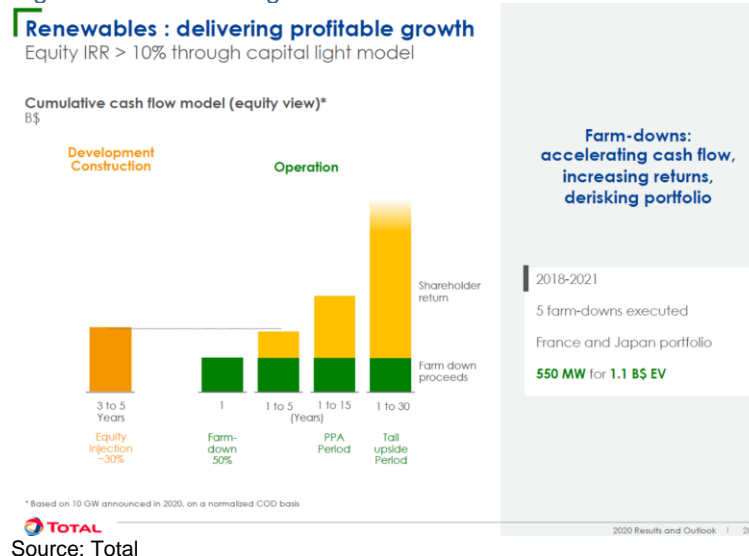
Pouyanne's 09/28/22: won't compete against financial institutions

A great example of Pouyanne's blunt comments was from Sept 28, 2022. Our tweet on his Q4 comments forwarded our Sept 28, 2022 tweet [\[LINK\]](#) *“Renewables, if you compete with others, you lose money! Okay, I said that, I declared it.” says @PPouyanne . It's why #TotalEnergies is selective to ensure their renewables deliver >10% ROE ie. uses its advantage to farm-down, merchant, trading, to enhance returns. #OOTT.”* There comments made at TotalEnergies 2022 Strategy & Outlook webcast. Our Oct 3, 2022 Energy Tidbits memo noted his full quote. We then wrote *“Renewables, if you compete with others, you lose money”. There is no change to TotalEnergies view that there are lLow renewable returns for competitive bidding projects on wind; Mgmt's comments should not have surprised anyone as they are in line with their and other's comments on the challenge to make money in renewable projects like offshore wind if there is any competitive bidding. On Wednesday, we tweeted[\[LINK\]](#) “Renewables, if you compete with others, you lose money! Okay, I said that, I declared it.” says @PPouyanne. It's why #TotalEnergies is selective to ensure their renewables deliver >10% ROE ie. uses its advantage to farm-down, merchant, trading, to enhance returns. #OOTT.” CEO Pouyanne also said *“Renewables, if you compete with others, you lose money! Okay, I said that, I declared it.” “I say to my colleagues, stop spending your time to go to this because we face competitions with financial institutions, when clearly I am not ready to pay NPV 4 or NPV 5.” TotalEnergies lifts up the returns of its renewables projects by farming down interests, allocating trading profits, etc.**

Total 02/24/21 approach on farming down renewables to get >10% return

Pouyanne was correct in saying farming down renewables has been their policy, even before its name change to TotalEnergies. Back when it was still called Total, on Feb 24, 2021, we tweeted [\[LINK\]](#) *“. \$TOT farms down some #RenewableEnergy assets. IRR lift on farm down helps get renewable IRRs to >10%. Lower renewable IRRs vs #Oil #NatGas remind of @lc_hurst reporting on challenge for EU big oil - investors want transition to #NetZero yet not at the expense of returns. #OOTT.”* Our tweet included the below Total slide.

Figure 44: How Total gets renewables >10% return from 2020 results



Source: Total

Energy Transition – BP ramps up oil and gas capex in strategy update

No one was surprised (thanks to the WSJ report last week) to see BP come out with a big change in strategy along with their Q4 results on Tuesday. BP issued a separate press release strategy update that announced a major increasing oil and gas expenditures, production and EBITDA. No surprise, the Twitter comments were on what BP name stood for. It's original was British Petroleum that changed to mean Beyond Petroleum and now it was considered Back to Petroleum. Needless to say the climate change side was not impressed. (i) Early Tuesday morning, we tweeted [\[LINK\]](#) on what we thought were the three big changes to their energy transition and corporate strategy. “#BP strategy “UPDATE” ie. wasn't working increasing #Oil #NatGas to add \$2b EBITDA in 25, \$3-4b in 30. investing more in higher return bioenergy & convenience & EV charging has visible EBITDA growth to add \$1b in 25, \$2b in 30. lowest return wind is “longer term” build. #OOTT.” (ii) Increasing oil and natural gas capex and production. This was the a big about face for BP and the key reason for why they are now forecasting a big increase in EBITDA to 2030. Our tweet included their key graphic on how BP is going to invest an addition \$1b per year in oil and natural gas and they expect this to generate an additional EBITDA of ~\$2 in 2025 and \$3-4b in 2030. Pretty impressive returns. (iii) The second key change was that they were changing their capital allocation priority for energy transition items with a focus and investing more into higher return Bioenergy and Convenience & EV charging. But at least they see an increase to EBITDA by spending more in these areas, just nowhere near the additional EBITDA growth from oil and gas. (iv) Less of a priority on offshore wind, which is their lowest return area and BP now calls a “longer term” build. (v) Our Supplemental Documents package includes excerpts from the BP strategy update and slides.

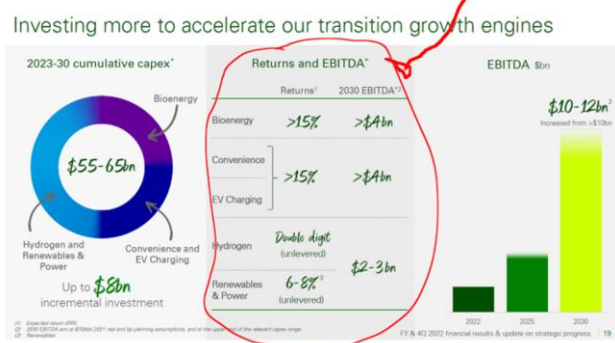
BP ramps up oil and gas to 2030

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BP doesn't use comparable returns for oil and gas vs energy transition items

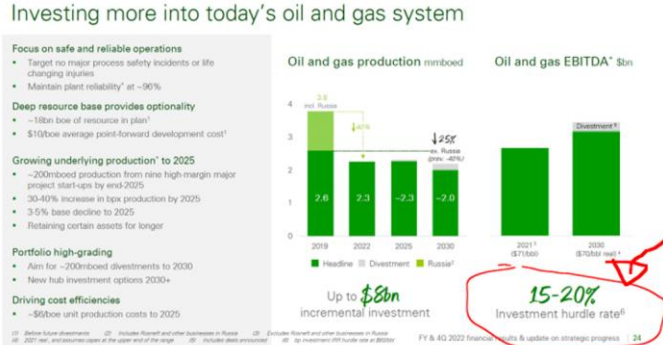
We understand that BP doesn't want to show the energy transition priorities have a hugely lower returns than oil and gas, which must be the reason they don't use comparable returns. BP highlights the expected returns for transition growth engines such as >15% for bioenergy, >15% for convenience and EV charging, double digit (unlevered) for hydrogen, and 6-8% unlevered for renewables and power. But, for oil and gas, it notes the "investment hurdle rate" of 15-20% as if to imply this is the expected return. . The hurdle rate is not the expected returns, it is the minimum expected return for bp to approve an investment in oil and gas ie. the expected returns are higher. But given that BP is increasing investment in bioenergy, convenience & EV charging by \$1b a year (the same increase for oil and gas), but the expected added EBITDA is about half as for oil and gas, it's pretty clear that the oil and gas 15-20% hurdle rate will actually turn into expected returns way way higher. We just don't know why companies don't provide investor with comparable metrics.

Figure 45: Expected returns from transition growth engines



Source: BP

Figure 46: oil and gas 15-20% hurdle rate



Source: BP

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BP's grouping of convenience & charging makes sense

BP talks about convenience & EV charging, which makes sense linking the two because they do go hand U& hand. We tweeted [LINK](#) "Here's why @bp links gas stations & EV chargers, and why forecast increasing convenience store margins with increasing chargers. See 📌 11/02/21 tweet. #EV drivers are captive shoppers during charge time so can spend on high margin coffee, etc. like theatres and popcorn #OOTT." BP has previously noted how EV chargers lead to sales of higher return items because they get people with time on their hands to spend money on higher margin products like coffee. We put in our tweet it's kind of like going to a movie. The cost of the movie ticket basically covers the cost of the movie and where the theaters make the money is selling popcorn and soft drinks. Our tweet forwarded our Nov 2, 2021 tweet on BP's Q3/21 call and management's comment on this very point of linking EV charging to convenience. Our tweet said "Reminder why gas stations don't want EV charging too fast. @BP CFO notes fast EV charging can be double the ICE fill up time, "hopefully, they come in, & they get a nice cup of Wild Bean coffee & a sandwich, & then that will certainly enhance those returns". Thx @business #OOTT." Our Nov 2, 2021 tweet included the BP CFO's full comment "and if you wanted to measure returns, the general stat we hold s if you get 10% utilization on a fast charger, you'll make a 10% return. That's just the pure electrons themselves. Of course, this is not just about the electrons, it's about the convenience as well. And hopefully, they come in, and they get a nice cup of Wild Bean coffee and a sandwich, and then that will certainly enhance those returns."

Figure 47: Convenience and EV Charging – deeper conviction



Source: BP

BP focus away from offshore wind reminds more natural gas will be needed

We also tweeted [LINK](#) "More #NatGas will be needed for longer. bp's focusing on bioenergy & convenience/EVs doesn't replace #NatGas for power generation. #OOTT." BP's initial big push in its energy transition was in offshore wind, which is now being pushed to back burner being replaced by bioenergy, convenience and EV charging. Having a lesser priority for offshore wind means a lesser priority in producing renewable energy for electricity, which means that there is more of a need for natural gas for electricity generation.

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WSJ last week “BP’s CEO plays down renewables push as returns lag”

It looks like WSJ did have a good scoop last week on BP downplaying items like offshore wind. Here is what we wrote in last week’s (Feb 5, 2023) Energy Tidbits memo. *“It sounds like BP will be following a similar path as seen in the Shell Q4 call in playing down or slow playing in some way their push on renewables driven by the lack of returns. Shell didn’t specifically say the renewable returns can’t be attained, but said on multiple times that returns have to meet acceptable levels. The concept is the same. The question will be how do they message this change. These European supermajors can’t back away from any climate pledges so will have to say this in an indirect way. These supermajors went into renewables, in particular offshore wind, knowing the expected returns would be much less than oil and gas and refining. Fortunately, they have had the benefit of high oil, natural gas and LNG prices to fund this push into renewables. We expect BP will be taking a similar tact when they release Q4 results on Tuesday morning and we have to believe they will be playing down their renewable push, much like their UK peer Shell did this week. And there should be multiple analyst questions in light of the WSJ’s Wednesday exclusive report “BP’s CEO Plays Down Renewables Push as Returns Lag: Bernard Looney seeks to sharpen strategic focus, with less emphasis on environmental goals.” [\[LINK\]](#). We don’t believe the WSJ would go out with this type of exclusive if they didn’t have good sources. WSJ wrote “Chief Executive Bernard Looney plans to dial back elements of the oil giant’s high-profile push into renewable energy, according to people familiar with recent discussions. Mr. Looney has said he is disappointed in the returns from some of the oil giant’s renewable investments and plans to pursue a narrower green-energy strategy, the people said. He has told some people close to the company that BP needs to do more to convince shareholders of its strategy to maximize profits in areas where it has a competitive advantage, including its legacy oil-and-gas operations. In some of the conversations, Mr. Looney has said he plans to place less emphasis on so-called ESG goals—a catchall term for environmental, social and governance—to help clarify that those aren’t distracting the company from its ability to deliver profits, the people said. Mr. Looney, the people said, is casting the moves as a modest short-term course correction rather than a major strategic pivot for the 114-year-old company.”*

Energy Transition – Investors are liking BP & Shell shift back to more oil and gas

BP and Shell have taken some shots from the climate change side with their increasing emphasis and capital allocation to oil and gas. BP was more direct on the shift. But, for both, investors are showing they like the move if you compare their share prices vs Chevron and Exxon. On Friday morning, we tweeted [\[LINK\]](#) *“ICYMI. investors liking BP & Shell pivot towards more E&P. @bp_plc shares +18% since Q4 clearly stating big jump up in #Oil #NatGas capex & growth. [\[LINK\]](#). @Shell shares +6% since Q4 emphasized excellent upstream business. [\[LINK\]](#) #OOTT.”* Those returns were to the Thursday close. Our tweet included the stock charts for BP and Shell that both show the move up with their Q4 change in priority.

**BP and Shell
shares up**

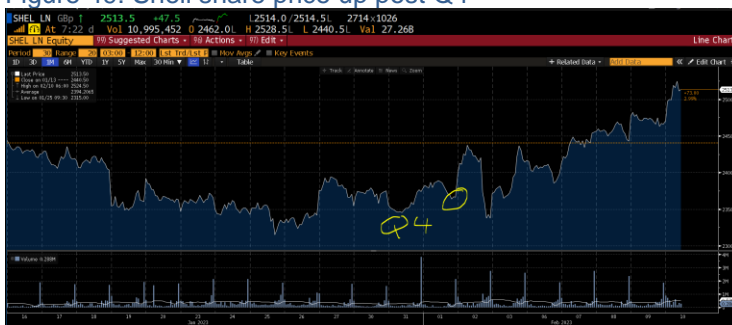
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Figure 48: BP share price up post Q4



Source: Bloomberg

Figure 49: Shell share price up post Q4



Source: Bloomberg

Energy Transition –New Zealand new priority is cost of living, not energy transition

There was a pretty clear new priority for New Zealand – the priority to focus on the cost of living, which, no surprise, means a major energy transition policy was cancelled as it would just add to the cost of living. On Wednesday, the new New Zealand Prime Minister Chris Hipkins made his first big policy statement after their first cabinet meeting. The announcement was titled “*Government takes new direction with policy refocus*” and “*Prime Minister Chris Hipkins has announced a suite of programmes that are being cancelled or delayed in order to put the Government’s focus on the cost of living. “The Government is refocusing its priorities to put the cost of living front and centre of our new direction,” Chris Hipkins said. “I said the Government is doing too much too fast, and that we need to focus on the cost of living. Today we deliver on that commitment.”* It was a very clear message that he is cancelling or delaying a number of former PM Jacinda Ardern’s policies. Ardern surprised with an abrupt resignation on Jan 20. Her Labour party had fallen behind the opposition National party in the polls with the election set for Oct 14. On Wednesday, we tweeted [\[LINK\]](#) “*Reality hits! @chrishipkins NZ new direction, refocus priorities to put cost-of-living front & centre. #biofuels mandate will not proceed. The mandate would have increased the price of fuel and given the pressure on households that’s not something I’m prepared to do. #OOTT.*” One of cancelled policies was Ardern’s “Powering NZ’s future with biofuels” announced on Dec 15, 2021 [\[LINK\]](#) that would see “*From 1 April 2023, fuel wholesalers will be required to cut the total greenhouse gas emissions for transport fuels they sell by a set percentage each year, by deploying biofuels as a part of their fuel supply.*” Hipkins new direction cancelled this “*Cabinet also agreed that the biofuels mandate will not proceed. The mandate would*

**New Zealand
priority is cost of
living**

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have increased the price of fuel, and given the pressure on households that's not something I'm prepared to do." Our Supplemental Documents package includes the Hipkins new direction.

Fits our 2022 Prediction, leaders admit energy transition isn't working

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

A #MacronMoment can take three forms

We also wrote in our Dec 12, 2021 Energy Tidbits. *"We use the term "Macron Moment" and the #MacronMoment as when an energy transition leaders come to the realization that the energy transition will take longer, be bumpy and cost more ie. it just won't be ready for prime time and they need to change their plans on how quickly*

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they get rid of oil and natural gas. We are already seeing politicians start to publicly have a #MacronMoment but, so far, it has come in three forms of admission as noted below.

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

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

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

No one should be surprised to see how Japan says their #MacronMoment. They don't say it isn't working, they don't say energy costs are way higher than expected. But they do clearly make the point. They say it important to have a pragmatic time frame for decarbonization. That sounds like Japan-speak for the energy transition aspirations plan isn't working and needs to be changed. On November 9, Japan and the IEA issued a press release and we tweeted [\[LINK\]](#) "Today's Japan "go slow" getting rid of #Oil #NatGas fits Japan's Nov 9 on acceleration of decarbonization that must have "the importance of measures with pragmatic time frame". Japan is having a "Macron Moment". See Nov 9 tweet [\[LINK\]](#) #OOTT." On Nov 9, we tweeted [\[LINK\]](#) on Japan's release [\[LINK\]](#) on its conference with IEA Executive Director Faith Birol. Japan wrote "The two sides also exchanged views on acceleration of decarbonization efforts following COP26, and shared the importance on measures with pragmatic time frame based on individual circumstances that each countries face including its renewable energy potentials". A pragmatic time frame or a go slow process, whatever you want to call it, it means the same thing – Japan doesn't want to get rid of fossil fuels too quickly. Our Supplemental Documents package includes the Japan/IEA Nov 9 press release.

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

US Energy Secretary Granholm has shown the third way of admitting the energy transition plan isn't working. She doesn't say specifically the energy transition plan isn't working or needs to be changed. She just avoids saying that. But she puts on

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

Energy Transition – Sieman Gamesa, offshore wind has a long way to go

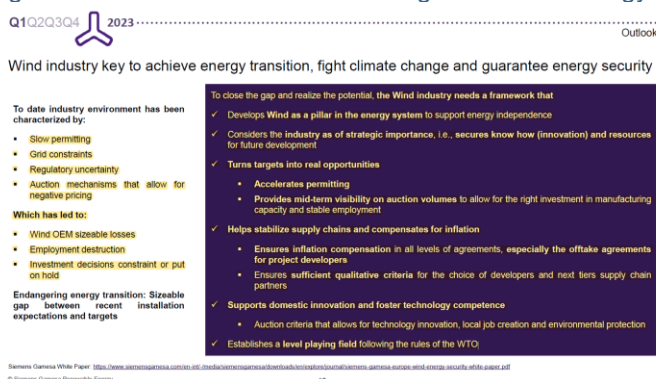
Siemens Gamesa, one of the big 3 wind OEMs and the leading OEM in offshore wind held its Q1/23 call on Thurs Feb 2. (i) It's hard not to read the earnings release and mgmt. comments in the earnings call and not think offshore wind has a long way to go before there is a profitable supply chain from the OEMs thru to the project developers. It's hard to see how offshore wind can deliver on energy transition aspirations. Especially as Siemens Gamesa says Net Zero 2050 would require 2.5x the current level of annual wind installations each year of this decade. They aren't seeing positive talk turn into the desired level of real orders. So there will inevitably be a need for more natural gas generation for longer. (ii) On Monday, we tweeted [\[LINK\]](#) "WOW! 📌 @SiemensGamesa wind industry hit by slow permitting, grid constrains, regulatory uncertainty, auction mechanisms that allow for negative pricing. led to wind OEM sizeable losses, employment destruction, investment decisions constraint/put on hold. Bullish #NatGas. #OOTT." (iii) Siemens Gamesa "the quarter with a net loss of €884 million." And "The negative development in our service business underscores that we have much work ahead of us to stabilize our business and return to profitability." (iv) They highlight all wind OEMs have this sizeable losses and governments aren't delivering to meet their ambitions. In their prepared remarks, they said "Please remember that not only we have difficulties on our profit line, but also our competition has similar effects. To date, our industry, the development has been characterized by slow permitting. We continue to observe grid constraints, we continue to have regulatory uncertainties in many cases and also the auction

Siemens: all wind OEMs have sizeable losses

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mechanism still do not focus enough on the overall political target which is behind that. So that means that in total the OEMs have seen sizable losses, we have had reduction in employment, in many cases and also observe that investment decisions are slowed down or the speed of that has slowed down or investment decisions are postponed. So, so far, we continued to observe that the political wills which I expressed all over, are not really materializing.” And “We have to make sure that the targets really turn in real opportunities, so permitting needs to be accelerated. There is in -- for instance European Union member states rather fragmented view on these situations and also when it comes to auctions, which are one way to define which developer is looking after which wind farm, this needs to be made clear that the secondary effects like those ones related to manufacturing and employment also can be considered.” (v) Our tweet highlighted the key summary from the Q1/23 slide deck. “There is much more in the release and Q1/23 slide deck. “To date, industry environment has been characterized by: slow permitting, grid constraints, regulatory uncertainty, auction mechanics that allow for negative pricing. Which has led to: Wind OEM sizeable losses, employment destruction, investment decisions constraint or put on hold. Endangering energy transition. Sizeable gap between recent installation expectations and target.” (vi) There are many more items in the release and slide deck. Our Supplemental Documents package includes excerpts from the release, Q1/23 call transcript and slide deck.

Figure 50: Siemens Gamesa challenges for wind energy



Source: Siemens Gamesa

Energy Transition – Uber CEO says customers will pay with their time to wait for an EV

Uber CEO Dara Khosrowshahi was on CNBC Squawk Box on Wednesday morning. We tweeted [\[LINK\]](#) ““most customers aren’t willing to pay a premium for an #EV, but instead of a 4 min ETA, they will wait for a 7 min ETA so they will take more time to help the environment” Uber CEO @dkhos to @andrewsorkin. Tax incentives? as Uber drivers drive 4-5 times normal drivers. #OOTT.” It was interesting to see his comments that people don’t mind waiting a bit to get an EV Uber instead of an ICE Uber. But we thought he made a good case for why governments should look at some sort of policy break for EV Ubers as he reminds that Uber drivers drive 4-5 times more than normal drivers. The same argument would apply to taxis. If governments really want to make sure they reduce emissions, make sure high volume service drivers go electric.

Uber CEO on EVs

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

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

**@Energy_Tidbits
on Twitter**

LinkedIn – Look for quick energy items from me on LinkedIn

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

**Look for energy
items on LinkedIn**

Misc Facts and Figures.

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

Frederick Banting was “The Guy” who isolated insulin

We were listening to Biden's State of the Union and couldn't help tweeting [\[LINK\]](#) *“#SOTU. Should out to a great ca Sir Frederick Banting (@UofT) although #Biden just called him “the guy”. Biden just said “insulin has been around for over 100 years. the guy who invented it didn't even patent it because he wanted to be available for everyone”. Biden only said “The Guy”, but we wanted to remind people he was talking about a great Canadian, Banting. Banting had one of the greatest medical discoveries of all time. On July 28, 1921, Dr. Frederick Banting and Charles Best, a medical student, made a huge breakthrough in treating diabetes at the University of Toronto by successfully isolating the hormone, insulin*

Labor Secretary Marty Walsh was this week's Designated Survivor

We expect most didn't know about the Designated Survivor until the 2016 show Designated Survivor starring Kiefer Sutherland as Tom Kirkland, Secretary of Housing and Urban Development. In the show, Sutherland is the designated survivor who is kept off in a protected location watching the State of the Union address so the entire government cannot be killed off at one time. He is casually watching, when a terrorist attack blows up the capital building on the State of the Union address and kills everyone in the succession ahead of Sutherland, who is then sworn in to become President. So this year, the Designated Survivor was Labor Secretary, Marty Walsh. Walsh is not well known, but is expected to become a well known name for hockey fans as the rumor is he will be taking over as President of the NHL Players' Association.

Cdns Nick Taylor and Adam Hadwin in the hunt at PGA's WM Phoenix Open

It looks like it will be a longer TV sports day for Canadian sports fans today with the final round of the WM Phoenix Open that is planned to finish before the Super Bowl.

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The big name leaderboard includes two Canadians – Nick Taylor and Adam Hadwin. Taylor and Jon Rahm are T2 in the final group trailing leader Scottie Scheffler by two shots. Hadwin and Jordan Spieth are T4 and three shots off the lead. Taylor and Hadwin have played solid all three days and hopefully all the Canadian snowbirds in the Phoenix area will give Taylor and Hadwin a boost.

Figure 51: WM Phoenix Open Leaderboard

Round 3 - Play Complete Auto Update: On

POS	↑↓	PLAYER	SCORE	TODAY	THRU	R1	R2	R3	R4	TOT
1	-	Scottie Scheffler	-13	-	10:45 AM	68	64	68	--	200
T2	↑4	Nick Taylor	-11	-	10:45 AM	66	69	67	--	202
T2	↑1	Jon Rahm	-11	-	10:45 AM	68	66	68	--	202
T4	↓1	Jordan Spieth	-10	-	10:34 AM	71	63	69	--	203
T4	↓3	Adam Hadwin	-10	-	10:34 AM	66	66	71	--	203
T6	↓3	Xander Schauffele	-9	-	10:12 AM	67	67	70	--	204
T6	↑3	Sungjae Im	-9	-	10:23 AM	70	67	67	--	204
T6	↑3	Rickie Fowler	-9	-	10:23 AM	71	66	67	--	204
T6	↑2	Jason Day	-9	-	10:23 AM	65	71	68	--	204

Source: ESPN

Can Patrick Mahomes do the regular season MVP and Super Bowl win double?

Kansas City Chiefs QB Patrick Mahomes was named NFL regular season MVP on Thursday night, which brought up the question if that means the Chiefs are more likely to win the Super Bowl today. Based on the prior track record of MVP winners playing in the Super Bowl, probably not. There have been 14 QBs that won regular season MVP play in the Super Bowl that same year. For the first 30 years of Super Bowls (1966-1996), there were five QBs MVPs and they all won the Super Bowl that year – Bart Starr 1966, Terry Bradshaw 1978, Joe Montana 1989, Steve Young 1994 and Brett Favre 1996. But in the 25 years since then (1997-2022), there were 10 QBs MPVs who played in the Super Bowl that same year and only 1 won the Super Bowl and that was Kurt Warner in 1999. The MVPs that lost the Super Bowl were Brett Favre 1997, Kurt Warner 2001, Rich Gannon 2002, Tom Brady 2007, Peyton Manning 2009, Peyton Manning 2013, Cam Newton 2015, Matt Ryan 2016 and Tom Brady 2017. So the last time a regular season QB MVP who won the Super Bowl that year as Kurt Warner in 1999.

Will the Eagles big wins so far get the same result as the 1989 49ers?

Recognize the 1989/90 Super Bowl has no correlation to today’s Super Bowl but always love to see numbers pop up that seem familiar. Was watching the old series “Joe Montana: Cool Under Pressure” and in episode 5 was the 49ers 1989/90 run to win the Super Bowl. It showed how the 49er’s won big their first two games to get into the Super Bowl. The 49ers beat the Vikings 41-13, and then the LA Rams 30-3 for a combined score of 71-16 to get to the Super Bowl. Their AFC opponent, the Dener Broncos beat the Steelers 24-24, and then the Browns 37-21 for a combined score of 61-45 to get to the Super Bowl. The first thought was that the Eagle have just had a similar two game scores to get to the Super Bowl of 69-14 beating Giants 38-7 and the 49ers 31-7. And the Chiefs have had beat the Jaguars 27-20 and the

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Bengals 23-20 for a combined 50-40. Not as close as the Broncos scores but similar.

Super Bowl Sunday is the biggest chicken wing day of the year

Just in case you were wondering why you had trouble finding chicken wings at the grocery store yesterday, it's Super Bowl LVII Sunday, which means it is the biggest chicken wing day of the year. Every year, the National Chicken Council [\[LINK\]](#) gives their forecast for chicken wing consumption today. They write "*While typically its barbecue in Kansas City and cheesesteaks in Philly, when it comes to the Super Bowl, the wing is still king. The National Chicken Council (NCC) today released its annual Chicken Wing Report, projecting Americans to consume a record-breaking 1.45 billion chicken wings during Super Bowl LVII weekend. This figure represents an increase of two percent from last year's report, the equivalent of 84 million more wings. There are several reasons for the uptick, says National Chicken Council spokesperson Tom Super: "The two main reasons are more favorable prices and more people getting back to normal and gathering for the Big Game, whether at home or at a bar/restaurant," Super said. "While Americans are seeing inflation impact almost every part of their lives, both wholesale and retail wing prices are down double digits from a year ago, according to USDA, and consumers are seeing a lot more features and promotions."* The NCC always gives perspective on, in this case, 1.45 billion wings. *ie. 1.45 billion wings laid end to end would stretch from GEHA Field at Arrowhead Stadium in Kansas City, Mo. to Lincoln Financial Field in Philadelphia, Pa. about 62 times. Enough to give four wings each to every man, woman and child in the United States. Phoenix's State Farm Stadium (home of Super Bowl LVII) can hold 73,000 people. If 1.45 billion chicken wings were distributed to the full stadium, each fan could enjoy 19,863 wings. Assuming Kansas City Chiefs' coach Andy Reid can eat three wings per minute, it would take him more than 900 years to eat 1.45 billion wings.*"

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