Energy Tidbits

China Speeding to Herd Immunity, Reports of Big Pick Up in Activity in Cities Like Beijing that have Hit Peak Covid

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Table 1. Summary of natural gas supply and disposition in the United States, 2017-2022

billion cubic feet

Year and month	Gross withdrawals	Marketed production	NGPL production[a]	Dry gas production[b]	Supplemental gaseous fuels[c]	Net imports	Net storage withdrawals[d]	Balancing item[e]	Consumption[f]
2017 total	**33,292**	**29,238**	**1,897**	**27,341**	**66**	**-121**	**254**	**-400**	**27,140**
2018 total	**37,326**	**33,009**	**2,235**	**30,774**	**69**	**-719**	**314**	**-300**	**30,139**
2019 total	**40,780**	**36,447**	**2,548**	**33,899**	**61**	**-1,916**	**-503**	**-408**	**31,132**
2020									
January	3,597	3,194	239	2,955	6	-248	581	28	3,321
February	3,363	2,985	223	2,761	5	-216	545	-37	3,059
March	3,582	3,196	239	2,957	6	-284	53	-10	2,722
April	3,374	3,012	225	2,786	5	-231	-311	7	2,257
May	3,285	2,927	219	2,708	5	-209	-454	22	2,072
June	3,217	2,873	215	2,658	5	-151	-363	-21	2,128
July	3,374	3,021	226	2,795	5	-139	-165	-33	2,464
August	3,350	3,012	225	2,786	5	-149	-232	-11	2,400
September	3,265	2,918	218	2,699	5	-221	-329	-3	2,151
October	3,364	2,992	224	2,768	5	-282	-96	-79	2,316
November	3,352	2,985	223	2,761	5	-317	-6	-1	2,442
December	3,490	3,089	231	2,858	5	-287	597	9	3,183
Total	**40,614**	**36,202**	**2,710**	**33,493**	**63**	**-2,734**	**-180**	**-129**	**30,513**
2021									
January	3,517	3,118	235	2,884	6	-279	719	16	3,344
February	2,950	2,609	196	2,412	5	-152	795	40	3,099
March	3,518	3,144	237	2,907	6	-357	64	30	2,649
April	3,438	3,069	231	2,838	5	-356	-180	-42	2,265
May	3,535	3,168	239	2,930	6	-373	-424	-21	2,117
June	3,400	3,056	230	2,826	5	-331	-254	-8	2,238
July	3,514	3,182	240	2,943	6	-338	-175	-23	2,412
August	3,545	3,196	241	2,956	6	-343	-164	-20	2,434
September	3,423	3,087	232	2,854	5	-315	-398	-4	2,142
October	3,600	3,245	244	3,001	6	-317	-368	-60	2,263
November	3,545	3,170	239	2,931	6	-315	137	-66	2,693
December	3,680	3,284	247	3,037	6	-368	330	3	3,007
Total	**41,666**	**37,328**	**2,811**	**34,518**	**66**	**-3,845**	**82**	**-157**	**30,665**
2022									
January	E3,591	E3,199	246	E2,953	7	-314	994	-45	3,594
February	E3,227	E2,870	223	E2,647	6	-288	658	37	3,061
March	E3,614	E3,225	267	E2,958	6	-378	163	34	2,784
April	E3,520	E3,152	257	E2,895	6	-341	-214	26	2,371
May	E3,667	E3,296	266	E3,030	6	-384	-403	-4	2,245
June	E3,557	E3,215	259	E2,955	4	-322	-324	11	2,325
July	E3,690	E3,330	276	E3,055	6	-299	-180	16	2,597
August	RE3,699	RE3,349	270	RE3,080	6	-319	-206	R1	2,561
September	RE3,636	RE3,279	265	RE3,014	4	-292	R-436	R17	R2,308
October	E3,766	E3,391	275	E3,116	5	-317	-422	-14	2,368
2022 10-month	**E35,966**	**E32,307**	**2,603**	**E29,704**	**56**	**-3,254**	**-369**	**78**	**26,215**
2021 10-month	**34,441**	**30,875**	**2,325**	**28,550**	**55**	**-3,162**	**-385**	**-94**	**24,964**
2020 10-month	**33,772**	**30,129**	**2,255**	**27,874**	**53**	**-2,130**	**-771**	**-137**	**24,889**

[a] We derive monthly natural gas plant liquid (NGPL) production, gaseous equivalent, from sample data reported by gas processing plants on Form EIA-816, *Monthly Natural Gas Liquids Report*, and Form EIA-64A, *Annual Report of the Origin of Natural Gas Liquids Production*.

[b] Equal to marketed production minus NGPL production.

[c] We only collect supplemental gaseous fuels data on an annual basis except for the Dakota Gasification Co. coal gasification facility, which provides data each month. We calculate the ratio of annual supplemental fuels (excluding Dakota Gasification Co.) to the sum of dry gas production, net imports, and net withdrawals from storage. We apply this ratio to the monthly sum of these three elements. We add the Dakota Gasification Co. monthly value to the result to produce the monthly supplemental fuels estimate.

[d] Monthly and annual data for 2017 through 2020 include underground storage and liquefied natural gas storage. Data for January 2021 forward include underground storage only. Appendix A, Explanatory Note 5, contains a discussion of computation procedures.

[e] Represents quantities lost and imbalances in data due to differences among data sources. Net imports and balancing item excludes net intransit deliveries. These net intransit deliveries were (in billion cubic feet): 212 for 2021; 209 for 2020; -8 for 2019; -12 for 2018; and 14 for 2017. Appendix A, Explanatory Note 7, contains a full discussion of balancing item calculations.

[f] Consists of pipeline fuel use, lease and plant fuel use, vehicle fuel, and deliveries to consuming sectors as shown in Table 2.

R Revised data.

E Estimated data.

RE Revised estimated data.

Source: 2017-2021: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2021*. January 2022 through current month: Form EIA-914, *Monthly Crude Oil and Lease Condensate, and Natural Gas Production Report*; Form EIA-857, *Monthly Report of Natural Gas Purchases and Deliveries to Consumers*; Form EIA-191, *Monthly Underground Gas Storage Report*; EIA computations and estimates; and Office of Fossil Energy and Carbon Management, *Natural Gas Imports and Exports*. Table 7 includes detailed source notes for Marketed Production. Appendix A, Notes 3 and 4, includes discussion of computation and estimation procedures and revision policies.

Note: Data for 2017 through 2020 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 states and the District of Columbia. Totals may not equal sum of components because of independent rounding.

Table 2. Natural gas consumption in the United States, 2017-2022

billion cubic feet, or as indicated

Year and month	Lease and plant fuel[a]	Pipeline and distribution use[b]	Delivered to consumers: Residential	Commercial	Industrial	Electric power	Vehicle fuel	Total	Total consumption	Heating value[c] (Btu per cubic foot)
2017 total	**1,583**	**722**	**4,413**	**3,165**	**7,943**	**9,266**	**48**	**24,835**	**27,140**	**1,036**
2018 total	**1,694**	**877**	**4,998**	**3,514**	**8,417**	**10,589**	**50**	**27,568**	**30,139**	**1,036**
2019 total	**1,823**	**1,018**	**5,019**	**3,515**	**8,417**	**11,288**	**53**	**28,291**	**31,132**	**1,038**
2020										
January	160	112	825	491	780	949	4	3,049	3,321	1,039
February	149	103	737	448	725	893	4	2,806	3,059	1,039
March	160	91	527	339	711	891	4	2,471	2,722	1,039
April	151	75	378	238	634	778	4	2,032	2,257	1,039
May	146	68	237	163	617	837	4	1,858	2,072	1,035
June	144	70	136	132	601	1,041	4	1,914	2,128	1,032
July	151	82	118	129	634	1,346	4	2,231	2,464	1,032
August	151	80	109	131	649	1,276	4	2,169	2,400	1,033
September	146	71	127	144	644	1,016	4	1,934	2,151	1,035
October	150	77	242	209	687	948	4	2,090	2,316	1,036
November	149	81	440	294	702	772	4	2,211	2,442	1,037
December	154	107	800	454	778	885	4	2,921	3,183	1,039
Total	**1,809**	**1,018**	**4,674**	**3,170**	**8,161**	**11,632**	**49**	**27,686**	**30,513**	**1,037**
2021										
January	159	125	895	497	791	872	5	3,060	3,344	1,038
February	133	116	876	497	686	787	4	2,850	3,099	1,041
March	160	98	574	358	703	752	5	2,392	2,649	1,038
April	156	83	342	248	676	756	4	2,026	2,265	1,036
May	161	77	218	183	658	816	5	1,879	2,117	1,035
June	156	82	130	144	638	1,085	4	2,001	2,238	1,034
July	162	88	113	143	666	1,235	5	2,162	2,412	1,035
August	163	89	106	142	669	1,261	5	2,182	2,434	1,034
September	157	78	118	150	639	995	4	1,907	2,142	1,035
October	165	82	193	197	677	944	5	2,015	2,263	1,035
November	161	99	482	338	726	882	4	2,432	2,693	1,037
December	167	112	669	402	767	886	5	2,729	3,007	1,038
Total	**1,901**	**1,130**	**4,716**	**3,298**	**8,295**	**11,271**	**54**	**27,634**	**30,665**	**1,037**
2022										
January	E163	E132	961	553	819	961	E5	3,299	3,594	1,038
February	E146	E113	796	466	722	814	E4	2,802	3,061	1,038
March	E164	E103	590	386	754	782	E5	2,517	2,784	1,036
April	E161	E87	390	279	702	749	E4	2,123	2,371	1,035
May	E168	E83	201	183	680	926	E5	1,994	2,245	1,034
June	E164	E86	124	146	655	1,146	E4	2,076	2,325	1,033
July	E170	E96	111	145	672	1,400	E5	2,331	2,597	1,033
August	RE171	E94	103	141	672	1,375	E5	2,296	2,561	1,035
September	RE167	E85	114	150	664	1,123	E4	2,056	R2,308	1,036
October	E173	E87	243	225	686	950	E5	2,108	2,368	1,036
2022 10-month YTD	**E1,645**	**E966**	**3,634**	**2,674**	**7,026**	**10,226**	**E44**	**23,604**	**26,215**	**1,036**
2021 10-month YTD	**1,573**	**919**	**3,565**	**2,559**	**6,802**	**9,503**	**45**	**22,473**	**24,964**	**1,039**
2020 10-month YTD	**1,506**	**829**	**3,435**	**2,422**	**6,680**	**9,975**	**41**	**22,554**	**24,889**	**1,039**

[a] We only collect plant fuel data and lease fuel data annually. We estimate monthly lease and plant fuel use from monthly marketed production by assuming that the preceding annual percentage remains constant for the next 12 months.

[b] We base published pipeline and distribution use data on reports collected on an annual basis. We estimate monthly pipeline and distribution use data from monthly total consumption (excluding pipeline and distribution use) by assuming that the preceding annual percentage remains constant for the next 12 months. Pipeline and distribution use volumes include line loss, defined as known volumes of natural gas that were the result of leaks, damage, accidents, migration, and/or blow downs, as well as fuel used in liquefaction and regasification.

[c] Heating value is the average number of British thermal units per cubic foot of natural gas as reported on EIA-857 and EIA-176. Appendix A, Explanatory Note 11, contains further information.

R Revised data.

E Estimated data.

RE Revised estimated data.

Source: 2017-2021: U.S. Energy Information Administration (EIA): Form EIA-857, *Monthly Report of Natural Gas Purchases and Deliveries to Consumers*; state and federal agencies; EIA estimates based on historical data; and *Natural Gas Annual 2021*. January 2022 through current month: Form EIA-914, *Monthly Crude Oil and Lease Condensate, and Natural Gas Production Report*; Form EIA-857; Form EIA-923, *Power Plant Operations Report*. Appendix A, Explanatory Note 6, contains an explanation of computation procedures and revision policy.

Note: Data for 2017 through 2020 are final. All other data are preliminary unless otherwise indicated. Geographic coverage is the 50 states and the District of Columbia. Totals may not equal sum of components because of independent rounding. Appendix A, Explanatory Note 6, contains a definition of sectors.

Table 4. U.S. natural gas imports, 2020-2022

volumes in million cubic feet; prices in dollars per thousand cubic feet

	2022 10-month YTD	2021 10-month YTD	2020 10-month YTD	October	September	August	July	2022 June
Imports								
Volume (million cubic feet)								
Pipeline								
Canada[a]	2,460,481	2,292,944	2,030,255	236,803	R233,605	232,632	254,087	228,653
Mexico	896	1,609	1,594	24	133	176	196	24
Total pipeline imports	**2,461,376**	**2,294,554**	**2,031,849**	**236,827**	**R233,738**	**232,808**	**254,283**	**228,677**
LNG								
By truck								
Canada	129	137	32	25	16	15	5	22
By vessel								
France	0	0	0	0	0	0	0	0
Nigeria	0	0	4,277	0	0	0	0	0
Norway	0	0	3,032	0	0	0	0	0
Trinidad/Tobago	19,509	18,066	33,538	0	0	2,862	2,736	0
United Kingdom	0	0	0	0	0	0	0	0
Total LNG imports	**19,638**	**18,203**	**40,878**	**25**	**16**	**2,877**	**2,742**	**22**
CNG								
Canada	316	174	260	36	28	24	27	26
Total CNG imports	**316**	**174**	**260**	**36**	**28**	**24**	**27**	**26**
Total imports	**2,481,331**	**2,312,930**	**2,072,987**	**236,888**	**R233,782**	**235,709**	**257,052**	**228,726**
Average Price (dollars per thousand cubic feet)								
Pipeline								
Canada	5.81	3.49	1.86	4.68	R5.99	6.50	5.93	7.03
Mexico	13.56	11.44	3.50	4.65	23.68	22.01	12.63	7.89
Total pipeline imports	**5.81**	**3.49**	**1.86**	**4.68**	**R6.00**	**6.51**	**5.93**	**7.03**
LNG								
By truck								
Canada	W	W	W	W	W	W	W	W
By vessel								
France	--	--	--	--	--	--	--	--
Nigeria	--	--	W	--	--	--	--	--
Norway	--	--	W	--	--	--	--	--
Trinidad/Tobago	W	W	W	--	--	W	W	--
United Kingdom	--	--	--	--	--	--	--	--
Total LNG imports	**27.75**	**8.43**	**W**	**W**	**W**	**15.33**	**11.96**	**W**
CNG								
Canada	10.74	4.56	3.17	6.22	9.31	9.49	7.27	9.10
Total CNG imports	**10.74**	**4.56**	**3.17**	**6.22**	**9.31**	**9.49**	**7.27**	**9.10**
Total imports	**5.99**	**3.53**	**1.91**	**4.68**	**R6.00**	**6.62**	**6.00**	**7.03**
Net imports - volume	**-3,253,917**	**-3,161,810**	**-2,130,305**	**-316,797**	**R-292,122**	**-319,104**	**-299,443**	**-321,816**

See footnotes at end of table.

Table 4. U.S. natural gas imports, 2020-2022

volumes in million cubic feet; prices in dollars per thousand cubic feet – continued

	2022						2021	
	May	April	March	February	January	Total	December	November
Imports								
Volume (million cubic feet)								
Pipeline								
Canada[a]	230,195	244,792	256,763	253,247	289,703	2,784,438	250,906	240,587
Mexico	24	24	53	189	54	1,718	57	52
Total pipeline imports	**230,218**	**244,816**	**256,816**	**253,436**	**289,757**	**2,786,156**	**250,963**	**240,639**
LNG								
By truck								
Canada	9	17	14	*	5	165	13	15
By vessel								
France	0	0	0	0	0	0	0	0
Nigeria	0	0	0	0	0	0	0	0
Norway	0	0	0	0	0	0	0	0
Trinidad/Tobago	482	0	2,600	4,448	6,381	21,423	1,628	1,729
United Kingdom	0	0	0	0	0	0	0	0
Total LNG imports	**490**	**17**	**2,614**	**4,448**	**6,387**	**21,587**	**1,641**	**1,744**
CNG								
Canada	36	31	34	38	35	217	22	22
Total CNG imports	**36**	**31**	**34**	**38**	**35**	**217**	**22**	**22**
Total imports	**230,744**	**244,864**	**259,464**	**257,922**	**296,179**	**2,807,961**	**252,626**	**242,405**
Average Price (dollars per thousand cubic feet)								
Pipeline								
Canada	6.70	5.49	4.44	5.25	6.23	3.71	4.57	4.97
Mexico	6.23	4.20	4.44	7.95	6.89	11.10	5.87	6.26
Total pipeline imports	**6.70**	**5.49**	**4.44**	**5.25**	**6.23**	**3.72**	**4.57**	**4.97**
LNG								
By truck								
Canada	W	W	W	W	W	7.11	W	W
By vessel								
France	--	--	--	--	--	--	--	--
Nigeria	--	--	--	--	--	--	--	--
Norway	--	--	--	--	--	--	--	--
Trinidad/Tobago	W	--	W	W	W	12.25	W	W
United Kingdom	--	--	--	--	--	--	--	--
Total LNG imports	**12.72**	**W**	**30.57**	**29.59**	**39.06**	**12.21**	**30.21**	**34.77**
CNG								
Canada	7.48	6.07	9.80	20.64	18.96	5.78	12.68	8.65
Total CNG imports	**7.48**	**6.07**	**9.80**	**20.64**	**18.96**	**5.78**	**12.68**	**8.65**
Total imports	**6.72**	**5.49**	**4.70**	**5.67**	**6.94**	**3.78**	**4.74**	**5.18**
Net imports - volume	**-383,564**	**-341,407**	**-378,099**	**-287,641**	**-313,924**	**-3,844,648**	**-368,260**	**-314,578**

See footnotes at end of table.

Table 4. U.S. natural gas imports, 2020-2022

volumes in million cubic feet; prices in dollars per thousand cubic feet – continued

	2021							
	October	September	August	July	June	May	April	March
Imports								
Volume (million cubic feet)								
Pipeline								
Canada[a]	228,101	218,703	220,830	225,984	207,811	203,154	208,290	237,236
Mexico	55	244	99	49	24	40	52	56
Total pipeline imports	**228,156**	**218,947**	**220,929**	**226,033**	**207,835**	**203,194**	**208,342**	**237,292**
LNG								
By truck								
Canada	24	25	22	22	11	13	8	2
By vessel								
France	0	0	0	0	0	0	0	0
Nigeria	0	0	0	0	0	0	0	0
Norway	0	0	0	0	0	0	0	0
Trinidad/Tobago	0	1,221	0	1,714	0	1,662	0	1,406
United Kingdom	0	0	0	0	0	0	0	0
Total LNG imports	**24**	**1,246**	**22**	**1,735**	**11**	**1,675**	**8**	**1,409**
CNG								
Canada	23	13	9	10	13	21	19	23
Total CNG imports	**23**	**13**	**9**	**10**	**13**	**21**	**19**	**23**
Total imports	**228,203**	**220,206**	**220,959**	**227,779**	**207,859**	**204,890**	**208,369**	**238,724**
Average Price (dollars per thousand cubic feet)								
Pipeline								
Canada	4.79	4.03	3.52	3.37	2.83	2.66	2.44	2.63
Mexico	5.70	9.32	6.37	4.33	2.08	2.52	2.47	3.10
Total pipeline imports	**4.79**	**4.04**	**3.52**	**3.37**	**2.83**	**2.66**	**2.44**	**2.63**
LNG								
By truck								
Canada	W	W	W	W	W	W	W	W
By vessel								
France	--	--	--	--	--	--	--	--
Nigeria	--	--	--	--	--	--	--	--
Norway	--	--	--	--	--	--	--	--
Trinidad/Tobago	--	W	--	W	--	W	--	W
United Kingdom	--	--	--	--	--	--	--	--
Total LNG imports	**W**	**9.30**	**W**	**8.41**	**W**	**7.55**	**W**	**8.36**
CNG								
Canada	6.19	4.52	4.21	3.98	3.21	3.06	3.09	4.59
Total CNG imports	**6.19**	**4.52**	**4.21**	**3.98**	**3.21**	**3.06**	**3.09**	**4.59**
Total imports	**4.79**	**4.07**	**3.52**	**3.41**	**2.83**	**2.70**	**2.44**	**2.66**
Net imports - volume	**-316,852**	**-315,377**	**-342,614**	**-338,268**	**-331,305**	**-373,167**	**-355,964**	**-356,687**

See footnotes at end of table.

Table 4. U.S. natural gas imports, 2020-2022

volumes in million cubic feet; prices in dollars per thousand cubic feet – continued

	2021							2020
	February	January	Total	December	November	October	September	August
Imports								
Volume (million cubic feet)								
Pipeline								
Canada[a]	265,227	277,608	2,499,955	261,053	208,648	199,184	172,869	208,069
Mexico	933	57	1,706	56	57	89	99	376
Total pipeline imports	**266,160**	**277,665**	**2,501,661**	**261,108**	**208,704**	**199,273**	**172,968**	**208,445**
LNG								
By truck								
Canada	7	3	43	7	4	8	6	9
By vessel								
France	0	0	0	0	0	0	0	0
Nigeria	0	0	6,906	2,629	0	0	0	0
Norway	0	0	3,032	0	0	0	0	0
Trinidad/Tobago	5,688	6,376	39,233	2,853	2,841	0	1,235	2,874
United Kingdom	0	0	0	0	0	0	0	0
Total LNG imports	**5,694**	**6,379**	**49,214**	**5,489**	**2,846**	**8**	**1,241**	**2,883**
CNG								
Canada	23	21	300	20	20	25	17	24
Total CNG imports	**23**	**21**	**300**	**20**	**20**	**25**	**17**	**24**
Total imports	**271,877**	**284,065**	**2,551,175**	**266,618**	**211,570**	**199,306**	**174,225**	**211,352**
Average Price (dollars per thousand cubic feet)								
Pipeline								
Canada	5.51	2.75	2.02	2.75	2.65	2.19	2.01	1.89
Mexico	15.39	2.91	3.48	3.07	3.20	2.97	3.41	7.81
Total pipeline imports	**5.54**	**2.75**	**2.02**	**2.75**	**2.65**	**2.19**	**2.01**	**1.90**
LNG								
By truck								
Canada	W	W	6.09	W	W	W	W	W
By vessel								
France	--	--	--	--	--	--	--	--
Nigeria	--	--	3.50	W	--	--	--	--
Norway	--	--	W	--	--	--	--	--
Trinidad/Tobago	W	W	4.67	W	W	--	W	W
United Kingdom	--	--	--	--	--	--	--	--
Total LNG imports	**9.44**	**7.62**	**4.60**	**5.54**	**6.93**	**W**	**3.40**	**1.52**
CNG								
Canada	5.83	5.41	3.26	3.82	3.86	2.27	2.26	2.39
Total CNG imports	**5.83**	**5.41**	**3.26**	**3.82**	**3.86**	**2.27**	**2.26**	**2.39**
Total imports	**5.63**	**2.86**	**2.07**	**2.80**	**2.71**	**2.19**	**2.02**	**1.89**
Net imports - volume	**-152,127**	**-279,450**	**-2,733,503**	**-286,558**	**-316,640**	**-282,314**	**-221,199**	**-148,878**

See footnotes at end of table.

Table 4. U.S. natural gas imports, 2020-2022

volumes in million cubic feet; prices in dollars per thousand cubic feet – continued

	2020						
	July	June	May	April	March	February	January
Imports							
Volume (million cubic feet)							
Pipeline							
Canada[a]	206,195	182,539	183,618	186,752	210,237	232,269	248,524
Mexico	119	32	63	60	100	355	300
Total pipeline imports	**206,315**	**182,571**	**183,681**	**186,812**	**210,337**	**232,624**	**248,824**
LNG							
By truck							
Canada	4	0	*	0	3	1	1
By vessel							
France	0	0	0	0	0	0	0
Nigeria	0	2,693	0	0	0	0	1,584
Norway	0	0	0	0	0	0	3,032
Trinidad/Tobago	4,078	2,178	2,811	3,214	2,857	5,689	8,602
United Kingdom	0	0	0	0	0	0	0
Total LNG imports	**4,083**	**4,871**	**2,811**	**3,214**	**2,860**	**5,689**	**13,218**
CNG							
Canada	22	36	26	23	34	15	38
Total CNG imports	**22**	**36**	**26**	**23**	**34**	**15**	**38**
Total imports	**210,419**	**187,478**	**186,518**	**190,049**	**213,231**	**238,328**	**262,080**
Average Price (dollars per thousand cubic feet)							
Pipeline							
Canada	1.59	1.54	1.59	1.50	1.64	1.95	2.46
Mexico	1.89	0.84	1.51	1.26	1.64	2.11	2.34
Total pipeline imports	**1.59**	**1.54**	**1.59**	**1.50**	**1.64**	**1.95**	**2.46**
LNG							
By truck							
Canada	W	--	W	--	W	W	W
By vessel							
France	--	--	--	--	--	--	--
Nigeria	--	W	--	--	--	--	W
Norway	--	--	--	--	--	--	W
Trinidad/Tobago	W	W	W	W	W	W	W
United Kingdom	--	--	--	--	--	--	--
Total LNG imports	**4.59**	**1.61**	**4.26**	**W**	**4.34**	**5.67**	**6.03**
CNG							
Canada	2.24	2.13	2.37	2.27	2.92	3.99	7.16
Total CNG imports	**2.24**	**2.13**	**2.37**	**2.27**	**2.92**	**3.99**	**7.16**
Total imports	**1.65**	**1.54**	**1.63**	**1.50**	**1.68**	**2.04**	**2.64**
Net imports - volume	**-138,748**	**-151,009**	**-208,954**	**-230,717**	**-284,206**	**-215,917**	**-248,363**

[a] EIA has reduced the reported volume of gas imported by pipeline from Canada by the amount of natural gas liquids removed from the saturated natural gas carried by Alliance Pipeline. Alliance moves saturated natural gas from the border to a processing plant in Illinois. After the adjustment, volumes of imported natural gas on this pipeline are on the same physical basis as other reported volumes of pipeline imports.

[b] For the "Other" area the point of origin for volumes of imported LNG was unassigned in the reports to the Office of Fossil Energy and Carbon Management.

[R] Revised data.

[W] Withheld.

[--] Not applicable.

[*] Volume is less than 500 Mcf.

Source: Office of Fossil Energy and Carbon Management, U.S. Department of Energy, *Natural Gas Imports and Exports*.

Note: In the case of missing import or export reports on Form FE-746R, *Import and Export of Natural Gas*, we estimate the missing volumes using pipeline flows or other available information. Prices are in nominal dollars. LNG prices are a volume-weighted average of the prices reported by cargo. The "LNG Monthly" (https://www.energy.gov/fecm/listings/lng-reports) from the Office of Fossil Energy and Carbon Management, U.S. Department of Energy, provides more information on what is included in the individual LNG prices. Totals may not equal sum of components because of independent rounding and/or withheld data.

Table 7. Marketed production of natural gas in selected states and the Federal Gulf of Mexico, 2017-2022

million cubic feet

Year and month	Alaska	Arkansas	California	Colorado	Kansas	Louisiana	Montana	New Mexico	North Dakota	Ohio
2017 total	**344,385**	**694,676**	**212,458**	**1,706,364**	**219,639**	**2,139,830**	**46,311**	**1,299,732**	**593,998**	**1,791,359**
2018 total	**341,315**	**589,985**	**202,617**	**1,847,402**	**201,391**	**2,832,404**	**43,530**	**1,493,082**	**706,552**	**2,403,382**
2019 total	**329,361**	**524,757**	**196,823**	**1,986,916**	**183,087**	**3,212,318**	**43,534**	**1,769,086**	**850,826**	**2,651,631**
2020										
January	30,018	42,187	15,908	178,066	14,623	274,755	3,527	162,016	78,798	203,701
February	28,537	39,093	14,649	166,620	13,636	255,885	3,340	155,323	77,940	190,559
March	29,219	43,677	15,376	175,202	14,486	276,544	3,527	169,244	83,892	203,701
April	27,513	39,748	14,906	168,438	13,595	264,869	3,148	156,722	72,059	193,050
May	27,076	40,463	15,172	163,768	14,012	281,636	2,692	147,782	52,874	199,485
June	25,545	38,742	14,837	159,601	13,321	264,072	2,667	153,276	52,626	193,050
July	26,779	39,855	15,061	167,105	13,674	264,875	3,322	165,335	64,860	201,686
August	26,846	40,295	13,344	165,091	13,504	260,226	3,248	168,311	74,940	201,686
September	26,978	38,734	12,857	162,531	13,030	255,690	3,009	165,008	78,195	195,180
October	29,080	40,172	13,059	164,462	13,461	263,120	3,204	171,376	82,649	201,097
November	29,575	38,565	12,934	159,409	12,917	267,312	3,143	167,213	80,112	194,610
December	31,161	39,452	12,475	160,168	13,097	277,178	3,135	166,561	83,498	201,097
Total	**338,329**	**480,982**	**170,579**	**1,990,462**	**163,356**	**3,206,163**	**37,963**	**1,948,168**	**882,443**	**2,378,902**
2021										
January	31,667	39,285	11,467	160,766	12,900	276,873	3,292	173,929	83,193	193,911
February	28,365	30,183	10,846	143,192	10,142	223,268	2,859	144,804	70,129	175,146
March	31,483	42,466	12,136	157,254	13,251	282,668	3,299	180,669	83,243	193,911
April	29,514	37,756	11,791	156,092	12,842	273,643	3,078	178,912	82,917	185,964
May	29,005	38,563	12,342	162,416	13,063	283,576	3,328	187,994	85,384	192,163
June	27,715	36,918	11,885	154,617	12,716	276,142	2,975	184,732	82,520	185,964
July	26,280	38,045	12,141	160,287	13,215	299,939	3,321	195,904	80,072	189,515
August	27,864	37,753	12,076	158,586	13,224	292,784	3,343	199,365	84,297	189,515
September	28,534	36,508	11,617	153,270	12,769	290,606	3,283	194,290	85,041	183,401
October	30,458	37,626	11,655	160,291	13,213	307,744	3,460	200,567	87,446	199,379
November	30,735	36,079	11,279	155,653	12,722	310,363	3,291	195,365	87,089	192,947
December	33,039	37,006	11,371	157,031	12,928	313,823	3,163	201,176	87,692	199,379
Total	**354,660**	**448,187**	**140,604**	**1,879,457**	**152,986**	**3,431,429**	**38,693**	**2,237,706**	**999,025**	**2,281,193**
2022										
January	32,865	E37,302	E11,186	E151,815	E12,255	E311,786	E3,092	E196,780	E81,699	E196,005
February	30,014	E33,465	E9,336	E138,369	E10,930	E284,177	E2,801	E183,345	E74,429	E172,829
March	32,473	E37,518	E11,388	E155,246	E12,194	E313,229	E3,214	E219,028	E86,190	E187,872
April	30,910	E36,247	E11,212	E151,319	E12,037	E313,229	E3,042	E215,953	E68,484	E179,444
May	31,677	E37,042	E11,489	E155,982	E12,469	E340,363	E3,152	E223,843	E80,563	E189,214
June	28,644	E35,573	E11,057	E150,046	E12,037	E335,290	E3,464	E214,602	E86,013	E190,021
July	29,654	E36,446	E11,651	E153,067	E12,457	E345,647	E3,465	E227,099	E89,572	E193,519
August	29,380	RE36,659	RE11,970	RE154,806	RE12,526	RE355,454	E3,634	RE230,690	RE88,700	RE196,604
September	29,288	RE35,431	RE11,331	RE151,378	E11,556	RE346,683	RE3,556	RE233,581	RE88,802	RE189,816
October	31,122	E36,361	E11,590	E155,286	E12,381	E364,024	E3,563	E245,129	E90,619	E195,856
2022 10-month	**306,026**	**E362,044**	**E112,209**	**E1,517,313**	**E120,843**	**E3,309,881**	**E32,982**	**E2,190,050**	**E835,071**	**E1,891,181**
2021 10-month	**290,886**	**375,103**	**117,955**	**1,566,773**	**127,336**	**2,807,243**	**32,239**	**1,841,166**	**824,244**	**1,888,867**
2020 10-month	**277,593**	**402,965**	**145,169**	**1,670,885**	**137,342**	**2,661,673**	**31,685**	**1,614,394**	**718,834**	**1,983,195**

See footnotes at end of table.

Table 7. Marketed production of natural gas in selected states and the Federal Gulf of Mexico, 2017-2022

million cubic feet – continued

Year and month	Oklahoma	Pennsylvania	Texas	Utah	West Virginia	Wyoming	Other states	Federal Gulf of Mexico	U.S. total
2017 total	**2,513,897**	**5,453,638**	**7,223,841**	**315,211**	**1,514,278**	**1,590,059**	**517,698**	**1,060,452**	**29,237,825**
2018 total	**2,875,787**	**6,264,832**	**8,041,010**	**295,826**	**1,771,698**	**1,637,517**	**485,675**	**974,863**	**33,008,867**
2019 total	**3,036,052**	**6,896,792**	**9,378,489**	**271,808**	**2,155,214**	**1,488,854**	**456,024**	**1,015,343**	**36,446,918**
2020									
January	263,734	603,836	843,432	21,944	209,896	124,274	37,391	86,071	3,194,177
February	243,139	569,721	783,094	20,373	198,090	108,722	34,782	81,114	2,984,616
March	257,387	607,689	841,347	21,765	210,559	117,977	36,689	87,955	3,196,236
April	235,642	586,955	783,283	20,379	204,826	111,744	34,389	80,574	3,011,842
May	217,154	592,126	734,176	20,326	212,646	107,288	33,986	64,374	2,927,037
June	222,324	560,390	741,401	19,244	212,831	103,890	32,957	62,227	2,873,001
July	226,843	604,716	775,851	20,312	220,032	108,679	34,568	67,778	3,021,331
August	226,344	607,221	782,436	19,814	223,208	107,320	33,757	43,988	3,011,580
September	222,010	567,029	755,253	19,283	218,893	104,520	30,468	48,900	2,917,569
October	219,403	595,653	773,720	20,042	226,064	104,787	31,775	38,702	2,991,827
November	224,327	605,244	751,562	19,200	223,428	103,236	31,246	60,496	2,984,528
December	228,057	647,714	770,555	19,307	231,845	103,933	32,383	67,085	3,088,701
Total	**2,786,366**	**7,148,295**	**9,336,110**	**241,989**	**2,592,319**	**1,306,368**	**404,391**	**789,262**	**36,202,446**
2021									
January	221,544	652,640	798,426	19,392	234,432	97,657	35,223	71,772	3,118,370
February	163,094	585,371	609,757	18,126	208,571	89,337	31,366	64,024	2,608,580
March	220,130	645,407	826,381	20,404	227,218	95,164	34,671	74,200	3,143,955
April	214,334	615,899	820,570	19,783	229,075	92,340	34,427	69,762	3,068,700
May	223,372	635,584	844,723	20,313	234,118	94,341	35,868	72,053	3,168,206
June	213,314	616,270	815,947	19,502	227,987	90,259	29,234	67,429	3,056,126
July	221,002	638,200	858,526	20,601	229,376	93,644	30,467	71,744	3,182,278
August	222,329	646,169	863,509	20,347	241,373	89,749	32,659	61,377	3,196,320
September	216,455	622,275	855,425	19,928	216,452	91,662	30,611	34,559	3,086,687
October	223,093	645,126	873,479	20,457	240,446	93,162	37,663	60,037	3,245,301
November	214,361	646,233	836,104	20,014	229,812	90,176	32,023	65,610	3,169,856
December	218,805	677,331	872,543	20,538	241,569	91,741	36,962	67,903	3,283,998
Total	**2,571,834**	**7,626,504**	**9,875,390**	**239,405**	**2,760,429**	**1,109,232**	**401,172**	**780,471**	**37,328,378**
2022									
January	E213,419	E660,345	E853,214	E20,789	E234,795	E85,192	E31,292	E65,454	E3,199,287
February	E192,596	E581,432	E766,441	E18,966	E209,707	E76,605	E28,839	E55,884	E2,870,165
March	E219,732	E635,076	E871,961	E21,315	E239,344	E84,319	E31,519	E63,547	E3,225,163
April	E223,078	E616,181	E856,759	E21,254	E235,580	E81,405	E29,705	E65,810	E3,151,649
May	E237,032	E640,189	E887,465	E22,840	E247,179	E82,036	E31,011	E62,326	E3,295,871
June	E230,337	E616,632	E862,817	E22,278	E240,568	E80,395	E31,237	E63,627	E3,214,637
July	E239,295	E641,726	E887,919	E23,066	E251,625	E85,506	E32,355	E66,393	E3,330,463
August	RE238,265	RE632,014	RE897,401	RE23,500	RE255,603	RE81,633	RE32,294	RE68,280	RE3,349,415
September	RE236,640	RE613,657	RE879,661	RE22,167	RE245,832	RE81,243	RE31,485	RE66,760	RE3,278,866
October	E241,982	E627,122	E911,175	E22,182	E257,942	E84,838	E32,190	E67,891	E3,391,253
2022 10-month YTD	**E2,272,376**	**E6,264,375**	**E8,674,814**	**E218,359**	**E2,418,176**	**E823,172**	**E311,925**	**E645,973**	**E32,306,770**
2021 10-month YTD	**2,138,668**	**6,302,940**	**8,166,742**	**198,853**	**2,289,048**	**927,315**	**332,188**	**646,957**	**30,874,524**
2020 10-month YTD	**2,333,982**	**5,895,337**	**7,813,993**	**203,482**	**2,137,046**	**1,099,199**	**340,762**	**661,681**	**30,129,216**

E Estimated data.

RE Revised estimated data.

Source: 2017-2021: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2021*, Bureau of Safety and Environmental Enforcement (BSEE), IHS Markit, and Enverus. January 2022 through current month: Form EIA-914, *Monthly Crude Oil and Lease Condensate, and Natural Gas Production Report*; and EIA computations.

Note: For 2022 forward, we estimate state monthly marketed production from gross withdrawals using historical relationships between the two. We collect data for Arkansas, California, Colorado, Kansas, Louisiana, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, Utah, West Virginia, Wyoming, and federal offshore Gulf of Mexico individually on the EIA-914 report. The "other states" category comprises states/areas not individually collected on the EIA-914 report (Alabama, Arizona, Federal Offshore Pacific, Florida, Idaho, Illinois, Indiana, Kentucky, Maryland, Michigan, Mississippi, Missouri, Nebraska, Nevada, New York, Oregon, South Dakota, Tennessee, and Virginia). Before 2022, Federal Offshore Pacific is included in California. We obtain all data for Alaska directly from the state. Monthly preliminary state-level data for all states not collected individually on the EIA-914 report are available after the final annual reports for these series are collected and processed. Final annual data are generally available in the third quarter of the following year. The sum of individual states may not equal total U.S. volumes because of independent rounding.

Summary

Overview of Activity for October 2022

- **Top five countries of destination, representing 62.6% of total U.S. LNG exports in October 2022**
  - France (48.9 Bcf), United Kingdom (46.0 Bcf), Netherlands (40.5 Bcf), South Korea (31.4 Bcf), and China (26.9 Bcf)
- **309.4 Bcf of exports in October 2022**
  - 4.9% increase from September 2022
  - 3.9% more than October 2021
- **97 cargos shipped in October 2022**
  - Sabine Pass (38), Cameron (37), Corpus Christi (20), Elba (2), Cove Point (0), and Freeport (0)
  - 98 cargos in September 2022
  - 94 cargos in October 2021

1a. Table of Exports of Domestically-Produced LNG Delivered by Region (Cumulative from February 2016 through October 2022)

Region	Number of Countries Receiving Per Region	Volume Exported (Bcf)	Percentage Receipts of Total Volume Exported (%)	Number of Cargos*
East Asia and Pacific	8	4,345.9	33.5%	1278
Europe and Central Asia	13	5,312.0	41.0%	1669
Latin America and the Caribbean**	13	2,124.2	16.4%	756
Middle East and North Africa	5	376.6	2.9%	110
South Asia	3	799.2	6.2%	238
Sub-Saharan Africa	0	0.0	0.0%	0
Total LNG Exports	**42**	**12,957.9**	**100.0%**	**4,051**

*Split cargos counted as both individual cargos and countries

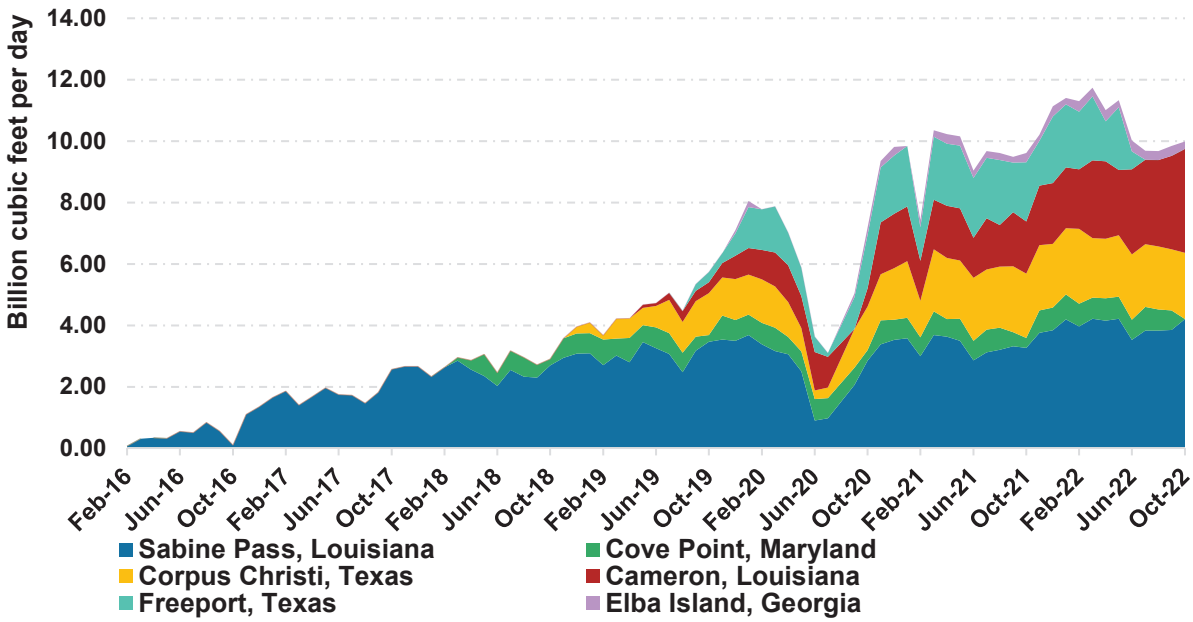
**Number of cargos does not include the shipments by ISO container

1b. Shipments of Domestically-Produced LNG Delivered – by Country
(Cumulative from February 2016 through October 2022)

	Country of Destination	Region	Number of Cargos	Volume (Bcf of Natural Gas)	Percentage of Total U.S LNG Exports (%)
1.	South Korea*	East Asia and Pacific	482	1,678.8	13.0%
2.	Japan*	East Asia and Pacific	346	1,194.0	9.2%
3.	Spain*	Europe and Central Asia	317	994.1	7.7%
4.	China*	East Asia and Pacific	282	962.3	7.4%
5.	France*	Europe and Central Asia	274	886.5	6.8%
6.	United Kingdom*	Europe and Central Asia	252	839.8	6.5%
7.	Netherlands*	Europe and Central Asia	206	677.4	5.2%
8.	Brazil*	Latin America and the Caribbean	217	608.3	4.7%
9.	India*	South Asia	179	605.8	4.7%
10.	Mexico*	Latin America and the Caribbean	163	546.3	4.2%
11.	Turkey*	Europe and Central Asia	170	542.1	4.2%
12.	Chile*	Latin America and the Caribbean	132	419.3	3.2%
13.	Taiwan*	East Asia and Pacific	98	310.8	2.4%
14.	Italy*	Europe and Central Asia	93	302.1	2.3%
15.	Argentina*	Latin America and the Caribbean	110	265.2	2.0%
16.	Poland*	Europe and Central Asia	75	251.5	1.9%
17.	Portugal*	Europe and Central Asia	78	247.7	1.9%
18.	Greece*	Europe and Central Asia	72	172.2	1.3%
19.	Kuwait	Middle East and North Africa	45	156.4	1.2%
20.	Dominican Republic*	Latin America and the Caribbean	63	151.1	1.2%
21.	Lithuania	Europe and Central Asia	45	140.3	1.1%
22.	Belgium*	Europe and Central Asia	43	138.4	1.1%
23.	Pakistan*	South Asia	40	128.9	1.0%
24.	Jordan*	Middle East and North Africa	36	124.2	1.0%
25.	Singapore*	East Asia and Pacific	33	107.3	0.8%
26.	Croatia	Europe and Central Asia	35	105.4	0.8%
27.	Thailand*	East Asia and Pacific	24	82.9	0.6%
28.	Bangladesh*	South Asia	19	64.5	0.5%
29.	Jamaica*	Latin America and the Caribbean	26	57.4	0.4%
30.	United Arab Emirates	Middle East and North Africa	15	51.1	0.4%
31.	Panama*	Latin America and the Caribbean	27	47.9	0.4%
32.	Israel*	Middle East and North Africa	9	28.0	0.2%
33.	Colombia*	Latin America and the Caribbean	18	24.2	0.2%
34.	Egypt*	Middle East and North Africa	5	16.9	0.1%
35.	Malta*	Europe and Central Asia	9	14.6	0.1%
36.	Indonesia*	East Asia and Pacific	12	6.1	0.0%
37.	Malaysia	East Asia and Pacific	1	3.7	0.0%
	Total Exports by Vessel		**4,051**	**12,953.4**	
38.	Barbados	Latin America and the Caribbean	304	1.3	0.0%
39.	Bahamas	Latin America and the Caribbean	631	1.4	0.0%
	Jamaica	Latin America and the Caribbean	123	1.3	0.0%
40.	Haiti	Latin America and the Caribbean	128	0.4	0.0%
41.	Antigua and Barbuda	Latin America and the Caribbean	31	0.0	0.0%
42.	Nicaragua	Latin America and the Caribbean	1	0.0	0.0%
	Total Exports by ISO		**1218**	**4.5**	
	Total Exports by Vessel and ISO		**5,269**	**12,957.9**	

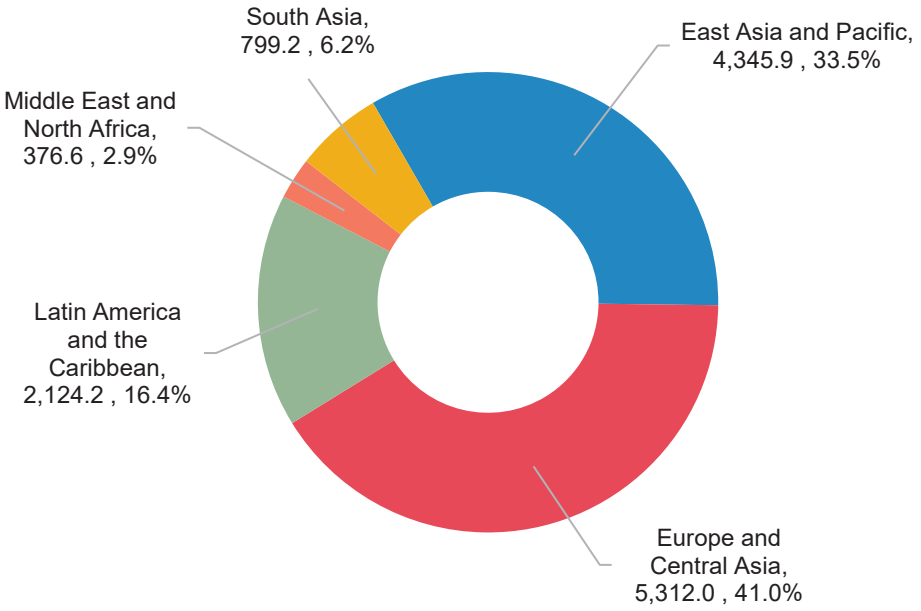
Note:
Volume and Number of Cargos are the cumulative totals of each individual Country of Destination by Region starting from February 2016.
Jamaica has received U.S. LNG exports by both vessel and ISO container. The volumes are totaled separately
* Split cargos counted as both individual cargos and countries.
Vessel = LNG Exports by Vessel and ISO container = LNG Exports by Vessel in ISO Containers.
Does not include re-exports of previously-imported LNG. See table 2c for re-exports data.
Totals may not equal sum of components because of independent rounding.

1c. Domestically-Produced LNG Exported by Point of Exit
(February 2016 through October 2022)



The Cameron, LA point of exit includes exports from Cameron LNG and Venture Global Calcasieu Pass.

1d. Domestically-Produced LNG Exported by Region
(Cumulative from February 2016 through October 2022)
(Bcf, %)



https://news.gov.bc.ca/releases/2022LWRS0067-001800

Ministers' joint statement on status of negotiations with Blueberry River First Nations

Joint Statement

Victoria
Saturday, November 26, 2022 4:45 PM

Josie Osborne, Minister of Land, Water and Resource Stewardship; Murray Rankin, Minister of Indigenous Relations and Reconciliation; and Bruce Ralston, Minister of Energy, Mines and Low Carbon Innovation, have issued the following statement about the status of negotiations with Blueberry River First Nations:

"We continue to engage in respectful negotiations with Blueberry River First Nations in response to the BC Supreme Court's direction in June 2021 to find a new approach to natural resource development that protects the Nations' treaty rights and addresses cumulative impacts.

"Our negotiating teams have been working incredibly hard to develop solutions that address healing and restoration on the land and provide predictability for industry, while including Blueberry River First Nations in how natural resources are planned and authorized in their territory

.

"From the start, our joint focus has been on ensuring we arrive at an agreement that protects Blueberry River First Nations' Treaty 8 rights and that provides for a sustainable economy with good jobs and opportunity for people in northeastern B.C.

"We wish to affirm that we are very close to an agreement and are discussing final issues. As such, we have initiated early engagement with select industry groups and other Treaty 8 Nations on a proposed agreement to hear their feedback and consider adjustments.

"Our commitment is to share more with British Columbians as soon as possible."

https://investors.next-decade.com/news-releases/news-release-details/nextdecade-announces-increase-enn-lng-sale-and-purchase

DECEMBER 27, 2022

NextDecade Announces Increase of ENN LNG Sale and Purchase Agreement

BACK TO NEWS & EVENTS

HOUSTON--(BUSINESS WIRE)--Dec. 27, 2022-- NextDecade Corporation (NextDecade) (NASDAQ: NEXT) announced today a volume increase of the sale and purchase agreement (SPA) with ENN LNG (Singapore) Pte Ltd (ENN), a wholly-owned subsidiary of ENN Natural Gas Co., Ltd. for the supply of liquefied natural gas (LNG) from NextDecade's Rio Grande LNG export project (RGLNG) in Brownsville, Texas.

Under the 20-year SPA, ENN will now purchase 2.0 million tonnes per annum (MTPA) of LNG. This is a 0.5 MTPA increase from the original 1.5 MTPA SPA announced earlier this year. All volumes of LNG are indexed to Henry Hub and will be supplied from the first three trains at RGLNG on a free-on-board basis.

NextDecade is currently targeting a positive Final Investment Decision (FID) on the first three trains of the RGLNG export project during the first quarter of 2023, with FIDs of its remaining trains to follow thereafter.

About NextDecade Corporation

NextDecade Corporation is an energy company accelerating the path to a net-zero future. Leading innovation in more sustainable LNG and carbon capture solutions, NextDecade is committed to providing the world access to cleaner energy. Through our wholly owned subsidiaries Rio Grande LNG and NEXT Carbon Solutions, we are developing a 27 MTPA LNG export facility in South Texas along with one of the largest carbon capture and storage projects in North America. We are also working with third-party customers around the world to deploy our proprietary processes to lower the cost of carbon capture and storage and reduce CO_2 emissions at their industrial-scale facilities. NextDecade's common stock is listed on the Nasdaq Stock Market under the symbol "NEXT." NextDecade is headquartered in Houston, Texas. For more information, please visit www.next-decade.com.

https://www.sempra.com/sempra-infrastructure-announces-sale-and-purchase-agreement-rwe-port-arthur-lng

December 28, 2022

Sempra Infrastructure Announces Sale and Purchase Agreement with RWE for Port Arthur LNG

HOUSTON, Dec. 28, 2022 /PRNewswire/ --
Sempra Infrastructure , a subsidiary of Sempra (NYSE: SRE) (BMV: SRE), today announced it has entered into a long-term sale and purchase agreement (SPA) with RWE Supply & Trading, a subsidiary of RWE (RWE: AG), for the supply of approximately 2.25 million tonnes per annum (Mtpa) of liquefied natural gas (LNG) from the Port Arthur LNG Phase 1 project under development in Jefferson County, Texas. The LNG will be delivered on a free-on-board basis for 15 years. The agreement also provides a framework to explore ways to lower the carbon intensity of LNG produced from the Port Arthur LNG Phase 1 project through GHG emission reduction, mitigation strategies and a continuous improvement approach.

"We could not be more excited to finalize our agreement with RWE as we continue supporting the energy security and environmental goals of our European customers," said Justin Bird, CEO of Sempra Infrastructure. "Because of its scale, location and permitting status, Port Arthur LNG is benefitting from a lot of commercial momentum with nearly all the projected off-take capacity for Phase 1 now under long-term agreements with some of the leading global energy companies. Today's announcement moves us one step further along in the process of making Port Arthur LNG a reality."

"Our partnership with Sempra Infrastructure, one of the leading companies for LNG infrastructure in the US, is another important step to diversify Germany's gas supply and thus contributes to enhancing security of supply in Europe on a long-term basis," said Andree Stracke, CEO of RWE Supply & Trading. "Thanks to the LNG supply contract with Sempra Infrastructure, we can also enlarge our international LNG portfolio."

Sempra Infrastructure recently announced it has entered into long-term agreements with ConocoPhillips, INEOS and ENGIE for the sale and purchase of approximately 7.3 Mtpa of LNG from the proposed Phase 1 project. The company is focused on completing the remaining steps necessary to achieve its goal of making a final investment decision for Phase 1 of the liquefaction project in the first quarter of 2023, with first cargo deliveries expected in 2027.

The Port Arthur LNG Phase 1 project is permitted and expected to include two natural gas liquefaction trains and LNG storage tanks and associated facilities capable of producing, under optimal conditions, up to approximately 13.5 Mtpa of LNG. A similarly sized Port Arthur LNG Phase 2 project is also competitively positioned and under active marketing and development.

Development of both phases of the Port Arthur LNG project is contingent upon completing the required commercial agreements, securing and/or maintaining all necessary permits, obtaining financing, and reaching a final investment decision, among other factors.

About Sempra Infrastructure
Sempra Infrastructure delivers energy for a better world. Through the combined strength of its assets in North America, the company is dedicated to enabling the delivery of cleaner energy for its customers. With a continued focus on sustainability, innovation, world-class safety, championing people, resilient operations and social responsibility, its more than 2,000 employees develop, build and operate clean power, energy networks and LNG and net-zero solutions that are expected to play a crucial role in the energy systems of the future. For more information about Sempra Infrastructure, please visit www.SempraInfrastructure.com
and Twitter
.

About RWE
RWE is leading the way to a green energy world. With an extensive investment and growth strategy, the company will expand its powerful, green generation capacity to 50 gigawatts internationally by 2030. RWE is

investing more than €50 billion gross for this purpose in this decade. The portfolio is based on offshore and onshore wind, solar, hydrogen, batteries, biomass and gas.
RWE Supply & Trading provides tailored energy solutions for large customers. RWE has locations in the attractive markets of Europe, North America and the Asia-Pacific region. The company is responsibly phasing out nuclear energy and coal. Government-mandated phaseout roadmaps have been defined for both of these energy sources. RWE employs around 19,000 people worldwide and has a clear target: to get to net zero by 2040. On its way there, the company has set itself ambitious targets for all activities that cause greenhouse gas emissions. The Science Based Targets initiative has confirmed that these emission reduction targets are in line with the Paris Agreement. Very much in the spirit of the company's purpose: Our energy for a sustainable life.

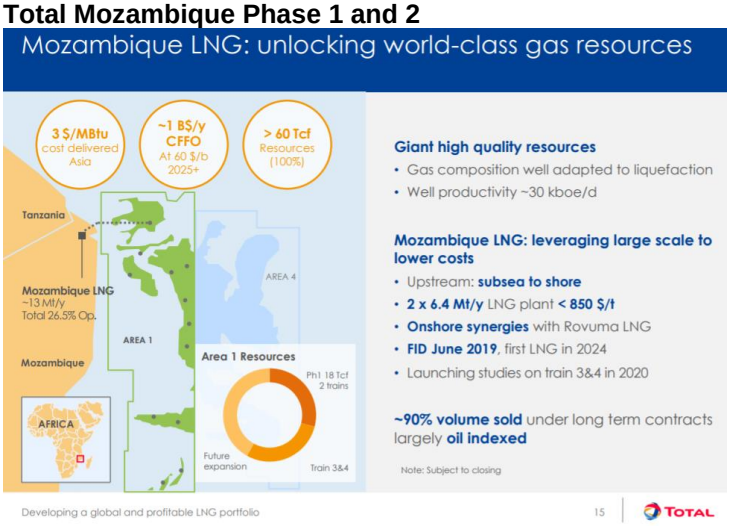
Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?

Posted Wednesday April 28, 2021. 9:00 MT

The next six months will determine the size and length of the new LNG supply gap that is hitting harder and faster than anyone expected six months ago. Optimists will say the Mozambique government will bring sustainable security and safety to the northern Cabo Delgado province and provide the confidence to Total to quickly get back to LNG development such that its LNG in-service delay is a matter of months and not years. We hope so for Mozambique's domestic situation, but will it be that easy for Total's board to quickly look thru what just happened? Total suspended LNG development for 3 months, restarted development on March 25, but then 3 days of violence led it to suspend development again on March 28, and announce force majeure on Monday April 26. Even if the optimists are right, Mozambique LNG is counted on for LNG supply and the major LNG supply project that are in LNG supply forecasts are now all delayed – Total Phase 1 of 1.7 bcf/d and its follow on Phase 2 of 1.3 bcf/d, and Exxon's Rozuma Phase 1 of 2.0 bcf/d. It is important to remember this 5.0 bcf/d of major LNG supply is being counted in LNG supply forecasts and starting in 2024. At a minimum, we think the more likely scenario is a delay of at least 2 years in this 5.0 bcf/d from the pre-Covid timelines. And this creates a much bigger and sooner LNG supply gap starting ~2025 and stronger outlook for LNG prices. Thermal coal in Asia will play a role in keeping a lid on LNG prices. But there will be the opportunity for LNG suppliers to at least review the potential for brownfield LNG projects to fill the growing supply gap. The thought of increasing capex was a non-starter six months ago, but there is a much stronger outlook for global oil and gas prices. Oil and gas companies are pivoting from cutting capex to small increases in 2021 capex and expecting for higher capex in 2022. We believe this sets the stage for looking at potential FID of brownfield LNG projects before the end of 2021 to be included in 2022 capex budgets. Mozambique is causing an LNG supply gap that someone will try to fill. And if brownfield LNG is needed, what about Shell looking at 1.8 bcf/d brownfield LNG Canada Phase 2? Cdn natural gas producers hope so as this would mean more Cdn natural gas will be tied to Asian LNG markets and not competing in the US against Henry Hub.

Total declares force majeure on Mozambique LNG, Yesterday, Total announced [LINK] "*Considering the evolution of the security situation in the north of the Cabo Delgado province in Mozambique, Total confirms the withdrawal of all Mozambique LNG project personnel from the Afungi site. This situation leads Total, as operator of Mozambique LNG project, to declare force majeure. Total expresses its solidarity with the government and people of Mozambique and wishes that the actions carried out by the government of Mozambique and its regional and international partners will enable the restoration of security and stability in Cabo Delgado province in a sustained manner".* Total is working Phase 1 is ~1.7 bcf/d (Train 1 + 2, 6.45 mtpa/train) and was originally expected to being LNG deliveries in 2024. There was no specific timeline for Phase 2 of 1.3 bcf/d (Train 3 + 4, 5.0 mtpa/train), but was expected to follow Phase 1 in short order to keep capital costs under control with a continuous construction process with a potential onstream shortly after 2026.

Total Mozambique Phase 1 and 2



Source: Total Investor Day September 24, 2019

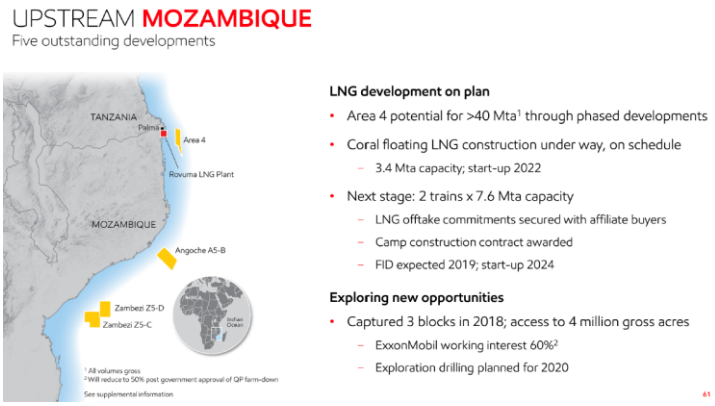
Total's Mozambique force majeure is no surprise, especially the need to the restoration of security and stability "in a sustained manner". Yesterday, Total announced [LINK] "*Considering the evolution of the security".* No one should be surprised by the force majeure or the sustained manner caveat. SAF Group posts a weekly Energy Tidbits research memo [LINK], wherein we have, in multiple weekly memos, that Total had shut down development in December for 3 months due to the violent and security risks. It restarted development on Wed March 24, violence/attacks immediately resumed for 3 consecutive days, and then Total suspended development on Sat March 27. Local violence/attacks shut development down in Dec, the situation gets settled enough for Total to restart in March, only to be shut down 3 days thereafter. No one should be surprised especially with Total's need to see security and stability "in a sustained manner".

Does anyone really think Total will risk another quick 2-3 month restart or even in 2021? The Mozambique government will be working hard to convince Total to restart soon. We just find it hard to believe Total board will risk a replay of March 24-27 in 2021. Unfortunately, Mozambique has had internal conflict for years. It reached a milestone to the positive in August 2019. Our SAF Group August 11, 2019 Energy Tidbits memo [LINK] highlighted the signing of a peace pact between Mozambique President Nyusi and leader of the Renamo opposition Momade. This was the official end to a 2013 thru 2016 conflict following a failure to hold up the prior peace pact. At that time, FT reported [LINK] "Mr Nyusi has said that "*the government and Renamo will come together and hunt" rebels who fail to disarm. The government has struggled to stem the separate insurgency in the north, which has killed or displaced hundreds near the gas-rich areas during the past two years. While the roots of the conflict remain murky, it is linked to a local Islamist group and appears to be drawing on disaffection over sharing gas investment benefits, say analysts*." This is just a reminder this is not a new issue. LNG is a game changer to Mozambique's economic future. It is, but also has been, a government priority to have the security and safety for Total and Exxon to move on their LNG developments. Its hard to believe the Mozambique government will be able to quickly convince Total and Exxon boards that they can be comfortable there is a sustained security/safety situation and they can send their people back in to develop the LNG. Total's board would allow any resumption of development before year end 2021. The last thing Total wants is a replay of March 24-27. The first question is how long will it take before the Total board is convinced its safe to restart. Could you imagine them doing a replay of what just happened? Wait three months, restart development and have to stop again right away? We have to believe that could lead the Total board to believe it is unfixable for years. We just don't think they are to prepared to risk that decision in 3 months. Its why we have to think there isn't a restart approval until at least in 2022 at the earliest ie. why we think the likely scenario is a delay of 2-3 years, and not a matter of months.

Mozambique's security issues pushes back 5.0 bcf/d of new LNG supply at least a couple years. The global LNG issue is that 5 bcf/d of new Mozambique LNG supply (apart from the Eni Coral FLNG of 0.45 bcf/d) won't start up in 2024 and

continuing thru the 2020s. And we believe all LNG forecasts included this 5.0 bcf/d to be in service in the 2020s as Mozambique had been considered the best positioned LNG supply to access Asia after Australia and Papua New Guinea. (i) Eni Coral Sul (Rovuma Basin) FLNG of 0.45 bcf/d planned in service in 2022. [LINK] This is an offshore floating LNG vessel that is still expected to be in service in 2022. (ii) Total Phase 1 to add 1.7 bcf/d with an in service originally planned for 2024. We expect the in service data to be pushed back to at least 2026 assuming Total gives a development restart approval in Dec 2021. In theory, this would only be a 1 year loss of time. However, Total has let services go, the project will be idle for 9 months, it isn't clear if the need to get people out quickly let them do a complete put the project on hold, and how many people will be on site maintaining the status of the development during the force majeure. Also what new procedures and safety will be put in place for a restart. These all mean there will be added time needed to get the project back to where it was when force majeure was declared ie. why we think a 12 month time delay will be more like an 18 month project delay. (iii) Exxon's Rozuma Phase 1 LNG will add 2.0 bcf/d and, pre-Covid, was expected to be in service in 2025. We believe the delays related to security and safety at Total are also going to impact Exxon. We find it highly unlikely the Exxon board would take a different security and safety decision than Total. Pre-pandemic, Exxon's March 6, 2019 Investor Day noted their operated Mozambique Rovuma LNG Phase 1 was to be 2 trains each with 1.0 bcf/d capacity for total initial capacity of 2.0 bf/d with FID expected in 2019 and first LNG deliveries in 2024. The 2019 FID expectation was later pushed to be expected just before the March 2020 investor day. But the pandemic hit, and on March 21, 2020, we tweeted [LINK] on the Reuters story "*Exclusive: Coronavirus, gas slump put brakes on Exxon's giant Mozambique LNG plan"* [LINK] that noted Exxon was expected to delay the Rovuma FID. There was no timeline, but the expectation was that FID would now be in 2022 (3 years later than original timeline0 and that would push first LNG likely to 2027. (iv) Total Phase 2 was to add 1.3 bcf/d. There was no firm in service date but it was expected to follow closely behind Phase 1 to maintain services. That would have put it originally in the 2026/2027 period. But if Phase 1 is pushed back 2 years, so will Phase 2 so more likely 2028/2029.. (v) Total Phase 1 + 2 and Exxon Rozuma Phase 1 total 5.0 bcf/d and would have been (and still are) in all LNG supply forecasts for the 2020s. (vi) We aren't certain if the LNG supply forecasts include Exxon Rozuma Phase 2 ,which would be an additional 2.0 bcf/d on top of the 5.0 bcf/d noted above. Exxon Rozuma has always been expected to be at least 2 Phases. This has been the plan since the Anadarko days given the 85 tcf size of the resource on Exxon's Area 4. There was no firm in service data for Phase 2, but it was expected they would also closely follow Phase 1 to maintain services. We expect that original timeline would have been 2026/2027 and that would not be pushed back to 2029/2030. (vii) It doesn't matter if its only 5 bcf/ of Mozambique that is delayed 2 to 3 years, it will cause a bigger LNG supply gap and sooner. The issue for LNG markets is this is taking projects that are in development effectively out of the queue for some period.

Exxon Mozambique LNG



Source: Exxon Investor Day March 6, 2019

Won't LNG and natural gas get hit by Biden's push for carbon free electricity? Yes, in the US. For the last 9 months, we have warned on Biden's climate change plan that were his election platform and now form his administration's energy transition map. We posted our July 28, 2020 blog "*Biden To Put US On "Irreversible Path to Achieve Net-Zero Emissions, Economy-Wide" Is a Major Negative To US Natural Gas in 2020s* "[LINK] on Biden's platform "*The Biden Plan to Build a Modern, Sustainable Infrastructure and an Equitable Clean Energy Future*" [LINK]. Biden's new American Jobs Plan

[LINK] lines up with his campaign platform including to put the US "*on the path to achieving 100 percent carbon-free electricity by 2035*.". Our July 28, 2020 blog noted that it would require replacing ~60% of US electricity generation with more renewable and it could eliminate ~40% (33.5 bcf/d) of 2019 US natural gas consumption. If Biden is 25% successful by 2030, it would replace ~6.3 bcf/d of natural gas demand. It would be a negative to US natural gas and force more US natural gas to export markets. The wildcard when does US natural gas start to decline if producers are faced with the reality of natural gas being phased out for electricity. The other hope is that when Biden says "carbon-free", its not what ends up in the details of any formal policy statement ie. carbon electricity will be allowed with Biden's push for CCS.

Will Cdn natural gas be similarly hit by if Trudeau move to "emissions free" and not "net zero emissions" electricity? Yes and No. Our SAF Group April 25, 2021 Energy Tidbits memo [LINK] was titled ""*Bad News For Natural Gas, Trudeau's Electricity Goal is Now 100% "Emissions Free" And Not "Net Zero Emissions*". On Thursday, PM Trudeau spoke at Biden's global climate summit [LINK] and looks like he slipped in a new view on electricity than was in last Monday's budget and his Dec climate plan. Trudeau said "*In Canada, we've worked hard to get to over 80% emissions-free electricity, and we're not going to stop until we get to 100%."* Speeches, especially ones made on a global stage are checked carefully so this had to be deliberate. Trudeau said "*emissions free*" and not net zero emissions electricity. It seems like this language is carefully written to exclude any fossil fuels as they are not emissions free even if they are linked to CCS. Recall in Liberals big Dec 2020 climate announcement [LINK], Liberals said ""*Work with provinces, utilities and other partners to ensure that Canada's electricity generation achieves net-zero emissions before 2050*." There is no way Trudeau changed the language unless he meant to do so. And this is a major change as it would seem to indicate his plan to eliminate all fossil fuels used for electricity. If so this would be a negative to Cdn natural gas that would be stuck within Western Canada and/or continuing to push into the US when Biden is trying to switch to carbon free electricity. We recognize that there is still some ambiguity in what will be the details of policy and the Liberals aren't changing to no carbon sourced electricity at all. Let's hope so. But let's also be careful that politicians don't change language without a reason or at least with a view to setting up for some future hit. Plus Trudeau had a big warning in that same speech saying "*we will make it law to respect our new 2030 target and achieve net-zero emissions by 2050*". They plan to make it the law that Canada has to be on track for the Liberals 2030 emissions targets. This means that the future messaging will be that the Liberals have no choice but to take harder future emissions actions as it is the law. They will be just obeying the law as they will be obligated to obey the law. Everyone knows the messaging will be we have to do more get to Net Zero, that in itself will inevitably mean it will be the law if he actually does move to eliminate any carbon based electricity. So yes it's a negative, that is unless more Cdn natural gas can be exported via LNG to Asia. We believe this would be a plus to be priced against global LNG instead of Henry Hub.

Biden's global climate summit reminded there is too much risk to skip over natural gas as the transition fuel. Apart from the US and Canada, we haven't seen a sea shift to eliminating natural gas for power generation, especially from energy import dependent countries. There is a strong belief that hydrogen and battery storage will one day be able to scale up at a competitive cost to lead to the acceleration away from fossil fuels. But that time isn't yet here, at least not for energy import dependent countries. One of the key themes from last week's leader's speeches at the Biden global climate summit – to get to Net Zero, the world is assuming there wilt be technological advances/discoveries that aren't here today and that have the potential to immediately ramp up in scale. IEA Executive Director Faith Birol was blunt in his message [LINK] saying "*Right now, the data does not match the rhetoric – and the gap is getting wider*." And "*IEA analysis shows that about half the reductions to get to net zero emissions in 2050 will need to come from technologies that are not yet ready for market. This calls for massive leaps in innovation. Innovation across batteries, hydrogen, synthetic fuels, carbon capture and many other technologies.* US Special Envoy for Climate John Kerry said a similar point that half of the emissions reductions will have to come from technologies that we don't yet have at scale. UK PM Johnson [LINK] didn't say it specifically, but points to this same issue saying "*To do these things we've got to be constantly original and optimistic about new technology and new solutions whether that's crops that are super-resistant to drought or more accurate weather forecasts like those we hope to see from the UK's new Met Office 1.2bn supercomputer that we're investing in*." It may well be that the US and other self sufficient energy countries are comfortable going on the basis of assuming technology developments will occur on a timely basis. But, its clear that countries like China, India, South Korea and others are not prepared to do so. And not prepared to have the confidence to rid themselves of coal power generation. This is why there hasn't been any material change in the LNG demand outlook

We expect the IEA's blunt message that the gap is getting wider will be reinforced on May 18. We have had a consistent view on the energy transition for the past few years. We believe it is going to happen, but it will take longer, be a bumpy road and cost more than expected. This is why we believe the demise of oil and natural gas won't be as easy and fast as hoped for by the climate change side. The IEA's blunt warning on the gap widening should not be a surprise as they warned on this in June 2020. Birol's climate speech also highlighted that the IEA will release on May 18 its roadmap for how the global energy sector can reach net zero by 2050. Our SAF Group June 11, 2020 blog "*Will The Demise Of Oil Take Longer, Just Like Coal? IEA and Shell Highlight Delays/Gaps To A Smooth Clean Energy Transition*" [LINK] feature the IEA's June 2020 warning that the critical energy technologies needed to reduce emissions are nowhere near where they need to be. In that blog, we said "there was an excellent illustration of the many significant areas, or major pieces of the puzzle, involved in an energy transition by the IEA last week. The IEA also noted the progress of each of the major pieces and the overall conclusion is that the vast majority of the pieces are behind or well behind where they should be to meet a smooth timely energy transition. It is important to note that these are just what the IEA calls the "*critical energy technologies*" and does not get into the wide range of other considerations needed to support the energy transition. The IEA divides these "critical energy technologies "into major groupings and then ranked the progress of each of these pieces in its report "*Tracking Clean Energy Progress"* [LINK] by on track, more efforts needed, or not on track". Our blog included the below IEA June 2020 chart.

IEA's Progress Ranking For "Critical Energy Technologies" For Clean Energy Transition

Power	Renewable Power	Geothermal
	Solar PV	Ocean Power
	Onshore Wind	Nuclear Power
	Offshore Wind	Natural Gas-Fired Power
	Hydropower	Coal-Fired Power
	Bioenergy Power Generation	CCUS in Power
	Concentrating Solar Power	
Fuel Supply	Methane Emissions from O&G	Flaring Emissions
Industry	Chemicals	Pulp and Paper
	Iron and Steel	Aluminum
	Cement	CCUS in Industry and Transformation
Transport	Electric Vehicles	Transport Biofuels
	Rail	Aviation
	Fuel Consumption of Cars and Vans	International Shipping
	Trucks and Busses	
Buildings	Building Envelopes	Lighting
	Heating	Appliances and Equipment
	Heat Pumps	Data Centres and Data Transmission Networks
	Cooling	
Energy Integration	Energy Storage	Demand Response
	Hydrogen	Direct Air Capture
	Smart Grids	

Source: IEA

On Track More Efforts Needed Not on Track

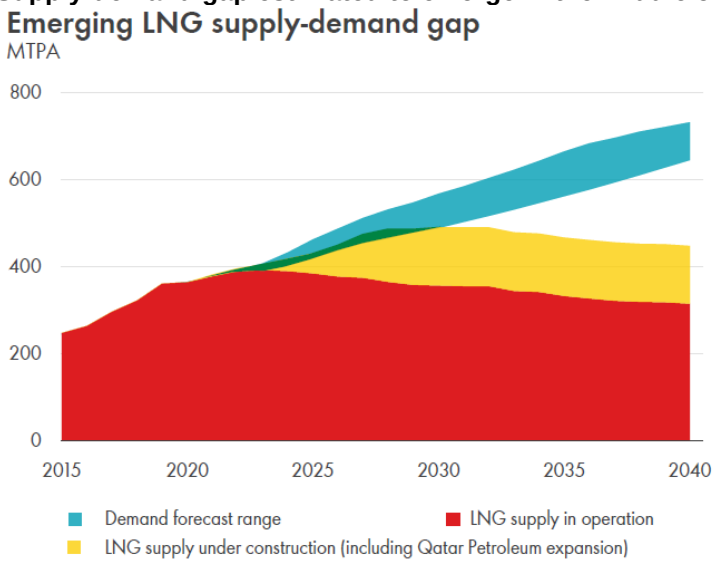
Source: IEA Tracking Clean Energy Progress, June 2020

We are referencing Shell's long term outlook for LNG We recognize there are many different forecasts for LNG, but are referencing Shell' LNG Outlook 2021 from Feb 25, 2021 for a few reasons. (i) Shell's view on LNG is the key view for when and what decision will be made for LNG Canada Phase 2. (ii) Shell is one of the global leaders in LNG supply and trading. (iii) Shell provides on the record LNG outlooks every year so there is the ability to compare and make sure the outlook fits the story. It does. (iv) Shell, like other supermajors, has had to make big capex cuts post pandemic and that certainly wouldn't put any bias to the need for more capex.

Shell's March 2021 long term outlook for LNG demand was basically unchanged vs 2020 and leads to a LNG supply gap in mid 2020s Shell does not provide the detailed numbers in their Feb 25, 2021 LNG forecast. We would assume they

would have reflected some delay, perhaps 1 year, at Mozambique but would be surprised if they put a 2-3 year delay in for the 5 bcf/d from Total Phase 1 +2 and Exxon Rozuma Phase 1. Compared to their LNG Outlook 2020, it looks like there was no change for their estimate of global natural gas demand growth to 2040, which looked relatively unchanged at approx. 5,000 bcm/yr or 484 bcf/d. Similarly, long term LNG demand looked unchanged to 2040 of ~700 mm tonnes (92 bcf/d) vs 360 mm tonnes (47 bcf/d) in 2020. In the 2021 outlook, Shell highlighted that the pandemic delayed project construction timelines and that the "*lasting impact expected on LNG supply not demand"*. And that Shell sees a LNG "*supply-demand gap estimated to emerge in the middle of the current decade as demand rebounds*". Comparing to 2020, it looks like the supply-demand gap is sooner.

Supply-demand gap estimated to emerge in the middle of the current decade



Source: Shell LNG Outlook 2021, Feb 25, 2021

Mozambique delays are redefining the LNG markets for the 2020s: Delaying 5 bcf/d of Mozambique new LNG supply 2-3 years means a much bigger supply gap starting in 2025.. Even if the optimists are right, there are now delays to all major Mozambique LNG supply from LNG supply forecasts. We don't have the detail, but we believe all LNG forecasts, including Shell's LNG Outlook 2021, would have included Total's Phase 1 and Phase 2 and Exxon Rozuma Phase 1. As noted earlier, we believe that the likely impact of the Mozambique security concerns is that these forecasts would likely have to push back 1.7 bcf/d from Total Phase 1 to at least 2026, 2.0 bcf/d Exxon Rozuma Phase 1 to at least 2027, and 1.3 bcf/d Total Phase 2 to at least 2028/2029 with the real risk these get pushed back even further. 5.0 bcf/d is equal to 38 mtpa. These delays would mean there is an increasing LNG supply gap in 2025 and increasingly significantly thereafter. And even if a new greenfield LNG project is FID's right away, it wouldn't be able to step in to replace Total Phase 1 prior startup timing for 2024 or likely the market at all until at least 2027. Its why the decision on filling the gap will fall on brownfield LNG projects.

And does this bigger, nearer supply gap force LNG players to look at what brownfield LNG projects they could advance? A greenfield LNG project would likely take at least until 2027 to be in operations. Its why we believe the Mozambique delays will effectively force major LNG players to look to see if there are brownfield LNG projects they should look to advance. Prior to the just passed winter, no one would think Shell or other major LNG players would be considering any new LNG FIDs in 2021. All the big companies are in capital reduction mode and debt reduction mode. But Brent oil is now solidly over $60 and LNG prices hit record levels in Jan and the world's economic and oil and gas demand outlook are increasing with vaccinations. And we are starting to see companies move to increasing capex with the higher cash flows. We would not expect any major LNG players to move to FID right away. But we see them watching to see if 2021 plays out to still support this increasing LNG supply gap. And unless new mutations prevent vaccinations from returning the world to normal, we suspect that major LNG players, like other oil and gas companies, will be looking to increase

capex as they approve 2022 budgets. The outlook for the future has changed dramatically in the last 5 months. The question facing Shell and others, should they look to FID new LNG brownfield projects in the face of an increasing LNG supply gap that is going to hit faster and harder than expected a few months ago. We expect these decisions to be looked at before the end of 2021. LNG prices will be stronger, but we expect the limiting cap in Asia will be that thermal coal will be used to mitigate some LNG price pressure.

Back to Shell, does increasing LNG supply gap provide the opportunity to at least consider a LNG Canada Phase 2 FID over the next 9 months? Shell is no different than any other major LNG supplier in always knowing the market and that the oil and gas outlook is much stronger than 6 months ago. No one has been or is talking about this Mozambique impact and how it will at least force major LNG players to look at if they should FID new brownfield LNG projects to take advantage of this increasing supply gap. We don't have any inside contacts at Shell or LNG Canada, but that is no different than when we looked at the LNG markets in September 2017 and saw the potential for Shell to FID LNG Canada in 2018. We posted a September 20, 2017 blog *"China's Plan To Increase Natural Gas To 10% Of Its Energy Mix Is A Global Game Changer Including For BC LNG*" [LINK]. Last time, it was a demand driven supply gap, this time, it's a supply driven supply gap. We have to believe any major LNG player, including Shell, will be at least looking at their brownfield LNG project list and seeing if they should look to advance FID later in 2021. Shell has LNG Canada Phase 2, which would add 2 additional trains or approx. 1.8 bcf/d. And an advantage to an FID would be that Shell would be able to commit to its existing contractors and fabricators for a continuous construction cycle following on LNG Canada Phase 1 ie. to help keep a lid on capital costs. No one is talking about the need for these new brownfield LNG projects, but, unless Total gets back developing Mozambique and keeps the delay to a matter of months, its inevitable that these brownfield LNG FID internal discussions will be happening in H2/21. Especially since the oil and gas price outlook is much stronger than it was in the fall and companies will be looking to increase capex in 2022 budgets

A LNG Canada Phase 2 would be a big plus to Cdn natural gas. A LNG Canada Phase 2 FID would be a big plus for Cdn natural gas. It would allow another ~1.8 bcf/d of Cdn natural gas to be priced against Asian LNG prices and not against Henry Hub. And it would provide demand offset versus Trudeau if he moves to make electricity "emissions free" and not his prior "net zero emissions". Mozambique may be in Africa, but, unless sustained peace and security is attained, it is a game changer to LNG outlook creating a bigger and sooner LNG supply gap. And with a stronger tone to oil and natural gas prices in 2021, the LNG supply gap will at least provide the opportunity for Shell to consider FID for its brownfield LNG Canada Phase 2 and provide big support to Cdn natural gas for back half of the 2020s. And perhaps if LNG Canada is exporting 3.6 bcf/d from two phases, it could help flip Cdn natural gas to a premium to US natural gas especially if Biden is successful in reducing US domestic natural gas consumption for electricity. The next six months will be very interesting to watch for LNG markets.

Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs

Posted 11am on July 14, 2021

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 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.

Sea change in Asian LNG buyers is also the best validation of the LNG supply gap and big to LNG supply FIDs. Has the data changed or have the market participants changed in how they react to the data? We can't recall exactly who said that on CNBC on July 12, it's a question we always ask ourselves. In the LNG case, the data has changed with Mozambique LNG delays and that has directly resulted in market participants changing and entering into long term contracts. We can't stress enough how important it is to see Asian LNG buyers move to long term LNG deals. (i) Validates the sooner and bigger LNG supply gap. We believe LNG markets should look at the last two weeks of new long term deals for Asian LNG buyers as being the validation of the LNG supply gap that clearly emerged post Total declaring force majeure on its 1.7 bcf/d Mozambique LNG Phase 1 that was under construction and on track for first LNG delivery in 2024. Since then, markets have started to realize the Mozambique delays are much more than 1.7 bcf/d. They have seen major LNG suppliers change their outlook to a more bullish LNG outlook and, most importantly, are now seeing Asian LNG buyers changing from trying to renegotiate long term LNG deals lower to entering into long term LNG deals to have security of supply. Asian LNG buyers are cozying up to Qatar in a prelude to the next wave of Asian buyer long term deals. What better validation is there than companies/countries putting their money where their mouth is. (ii) Provides financial commitment to help push LNG suppliers to FID. We believe these Asian LNG buyers are doing much more than validating a LNG supply gap to markets. The big LNG suppliers can move to FID based on adding more LNG supply to their portfolio, but having more long term deals provides the financial anchor/visibility to long term capital commitment from the buyers. Long term contracts will only help LNG suppliers get to FID.

It was always clear that the Mozambique LNG supply delay was 5.0 bcf/d, not just 1.7 bcf/d from Total Phase 1. LNG markets didn't really react to Total's April 26 declaration of force majeure on its 1.7 bcf/d Mozambique LNG Phase 1. This was an under construction project that was on time to deliver first LNG in 2024. It was in all LNG supply forecasts. There was no timeline given but, on the Apr 29 Q1 call, Total said that it expected any restart decision would be least a year away. If so, we believe that puts any actual construction at least 18 months away. There will be work to do just to get back to where they were when they were forced to stop development work on Phase 1. Surprisingly, markets didn't look the broader implications, which is why we posted our 7-pg Apr 28 blog "*Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?*" [LINK] We highlighted that Mozambique LNG delays were actually 5 bcf/d, not 1.7 bcf/d. And this 5 bcf/d of Mozambique LNG supply was built into most, if not all, LNG supply forecasts. The delay in Total Phase 1 would lead to a commensurate delay in its Mozambique LNG Phase 2 of 1.3 bcf/d. Total Phase 2 was to add 1.3 bcf/d. There was no firm in service date, but it was expected to

follow closely behind Phase 1 to maintain services. That would have put it originally in the 2026/2027 period. But if Phase 1 is pushed back at least 2 years, so will the follow on Phase 2, so more likely, it will be at least 2028/2029. The assumption for most, if not all, LNG forecasts was that Phase 2 would follow Phase 1. Exxon Rozuma Phase 1 of 2.0 bcf/d continues to be pushed back in timeline especially following Total Phase 1. Exxon's Mozambique Rozuma Phase 1 LNG will add 2.0 bcf/d and, pre-Covid, was originally expected to be in service in 2025. The project was being delayed and Total's force majeure has added to the delays. Rozuma onshore LNG facilities are right by Total. On June 20, we tweeted [LINK] on the Reuters report "*Exclusive: Galp says it won't invest in Rovuma until Mozambique ensures security*" [LINK]. Galp is one of Exxon's partners in Rozuma. Reuters reported that Galp said they won't invest in Exxon's Rozuma LNG project until the government ensures security, that this may take a while, they won't be considering the project until after Total has reliably resumed work on its Phase 1, which likely puts any Rozuma decision until at least end of 2022 at the earliest. Galp has taken any Rozuma Phase 1 capex out of their new capex plans thru 2025 and will have to take out projects in their capex plan if Rozuma does come back to work. This puts Rozuma more likely 2028 at the earliest as opposed to before the original expectations of before 2025. Pre-pandemic, Exxon's March 6, 2019 Investor Day noted their operated Mozambique Rovuma LNG Phase 1 was to be 2 trains each with 1.0 bcf/d capacity for total initial capacity of 2.0 bf/d with FID expected in 2019 and first LNG deliveries sometime before 2025. LNG forecasts had been assuming Exxon Rozuma would be onstream around 2025. The 2019 FID expectation was later pushed to be expected just before the March 2020 investor day. But the pandemic hit, and on March 21, 2020, we tweeted [LINK] on the Reuters story "*Exclusive: Coronavirus, gas slump put brakes on Exxon's giant Mozambique LNG plan"* [LINK] that noted Exxon was expected to delay the Rovuma FID. There was no timeline, but now, any FID is not expected until late 2022 at the earliest, that would push first LNG likely to at least 2028. What this means is that the Mozambique LNG delays are not 1.7 bcf/d but 5.0 bcf/d of projects that were in all, if not most, LNG supply forecasts. There is much more in our 7-pg blog. But Mozambique is what is driving a much bigger and sooner LNG supply gap starting ~2025 and stronger outlook for LNG prices

<u>One of the reasons why it went under the radar is that major LNG suppliers played stupid on the Mozambique impact.</u> It makes it harder for markets to see a big deal when the major LNG suppliers weren't making a big deal of Mozambique or playing stupid in the case of Cheniere in their May 4 Q1 call. In our May 9, 2021 Energy Tidbits memo, we said we had to chuckle when we saw Cheniere's response in the Q&A to its Q1 call on May 4 that they only know what we know from reading the Total releases on Mozambique and its impact on LNG markets. It's why we tweeted [LINK] "*Hmm! $LNG says only know what we read on #LNG market impact from $TOT $XOM MZ LNG delays*. *Surely #TohokuElectric & other offtake buyers are reaching out to #Cheniere. MZ LNG delays is a game changer to LNG in 2020s, see SAF Group blog. Thx @olympe_mattei @TheTerminal #NatGas".* How could they not be talking to LNG buyers for Total and /or Exxon Mozambique LNG projects. In the Q1 Q&A, mgmt was asked about Mozambique and didn't know any more than what you or I have read. Surely, they were speaking to Asian LNG buyers who had planned to get LNG supply from Total Mozambique or Exxon Rozuma Mozambique or both. Mgmt is asked "*wanted to just kind of touch on the color use talking about for these supply curve. And are you able to kind of provide any thoughts on the Mozambique and a deferral with the project of that size on 13 and TPA being deferred by we see you have you noticed any impact to the market has is there any impact for stage 3 with that capacity? Thanks*." Mgmt replies "*No. Look, I only know about the Mozambique delay with what I read as well as what you read that from total and an Exxon. And it's a sad situation and I hope everybody is safe and healthy that were there to experience that unrest but no I don't think it's, again it's a different business paradigm than what we offer. So, we offer a full value product, the customer doesn't have to invest in equity, customer doesn't have to worry about the E&P side of the business because, we've been able to both the by at our peak almost 7 Dee's a day of US NAT gas from almost a 100 different producers on 26 different pipelines and deliver it to our to facilities. So we take care of a lot of what the customer needs".*

<u>There are other LNG supply delays/interruptions beyond Mozambique.</u> There have been a number of other smaller LNG delay or existing supply interruptions that add to Asian LNG buyers feeling less secure about the reliability of mid to long term LNG supply. Here are just a few examples. (i) Total Papua LNG 0.74 bcf/d. On June 8, we tweeted [LINK] *"Timing update Papua #LNG project. $OSH June 8 update "2022 FEED, 2023 FID targeting 2027 first gas". $TOT May 5 update didn't forecast 1st gas date. Papua is 2 trains w/ total capacity 0.74 bcf/d."* We followed the tweet saying [LINK] *"Bigger #LNG supply gap being created >2025. Papua #LNG originally expected FID in 2020 so 1st LNG is 2 years delayed.*

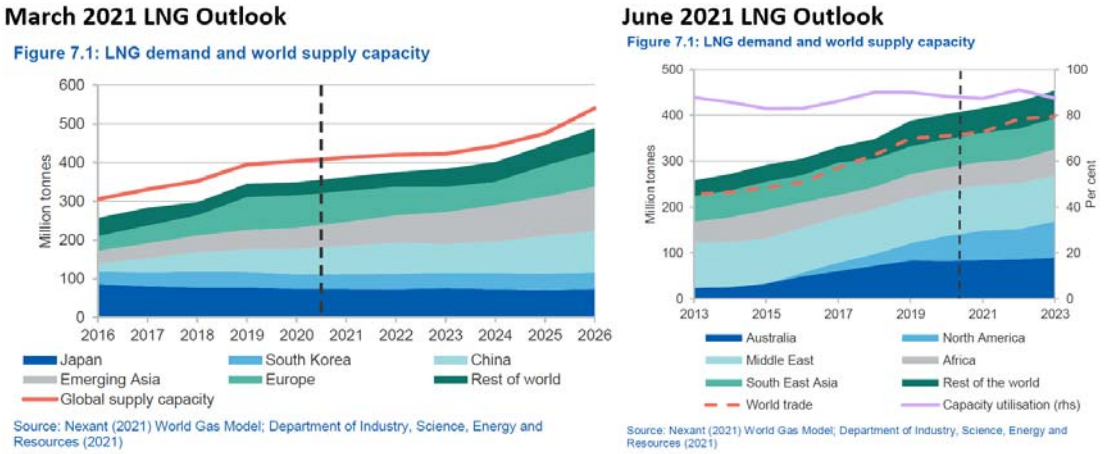
Common theme - new LNG supply is being delayed ie. [Total] Mozambique. Don't forget need capacity>demand due to normal maintenance, etc. Positive for LNG." (ii) Chevron's Gorgon. A big LNG story in H2/20 was the emergence of weld quality issues in the propane heat exchangers at Train 2, which required additional downtime for repair. Train 2 was shut on May 23 with an original restart of July 11, but the repairs to the weld quality issues meant it didn't restart until late Nov. The same issue was found in Train 1 but repairs were completed. However extended downtime for the trains led to lower LNG volumes. Gorgon produced ~2.3 bcf/d in 2019 but was down to 2.0 bcf/d in 2020. (iii) Equinor's Melkoeya 0.63 bcf/d shut down for 18 months due to a fire. A massive fire led to the Sept 28, 2020 shutdown of the 0.63 bcf/d Melkoeya LNG facility in Norway. On April 26, Equinor released "*Revised start-up date for Hammerfest LNG*" [LINK] with regard to the 0.63 bcf/d Melkoeya LNG facility. The original restart date was Oct 1, 2021 (ie. a 12 month shut down), but Equinor said "*Due to the comprehensive scope of work and Covid-19 restrictions, the revised estimated start-up date is set to 31 March 2022".* When we read the release, it seemed like Equinor was almost setting the stage for another potential delay in the restart date. Equinor had two qualifiers to this March 31, 2022 restart date. Equinor said "*there is still some uncertainty related to the scope of the work*" and "*Operational measures to handle the Covid-19 situation have affected the follow-up progress after the fire. The project for planning and carrying out repairs of the Hammerfest LNG plant must always comply with applicable guidelines for handling the infection situation in society. The project has already introduced several measures that allow us to have fewer workers on site at the same time than previously expected. There is still uncertainty related to how the Covid-19 development will impact the project progress."*

Cheniere stopped the game playing the game on June 30. Our July 4, 2021 Energy Tidbits memo noted that it looks like Cheniere has stopped playing stupid with respect to the strengthening LNG market in 2021. We can't believe they thought they were fooling anyone, especially their competitors. Bu that week, they came out talking about how commercial discussions have picked up in 2021 and it's boosted their hope for a Texas (Corpus Christi) LNG expansion. On Wednesday, Platts reported "*Pickup in commercial talks boosts Cheniere's hopes on mid-scale LNG project*" [LINK] Platts wrote "*Cheniere Energy expects to make a "substantial dent" by the end of 2022 in building sufficient buyer support for a proposed mid-scale expansion at the site of its Texas liquefaction facility, Chief Commercial Officer Anatol Feygin said June 30 in an interview." " As a result, he said, " The commercial engagement, I think it is very fair to say, has really picked up steam, and we are quite optimistic over the coming 12-18 months to make a substantial dent in that Stage 3 commercialization."* Platts also reported that Cheniere noted this has been a tightening market all year (ie would have been known by the May 4 Q1 call). Platts wrote "*We obviously find ourselves at the beginning of this year and throughout in a very tight market where prices today into Asia and into Europe are at levels that we frankly haven't seen in a decade-plus," Feygin said. "We've surpassed the economics that the industry saw post the Fukushima tragedy in March 2011, and that's happened in the shoulder period."* It's a public stance as to a more bullish LNG outlook

But we still see major LNG suppliers like Australia hinting but not outright saying that LNG supply gap is coming sooner. We have to believe Australia will be unveiling a sooner LNG supply gap in their September forecast. On June 28, we tweeted [LINK] on Australia's Resources and Energy Quarterly released on Monday [LINK] because there was a major change to their LNG outlook versus their March forecast. We tweeted "*#LNGSupplyGap. AU June fcast now sees #LNG mkt tighten post 2023 vs Mar fcast excess supply thru 2026. Why? $TOT Mozambique delays. See below SAF Apr 28 blog. Means brownfield LNG FID needed ie. like #LNGCanada Phase 2. #OOTT #NatGas".* Australia no longer sees supply exceeding demand thru 2026. In their March forecast, Australia said "*Nonetheless, given the large scale expansion of global LNG capacity in recent years, demand is expected to remain short of total supply throughout the projection period."* Note this is thru 2026 ie. a LNG supply surplus thru 2026. But on June 28, Australia changed that LNG outlook and now says the LNG market may tighten beyond 2023. Interestingly, the June forecast only goes to 2023 and not to 2026 as in March. Hmmm! On Monday, they said "*Given the large scale expansion of global LNG capacity in recent years, import demand is expected to remain short of export capacity throughout the outlook period. Beyond 2023, the global LNG market may tighten, due to the April 2021 decision to indefinitely suspend the Mozambique LNG project, in response to rising security issues. This project has an annual nameplate capacity of 13 million tonnes, and was previously expected to start exporting LNG in 2024*." 13 million tonnes is 1.7 bcf/d so they are only referring to Total Mozambique LNG Phase 1. So no surprise the change is Mozambique LNG driven but we have to believe the reason why they cut their forecast off this time at 2023 is that they are looking at trying to figure out what to forecast beyond 2023 in addition to Total Phase 1. And, importantly, we believe they will be changing their LNG forecast for more than Mozambique ie. India

demand that we highlight later in the blog. They didn't say anything else specific on Mozambique but, surely they have to also be delaying the follow on Total Phase 2 of 1.3 bcf/d and Exxon Rozuma Phase 1 of 2.0 bcf/d.

Australia's LNG Outlook: March 2021 vs June 2021 Forecasts

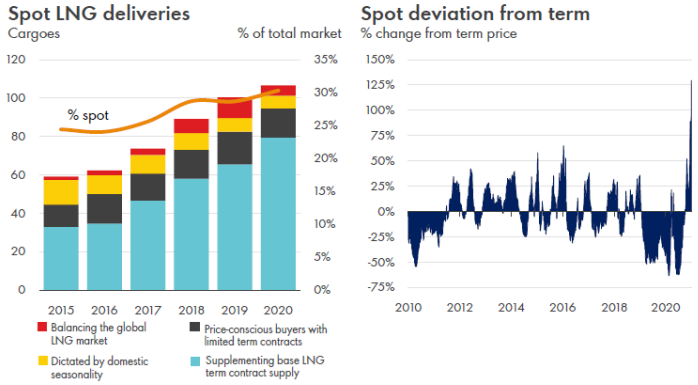


Source: Australia Resources and Energy Quarterly

Clearly Asian LNG buyers did the math, saw the new LNG supply gap and were working the phones in March/April/May trying to lock up long term supply. We wrote extensively on the Total Mozambique LNG situation before the April 26 force majeure as it was obvious that delays were coming to a project counted on for first LNG in 2024. Total had shut down Phase 1 development in December for 3 months due to the violence and security risks. It restarted development on Wed March 24, violence/attacks immediately resumed for 3 consecutive days, and then Total suspended development on Sat March 27. That's why no one should have been surprised by the April 26 force majeure. Asian LNG buyers were also seeing this and could easily do the same math we were doing and saw a bigger and sooner LNG supply gap. They were clearly working the phones with a new priority to lock up long term LNG supply. Major long term deals don't happen overnight, so it makes sense that we started to see these new Asian long term LNG deals start at the end of June.

A big pivot from trying to renegotiate down long term LNG deals or being happy to let long term contracts expire and replace with spot/short term LNG deals. This is a major pivot or abrupt turn on the Asian LNG buyers contracting strategy for the 2020s. There is the natural reduction of long term contracts as contracts reach their term. But with the weakness in LNG prices in 2019 and 2020, Asian LNG buyers weren't trying to extend long term contracts, rather, the push was to try to renegotiate down its long term LNG deals. The reason was clear, as spot prices for LNG were way less than long term contract prices. And this led to their LNG contracting strategy – move to increase the proportion of spot LNG deliveries out of total LNG deliveries. Shell's LNG Outlook 2021 was on Feb 25, 2021 and included the below graphs. The spot LNG price derivation from long term prices in 2019 and 2020 made sense for Asian LNG buyers to try to change their contract mix. Yesterday, Maeil Business News Korea reported on the new Qatar/Kogas long term LNG deal with its report "*Korea may face LNG supply cliff or pay hefty price after long-term supplies run out*" [LINK], which highlighted this very concept – Korea wasn't worried about trying to extend expiring long term LNG contracts. Maeil wrote "*Seoul in 2019 secured a long-term LNG supply contract with the U.S. for annual 15.8 million tons over a 15-year period. But even with the latest two LNG supply contracts, the Korean government needs extra 6 million tons or more of LNG supplies to keep up the current power pipeline. By 2024, Korea's long-term supply contracts for 9 million tons of LNG will expire - 4.92 million tons on contract with Qatar and 4.06 million tons from Oman, according to a government official who asked to be unnamed."*

Spot LNG deliveries and Spot deviation from term price



Source: Shell LNG Outlook 2021 on Feb 25, 2021

Asian LNG buyers moving to long term LNG deals provide financing capacity for brownfield LNG FIDs. We believe this abrupt change and return to long term LNG deals is even more important to LNG suppliers who want to FID new projects. The big LNG players like Shell can FID new LNG supply without new long term contracts as they can build into their supply options to fill their portfolio of LNG contracts. But that doesn't mean the big players don't want long term LNG supply deals, as having long term LNG contracts provide better financing capacity for any LNG supplier. It takes big capex for LNG supply and long term deals make the financing easier.

Four Asian buyer long term LNG deals in the last week. It was pretty hard to miss a busy week for reports of new Asian LNG buyer long term LNG deals. There were two deals from Qatar Petroleum, one from Petronas and one from BP. The timing fits, it's about 3 months after Total Mozambique LNG problems became crystal clear. And as noted later, there are indicators that more Asian buyer LNG deals are coming.

> Petronas/CNOOC is 10 yr supply deal for 0.3 bcf/d. On July 7, we tweeted [LINK] on the confirmation of a big positive to Cdn natural gas with the Petronas announcement [LINK] of a new 10 year LNG supply deal for 0.3 bcf/d with China's CNOOC. The deal also has special significance to Canada. (i) Petronas said "*This long-term supply agreement also includes supply from LNG Canada when the facility commences its operations by middle of the decade*". This is a reminder of the big positive to Cdn natural gas in the next 3 to 4 years – the start up of LNG Canada Phase 1 is ~1.8 bcf/d capacity. This is natural gas that will no longer be moving south to the US or east to eastern Canada, instead it will be going to Asia. This will provide a benefit for all Western Canada natural gas. (ii) First ever AECO linked LNG deal. It's a pretty significant event for a long term Asia LNG deal to now have an AECO link. Petronas wrote "*The deal is for 2.2 million tonnes per annum (MTPA) for a 10-year period, indexed to a combination of the Brent and Alberta Energy Company (AECO) indices. The term deal between PETRONAS and CNOOC is valued at approximately USD 7 billion over ten years.*" 2.2 MTPA is 0.3 bcf/d. (iii) Reminds of LNG Canada's competitive advantage for low greenhouse gas emissions. Petronas said "*Once ready for operations, the LNG Canada project paves the way for PETRONAS to supply low greenhouse gas (GHG) emission LNG to the key demand markets in Asia."*
>
> Qatar Petroleum/CPC (Taiwan) is 15 yr supply deal for 0.16 bcf/d. Pre Covid, Qatar was getting pressured to renegotiate lower its long term LNG contract prices. Now, it's signing a 15 year deal. On July 9, they entered in a new small long term LNG sales deal [LINK], a 15-yr LNG Sale and Purchase Agreement with CPC Corporation in Taiwan to supply it ~0.60 bcf/d of LNG. LNG deliveries are set to begin in January 2022. H.E. Minister for Energy Affairs & CEO of Qatar Petroleum Al-Kaabi said *"We are pleased to enter into this long term LNG SPA, which is another milestone in our relationship with CPC, which dates back to almost three decades. We look forward to commencing deliveries under this SPA and to continuing our supplies as a trusted and reliable global LNG provider."* The pricing was reported to be vs a basket of crudes.

BP/Guangzhou Gas, a 12-yr supply deal for 0.13 bcf/d. On July 9, there was a small long term LNG supply deal with BP and Guangzhou Gas (China). Argus reported [LINK] BP had signed a 12 year LNG supply deal with Guangzhou Gas (GG), a Chinese city's gas distributor, which starts in 2022. The contract prices are to be linked to an index of international crude prices. Although GG typically gets its LNG from the spot market, it used a tender in late April for ~0.13 bcf/d starting in 2022. BP's announcement looks to be for most of the tender, so it's a small deal. But it fit into the trend this week of seeing long term LNG supply deals to Asia. This was intended to secure deliveries to the firm's Xiaohudao import terminal which will become operational in August 2022.

Qatar/Korea Gas is a 20-yr deal to supply 0.25 bcf/d. On Monday, Reuters reported [LINK] "*South Korea's energy ministry said on Monday it had signed a 20-year liquefied natural gas (LNG) supply agreement with Qatar for the next 20 years starting in 2025. South Korea's state-run Korea Gas Corp (036460.KS) will buy 2 million tonnes of LNG annually from Qatar Petroleum".* There was no disclosure of pricing.

More Asian buyer long term LNG deals (ie. India) will be coming. There are going to be more Asian buyer long term LNG deals coming soon. Our July 11, 2021 Energy Tidbits highlighted how India's new petroleum minister Hardeep Singh Puri (appointed July 8) hit the ground running with what looks to be a priority to set the stage for more India long term LNG deals with Qatar. On July 10, we retweeted [LINK] "*New India Petroleum Minister hits ground running. What else w/ Qatar but #LNG. Must be #Puri setting stage for long term LNG supply deal(s). Fits sea change of buyers seeing #LNGSupplyGap (see SAF Apr 28 blog http://safgroup.ca) & wanting to tie up LNG supply. #OOTT".* It's hard to see any other conclusion after seeing what we call a sea change in LNG buyer mentality with a number of long term LNG deals this week. Puri tweeted [LINK] "*Discussed ways of further strengthening mutual cooperation between our two countries in the hydrocarbon sector during a warm courtesy call with Qatar's Minister of State for Energy Affairs who is also the President & CEO of @qatarpetroleum HE Saad Sherida Al-Kaabi".* As noted above, we believe there is a sea change in LNG markets that was driven by the delay in 5 bcf/d of LNG supply from Mozambique (Total Phase 1 & Phase 2, and Exxon Rozuma Phase 1) that was counted on all LNG supply projections for the 2020s. Puri's tweet seems to be him setting the stage for India long term LNG supply deals with Qatar.

Supermajors are aggressively competing to commit 30+ year capital to Qatar's LNG expansion despite stated goal to reduce fossil fuels production. It's not just Asian LNG buyers who are now once again committing long term capital to securing LNG supply, it's also supermajors all bidding to be able to commit big capex to part of Qatar Petroleum's 4.3 bcf/d LNG expansion. Qatar Petroleum received a lot of headlines following the their June 23 announcement on its LNG expansion [LINK] on how they received bids for double the equity being offered. And there were multiple reports that these are on much tougher terms for Qatar's partners. Qatar Petroleum CEO Saad Sherida Al-Kaabi specifically noted that, among the bidders, were Shell, Total and Exxon. Shell and Total have two of the most ambitious plans to reduce fossil fuels production in the 2020's, yet are competing to allocate long term capital to increase fossil fuels production. And Shell and Total are also two of the global LNG supply leaders. It has to be because they are seeing a bigger and sooner LNG supply gap.

Remember Qatar's has a massive expansion but India alone needs 3x the Qatar expansion LNG capacity. In addition to the competition to be Qatar Petroleum's partners, we remind that, while this is a massive 4.3 bcf/d LNG expansion, India alone sees its LNG import growing by ~13 bcf/d to 2030. The Qatar announcement reminded they see a LNG supply gap and continued high LNG prices. We had a 3 part tweet. (i) First, we highlighted [LINK] "*1/3. #LNGSupplyGap coming. big support for @qatarpetroleum expansion to add 4.3 bcf/d LNG. but also say "there is a lack of investments that could cause a significant shortage in gas between 2025-2030" #NatGas #LNG".* This is after QPC accounts for their big LNG expansion. The QPC release said "*However, His Excellency Al-Kaabi voiced concern that during the global discussion on energy transition, there is a lack of investment in oil and gas projects, which could drive energy prices higher by stating that "while gas and LNG are important for the energy transition, there is a lack of investments that could cause a significant shortage in gas between 2025-2030, which in turn could cause a spike in the gas market."* (ii) Second, this is a big 4.3 bcf/d expansion, but India alone has 3x the increase in LNG import demand. We tweeted [LINK] "*2/3. Adding 4.3 bcf/d is big, but dwarfed by items like India. #Petronet gave 1st specific forecast for what it means if #NatGas is to be 15%*

of energy mix by 2030 - India will need to increase #LNG imports by ~13 bcf/d. See SAF Group June 20 Energy Tidbits memo." (iii) Third, Qatar's supply gap warning is driven by the lack of investments in LNG supply. We agree, but note that the lack of investment is in great part due to the delays in both projects under construction and in FIDs that were supposed to be done in 2019. We tweeted [LINK] "3/*3. #LNGSupplyGap is delay driven. $TOT Mozambique Phase 1 delay has chain effect, backs up 5 bcf/d. See SAF Group Apr 28 blog Multiple Brownfield LNG FIDs Now Needed To Fill New #LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2? #NatGas*."

Seems like many missed India's first specific LNG forecast to 2030. Our June 20, 2021 Energy Tidbits memo highlighted the first India forecast that we have seen to estimate the required growth in natural gas consumption and LNG imports if India is to meet its target for natural gas to be 15% of its energy mix by 2030. India will need to increase LNG imports by ~13 bcf/d or 3 times the size of the Qatar LNG expansion. Our June 6, 2021 Energy Tidbits noted the June 4 tweet from India's Energy Minister Dharmendra Pradhan [LINK] reinforcing the 15% goal "*We are rapidly deploying natural gas in our energy mix with the aim to increase the share of natural gas from the current 6% to 15% by 2030."* But last week, Petronet CEO AK Singh gave a specific forecast. Reuters report "*LNG's share of Indian gas demand to rise to 70% by 2030: Petronet CEO"* [LINK] included Petronet's forecast if India is to hit its target for natural gas to be 15% of energy mix by 2030. Singh forecasts India's natural gas consumption would increase from current 5.5 bcf/d to 22.6 bcf/d in 2030. And LNG shares would increase from 50% to 70% of natural gas consumption ie. an increase in LNG imports of ~13 bcf/d from just under 3 bcf/d to 15.8 bcf/d in 2030. Singh did not specifically note his assumption for India's natural gas production, but we can back into the assumption that India natural gas production grows from just under 3 bcf/d to 6.8 bcf/d. It was good to finally see India come out with a specific forecast for 2030 natural gas consumption and LNG imports if India is to get natural gas to 15% of its energy mix in 2030. Petronet's Singh forecasts India natural gas consumption to increase from 5.5 bcf/d to 22.6 bcf/d in 2030. This forecast is pretty close to our forecast in our Oct 23, 2019 blog "*Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030*". Here part of what we wrote in Oct 2019. "*It's taken a year longer than we expected, but we are finally getting visibility that India is taking significant steps towards India's goal to have natural gas be 15% of its energy mix by 2030. On Wednesday, we posted a SAF blog [LINK] "Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030".* Our 2019 blog estimate was for India natural gas demand to be 24.0 bcf/d in 2030 (vs Singh's 22.6 bcf/d) and for LNG import growth of +18.4 bcf/d to 2030 (vs Singh's +13 bcf/d). The difference in LNG would be due to our Oct 2019 forecast higher natural gas consumption by 1.4 bcf/d plus Singh forecasting India natural gas production +4 bcf/d to 2030. Note India production peaked at 4.6 bcf/d in 2010.

Bigger, nearer LNG supply gap + Asian buyers moving to long term LNG deals = LNG players forced to at least look at what brownfield LNG projects they could advance and move to FID. All we have seen since our April 28 blog is more validation of the bigger, nearer LNG supply gap. And now market participants (Asian LNG buyers) are reacting to the new data by locking up long term supply. Cheniere noted how the pickup in commercial engagement means they "*are quite optimistic over the coming 12-18 months to make a substantial dent in that Stage 3 commercialization."* Cheniere can't be the only LNG supplier having new commercial discussions. It's why we believe the Mozambique delays + Asian LNG buyers moving to long term deals will effectively force major LNG players to look to see if there are brownfield LNG projects they should look to advance. Prior to March/April, no one would think Shell or other major LNG players would be considering any new LNG FIDs in 2021. Covid forced all the big companies into capital reduction mode and debt reduction mode. But Brent oil is now solidly over $70, and LNG prices are over $13 this summer and the world's economic and oil and gas demand outlook are increasing with vaccinations. And we are starting to see companies move to increasing capex with the higher cash flows. The theme in Q3 reporting is going to be record or near record oil and gas cash flows, reduced debt levels and increasing returns to shareholders. And unless new mutations prevent vaccinations from returning the world to normal, we suspect that major LNG players, like other oil and gas companies, will be looking to increase capex as they approve 2022 budgets. The outlook for the future has changed dramatically in the last 8 months. The question facing major LNG players like Shell is should they look to FID new LNG brownfield projects in the face of an increasing LNG supply gap that is going to hit faster and harder and Asian LNG buyers prepared to do long term deals. We expect these decisions to be looked at before the end of 2021 for 2022 capex budget/releases. One wildcard that could force these decisions sooner is the already stressed out global supply chain. We have to believe that discussion there will be pressure for more Asian LNG buyer long term deals sooner than later.

For Canada, does the increasing LNG supply gap provide the opportunity to at least consider a LNG Canada Phase 2 FID over the next 6 months? Our view on Shell and other LNG players is unchanged since our April 28 blog. Shell is no different than any other major LNG supplier in always knowing the market and that the oil and gas outlook is much stronger than 9 months ago. Even 3 months post our April 28 blog, we haven't heard any significant talks on how major LNG players will be looking at FID for new brownfield LNG projects. We don't have any inside contacts at Shell or LNG Canada, but that is no different than when we looked at the LNG markets in September 2017 and saw the potential for Shell to FID LNG Canada in 2018. We posted a September 20, 2017 blog *"China's Plan To Increase Natural Gas To 10% Of Its Energy Mix Is A Global Game Changer Including For BC LNG*" [LINK]. Last time, it was a demand driven supply gap, this time, it's a supply driven supply gap. We have to believe any major LNG player, including Shell, will be at least looking at their brownfield LNG project list and seeing if they should look to advance FID later in 2021. Shell has LNG Canada Phase 2, which would add 2 additional trains or approx. 1.8 bcf/d. And an advantage to an FID would be that Shell would be able to commit to its existing contractors and fabricators for a continuous construction cycle following on LNG Canada Phase 1 ie. to help keep a lid on capital costs. We believe maintaining a continuous construction cycle is even more important given the stressed global supply chain. No one is talking about the need for these new brownfield LNG projects, but, unless some major change in views happen, we believe its inevitable that these brownfield LNG FID internal discussions will be happening in H2/21. Especially since the oil and gas price outlook is much stronger than it was in the fall and companies will be looking to increase capex in 2022 budgets.

A LNG Canada Phase 2 would be a big plus to Cdn natural gas. LNG Canada Phase 1 is a material natural gas development as its 1.8 bcf/d capacity represents approx. 20 to 25% of Cdn gas export volumes to the US. The EIA data shows US pipeline imports of Cdn natural gas as 6.83 bcf/d in 2020, 7.36 bcf/d in 2019, 7.70 bcf/d in 2018, 8.89 bcf/d in 2017, 7.97 bcf/d in 2016, 7.19 bcf/d in 2015 and 7.22 bcf/d in 2014. A LNG Canada Phase 2 FID would be a huge plus for Cdn natural gas. It would allow another ~1.8 bcf/d of Cdn natural gas to be priced against pricing points other than Henry Hub. And it would provide demand offset versus Trudeau if he moves to make electricity "emissions free" and not his prior "net zero emissions". Mozambique has been a game changer to LNG outlook creating a bigger and sooner LNG supply gap. And with a stronger tone to oil and natural gas prices in 2021, the LNG supply gap will at least provide the opportunity for Shell to consider FID for its brownfield LNG Canada Phase 2 and provide big support to Cdn natural gas for the back half of the 2020s. And perhaps if LNG Canada is exporting 3.6 bcf/d from two phases, it could help flip Cdn natural gas to a premium vs US natural gas especially if Biden is successful in reducing US domestic natural gas consumption for electricity. The next six months will be very interesting to watch for LNG markets and Cdn natural gas valuations. Imagine the future value of Cdn natural gas is there was visibility for 3.6 bcf/d of Western Canada natural gas to be exported to Asia.

https://tass.com/economy/1549513
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Launch of first line of Arctic LNG 2 set for December 2023

According to Russian Ambassador to Tokyo Mikhail Galuzin, around 2 mln tonnes of LNG will be added to gas supplies to Japan "with the full-scale launch of Arctic LNG-2"

SABETTA, December 12. /TASS/. The launch of Novatek's first line of the Arctic LNG 2 plant is still scheduled for December 2023, and the second and third lines - for 2024 and 2026, respectively, Deputy General Director for capital construction of Arctic LNG 2 Timofey Sazonov told reporters.

"The goal is to launch … in December 2023. [Second and third stages] - in 2024 and 2026. We are not reconsidering [deadlines]," he said.

It was reported back in November that Russia may start deliveries of liquefied natural gas (LNG) to Japan from the Arctic LNG-2 project in 2023, which can reach 2 mln tonnes per year in the future.

"This project [Arctic LNG-2] is developing successfully. We hope that next year Japan will receive additional volumes of Russian LNG, in addition to what is already supplied from Sakhalin-2," Russian Ambassador to Tokyo Mikhail Galuzin said, drawing attention to the fact that Russia and Japan have areas "for mutually beneficial cooperation", among which he mentioned energy.

According to Galuzin, around 2 mln tonnes of LNG will be added to gas supplies to Japan "with the full-scale launch of Arctic LNG-2." He noted that now the volume of Japanese imports of Russian LNG reaches roughly 5-6 mln tonnes, which means that, taking into account fuel from the Arctic LNG-2 project, the share of Russian gas in the structure of Japanese imports may increase.

Arctic LNG-2 is Novatek's second LNG project. It includes the construction of three lines for the production of liquefied natural gas with a capacity of 6.6 mln metric tons per year each and stable gas condensate up to 1.6 mln metric tons per year. The launch of the first line is planned for December 2023, the launch of the second and third lines is expected in 2024 and 2026, respectively.

Japan Utilities to Still Take Russian LNG Even Without Insurance
2022-12-27 09:15:45.154 GMT
By Stephen Stapczynski, Shoko Oda and Tsuyoshi Inajima
(Bloomberg) -- Japan's liquefied natural gas importers are moving to continue receiving deliveries of the fuel from Russia, even if shipping coverage for risks related to the war in Ukraine end.

Several Japanese gas and power companies will consider promising shippers to pay for any potential damage that is normally covered by insurers, according to people with knowledge of the matter. This comes after insurance companies said they will stop providing coverage for marine hull war risks in Russian, Ukrainian and Belarusian territorial waters from Jan. 1.

The LNG importers need the fuel from Russia and can't lose shipments, so are willing to bear the financial risk in the unlikely scenario that there is damage to the vessel, the people said. Colder weather across Japan is boosting consumption of gas, and purchasing a replacement LNG shipment from the spot market is exceedingly expensive.

Read more: Japan's LNG Buyers Check How Insurance Halt Will Affect Supplies

While importers are showing a willingness to forgo insurance, the Japanese government is seeking for a continuance of the shipping coverage. The trade ministry and the Financial Services Agency sent a letter to the General Insurance Association of Japan, requesting it to consider increasing marine hull coverage, an official at the ministry said Tuesday, confirming an earlier report from Nikkei. An official at the FSA also confirmed.

The government has repeatedly emphasized that the Sakhalin-2 project is important for the country's energy security. Japan relies on Russia for about 9% of its LNG, and almost all imports from the nation are from the project.

The General Insurance Association of Japan received a letter from the government agencies, a spokesperson for the organization said, declining to comment on details of the letter. The organization is preparing to share the letter to member insurance companies, according to the spokesperson.

Spokespeople for Tokio Marine Holdings Inc., Sompo Holdings Inc. and MS&AD Insurance Group Holdings Inc. said they will continue to negotiate with re-insurers.

--With assistance from Nao Sano.

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https://www.nytimes.com/2022/12/26/world/europe/nordstream-pipeline-explosion-russia.html#:~:text=The%20Baltic%20Sea%2C%20it%20turns,turning%20off%20their%20tracking%20transponders.

In Nord Stream Mystery, Baltic Seabed Provides a Nearly Ideal Crime Scene

As investigators piece together clues, Russia has quietly taken steps to begin expensive repairs on the giant gas pipeline, complicating theories about who was behind September's sabotage.

A section of the Nord Stream 2 gas pipeline in Lubmin, Germany. Much of the European Union and the United States — under both President Barack Obama and President Donald J. Trump — opposed the pipeline's construction. Laetitia Vancon for The New York Times

By Rebecca R. Ruiz and Justin Scheck

Rebecca Ruiz reported from Stockholm, and Justin Scheck reported from Germany and the Baltics.

Dec. 26, 2022Updated 10:49 a.m. ET

More than 15 years ago, when the Nord Stream gas pipeline between Russia and Germany was little more than an idea, a Swedish government study warned of the risks inherent in running a critical piece of energy infrastructure along the Baltic Sea floor.

The pipeline would be vulnerable to even the most rudimentary form of sabotage, analysts wrote, and underwater surveillance would be nearly impossible. The 2007 study, written by the Swedish Defense Research Agency, even posited a scenario:

"One diver would be enough to set an explosive device."

Today, European investigators face almost exactly that scenario. The Swedish authorities leading a criminal investigation have concluded that a state actor was most likely responsible for a September blast that ripped through the gas pipes. Officials and experts say that explosives were probably dropped from ships or — just as the Swedish report warned — planted on the seafloor using submarines or divers.

The Nord Stream attack has been a wartime mystery, prompting finger-pointing and speculation about how — in an era of constant satellite surveillance, in the midst of an energy crisis and with Europe on alert because of the war in Ukraine — a vessel could creep up on a crucial energy conduit, plant a bomb and leave without a trace.

The Baltic Sea, it turns out, was a nearly ideal crime scene. Its floor is latticed with telecommunication cables and pipes that, as had been warned, are not closely monitored. Ships come and go constantly from the nine countries bordering the sea, and vessels can easily hide by turning off their tracking transponders.

A large disturbance off the Danish island of Bornholm on Sept. 27 caused by sabotage on the two Nord Stream lines running from Russia to Germany under the Baltic Sea. Armed Forces of Denmark

“The key question is not what kind of surveillance there was, but why the lack of surveillance for this pipeline — and other pipelines and electric cables and the underwater cables on the seabed,” said Niklas Rossbach, deputy research director at the Swedish Defense Research Agency.

The Baltic is also a giant graveyard for unexploded munitions and chemical weapons dumped after the World Wars. Expeditions to clear those obstacles are common, meaning the expertise to carry out underwater detonation is ubiquitous. Several countries along the Baltic, including Russia, have dive teams that specialize in seabed operations, officials in the region said. Russia, with a port along the Baltic, has small, quiet submarines that can move undetected, according to former military and intelligence officials in the region.

After the blasts, Poland and Ukraine openly blamed Russia but provided no evidence. In an interview, Daniel Stenling, Sweden's top counterintelligence official, declined to speculate on a perpetrator. But he placed the Nord Stream attack squarely in the context of increasingly brazen Russian espionage.

"In the big context of the war in Ukraine that is ongoing, it's very interesting and very serious," he said of the blasts, repeatedly emphasizing growing threats from Russian spycraft and cyberattacks.

"We have seen increased acts from Russia for a long time now," he said.

Russia, for its part, has blamed Britain, also without evidence.

Russia has a history of using energy to exert influence and has an interest in fracturing alliances within Europe. But the theory that Russia carried out the blasts, repeated often by Western officials, has only gotten more complicated.

In recent weeks, Nord Stream AG, which is majority-owned by a Kremlin-controlled company, has begun pricing out the cost to repair the pipe and restore gas flow, according to a person briefed on the work who spoke on condition of anonymity because he was not authorized to speak about it publicly. One repair estimate starts at about $500 million, the person said. Consultants for Russia are also studying how long the damaged pipes can withstand saltwater exposure. The inquiries raise the question of why, if Russia bombed its own pipelines, it would begin the expensive work of repairing them.

Pipes left over from the construction of Nord Stream 2, in Sassnitz, Germany. Repairing the damage in the Baltic Sea could cost about $500 million per pipe. Laetitia Vancon for The New York Times

But like any good mystery story, the sabotage has layers of intrigue and multiple players with degrees of motive and ability. Even the decision by the Swedish government to keep details of its inquiry secret from

Western allies has prompted whispered speculation that perhaps investigators have cracked the case and are strategically keeping quiet.

Not so, Mr. Stenling said. “We have no concrete evidence,” he said. “But hopefully we will.”

As for his government’s choice to keep its cards close, Mr. Stenling said: “The entire investigation is unusual.”

Nord Stream encompasses two projects, each a pair of concrete-encased steel pipes nearly four feet in diameter and more than 700 miles long.

The first pair, Nord Stream I, came online in 2011. Germany wanted cheap, reliable gas, and Russia wanted to reduce its reliance on piping gas through Ukraine, a country with which it had a contentious relationship long before this year’s invasion.

Just about everyone else in Europe, along with the United States, objected. A senior Polish official even compared the pipeline deal to the pre-World War II pact between Hitler and Stalin that carved up Poland.

Sweden objected to part of the project that was planned near its coastline, arguing that it could enable Russian surveillance.

But the biggest argument was that Nord Stream would make Europe too reliant on Russian gas, giving Moscow a lever over the European Union with its ability to turn off supplies.

Nord Stream 1 in Lubmin. The pipeline came online in 2011. Germany wanted cheap, reliable energy, and Russia wanted to reduce its reliance on gas pumped west through Ukraine. Lena Mucha for The New York Times

Soon after Nord Stream I went online, the Kremlin started pushing for another set of pipes. This second pipeline, known as Nord Stream II, has been even more contentious, with most of the European Union and the United States — under both President Barack Obama and President Donald J. Trump — opposing it.

Construction finished last September and, as Russian soldiers gathered on the border with Ukraine, Ukrainian officials saw the pipeline as a security threat. If Russian gas suppliers could further bypass Ukraine, the argument went, the Kremlin would have no reason not to bomb Ukrainian infrastructure.

Last year, Ukrainian energy regulators sent a 13-page letter to Poland as part of a coordinated effort to stop the new pipeline from coming online. Nord Stream II “will negatively impact on Ukraine’s national security,” read the letter, which was obtained by The New York Times. The letter also warned of economic consequences for Ukraine, since Russian companies still pay to send gas through Ukrainian pipes.

Even after Russia invaded, a Ukrainian government document obtained by The Times shows that Ukraine expected to continue charging Russian companies, including state-owned Gazprom and Rosneft, to transmit gas during the first half of 2022. Under its contract, Ukraine receives an average of $1 billion a year in transit fees.

So the pipelines had no shortage of adversaries.

But sabotaging a key piece of energy infrastructure could be considered an act of war. For a European Union or NATO member to carry it out would have significant consequences, shattering trust in two of the most important Western partnerships. And while attacking the pipeline may have made financial sense for Ukraine, particularly in a time of war, its capability to pull off such a feat is unclear. Ukraine does not have a Baltic port and its only known submarine was captured by Russia in 2014.

The destroyed Kyiv suburb of Irpin this month. Even after Russia invaded, Ukraine expected to continue charging Russian companies to transmit gas during the first half of 2022. David Guttenfelder for The New York Times

Many European governments and experts see Moscow as the most likely saboteur. President Vladimir V. Putin of Russia has used gas as a political lever in the past and there is evidence that he saw Europe as vulnerable.

In one Gazprom meeting, an executive dismissed the idea that Europe could leave Nord Stream II closed. “Wait for one cold winter, and they will beg for our gas,” one official told colleagues at a meeting with Russian policymakers and business executives last year, according to an attendee. The attendee spoke on condition of anonymity because he was not authorized to discuss the meeting.

But Germany blocked Nord Stream II’s launch.

As European countries stockpiled natural gas this year, the Kremlin’s behavior changed. Russia took Nord Stream I offline in late August, blaming mechanical issues. In early September, the Kremlin said that the pipeline would be shut indefinitely. The explosions came a few weeks later, on Sept. 26. They severed both strands of Nord Stream I and one of the Nord Stream II pipes.

The explosion does not neatly benefit Russia. It must keep paying transit fees to Ukraine, it cannot easily use the promise of cheap gas to cleave Germany from its European allies, and it faces hefty repair costs.

But the sabotage all but guarantees that gas prices will be uncomfortably high for Europeans until spring. And it creates an incentive for E.U. countries to push Ukraine to negotiate a quick ending, since the war threatens the land-based pipes that bring gas west. The fact that one of the Nord Stream II pipes remains intact also means that, in an energy crunch, Germany could reverse course and allow that pipe to start pumping gas.

Sabotaging Nord Stream also creates uncertainty about what other infrastructure could be attacked. In addition to damaging the pipeline, the explosion came perilously close to damaging a cable carrying electricity from Sweden to Poland. “You are sending a signal,” said Martin Kragh, deputy director of the Stockholm Center for Eastern European Studies at the nonprofit Swedish Institute of International Affairs. “It’s signaling ‘We can do this, and we can do this elsewhere.’”

The Baltic Sea is a graveyard for unexploded weapons dumped after the World Wars. Expeditions to clear those obstacles are common, meaning the expertise to carry out underwater detonation is ubiquitous.
Andrea Mantovani for The New York Times

The fact that the pipeline was not carrying gas at the time of the explosions has contributed to that speculation.

“We are less certain that the primary aim was functional damage here, because the Nord Stream gas pipeline was not operational at the time,” said Kjell Engelbrekt, who teaches political science at the Swedish Defense University.

(The lack of gas at the time of the explosion also casts serious doubt on a theory that a bomb was sent through the pipe using an inspection device known as a PIG, or pipeline inspection gauge. “Nonsense,” said Stephan Harmsen, who designed the PIG for Nord Stream I. Those devices require gas flow to operate, he said).

Swedish investigators have recovered explosive residue from the blast site. But they have found the Baltic a difficult environment. Undersea photos showed little. Surveillance of such an enormous pipeline would have been incredibly expensive and was never a priority for European intelligence agencies. The best undersea surveillance in the area, security experts say, is by Russian sonar sensors along the pipeline. Western investigators have no access to that data.

With scant evidence from the seabed, a breakthrough may rely on intelligence service wiretaps and human sources. But so far, American and European intelligence agencies have not publicly shared any data that they might have collected.

“It’s very fascinating, but it’s very complex,” Mr. Engelbrekt said. “And it’s very difficult without access to some of these data points to start eliminating actors and motives.”

https://www.kfyrtv.com/2022/12/27/2022-north-dakota-oil-gas-production-growth-slower-than-expected/

2022: North Dakota oil and gas production growth slower than expected

By Michael Anthony
Published: Dec. 27, 2022 at 12:25 PM MST|Updated: 8 hours ago

BISMARCK, N.D. (KUMV) - The Bakken saw very slow growth in oil and gas production this past year.

The region was rebranded as "Mature" by top operators in February, meaning they expected flat production going forward. Currently, the Bakken produces 1.1 million barrels per day, which was lower than the 1.2 million operators had hoped for by the end of the year.

"Significant players in North Dakota's production are talking one or two percent growth next year, so pretty flat," said Lynn Helms, North Dakota Department of Mineral Resources Director.

Helms says several factors are affecting growth including price uncertainty, federal policies, and lack of workforce.

"If I had a magic wand, I would wave it and there would be a large herd of oil and gas workers up here and the NYMEX oil price would go to 98 dollars," said Helms.

Despite the flat growth, advancements in technology such as enhanced oil recovery and longer laterals will help to keep production going for decades.

Excerpt SAF Group July 24, 2022 Energy Tidbits memo https://safgroup.ca/news-insights/

North Dakota expects oil production +2% YoY to exit 2022 around 1.3 mmb/d

We always look to the local North Dakota oil media for extra insights on the monthly North Dakota production data based on comments at the monthly press conference on the new oil and gas production data. This week the Williston Herald [LINK] report had a number of good insights that aren't in the monthly Director's Cut report. (i) 2022 exit +2% YoY to ~1.3 mmb/d. The Williston Herald wrote ""*We anticipate that June will show a full recovery from that and that July is actually going to show a significant increase in production, so we are marching towards that maybe 2 percent production increase of rate year, which should put us in the neighborhood of 1.3 million a day by year-end. I think that's kind of what the target is for industry."* (ii) The Bakken was still about 60,000 b/d not fully recovered from April, but North Dakota expects June oil production will be a full recovery. (iii) The Williston Herald wrote "*One surprise for the May report's stats, Helms said, was the jump in inactive well counts to more than 2,400 wells. "A large part of that is we had a large group of wells on non-completed well waivers," Helms said. "And the commission had institute d a policy to allow people who had drilled new Bakken wells to leave then in a non-completed status. But that expired, because oil price is so high. (And) it expired when load limits went off in the month of May."* Our Supplemental Documents package include the Williston Herald report.

Excerpt SAF Group Aug 21, 2022 Energy Tidbits memo https://safgroup.ca/news-insights/

North Dakota sees oil production ~1.2 mmb/d next year, ~1.4 mmb/d at peak

We always look to the local North Dakota oil media for extra insights from the monthly North Dakota Director of Mineral Resources Lynn Helms press conference on the monthly North Dakota production data. This week the Williston Herald [LINK] report had a number of good insights that aren't in the monthly Director's Cut report. (i) Helms is projecting production to grow to 1.2 mmb/d within the next year and to 1.4 mmb/d by end of 2020s. When asked about peak production, Helms stated "*no, we really believe that within the next year, production is going to grow to 1.2 million barrels a day. And looking a little bit further out, we think by the end of the 2020s, we can achieve and sustain 1.4 million barrels a day. So it's a slow growth curve."* (ii) The full potential of production continues to be held back by workforce and gas takeaway issues. The article highlighted *"Gas takeaway capacity continues to do well in the state, Helms said, with an average 94 percent capture rate statewide. But the state's oil production is bumping up against its ceiling on gas takeaway. That's a potentially big limiting factor for further Bakken production growth. Natural gas prices are on the one hand providing incentive for industry to continue adding gas takeaway infrastructure, but, in the short-term, it's also an incentive to limit oil production to get attractively priced gas to market. Another thing that's hampering the growth of Bakken oil production right now are continued workforce issues. It takes around two months to hire and train a crew, whether it's a drilling rig, hydraulic fracturing or workover rig crew."* Our Supplemental Documents package include the Williston Herald report.

Prepared by SAF Group https://safgroup.ca/news-insights/

https://www.transmountain.com/news/2022/update-january-2023-capacity-announcement-for-the-trans-mountain-pipeline-system-2

Update: January 2023 Capacity Announcement for the Trans Mountain Pipeline System

Dec. 28, 2022

Total system nominations for the Trans Mountain Pipeline system are apportioned by 13 percent for January 2023.

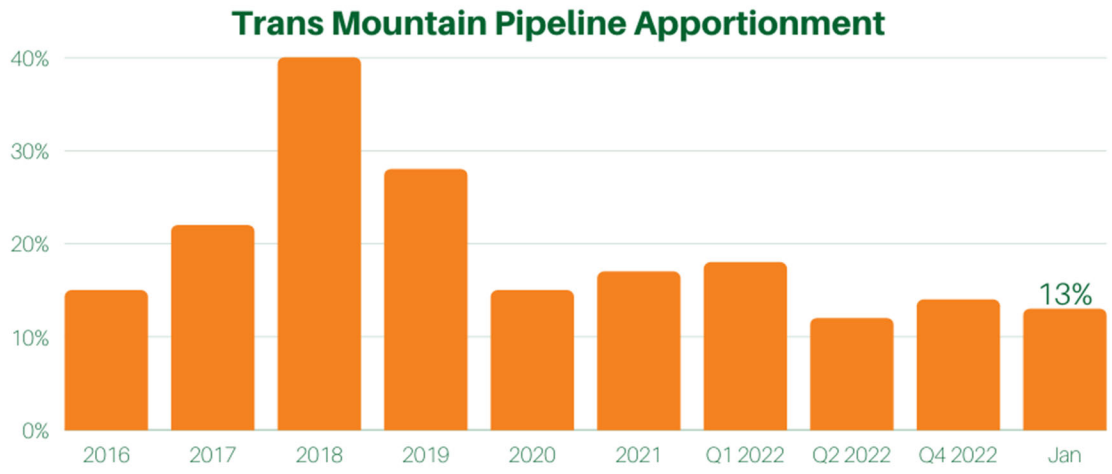
What is pipeline 'apportionment' and why is it important?

The energy sector around the world works on a monthly cycle. The Trans Mountain Pipeline is part of that cycle. Apportionment describes the amount of demand shippers place on the pipeline in excess of its available capacity. Here's a step-by-step guide to the apportionment determination that's carried out every month for the existing Trans Mountain Pipeline system.

- Each month our shippers submit requests for how much petroleum (crude oil and refined products) they want to ship through the pipeline to service their customers. These requests are called 'nominations'.
- Based on shippers' nominations, we then determine the 'capacity' available on the pipeline for the month. Determining pipeline capacity is complex. Capacity is affected by, among other things, the types of products that have been nominated, any pipeline system maintenance activities that will reduce flows that month and carry-over volumes that haven't completed their transit of the pipeline by month's end.
- Based on available pipeline capacity and the volume of shipper nominations we received, we calculate apportionment using a method accepted by the Canada Energy Regulator and forming part of our tariff. A tariff includes the terms and conditions under which the service of a pipeline is offered or provided, including the tolls, the rules and regulations, and the practices relating to specific services.
- If shipper nominations are less than pipeline capacity, the apportionment percentage to that destination is "zero" and all the product volumes nominated by shippers are accepted to be transported that month.
- If shipper nominations exceed pipeline capacity, the apportionment is a percentage greater than zero.

Trans Mountain Pipeline apportionment by the numbers

Apportionment of the Trans Mountain Pipeline system has been a regular monthly occurrence for the past decade. The chart below shows the apportionment for 2016, 2017, 2018, 2019, 2020, 2021, 2022 and apportionment to date for 2023.



When a pipeline experiences significant and prolonged apportionment like in the case of the existing Trans Mountain Pipeline, it's one signal that more capacity is needed. Apportionment can bring with it a discounting of prices as producers compete to sell what they can through the pipeline before having to use another pipeline or other modes of transport to another, less profitable market. It can also mean the buyers at the end of the pipeline are forced to source their shortfall of supply from alternate, less desirable sources.

Business case for expansion is strong

There is a strong and clear business case supporting the Trans Mountain Expansion Project. Our shippers have made long-term contract commitments ranging from 15 to 20 years that will underpin the cost of construction and the operating costs. The additional capacity offered by the expansion will be used to supply more crude oil and refined products markets in British Columbia and Washington State and to offshore markets in the Asia Pacific. Pipeline design and operations, including emergency response and preparedness for tanker movements are world-class, providing a safe and reliable supply of petroleum products to the markets served by the Trans Mountain Pipeline.

Google Translate of Excerpt from [LINK]

Décision

Copier le lien de la décision | Télécharger la décision | Liste des résultats | Nouvelle recherche

Ouellet c. Compagnie de chemin de fer Canadien Pacifique **2022 QCCS 4643**

COUR SUPÉRIEURE

(Chambre civile)

CANADA
PROVINCE DE QUÉBEC
DISTRICT DE MÉGANTIC

DATE : 14 décembre 2022

1. OVERVIEW [1] On the night of July 6, 2013, the citizens of the town of Lac-Mégantic experienced one of the worst rail tragedies in Canadian history. A convoy of tank cars traveling at a speed of more than 100 km/h, without a driver or crew, derailed in the heart of downtown Lac-Mégantic causing the death of 47 people, causing physical or psychological injuries to hundreds more, while directly or indirectly destroying almost the entire commercial and economic heart of this municipality. This tragedy still has major repercussions today both on the population of Lac-Mégantic and the surrounding area and on a large number of social and economic activities in this community.

[2] The purpose of this judgment is to determine whether the Canadian Pacific Railway Company (CP) is responsible in whole or in part for this accident and the very numerous consequences resulting from it. Although it seems obvious, on reading this judgment, that many parties involved in the transport of crude oil from North Dakota and destined for a refinery in Saint John, New Brunswick have some responsibility in this incident , they are not directly involved in this litigation since they benefit from releases obtained in exchange for their participation and their contribution to a plan of arrangement and to a compensation fund of more than $430 million which was compiled and distributed to compensate the many victims of this accident.

[3] In addition to the Montreal, Maine and Atlantic Canada Company (MMA) railway company, all other parties connected in any way with this transport of dangerous goods, whether crude oil producers, shipper thereof, of the buyer or importer, of the owners or lessors of the tank cars used, of the companies involved in the initial transport by tank trucks or in the operations of transhipment of the oil into the tank cars and even Transports Canada (TC), benefit from final releases for any claim from any victim of this tragedy because of their contribution to this compensation fund[1].

905] The conclusions arrived at by the Tribunal regarding CP's non-responsibility and the determinations it made, in connection with the evidence, therefore lead it to answer the common questions identified as follows: in paragraph 34 of the authorization judgment of October 24, 2016[200] and relating to the question of liability.

[906] The Court reproduces the text appearing in this judgment even if, in the context of this judgment, MMACC is rather identified as MMA and CPR as CP.

1. Were the shale liquids transported by rail at the request of World Fuel properly classified and labelled? No.

2. If the shale liquids transported at the request of World Fuel were incorrectly classified and identified in accordance with the legislation in force and the regulations of application, did these classification and identification errors cause or did they contribute to the fire, explosions and contamination that followed the July 6, 2013 derailment in Lac-Mégantic? No.

3. Did defendants MMACC and CPR know or should they have known that shale liquids transported from New Town, North Dakota to St. John, New Brunswick in DOT-111 tank cars were misclassified and identified? No.

4. Did defendants MMACC and CPR know or should they have known that shale liquids transported by rail from New Town, North Dakota to St. John, New Brunswick were more volatile, explosive and flammable than typical crude oil? No.

5. Were defendants MMACC and CPR negligent in allowing shale liquids to be transported from New Town, North Dakota to St. John's, New Brunswick in DOT-111 tank cars? No.

6. Were the DOT-111 tank cars used to transport the shale liquids appropriate and did the decision to use these tank cars cause or promote the ensuing fire, explosions and contamination the derailment that occurred on July 6, 2013 in Lac-Mégantic? Yes and no.

7. Was defendant CPR negligent in its discussions and negotiations with World Fuel for the choice of route to move shale liquids from New Town, North Dakota to St. John, New Brunswick and did he have a preponderant and faulty role in the final determination of the route and, consequently, of the carrier used? No.

8. Was Defendant CPR negligent in choosing, suggesting, recommending or allowing shale liquids to be transported from New Town, North Dakota, to St. John, New Brunswick on the railroad? owned by rail carrier MMACC? No.

9. Did defendant MMACC exercise effective control over the derailed train? Yes.

10. Did defendant MMACC fail to develop and implement policies and procedures prior to the derailment of the derailed train? Yes.

11. Did the Respondent MMACC fail in its duty to employ qualified persons, train them and supervise them adequately in the proper procedures to be used in securing their trains? Yes.

12. Did the defendant Thomas Harding, by his acts and gestures, cause or contribute to the derailment of the train? Yes.

13. What is the nature of the extent of the damages and other remedies that can be claimed by the members of the class action? Response to come.

14. Are class action members entitled to bodily, moral and material damages? If yes, what is the amount of these damages? Response to come.

[907] The answers given by the Court to the first twelve questions confirm that the class action is dismissed against CP and that it is however allowed against the only other defendant, MMA.

[908] These same responses result in the actions brought by the AGQ and Promutuel et als being dismissed against CP, but upheld against MMA.

[909] It follows, given the division of proceedings ordered in the three files according to the provisions of article 211 C.p.c., that a second stage dedicated to the determination of the damages with a view to a conviction against MMA should be held. .

[910] However, before deciding what to do with this defendant and since the three appeals against the other defendant, CP, have been dismissed, it will probably be appropriate, this remains to be discussed with the

parties and subsequently determined, to suspend this second stage relating to damages, while the plaintiffs determine what they possibly intend to do with respect to the appeal concerning the defendant CP.

[911] The Tribunal, since it remains seized of the case with respect to the defendant MMA, also intends to remain available for any management conference required due to the subsequent proceedings.

FOR THESE REASONS, THE TRIBUNAL:

[912] PARTIALLY GRANTS the amended Statement of Claim of the Representatives, dated January 13, 2017, against the defendant MMA, in Superior Court file no. 480-06-000001-132 and DECLARES that this defendant is liable for the damages suffered by the members of the group described in this Amended Statement of Claim.

[913] PARTIALLY GRANTS the AGQ's fifth amended motion to institute proceedings, dated August 16, 2021, against defendant MMA in Superior Court file no. 480-17-000070-159 and DECLARES that the defendant MMA is liable for the damages suffered by the AGQ and claimed in this amended Motion to Institute Proceedings.

[914] PARTIALLY GRANTS the amended Statement of Claim, dated December 18, 2017, of plaintiffs Promutuel et als in Superior Court file no. 480-17-000096-162 and DECLARES that defendant MMA is liable for the damages suffered by these plaintiffs and claimed in this Amended Motion to Institute Proceedings.

[915] ORDERS the plaintiffs in each of the three files, as well as the defendant MMA, to participate, on a date yet to be determined, in a management conference to determine the terms and procedures for proceeding with the second stage of these legal remedies, that is to say the determination of the damages suffered by all the plaintiffs.

[916] DISMISSES, with respect to defendant CP, the amended Statement of Claim of the Representatives, dated January 13, 2017, in Superior Court file no. 480-06-000001-132, without any legal costs against them.

[917] DISMISSES, with respect to defendant CP, the AGQ's fifth amended motion to institute proceedings, dated August 16, 2021, in Superior Court file no.: 480-17-000070-159, with costs of justice against this plaintiff.

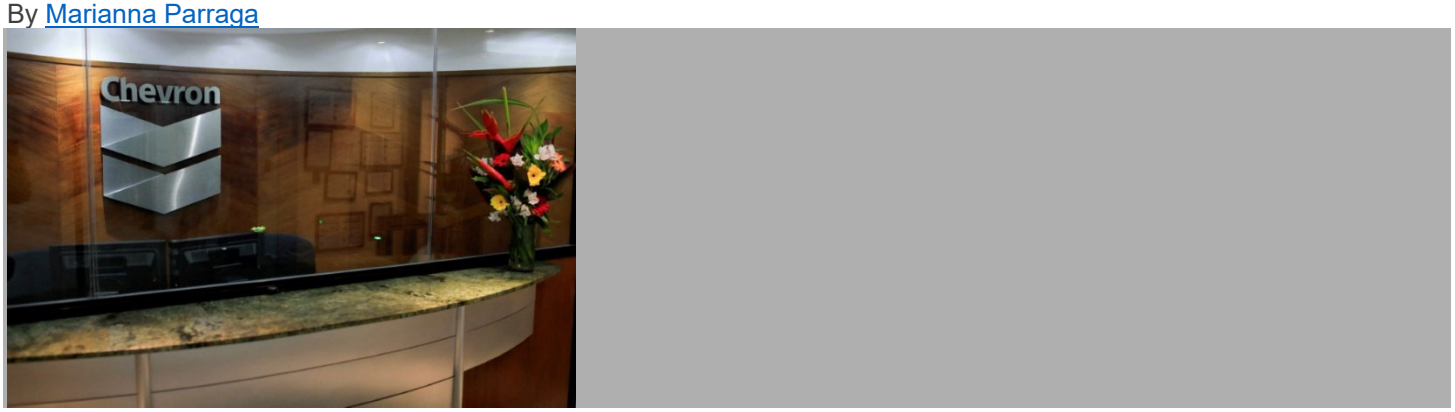
[918] DISMISSES, with respect to CP, the plaintiffs Promutuel et als' amended motion to institute proceedings, dated December 18, 2017, in Superior Court file no: 480-17-000096-162, with costs of justice against these plaintiffs.

https://www.reuters.com/business/energy/chevron-load-venezuelan-oil-exports-supply-diluents-joint-venture-2022-12-30/?taid=63af0fb6fe01750001716e13&utm_campaign=trueAnthem:+Trending+Content&utm_medium=trueAnthem&utm_source=twitter

2 minute readDecember 30, 20228:47 AM MSTLast Updated 3 hours ago

Chevron sending two oil tankers to Venezuela under U.S. approval

By Marianna Parraga



The logo of Chevron is seen at the company's office in Caracas, Venezuela April 25, 2018. REUTERS/Marco Bello/File Photo

HOUSTON, Dec 30 (Reuters) - U.S. oil company Chevron Corp (CVX.N) is sending two oil tankers to Venezuela, one of which will load the first cargo of crude destined for the United States in nearly four years, according to a person familiar with the matter and shipping data.

On Friday, a Chevron-chartered vessel approached the South American country's waters to pick up a cargo of Venezuelan crude. A second tanker carrying a cargo of diluents to a Chevron oil joint venture is due to arrive in the country early next month, the person said.

The U.S. last month issued a 6-month license to Chevron authorizing it to take an expanded role at four Venezuelan oil joint ventures that produce, process and export oil, and to bring their oil to the United States.

A Chevron spokesman declined to comment, citing a policy of not discussing commercial matters.

Venezuelan state oil company PDVSA did not immediately reply to a request for comment.

The U.S. license will reopen oil flows that were shut by U.S. sanctions nearly four years ago. The license was one of Washington's first steps to ease sanctions on the country as an incentive for Venezuela to work with opposition leaders on a presidential election in late 2023.

Washington officials have said further easing of Venezuelan oil sanctions could come with a reinstatement of excluded political candidates and election observers.

The Bahamas-flagged tanker Caribbean Voyager is set to load Venezuelan oil for exports to the United States in the coming days, while the Marshall Islands-flagged UACC Eagle is sailing to Venezuela's Jose oil port to discharge naphtha for the joint venture Petropiar, according to the person and Refinitiv Eikon vessel monitoring data.

The cargoes are the first under the U.S. Treasury Department's November license allowing the U.S. oil major to expand its operations in the South American country.

U.S. President Joe Biden's administration previously had authorized European oil companies to receive Venezuelan crude to recoup pending debt, removed individual sanctions on some Venezuelans, and released relatives of Venezuela's first lady who were convicted of drug trafficking charges.

Chevron earlier this year had requested an broader license that would allow it to take operational control of its joint ventures in Venezuela, but Washington opted for a limited authorization set to be scalable as political talks progress.

Reporting by Marianna Parraga in Houston; editing by Gary McWilliams and Chizu Nomiyama
Our Standards: The Thomson Reuters Trust Principles.

DEPARTMENT OF THE TREASURY
WASHINGTON, D.C.

OFFICE OF FOREIGN ASSETS CONTROL

Venezuela Sanctions Regulations
31 CFR part 591

GENERAL LICENSE NO. 41

Authorizing Certain Transactions Related to Chevron Corporation's Joint Ventures in Venezuela

(a) Except as provided in paragraph (b) of this general license, all transactions ordinarily incident and necessary to the following activities for or related to the operation and management by Chevron Corporation or its subsidiaries ("Chevron") of Chevron's joint ventures in Venezuela (collectively, the "Chevron JVs") involving Petróleos de Venezuela, S.A. (PdVSA) or any entity in which PdVSA owns, directly or indirectly, a 50 percent or greater interest, that are prohibited by Executive Order (E.O.) 13850, as amended by E.O. 13857, or E.O. 13884, each as incorporated into the Venezuela Sanctions Regulations, 31 CFR part 591 (the VSR), are authorized:

(1) Production and lifting of petroleum or petroleum products produced by the Chevron JVs, and any related maintenance, repair, or servicing of the Chevron JVs;

(2) Sale to, exportation to, or importation into the United States of petroleum or petroleum products produced by the Chevron JVs, provided that the petroleum and petroleum products produced by the Chevron JVs are first sold to Chevron;

(3) Ensuring the health or safety of personnel or the integrity of operations or assets of the Chevron JVs in Venezuela; and

(4) Purchase and importation into Venezuela of goods or inputs related to the activities described in paragraphs (a)(1)–(3) of this general license, including diluents, condensates, petroleum, or natural gas products.

Note 1 to paragraph (a)(4). Except as authorized pursuant to the Iranian Transactions Sanctions Regulations, 31 CFR part 560, or otherwise exempt, U.S. persons, wherever located, remain prohibited from engaging in any transaction or dealing in or related to goods or services of Iranian origin, including the purchase or import of Iranian-origin diluents, condensates, petroleum, or natural gas.

(b) This general license does not authorize:

(1) The payment of any taxes or royalties to the Government of Venezuela;

(2) The payment of any dividends, including a dividend in kind, to PdVSA, or any entity in which PdVSA owns, directly or indirectly, a 50 percent or greater interest;

(3) The sale of petroleum or petroleum products produced by or through the Chevron JVs for the exportation to any jurisdiction other than the United States;

(4) Any transaction involving an entity located in Venezuela that is owned or controlled by an entity located in the Russian Federation;

(5) Any expansion of the Chevron JVs into new fields in Venezuela beyond what was in place on January 28, 2019; or

(6) Any transactions otherwise prohibited by the VSR, including transactions involving any person blocked pursuant to the VSR other than the blocked persons described in paragraph (a) of this general license, unless separately authorized.

(c) This authorization automatically renews on the first day of each month and is valid for a period of six months from the effective date of General License No. 41 or the date of any subsequent renewal of General License No. 41, whichever is later.

Note 2 to General License No. 41. Nothing in this general license relieves any person from compliance with the requirements of other Federal agencies, including the Department of Commerce's Bureau of Industry and Security.

_____

Andrea M. Gacki
Director
Office of Foreign Assets Control

Dated: November 26, 2022

https://www.wsj.com/articles/chevron-waiting-it-out-in-venezuela-tells-u-s-now-is-the-time-to-pump-oil-11647959248?mod=newsviewer_click&adobe_mc=MCMID%3D43904269652561322512265019543051439235%7CMCORGID%3DCB68E4BA55144CAA0A4C98A5%2540AdobeOrg%7CTS%3D1647963540

Chevron, Waiting It Out in Venezuela, Tells U.S. Now Is the Time to Pump Oil

An oil refinery in Venezuela, where the U.S. has banned American oil companies from operating since 2019. YURI CORTEZ/AFP/GETTY IMAGES

By Christopher M. Matthews and José de Córdoba
March 22, 2022 10:27 am ET

HOUSTON—For months, Biden administration officials snubbed top executives and lobbyists for Chevron Corp. who had pressed officials in Washington to ease sanctions so the company could boost production in Venezuela, where the U.S. has banned such activities since 2019.

Then Vladimir Putin invaded Ukraine.

Now the Biden administration is listening closely to Chevron, say people familiar with the conversations, which says it can help double Venezuela's 800,000 barrels-a-day production within months. That could replace the loss of roughly 700,000 barrels a day the U.S. was importing from Russia before it attacked Ukraine. And it could help lower gasoline prices—a major concern for the Biden administration in a tough election year.

"Chevron came in November, they pitched it around, but got laughed out of town," said Juan Cruz, a former National Security Council official in charge of the Western Hemisphere who has closely followed the Biden administration's policy toward Venezuela. "But what was really funny in November is a plan today."

Since the Russians invaded on Feb. 24 and Mr. Biden canceled Russian oil imports, Chevron Chief Executive Officer Mike Wirth has offered the company's help to Secretary of Energy Jennifer Granholm in shoring up U.S. energy supplies by ramping up production in Venezuela, according to people briefed on the talks. Chevron is the only major U.S. producer to retain assets in Venezuela following nationalizations by the Socialist government and, much later, U.S. sanctions.

Granting the San Ramon, California-based company and other U.S. producers permits to operate could boost Venezuelan production while keeping other sanctions in effect. Broadly easing sanctions on Venezuela faces stiff opposition in the U.S. over concerns it would prop up the country's autocratic regime. U.S. officials are divided over the issue, say people familiar with the situation.

Asked recently by CNN about the outreach to Venezuela and Saudi Arabia for more oil, Ms. Granholm, said, “I think Americans should see the administration calling right now for an increase in supply as something that helps them,” naming the benefit of reducing costs at the pump.

Shortly after Mr. Wirth talked to the energy secretary, three senior U.S. officials—Juan Gonzalez, the senior National Security Council official in charge of Latin America; James Story, the U.S. ambassador to Venezuela; and Roger D. Carstens, a special envoy—flew to Caracas on March 5 and met with President Nicolás Maduro and other top Venezuelan officials.

Another person who spoke with senior Venezuelan officials after the invasion was Ali Moshiri, a charismatic Iranian-American who had headed Chevron’s Latin America division and was considered a “dear friend” by the late Hugo Chávez, the founder of the political movement now led by Mr. Maduro, with whom Mr. Moshiri also has close a close relationship. Mr. Moshiri retired from Chevron in 2017 but now consults for the company in Venezuela, where he has deep ties with senior officials, say people familiar with the matter.

Many oil industry executives say that Mr. Moshiri was essential to Chevron’s controversial decision to stay in the country even as other Western oil companies exited after the Venezuelan government in 2007 nationalized billions of dollars of assets owned by ConocoPhillips, Exxon Mobil Corp. and others. He has also lobbied Biden officials to loosen sanctions on Venezuela, where Chevron has operated for nearly a century.

“You cannot ignore Venezuela,” Mr. Moshiri said in an interview last week. “Venezuela will always be part of our energy security.”

The White House declined to comment about Chevron’s possible role or its own talks in Venezuela. The Energy Department declined to comment.

People briefed on the talks say Mr. Moshiri has argued to U.S. officials that the U.S. can’t cede influence of Venezuelan energy to rivals like China and Russia, which have increased their activities in the country in recent years. He has also spoken with Venezuelan officials for months to try to win the release of Americans imprisoned in Venezuela, these people said.

A Chevron spokesman said Mr. Moshiri isn’t representing the company in negotiations with the U.S. or with Venezuelan officials. Mr. Moshiri declined to provide details about his contract with Chevron. After leaving Chevron, he founded a firm, Amos Global Energy, which seeks investment opportunities in Venezuela, people familiar with the matter said.

A few days after the March 5 meeting in Caracas with U.S. officials, the Maduro government freed two American captives, one of them an executive of Citgo, the U.S. refining subsidiary of state-run oil company Petróleos de Venezuela SA, or PdVSA. The government also agreed to restart negotiations in Mexico with representatives of Venezuela's opposition, who want officials to agree to free and fair presidential elections in 2024.

News of the meeting in Caracas, though, has caused a political backlash in Washington and in Florida, where exiled Venezuelans live and have forged links to the state's powerful and conservative Cuban American community.

"The democratic aspirations of the Venezuelan people, much like the resolve and courage of the people of Ukraine, are worth much more than a few thousand barrels of oil," New Jersey Sen. Robert Menendez, the Democratic chairman of the Senate Foreign Affairs Committee, wrote in a statement. Those sentiments were echoed by both Democratic and Republican lawmakers in Florida.

SHARE YOUR THOUGHTS

Should the U.S. ease sanctions on Venezuela to get more oil? Why or why not? Join the conversation below.

Venezuelan opposition leader Juan Guaidó, whom the U.S. recognizes as Venezuela's legitimate president, was told of the U.S.-Venezuela meeting after it had taken place. Mr. Guaidó wrote a letter to Mr. Biden, according to a person with knowledge of the matter, saying that lifting sanctions on Venezuela would do little to ease the world's crude supply shortages while rewarding Mr. Maduro, a Putin ally whose rule is blamed for leading six million Venezuelans to flee the country.

"Today, more than ever we should be firm and morally consistent," said Mr. Guaidó in a video press conference from Caracas last week. He said any lifting of sanctions on Venezuela or permission for Chevron to pump oil there should only come in exchange for democratic concessions by the regime.

Answering reporters' questions last week White House press secretary Jen Psaki said, "There is no dialogue between us and the regime." She said the administration would consider lifting sanctions on the basis of progress in talks between Mr. Maduro and the opposition.

Chevron officials still say the company could win a license permitting it, along with European oil companies such as Eni Spa and Repsol SA, to operate in Venezuela.

A refinery of state-owned Petróleos de Venezuela in El Palito. Venezuelan oil production has plummeted since the 1990s due to mismanagement.

PHOTO: MANAURE QUINTERO/BLOOMBERG NEWS

Venezuela claims to have the world's largest proven oil reserves. But years of mismanagement, corruption and nationalization of oil ventures led production to fall from 3.2 million barrels a day in

the 1990s to a 10th of that in 2020. Since then, production has more than doubled as Venezuela turned to opaque foreign companies to boost production, say industry executives. Chevron's lobbyists assert that the recent production increases show that the U.S. sanctions aren't working as intended.

But though Chevron has told U.S. officials it could jack up production quickly, some oil analysts who closely track Venezuela doubt the company could deliver. Even in good times, Venezuela had never increased production anywhere near the level of recent optimistic projections, according to Francisco Monaldi, director of the Latin America Energy Program at Rice University's Baker Institute. Chevron's perseverance in Venezuela has come as the company has tried to get Venezuela to pay money owed under production-sharing agreements. The company wrote down all of its assets there in 2020, taking a charge of $2.6 billion. Nonetheless, it stayed, receiving periodic licenses from the U.S. government to retain but not operate assets.

—Timothy Puko in Washington contributed to this article.

Write to Christopher M. Matthews at christopher.matthews@wsj.com and José de Córdoba at jose.decordoba@wsj.com

https://www.argusmedia.com/en/news/2403155-high-hurdles-to-grow-chevrons-venezuela-oil-output

High hurdles to grow Chevron's Venezuela oil output

Published date: 21 December 2022

An internal Chevron plan to increase Venezuelan oil production to 200,000 b/d by mid-2023 relies on efforts to rehabilitate some 18,000 wells in various states of disrepair in the country's once-prolific Occidente region.

According to a report from Venezuela state-owned PdV obtained by *Argus*, about 7pc of existing wells in Occidente are operating. The 1,400 or so "Category 1" wells are producing oil, but many at declining rates.

About 8,700 wells fall into Category 2, which includes non-operating wells that may just need minor work to become operational. These wells may need around $500,000 each in new investment to be viable, according to sources familiar with the field.

In Category 3 are more than 7,900 wells that need between $5mn-$6mn of investment each to be commercially viable.

Hundreds of wells in the PdV report are reportedly shut down just for a lack of reliable electricity, which plagues many parts of the country. Many more have been stripped bare of any surface equipment by thieves.

Production in Occidente has declined from 150,000 b/d earlier this year to around 90,000 b/d in November.

Much of Chevron's work in Venezuela has been curtailed in recent years by US sanctions. The US eased some sanctions in late November when the government agreed to resume talks with the opposition about new elections, which will allow Chevron to sell crude from its Venezuela joint ventures.

Chevron was expected to send its first cargo of Venezuelan crude to a US Gulf coast refiner since 2018 by the end of December, but it is not yet clear if that will happen. Government officials are anxious to send a symbolic message with a cargo before the new year, while Chevron appears less concerned with rushing any shipments.

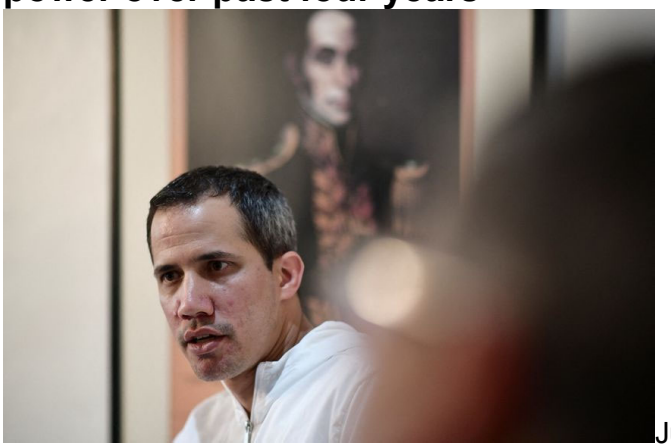
Chevron plans to increase its global spending in 2023 to $17bn, up from around $15bn in 2022, but has not disclosed any specific plans for Venezuela.

By Carlos Camacho

https://www.wsj.com/articles/venezuelas-u-s-backed-opposition-removes-juan-guaido-as-its-leader-11672441327

Venezuela's U.S.-Backed Opposition Removes Juan Guaidó as Its Leader

Shake-up comes after unsuccessful efforts to remove Nicolás Maduro from power over past four years


Juan Guaidó's movement is currently recognized by the U.S. and a handful of allies.PHOTO: GABY ORAA/REUTERS

By Kejal Vyas

Updated Dec. 30, 2022 7:52 pm ET

Venezuela's biggest opposition parties voted to remove Juan Guaidó as their leader, marking an end to a bold, U.S.-backed political gambit in which he was recognized as the country's legitimate president as part of an unsuccessful bid to oust authoritarian Nicolás Maduro from power.

Lawmakers, scattered in exile around the world, voted in a Zoom call to restructure their movement, removing Mr. Guaidó and eliminating the so-called interim government he leads. The interim government had been recognized as Venezuela's legitimate government by more than 60 countries when it was created in early 2019. But now, the U.S. and only a handful of allies continue to recognize the Guaido-led movement, while Mr. Maduro maintains an ironclad grip on the country with support from Russia, Iran and China.

Mr. Guaidó, 39 years, will continue to head both Venezuela's opposition congress and the interim government until Jan. 5, when his movement's duties will be divided up. The opposition said it would create a new committee to oversee Venezuelan state assets that came into its control—including U.S. refiner Citgo Petroleum Corp. as well as gold bullion at the Bank of England—and are being targeted by creditors looking to seize them.

Meanwhile, a special panel made up of political representatives will work on negotiations that the opposition is preparing with the Maduro regime, with the hopes of organizing free and fair elections in 2024.

The leadership shake-up comes after four years of unsuccessful efforts to dislodge Mr. Maduro through street demonstrations, international sanctions and a failed military uprising. A majority of lawmakers, who voted 72-29 in favor of removing Mr. Guaidó, said their political coalition needed different strategies to restore democracy in the troubled, oil-rich nation.

"Venezuela needs new machinery in this struggle," lawmaker Juan Miguel Matheus said, explaining why he no longer supported the Guaidó movement. He said the interim government had deviated

from its original goal, which was to fight for fair elections. “It was something that was supposed to be temporary, but it became something perpetual,” he said.

The three main parties opposed to Mr. Guaidó, who hold about three-fourths of congressional seats, said in a statement that “we’re taking this step to build a more solid and realistic coalition in the democratic struggle.”

Discord within the opposition’s ranks had been brewing for months amid mounting frustrations over the shortcomings of a strategy that was strongly supported by the Trump administration. Some detractors of Mr. Guaidó were angered by alleged graft and mishandling of state funds by representatives of the interim government, which managed everything from embassies to overseas state-owned companies and bank accounts. Mr. Guaidó promised to investigate the allegations.

Mr. Guaidó and his allies had fought against the dissolution of their movement. They argued that the elimination of the interim government would jeopardize the foreign assets that they are trying to protect from creditors in courtrooms in the U.S. and U.K. For years, they had argued that they were Venezuela’s legitimate government to prevent Mr. Maduro from accessing overseas funds.

Mr. Guaidó’s supporters said the move threatened to break up the opposition, making it harder to appeal for support from foreign allies. They said it would give a boost to Mr. Maduro, who has been deemed illegitimate by the U.S. and other countries for alleged electoral fraud and is widely blamed for triggering Venezuela’s brutal economic downfall. Mr. Guaidó said he adhered to the constitution, which stipulates that a caretaker government can remain in power until elections are held.

“This is not about defending Guaidó,” Mr. Guaidó said. “This is about not losing the important tools that we have in this struggle.”

Lawmaker Freddy Guevara, who has backed Mr. Guaidó, called Friday’s decision “political suicide” for the opposition. “Maduro today must be partying,” another congressman, Jose Antonio Figueredo, said.

A spokesperson for the White House’s National Security Council declined to comment on the opposition’s internal deliberations. “The United States will continue to support Venezuela’s democratic opposition, the democratically-elected National Assembly, and the Interim Government, regardless of what form it takes,” the spokesperson said in a statement.

The opposition’s move comes as the U.S. as well as a host of new left-leaning governments in Latin America seek to engage with Mr. Maduro. The Biden administration has largely dropped its predecessor’s so-called maximum-pressure campaign marked by financial and oil-sector sanctions. U.S. diplomats have for months been meeting with high officials in the Maduro government and dangled the possibility of extending sanctions relief on the Maduro regime in exchange for committing to democratic reforms.

Earlier this year, the U.S. exchanged prisoners with the regime, with the U.S. releasing two relatives of Mr. Maduro who had been convicted of drug trafficking and Venezuela freeing six U.S. citizens and a U.S. legal resident. The U.S. also granted a special license to Chevron Corp., allowing the oil major to return to pumping and shipping crude in Venezuela, which the U.S. had banned in 2018 to financially isolate Mr. Maduro.

Elliott Abrams, the U.S.’s top envoy to Venezuela during the Trump administration, attributed the opposition’s infighting to political jockeying between some leaders looking to outshine Mr. Guaidó as the movement’s main interlocutor.

 Nicolás Maduro, at a rally earlier this month in Caracas, maintains an ironclad grip on Venezuela with support from Russia, Iran and China.PHOTO: LEONARDO FERNANDEZ VILORIA/REUTERS

“What they’re doing is risky, too risky,” Mr. Abrams said. “When you’re facing a vicious dictatorship, it’s very unfortunate that personal rivalries seem to outweigh the main goal. They’re running the risk that foreign governments will walk away from them.”

Mr. Guaidó’s fallout is the latest twist in Venezuela’s ongoing political standoff, which has run parallel to a devastating economic contraction since Mr. Maduro came to power in 2013. More than seven million migrants, about a quarter of the population, have fled the country during Mr. Maduro’s tenure, the largest mass exodus ever seen in the Americas, historians and human rights groups say.

Mr. Guaidó had received backing from more than 50% of Venezuelans when he rose from a little-known lawmaker to become chief of the congress, which is called the National Assembly, and interim president. It was an unusually high level of support in a politically polarized country, said Saul Cabrera, director of the Caracas pollster and market research firm Consultores 21.

But Mr. Guaidó’s popularity plummeted by more than half as Mr. Maduro held on to power and gained influence. “It’s not that people don’t like him personally. It’s more like ‘Oh, this guy failed me, too,’” said Mr. Cabrera.

In Caracas, Mr. Guaidó had been facing increasing isolation as the Maduro regime locked up political dissidents and pushed scores of others to flee into exile. Banned from television or radio, Mr. Guaidó’s public speeches are almost exclusively limited to social media. He posts videos from his 14th floor office in a rundown shopping mall, where the toilet often doesn’t flush because of a lack of running water.

Last month, with his days as interim president numbered, Mr. Guaidó acknowledged many of his movement’s shortcomings in an interview with The Wall Street Journal. But he pledged to keep fighting for democracy, saying he had no other choice.

Hunched over a tablet in his bare-bones office, the scene was a sharp contrast to Mr. Maduro, who at the same time was traveling to a U.N. environmental summit in Egypt, where he shook hands with French President Emmanuel Macron and the U.S.’s top climate envoy, John Kerry.

For some analysts of Venezuela political situation, Mr. Guaidó’s precarious situation was a sign the opposition had been abandoned by onetime allies.

“We should never be giving up on the chance for restoring democracy and supporting the opposition, and we seem to be doing just that in Venezuela,” said Mr. Abrams. “It’s pretty sad.”

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http://en.kremlin.ru/events/president/transcripts/70315

New Year Address to the Nation

December 31, 202223:55

President of Russia Vladimir Putin: Citizens of Russia, friends,

The year 2022 is drawing to a close. It was a year of difficult but necessary decisions, of important steps towards Russia's full sovereignty and a powerful consolidation of our society.

It was a year that put many things in their place, and drew a clear line between courage and heroism, on the one hand, and betrayal and cowardice on the other, showed us that there is nothing stronger than love for our near and dear, loyalty to our friends and comrades-in-arms, and devotion to our Fatherland.

It was a year of truly pivotal, even fateful events. They became the frontier where we lay the foundation for our common future, our true independence.

This is what we are fighting for today, protecting our people in our historical territories in the new regions of the Russian Federation. Together, we are building and creating.

Russia’s future is what matters the most. Defending our Motherland is the sacred duty we owe to our ancestors and descendants. The moral and historical truth is on our side.

The outgoing year has brought great and dramatic changes to our country and to the world. It was filled with uncertainty, anxiety and worry.

But our multiethnic nation showed great courage and dignity as it had in every challenging period in Russian history, supported the defenders of our Fatherland, our soldiers and officers, and all participants in the special military operation, in both word and deed.

We have always known that Russia's sovereign, independent and secure future depends only on us, on our strength and determination, and today, we have become convinced of it once again.

For years, Western elites hypocritically assured us of their peaceful intentions, including to help resolve the serious conflict in Donbass. But in fact, they encouraged the neo-Nazis in every possible way, who continued to take military and overtly terrorist action against peaceful civilians in the people's republics of Donbass.

The West lied to us about peace while preparing for aggression, and today, they no longer hesitate to openly admit it and to cynically use Ukraine and its people as a means to weaken and divide Russia. We have never allowed anyone to do this and we will not allow it now.

Russian servicemen, militiamen and volunteers are now fighting for their homeland, for truth and justice, for reliable guarantees of peace and Russia’s security. They are all our heroes and they are shouldering the heaviest burden right now.

From the bottom of my heart, I wish a very happy New Year to every participant in the special military operation, to those who are here next to me now, and who are on the frontline, those getting ready for action at training centres, those who are in hospitals or already back home, having fulfilled their duty, to all those now on combat duty in strategic units, and all personnel of the Russian Armed Forces.

Comrades,

thank you for your valiant service. Our entire vast country is proud of your fortitude, endurance and courage. Millions of people are with you in their hearts and souls, and will be raising a toast to you at their New Year's table.

Many thanks to everyone who provides ancillary support for military operations: drivers and railway workers who deliver supplies to the front, doctors, paramedics, and nurses who are fighting for soldiers’ lives and nursing wounded

civilians. I thank the workers and engineers at our military and other plants who are working today with great dedication, builders who are erecting civilian facilities and defensive fortifications, and helping to restore the destroyed cities and villages in Donbass and Novorossiya.

Friends,

Russia has been living under sanctions since the events in Crimea in 2014, but this year, a full-blown sanctions war has been unleashed against us. Those who started it expected our industry, finances and transport to collapse and never recover.

This did not happen, because together we created a reliable margin of safety. We have been taking steps and measures towards strengthening our sovereignty in a vitally important field, in the economy. Our struggle for our country, for our interests and for our future undoubtedly serves as an inspiring example for other states in their quest for a just multipolar world order.

I consider it very important that in the outgoing year, such qualities as mercy, solidarity and proactive empathy have become especially important in Russia. More and more Russians feel the need to help others. They rally together and take initiative without any formal instructions.

I want to thank you for being so considerate, responsible and kind, for your active involvement in the common cause regardless of age or income. You arrange warehouses and transport to deliver parcels to our fighters in the combat zone, to the residents of affected cities and towns, and help organise holidays for children from the new constituent entities of the Federation.

My friends, you are providing great support to the families of the fighters who perished, who gave their lives defending the lives of others.

I know how difficult it is for their wives, sons and daughters, and for their parents, who raised real heroes; I understand how they feel now, on New Year's Eve. We will make every effort to help the families of our fallen comrades raise their children, give them a good education, and get a profession.

With all my heart, I share your pain and ask you to accept my sincere words of support.

Friends,

Our country has always celebrated the start of the New Year, even during very difficult times. It has always been everyone’s favourite holiday, and has a magical power to reveal the best in people, to heighten the importance of traditional family values, the energy of kindness, generosity and trust.

As we see the New Year in, everyone strives to give joy to their loved ones, to show them attention and warmth, to give them presents they have been dreaming of, to see the delight in children’s eyes and parents’ touching gratitude for our attention. The older generation knows how to appreciate such moments of happiness.

Friends, now is the best moment to leave all personal grievances and misunderstandings in the past, to tell our nearest and dearest how we feel, how much we love them, how important it is to take care of each other – always, at any time.

Let these heartfelt words and noble feelings give each of us immense strength and confidence that together, we will overcome all the challenges and keep our country great and independent.

We will only move forward, to fight for our families and for Russia, for the future of our only, beloved Motherland.

Happy New Year, friends! Happy 2023!

https://tass.ru/interviews/16682645

December 25, 22:00

Interview

Alexander Novak: There is no one to replace Russia in the oil and gas market

Alexander Novak

© Anton Novoderezhkin/ TASS

Deputy Prime Minister of the Russian Federation on the work of the fuel and energy complex in the conditions of sanctions

This year turned out to be extremely difficult for the Russian fuel and energy sector: first, the industry faced sanctions pressure, problems with Nord Streams, then with the European embargo and oil and gas price ceilings. Due to what it was possible to do, how the oil and gas industry of Russia will cope with the challenges, to which countries new pipelines will be laid, and how soon the Russian technology for liquefying natural gas will be created in an interview with TASS told Russian Deputy Prime Minister Alexander Novak. He summed up the work of the industry in 2022 and outlined the prospects.

- Alexander Valentinovich, speaking about the results of the year in the fuel and energy sector, it is difficult to ignore the sanctions topic. Despite the fact that in the spring many predicted the imminent collapse of the oil and gas industry in Russia, the country was able to adapt to the new situation. How did you manage to do this?

— The Russian fuel and energy sector has been living under sanctions since 2014. But then there were no restrictions on the supply of resources to world markets, and the situation developed in a more market way. In the same year, we faced a de facto ban on supplies to unfriendly countries.

If we talk about the oil industry, then at the peak, in March-April, we saw a drop in production by about 1.2 million barrels per day. However, then the energy industry recovered from the shock of the beginning of the year. Our companies have built new logistics chains for the sale of oil and petroleum products and in May-June restored

production to the levels of January-February, which remain now - about 10 million barrels per day.

Since the end of February, we have held a number of meetings with Russian President Vladimir Putin, where the risks were analyzed and relevant instructions were given. As a result, a new configuration of logistics chains was provided, fast and well-coordinated work of the federal authorities was organized under the leadership of Prime Minister Mikhail Mishustin in conjunction with industry companies and legislators who promptly considered the initiatives of the government and industry.

— As we know, the industry is waiting for new tests, new embargoes ahead...

" Challenges appear every day. The West, seeing that we are coping, introduces new restrictions. However, all this is reflected in a boomerang on them: inflation is growing, the development of the economy is slowing down.

The latest decision to introduce a ceiling on gas prices once again shows that Western colleagues are guided not by economic sound calculation, but only flirt with their voters. They receive short-term benefits, but only political, not economic. If we talk about long-term prospects, then with such decisions they provoke a deep long-term crisis, destabilization in Europe.

Many Western oil and gas companies are already wary of all these processes and withdraw funds in the form of dividends instead of investments. In the future, this will lead to the fact that as a result of a decrease in the volume of energy investments in the EU, there will be a shortage, the world will face a deficit and a new round of crisis.

- How soon can this happen?

— In the medium term. Within 5-10 years, the world will face serious problems. This will affect Europe the most, as they have reduced imports of Russian gas and are now focusing on LNG and the growth of their own production, which briefly occurred in Norway and the UK. However, resources there are very limited, and this increase will not be long-term. If we talk about LNG, then there are also no guarantees. With increased consumption in the Asia-Pacific region, Europe will also inevitably face a deficit.

- Why, then, is Europe not experiencing any particular problems with gas volumes?

- This year, two positive factors played for them. Lockdowns in China restrained demand growth, and warm weather reduced consumption in Europe. However, even despite this, the Europeans had to reduce gas consumption this year by 40-50 billion

cubic meters of gas due to the closure of enterprises for the production of fertilizers, gas chemistry, metallurgy. And this is only the beginning of the European energy crisis.

- We have a new challenge ahead: an embargo on petroleum products, and we will also feel the effect of a similar measure on oil. Already now we see an increase in the discount on Urals, which is already above $ 30 per barrel. Will there be adaptation again in 2023 or will it be more difficult to cope this time?

— So far, we see that in 2023 there will be many uncertainties associated with work in foreign markets. However, it is obvious that our product is in demand in the international market. Of course, the routes are lengthening, so the discount has become higher than a month ago. We observed the same situation in March-April, when the discount increased sharply, and then halved within about four months. This time the situation will be similar, and I think that the disparity will be smoothed out after the stabilization of new logistics chains.

- How soon will this happen?

- I think a few months. Last time, it took about four months to stabilize the new supply chains, this time it will be about the same.

- Will the new embargo have a strong impact on production?

— I do not rule out that in 2023 there will be risks of a decrease in production in certain periods. Perhaps at the peak we will reduce it by 7-8%. However, in the whole year we will produce at least 490-500 million tons. But, I repeat, much will depend on logistics.

- There is an opinion that the EU embargo on petroleum products can have a greater impact than on oil ...

— Europe was our main market for petroleum products. Let's see what decisions they eventually make. So far, it is not clear to us what they will replace our fuel. Perhaps they will introduce exceptions, as it was with oil, when pipeline supplies, processing plants in Bulgaria, the Czech Republic, and Slovakia did not fall under the restriction.

Even Germany and Poland, which announced that they would abandon Russian oil, applied for pumping for 2023.

- Germany reported that they meant Kazakhstan's oil ...

- The applications do not specify what kind of oil it will be.

— How will the Russian oil products market change after the introduction of the embargo?

— We have calculated different scenarios, including maintaining the current ratio of oil exports, production and refining. If there are problems with the sale of petroleum products, oil refining in some volume can be replaced by additional volumes of oil exports.

— With what results in the extraction and export of the main types of energy resources are we approaching 2023?

- According to preliminary data from the Ministry of Energy, this year, despite the pressure on the industry, we will increase oil production by about 2% compared to 2021

- up to 535 million tons. Exports will grow by 7.5% to 242 million tons. Primary oil refining will decrease by 2.9% to 272 million tons, while the production of motor gasoline will grow by 4.2% to 42.5 million tons, the production of diesel fuel by 5.9%, to 85 million tons. Thus, even with a reduced volume of oil refining, we will get more high-quality products.

As for gas, its production and exports will be forced to fall. Gas production at the end of the year will be 12% less than in 2021, and exports will decrease by about a quarter. This is primarily due to the shutdown of the export infrastructure. At the same time, LNG production and exports will grow by more than 8.7%.

Coal production is expected this year at the level of 2021, while exports will decrease by 8.4%, and coal consumption in the domestic market will grow by 6.8%.

— What are the indicators for the electric power industry?

— Here we observe an increase in the production and consumption of electricity by 0.8% and 1.6%, respectively.

— You said that the world market is underinvested. Is there a fear that the Russian fuel and energy sector may suffer the same fate, given the growth of the tax burden on the industry in 2023?

— We do not see such prerequisites. Even in a difficult 2022, we have increased investment in oil production. According to data for 10 months, they amounted to 1.4 trillion rubles, and for the whole of last year - 1.5 trillion rubles. That is, by the end of the year, the figure will clearly be higher. As for the gas industry, Gazprom's investments alone by the end of 2022 are expected to amount to almost 2 trillion rubles, and in 2023 it is expected to grow to 2.3 trillion rubles.

Now in Russia there are processes of diversification of routes, replacement of production capacities, a large number of large investment projects are being implemented.

— This year, in the gas market in the EU, we saw a rise in prices, refusals to repair Nord Stream turbines, sabotage on pipelines. Is there still an opportunity for Russian gas to return to the European market, or has Russia finally turned to the East?

— The European market remains relevant, as the gas deficit remains, and we have every opportunity to resume supplies. For example, the Yamal-Europe pipeline, which was stopped for political reasons, remains unused. We also have the Turkish Stream operating at full capacity, the Ukrainian route supplies Europe with 42 million cubic meters of gas per day – about 1/3 of the pumping volumes prescribed in the contract. Now the implementation of additional volumes of gas supplies through Turkey after the creation of a hub there is also being discussed. Now we are actively working with the countries that will take part in the implementation of this project, as well as with consumers in need of Russian gas.

- A lot of people?

- Applications from European consumers to increase gas supplies are constant, that is, today we can confidently say that there is a demand for our gas. Therefore, we

continue to consider Europe as a potential market for our products. It is clear that a large-scale campaign was launched against us, which ended with acts of sabotage against Nord Streams.
Even now, this market is not closed. For example, this year we were able to significantly increase LNG supplies to Europe, for 11 months of 2022 they increased to 19.4 billion cubic meters, by the end of the year 21 billion cubic meters are expected.
— Is it still possible to repair Nord Streams?
- Specialists who deal with such issues say that there are technical capabilities, but this requires money and time. Until the investigation is over, it is difficult to say when this infrastructure will be restored and how much it will cost. In the meantime, the operators of the gas pipelines - Nord Stream AG and Nord Stream 2 AG - are not allowed to access the information that the competent authorities of European countries receive during the investigation.
— Кроме Европы, какие еще страны потенциально могли бы покупать российский трубопроводный газ?
— If we talk about pipeline gas, the main consumer is China. Taking into account the already planned projects, supplies may amount to 100 billion cubic meters per year. It is also possible to increase gas exports through Turkey. We are also discussing with our partners from Kazakhstan and Uzbekistan the growth of gas supplies to their domestic market, as their consumption increases.
If we talk about a deeper perspective, then this is the export of gas to Afghanistan, Pakistan: either using infrastructure projects in Central Asia, or swap from the territory of Iran. That is, we will receive their gas in the south of the country, and in exchange supply gas to the north for Iranian consumers.
- **Are you discussing swaps with Azerbaijan?**
- There is an agreement with Azerbaijan to increase our supplies, since they still have a gas deficit. In the future, when they increase gas production, we will be able to discuss swaps.
— Is it realistic for Russia to implement the plans and tasks of the LNG energy strategy in the new conditions, given that the country does not yet have its own technology for large-scale liquefaction of gas?
- Now the increase in LNG production in Russia has become even more relevant, since it can be supplied to different parts of the world and not depend on any country. In the near future, we expect to increase production to 64 million tons per year, and by 2035 to reach the level of 100 million tons.
As for large-scale LNG, since 2014 we have been engaged in import substitution of LNG technologies, subsidizing the creation of equipment. Already now there is a Russian liquefaction technology "Arctic Cascade" at the Yamal LNG plant with a capacity of 1 million tons. In the future, it can be brought to 2-3 million tons. In parallel, equipment with a capacity of 5-6 million tons is being developed by the structures of Rosatom, Novatek and Gazprom.

Work is also underway to create Russian heat exchangers for large-capacity LNG. When they make them, then it will be possible to say that Russia has its own technology of large-scale LNG.

— This year we see an attempt to create a cartel of oil consumers. How acceptable is this for oil exporters?

— Our colleagues in OPEC+ have already voiced that this is unacceptable for the market.

When consumers begin to intervene in the market economy, it only leads to an imbalance.

— Can such actions of consumers become a factor in the consolidation of oil-exporting countries?

"Cohesion was and is, but it's based on an understanding of what's going on in the market. It's influenced by a variety of factors, one of them **is** sanctions.

- Another important event of this year was the launch of the Russian mechanism for insurance of oil tankers. How successfully was it applied?

"On behalf of the President, we began to prepare these measures preventively. As a result, we were able to recapitalize the Russian National Reinsurance Company and worked with friendly countries. In general, there are still problems in this direction, but they are being resolved. As you can see from the statistics, the export is underway.

— What share do Russian insurance companies currently occupy?

- I can only say that they have increased the volume, and their share is much larger than it was before the strengthening of sanctions.

"Infrastructure expansion was also seen as an important countermeasure to sanctions. What progress has been made in this direction?

- This was also one of the president's instructions. We prepared these measures in case of a possible embargo on pipeline infrastructure in order to redirect supplies by sea. Now we have free port facilities for transshipment of 35-40 million tons of cargo, work is underway to expand them.

— When will the work be completed?

- Over the next three years.

— After the expansion of the infrastructure, how much will its capacity change in alternative directions to the West?

- For oil, by 2025, an increase in exports to 260 million tons is likely, also at the expense of the Asia-Pacific countries. For gas, the implementation of such projects as the Power of Siberia, the Far Eastern route, will allow by 2025 to increase gas supplies to the east to 48 billion cubic meters, and by 2030 - up to 88 billion.

- Another area that the government has been working on is the conduct of energy trade in national currencies. How much has their share grown in 2022?

- If at the beginning of the year this flywheel was rocking very hard, then in just a few months it became an ordinary story, and we steadily began to trade in national currencies. Gazprom, for example, completely transferred the payment for the Power of

Siberia gas to yuan and rubles on a parity basis. Trade is also increasing in Indian rupees, Turkish liras, and Russian rubles.
The constant inflow of national currency inflows gives confidence to the market. At the beginning of the year, we faced a problem – it was not very clear what to do with this currency and where to put it. At the moment, it is traded on the stock exchange and provides mutual turnover. Therefore, in the future, the share of operations in national currencies will only grow.

- Now the prices for coal, oil, gas are at a fairly high level. Is this a long term trend, or could they fall back to fairly low levels again?

- At the moment, we are seeing, rather, a trend towards volatility. For oil, we saw two-fold fluctuations from $65 to $130 per barrel. The situation is similar for gas. The price reached $4,000 per thousand cubic meters, now it is about $1,000.

Much of the dynamics will depend on the temperature this winter, but in the short term they will remain high due to the shortage. I don't see how prices could return to the levels of the beginning of 2021 — $200-250 per 1,000 cubic meters.

— What about oil?

— Volatility has also increased here, the price is within a certain range. We don't see jumps.

- Previously, many were sure that the price would never rise above $50-60 again, and the Russian budget was generally made up at $40.

- When such forecasts were voiced, no one could have imagined these crazy actions of Western politicians. In February, an embargo on the supply of Russian oil products to Europe will come into force, let's see what prices there will be for diesel.

— This year, a unique situation has developed in Russia, when the retail price of gasoline and diesel grew several times lower than inflation. Should we expect the situation to continue in 2023, will companies catch up with lost profits?

— Our strategic task is to keep the growth of prices for petroleum products in the domestic market no higher than inflation. This year, this task was exceeded. Gasoline with inflation of 11.1% rose in price by only 0.6%, diesel - by 8.4%.
Next year, together with the FAS, we will closely monitor that price increases do not exceed inflation. To do this, we have a damper - a unique tool that smoothes out fluctuations in world prices.

— How do you assess the chances of a renaissance of the green agenda, which has now noticeably subsided, and a new round of energy transition?

- The green agenda has not gone anywhere, according to the results of this year, a record $ 1.4 trillion will be invested around the world in renewable energy sources alone. However, indeed, we see that the approach to the green agenda has changed. If earlier its zealous supporters said that it was necessary to ban the operation of coal-fired power plants and investment in oil and gas projects as soon as possible, now the position has become more balanced.

In my opinion, the green agenda remains, but it will be smoother. We need to realize that there is no getting away from this story. The share of renewable energy sources will grow, as coal began to replace oil in its time, and gas began to replace it. As for hydrocarbons and coal, now their share in the global energy balance is about 82%. And in any case, it will remain dominant for at least the next decades.

To sum up all of the above, do you think it is ever realistic to cut Russia off from the world's oil, gas and coal supplies, as was partially done with Venezuela and Iran? Will we have enough resilience to ensure that doesn't happen?

— Russia is the largest energy player (this is 20% of world gas exports, more than 20% of oil) and is the third largest coal supplier in the world. In addition, we are still engaged in petrochemicals, we still want to become major players in the global hydrogen market and have not abandoned plans to export it. We are developing traditional and new energy, we have unique competencies in the field of nuclear energy, technologies and experience that no one in the world has.

Obviously, energy consumption will only grow in the future, so I cannot imagine how the world economy will do without our energy resources. There is no one to replace us, it is impossible. Moreover, I do not see a world without our participation, our competencies. In this regard, we are optimistic and set ourselves only ambitious tasks.

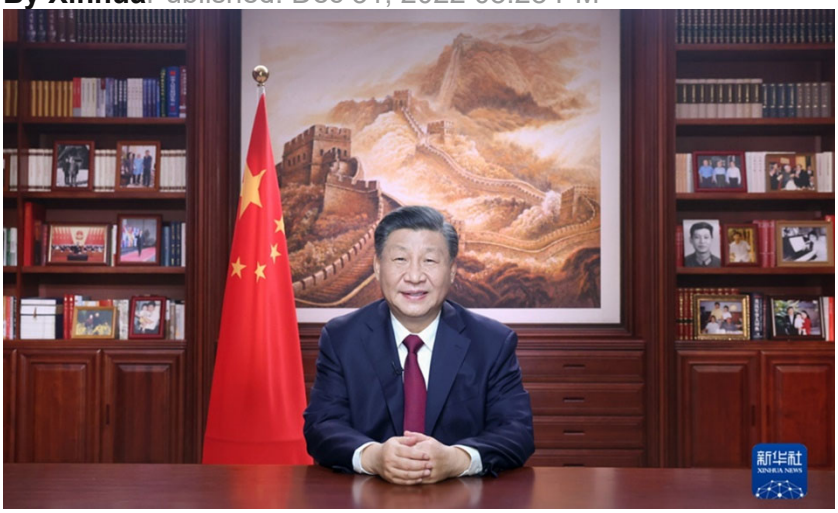
Беседовал ***Алексей Большов***

Tags:

https://www.globaltimes.cn/page/202212/1283000.shtml

Full Text: 2023 New Year Address by President Xi Jinping

By Xinhua Published: Dec 31, 2022 08:28 PM



Chinese President Xi Jinping delivers a New Year address Saturday evening in Beijing to ring in 2023. (Xinhua/Ju Peng)

On New Year's eve, President Xi Jinping delivered his 2023 New Year Address through China Media Group and the Internet. The following is the full text of the address:

Greetings to you all. The year 2023 is approaching. From Beijing, I extend my best New Year wishes to all of you.

In 2022, we successfully convened the 20th National Congress of the Communist Party of China (CPC). An ambitious blueprint has been drawn for building a modern socialist country in all respects and advancing the great rejuvenation of the Chinese nation on all fronts through a Chinese path to modernization, sounding a clarion call of the times for us forging ahead on a new journey.

The Chinese economy has remained the second largest in the world and enjoyed sound development. GDP for the whole year is expected to exceed 120 trillion yuan. Despite a global food crisis, we have secured a bumper harvest for the 19th year in a row, putting us in a stronger position to ensure the food supply of the Chinese people. We have consolidated our gains in poverty elimination and advanced rural revitalization across the board. We have introduced tax and fee cuts and other measures to ease the burden on businesses, and made active efforts to solve the most pressing difficulties of high concern to the people.

Since COVID-19 struck, we have put the people first and put life first all along. Following a science-based and targeted approach, we have adapted our COVID response in light of the evolving situation to protect the life and health of the people to the greatest extent possible. Officials and the general public, particularly medical professionals and community workers, have bravely stuck to their posts through it all. With extraordinary efforts, we have prevailed over unprecedented difficulties and challenges, and it has not been an easy journey for anyone. We have now entered a new phase of COVID response where tough challenges remain. Everyone is holding on with great fortitude, and the light of hope is right in front of us. Let's make an extra effort to pull through, as perseverance and solidarity mean victory.

Comrade Jiang Zemin passed away in 2022. We pay high tribute to his towering achievements and noble demeanor, and cherish the great legacy he left behind. We will honor his last wishes and advance the cause of socialism with Chinese characteristics in the new era.

Wave upon wave, the mighty river of history surges forward. With the persistent efforts of one generation after another, we have taken China to where it is today.

Today's China is a country where dreams become reality. The Beijing Olympic and Paralympic Winter Games concluded with a resounding success. Chinese winter sports athletes gave their all and achieved extraordinary results. Shenzhou-13, Shenzhou-14 and Shenzhou-15 soared into the heavens. China's space station was fully completed and our "home in space" is roving in the deep-blue sky. The people's armed forces marked the 95th birthday and all service members are marching confidently on the great journey of building a strong military. China's third aircraft carrier Fujian was launched. C919, China's first large passenger aircraft, was delivered. And the Baihetan hydropower station went into full operation... None of these achievements would have been possible without the sweat and toil of the numerous Chinese people. Sparks of talent are coming together, and they are the strength of China!

Today's China is a country brimming with vigor and vitality. Various pilot free trade zones and the Hainan Free Trade Port are booming, innovations are gushing out in the coastal areas, development is picking up pace in the central and western regions, the momentum for revitalization is building in the northeast, and there is greater development and affluence in the border regions. The Chinese economy enjoys strong resilience, tremendous potential and great vitality. The fundamentals sustaining its long-term growth have remained strong. As long as we stay confident and strive for progress while maintaining stability, we will realize the goals we have set. On my visit to Hong Kong earlier this year, I was deeply glad to see that Hong Kong has restored order and is set to thrive again. With determined implementation of One Country, Two Systems, Hong Kong and Macao will surely enjoy long-term prosperity and stability.

Today's China is a country that keeps to its national character. In the course of 2022, we encountered various natural disasters including earthquakes, floods, droughts and wildfires, and experienced some workplace accidents. Amid those disconcerting and heartbreaking scenes, there have emerged numerous touching stories of people sticking together in face of adversity or even sacrificing their lives to help others in distress. Those heroic deeds will be forever etched in our memories. At every turn of the year, we always think of the great character of resilience that the Chinese nation has carried forward through millennia. It gives us still greater confidence as we continue our way forward.

Today's China is a country closely linked with the world. Over the past year, I have hosted quite a few friends, both old and new, in Beijing; I have also traveled abroad to communicate China's propositions to the world. Changes unseen in a century are unfolding at a faster pace, and the world is not yet a tranquil place. We cherish peace and development and value friends and partners as we have always done. We stand firm on the right side of history and on the side of human civilization and progress. We work hard to contribute China's wisdom and solutions to the cause of peace and development for all humanity.

After the 20th CPC National Congress, my colleagues and I visited Yan'an. We were there to relive the inspiring episode in which the Party's central leadership overcame extraordinary difficulties in the 1930s and 1940s, and to draw on the spiritual strength of the older generation of CPC members. I often say, "Just as polishing makes jade finer, adversity makes one stronger." Over the past 100 years, the CPC has braved wind and rain, and forged ahead against all odds. That is a most difficult yet great journey. Today, we must press on courageously to make tomorrow's China a better place.

Going forward, China will be a country that performs miracles through hard work. Here I want to quote Su Shi, a renowned Chinese poet, "Charge at the toughest and aim at the farthest." It means to take on the biggest challenges and go after the most ambitious goals. Long as the journey is, we will reach our destination if we stay the course; difficult as the task is, we will get the job done if we keep working at it. As long as we have the resolve to move mountains and the perseverance to plod on, as long as we keep our feet on the ground and forge ahead with our journey by making steady progress, we will turn our grand goals into reality.

Going forward, China will be a country that draws its strength from unity. Ours is a big country. It is only natural for different people to have different concerns or hold different views on the same issue. What matters is that we build consensus through communication and consultation. When the 1.4 billion Chinese work with one heart and one mind, and stand in unity with a strong will, no task will be impossible and no difficulty insurmountable. The people on both sides of the Taiwan Strait are members of one and the same family. I sincerely hope that our compatriots on both sides of the Strait will work together with a unity of purpose to

jointly foster lasting prosperity of the Chinese nation.

Going forward, China will be a country that has great expectations of its younger generation. A nation will prosper only when its young people thrive. For China to develop further, our young people must step forward and take on their responsibilities. Youth is full of vigor and is a source of hope. Youngsters should keep their country in mind, cultivate keen enterprise, and live youth to the fullest with great drive, to prove worthy of the times and the splendor of youth.

To the many people who are still busy working at this very moment, I salute you all! We are about to ring in the New Year. Let us welcome the first ray of sunshine of 2023 with the best wishes for a brighter future.

May our country enjoy prosperity and our people live in harmony. May the world enjoy peace and people of all countries live in happiness. I wish you all a happy New Year and may all your wishes come true.

Thank you.

人民网 en.people.cn PEOPLE'S DAILY ONLINE
http://en.people.cn/n3/2022/1230/c90000-10190253.html

Steps taken to ensure COVID preparedness

By WANG XIAOYU (China Daily) 10:45, December 30, 2022

China's recent shifts in COVID-19 control strategy are well-paced, with sufficient preparatory work in place to handle the resulting surge in medical demand, authorities said on Thursday.

With the epidemic progressing rapidly, they added that the country has counted and will always count and publish the COVID-19 death toll in a transparent and fact-based manner.

Wu Zunyou, chief epidemiologist at the Chinese Center for Disease Control and Prevention, said at a news briefing that outbreaks in cities like Beijing and Tianjin as well as Chengdu, Sichuan province, have peaked.

Increased movement during the Spring Festival travel rush and circulation of other respiratory diseases will make the situation more challenging, he said. "Localities are closely monitoring and analyzing outbreaks and strive to reduce disruption to normal lives and production."

China has adjusted its COVID-19 strategy and gradually eased curbs since November, leading to concerns over the challenges posed to the resilience of a healthcare system serving a dense and massive population.

Jiao Yahui, deputy director of the National Health Commission's medical administration bureau, said that the country's overall medical system has not reached full capacity and is not under widespread strain, although some cities have faced a shortage of medical supplies during infection peaks.

"We had foreseen a spike in medical demand (after the policy shift) and have been stepping up preparedness," she said.

For instance, community and rural health institutions have all been required to set up fever clinics, and the number of facilities accepting fever patients at secondary and tertiary hospitals has increased to about 57,000.

"Makeshift hospitals and nucleic acid testing booths can also be repurposed to function as temporary fever clinics, in order to meet the needs of patients," she said.

Authorities have also beefed up production and distribution of medications, and residents can purchase medicines either online or at bricks-and-mortar pharmacies.

Jiao said the number of intensive care beds has reached 181,000 nationwide, and more emergency medical equipment, ranging from respirators to high-flow oxygen devices, has been added.

To alleviate pressure in hard-hit regions, Jiao said a cross-regional assistance mechanism devoted to mobilizing critical care resources has been set up.

As China is set to lift quarantine and testing demands for incoming travelers on Jan 8, Jiao said that being well prepared means that the opening up of borders won't overwhelm its medical system.

The increasingly robust healthcare network is among the factors contributing to changing the country's virus control approach, experts said.

Liang Wannian, head of the commission's COVID-response expert panel, said that China has been closely monitoring the virulence and pathogenicity of the virus, people's immunity level, the capacity of the nation's medical systems and implementation of public health measures.

Since 2020, it has published nine versions of COVID-19 control protocols, and it has launched two new guidelines since November. Starting on Jan 8, the disease will be downgraded from the top Class A to the less serious Class B.

"These shifts have reflected our balanced consideration of different factors... and a continuous effort to enforce more precise and scientific approaches and to concentrate resources to the most significant tasks," he said.

"I think history will prove that our recent adjustments are appropriate, science-based, legitimate and fit the epidemic situation in China," he said.

Liang added that the focus of China's containment work has pivoted to preventing severe cases and deaths, and the country has put great emphasis on researching fatality rates and other perimeters of the virus' threat to people's health.

Regarding counting criteria for COVID-19 death tolls, Jiao, the commission official, said that since 2020, China has always adhered to the method of counting patients who tested positive for the virus and eventually died of respiratory pneumonia caused by the infection.

She said the method is one of the two most common deployed globally.

"While striving to reduce serious cases and deaths, we have provided channels (for hospitals) to report confirmed COVID-19 deaths," she said. "Any COVID-19 death in China will be reported in an open and transparent manner."

PEOPLE'S DAILY ONLINE
en.people.cn
http://en.people.cn/n3/2022/1231/c90000-10190671.html

China's consumption market resuming after COVID response shift

(Xinhua) 16:35, December 31, 2022

BEIJING, Dec. 30 (Xinhua) -- With China's latest optimization of COVID-19 response, restaurants, shopping malls and cinemas nationwide have reopened and reported burgeoning foot traffic, a sign that experts believe bodes the revival of the country's consumption market in 2023.

In Beijing, hordes of people crowded outside restaurants in commercial districts, waiting for seats during peak hours. Popular diners have posted over 80 percent of customer traffic compared with regular times, with some even seeing a full house.

The same thing goes for cinemas. Cinema staff confirmed that attendance at some movie theaters in Beijing has returned to 75 percent of the regular level. The cinemas are expected to witness more moviegoers with New Year's Day and the Spring Festival holiday approaching.

The consumption recovery momentum is further boosted by the ice-snow industry boom in the first snow season after the Beijing 2022 Olympic Winter Games concluded. Data from online travel service provider Trip.com Group shows that reservations for hotels related to skiing venues in Beijing surged 99 percent week on week from Dec. 19 to 23.

Due to the lingering COVID-19 pandemic, China's consumption market has taken a hit. In the first 11 months of this year, the country's retail sales of consumer goods edged down 0.1 percent year on year. The catering industry and other contact-based sectors have taken the heaviest losses.

COVID RESPONSE SHIFT

To better coordinate anti-virus efforts and economic development, China has optimized its COVID-19 response policies dynamically. In its latest move, China announced to downgrade the management of COVID-19 from Jan. 8, 2023, treating it as a Class B infection rather than a more serious Class A infection.

The adjustments of China's COVID-19 response will effectively stimulate the recovery of consumption, with catering consumption driven by local demands possibly taking the lead in resuming. Hospitality, tourism, and aviation consumption driven by non-local demand would follow, said Wu Yifan, deputy head of a research institute under Hua Chuang Securities.

The continued optimization of COVID-19 policies would significantly propel consumption growth next year, said Wu Chaoming, chief economist with Chasing International Economic Institute.

Wu anticipated that the per capita consumption expenditure of Chinese residents would increase from 8 percent to 12 percent in 2023, and the total retail sales of consumer goods would expand by 7 percent to 11 percent. He said COVID-19 policies would restore offline consumption and bolster the residents' willingness to travel and spend.

PRO-CONSUMPTION POLICIES

Experts believe that promoting consumption will be high on China's policy agenda for next year.

The country released a guideline on facilitating consumption on all fronts and accelerating the upgrading of consumption quality earlier this month. The annual Central Economic Work Conference held in mid-December also noted that China would prioritize the recovery and expansion of consumption next year.

Chief economist at CITIC Securities Ming Ming expected that China would probably step up the issuance of consumption vouchers in this regard, given its broad reach to residents.

Ming said localities nationwide issued 23 billion yuan (about 3.3 billion U.S. dollars) of consumption coupons this year, with a projected leverage effect of five times.

Considering the combining strengths from other pro-consumption policy incentives, experts are upbeat about China's consumption outlook in the future.

"In the short run, China's consumption market will pick up, with consumption related to travel and services registering a bigger rebound. In the mid-to-long term, consumption will become a major driving force for economic growth," said Huang Wentao, chief economist with China Securities.

(Web editor: Zhang Wenjie, Liu Ning)

Global Times

https://www.globaltimes.cn/page/202212/1282995.shtml

Air, rail and road traffic volumes pick up in Beijing as New Year's Day holiday kicks off

By Global Times Published: Dec 31, 2022 05:27 PM

Photo: VCG

Beijing's transportation sector is showing signs of recovery as of the first day of the New Year holidays, with air and road traffic volume rising significantly, government departments announced on Saturday.

Saturday is the first day of the New Year's Day holiday, the first major holiday since China optimized COVID-19 epidemic control measures in December.

The flight volume at Beijing's two airports, Beijing Capital International Airport and Beijing Daxing International Airport, witnessed their first peak on Friday, with number of daily flights exceeding 1,000 for the first time since optimization of epidemic control, the CAAC North China Region Administration said.

Across the New Year's Day holidays, a total of 2,960 flights are expected to be operated out of the two airports while the peak for returning passengers is expected to take place on Monday. People are mainly heading to warmer holiday destinations such as Chengdu in Southwest China's Sichuan Province and Guangzhou in South China's Guangdong Province.

The Beijing municipal transport regulator also expects more pressure on the capital's roads near parks, commercial areas, rural resorts, tourist sites as well as ski and snow sports avenues. It also expects a slight increase in expressway traffic and announced that it will still charge tolls.

Rail, air and road traffic are set to continue their recovery, according to the Beijing Municipal Commission of Transport.

Nationwide, rail passenger numbers have been on the rise over the New Year's Day holidays, with 6,081 trains carrying 4.41 million passengers operating on Friday and 5.5 million passenger trips expected for Saturday, according to the China State Railway Group Co.

In Northwest China's Shaanxi Province, the local railway bureau is expecting 480,000 passenger trips, nearly six times that of the corresponding period last year, the public's willingness to travel is buoyed by the optimization of epidemic control measures, according to media reports on Saturday.

Global Times

https://finance.sina.com.cn/jjxw/2023-01-01/doc-imxysefi2417973.shtml

Guangzhou: The epidemic has peaked and is expected to enter the end of the epidemic before the Spring Festival

2023 year 01 month 01 day 12:58 TAKE A LOOK AT THE NEWS KNEWS

On January 1, the reporter learned from the Guangzhou Municipal Health Commission that after a high plateau period of more than a week, since December 23, the number of fever outpatient visits in the city began to fall from a high level, and the number of single-day visits dropped from 560,000 at the peak to 19,000.

According to research, the epidemic of new coronavirus infection in Guangzhou has peaked, and it is expected to enter the end of the epidemic before the Spring Festival in 2023.

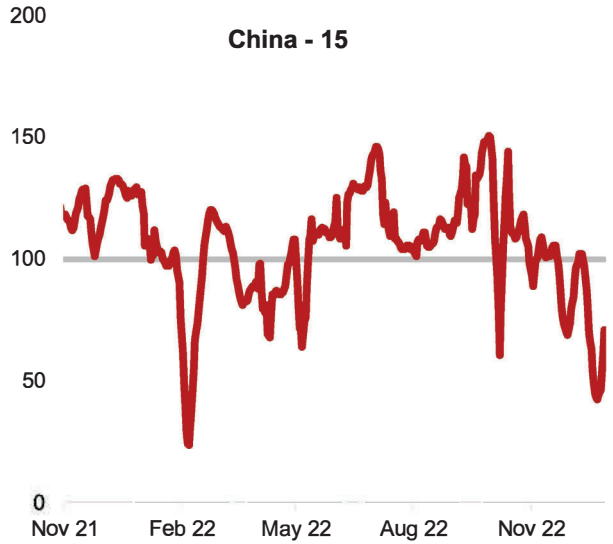
TomTom | Baidu

China (Baidu) congestion index

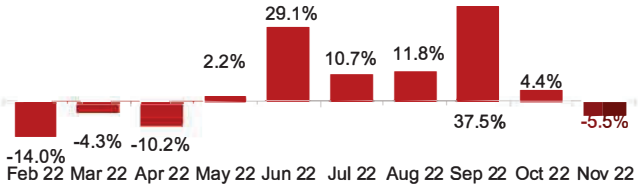
Traffic levels in China pick up despite surge in Covid cases

China congestion index (calculated from Baidu data)

Daily peak congestion levels, indexed to January 2021 (seven-day moving average)



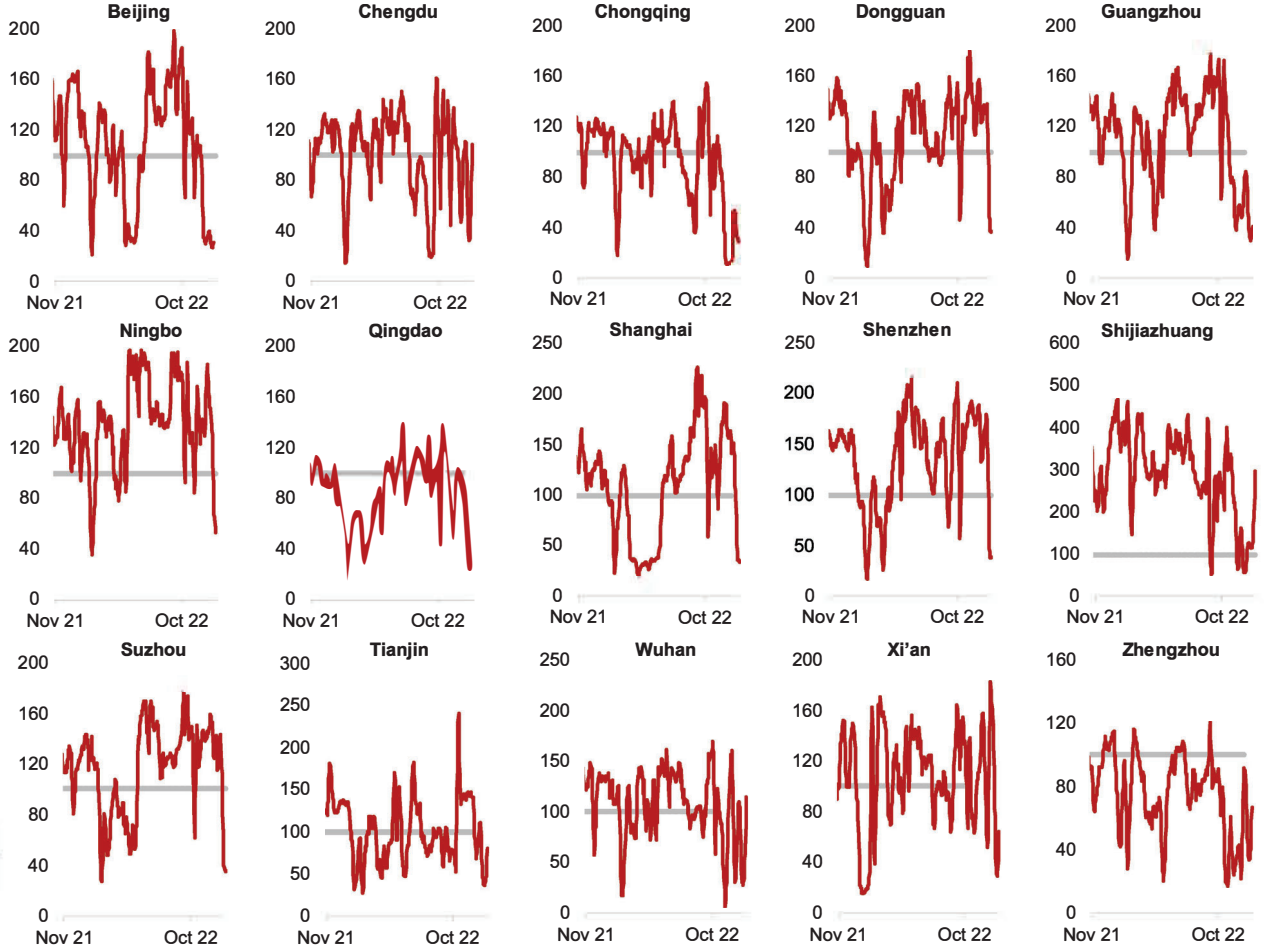
Monthly % change from January 2021 level



	Latest	Week Δ	Four-week Δ
China - 15	70.90	26.08 (+58.18%)	-0.47 (-0.65%)

Road traffic in China in the week ending December 28 was up 26.08 percentage points to 70.90 of January 2021 levels.

Daily peak congestion levels, indexed to January 2021 (seven-day moving average)



Source: BloombergNEF, calculated from Baidu's data. Note: ***Data updated to December 28, 2022****. City-level charts display the 15 cities with the highest number of vehicle registrations (excluding two- and three-wheelers). The China-15 congestion level is calculated by taking the weighted average of the congestion levels in the 15 cities and their vehicle registration numbers. Δ = change.*

TomTom | Baidu

China's city-level data (Baidu)

- China's city-level congestion data is shown below. Data is available in the accompanying Excel sheet.
- Congestion levels are compared against January 2021 levels. An index value below 100 indicates a decrease from January 2021 levels.
- Sparklines reflect the weekly congestion indices dating back to August 2021.

		January 2021 = 100	Weekly point Δ	Weekly percent Δ
Baoding	保定	138.10	54.27	64.74%
Beijing	北京	101.01	69.16	217.18%
Cangzhou	沧州	89.93	9.51	11.82%
Changchun	长春	102.67	54.52	113.21%
Changsha	长沙	40.37	0.20	0.50%
Changzhou	常州	67.52	-6.66	-8.98%
Chengdu	成都	108.34	74.20	217.38%
Chongqing	重庆	76.10	45.46	148.40%
Dali	大理	79.13	-15.36	-16.26%
Dalian	大连	59.53	-3.49	-5.54%
Datong	大同	64.67	-6.73	-9.42%
Dezhou	德州	52.51	-3.58	-6.38%
Dongguan	东莞	36.87	-49.17	-57.15%
Foshan	佛山	31.57	-4.67	-12.88%
Fuzhou	福州	38.77	-62.02	-61.53%
Ganzhou	赣州	93.14	-19.21	-17.10%
Guangzhou	广州	41.91	8.27	24.59%
Guilin	桂林	49.83	-14.99	-23.13%
Guiyang	贵阳	28.74	-11.58	-28.72%
Haikou	海口	29.84	-35.65	-54.43%
Handan	邯郸	101.97	36.04	54.68%
Hangzhou	杭州	39.90	-34.12	-46.09%
Harbin	哈尔滨	102.96	43.28	72.53%
Hefei	合肥	37.10	-3.17	-7.87%
Hengshui	衡水	58.39	19.75	51.13%
Hengyang	衡阳	62.10	20.07	47.77%
Huai'an	淮安	56.49	-22.24	-28.25%
Huhhot	呼和浩特	66.98	-11.38	-14.52%
Huizhou	惠州	45.42	-50.81	-52.80%
Huzhou	湖州	51.05	-21.32	-29.46%
Jiangmen	江门	53.42	-34.53	-39.26%
Jiaxing	嘉兴	35.87	-19.30	-34.98%
Jinan	济南	39.32	11.81	42.92%
Jinhua	金华	80.76	-26.09	-24.41%
Jining	济宁	47.89	-7.17	-13.03%

		January 2021 = 100	Weekly point Δ	Weekly percent Δ
Kunming	昆明	55.24	23.30	72.93%
Langfang	廊坊	100.54	41.28	69.67%
Lanzhou	兰州	105.24	32.53	44.75%
Lasa	拉萨	95.92	-10.05	-9.48%
Leshan	乐山	56.28	13.64	31.99%
Lianyungang	连云港	49.48	-20.15	-28.94%
Linyi	临沂	28.87	-14.55	-33.50%
Liuzhou	柳州	48.98	-1.65	-3.25%
Luoyang	洛阳	94.65	34.89	58.39%
Maoming	茂名	53.99	-34.56	-39.03%
Mianyang	绵阳	66.61	17.95	36.87%
Nanchang	南昌	50.35	3.53	7.54%
Nanchong	南充	88.62	23.17	35.40%
Nanjing	南京	36.72	-20.00	-35.25%
Nanning	南宁	53.62	-3.17	-5.58%
Nantong	南通	40.24	-42.22	-51.20%
Nanyang	南阳	87.75	25.04	39.94%
Ningbo	宁波	53.57	-38.52	-41.83%
Qingdao	青岛	26.27	-5.29	-16.75%
Qingyuan	清远	45.02	-21.64	-32.47%
Qinhuangdao	秦皇岛	85.86	23.02	36.64%
Quanzhou	泉州	44.42	-33.93	-43.30%
Sanya	三亚	72.28	-12.01	-14.25%
Shanghai	上海	35.16	-18.12	-34.01%
Shantou	汕头	39.63	-38.70	-49.41%
Shaoguan	韶关	52.35	-23.66	-31.13%
Shaoxing	绍兴	29.49	-9.89	-25.11%
Shenyang	沈阳	90.89	43.00	89.81%
Shenzhen	深圳	39.36	-52.63	-57.22%
Shijiazhuang	石家庄	297.59	167.47	128.71%
Suzhou	苏州	35.99	-29.40	-44.96%
Tai'an	泰安	66.69	8.39	14.38%
Taiyuan	太原	66.78	-1.17	-1.72%
Taizhou	台州	52.71	-32.03	-37.79%
Tangshan	唐山	105.56	33.05	45.58%

		January 2021 = 100	Weekly point Δ	Weekly percent Δ
Tianjin	天津	80.58	42.92	113.99%
Urumqi	乌鲁木齐	83.24	-56.83	-40.57%
Weifang	潍坊	56.53	-2.21	-3.77%
Wenzhou	温州	47.23	-28.92	-37.98%
Wuhan	武汉	113.91	80.05	236.43%
Wuxi	无锡	40.55	-40.24	-49.81%
Xiamen	厦门	36.17	-46.09	-56.03%
Xi'an	西安	63.80	28.23	79.37%
Xianyang	咸阳	40.92	-18.68	-31.34%
Xingtai	邢台	181.73	32.77	22.00%
Xining	西宁	61.04	-19.35	-24.07%
Xinxiang	新乡	98.91	25.31	34.39%
Xuzhou	徐州	36.30	10.77	42.20%
Yancheng	盐城	50.00	-22.47	-31.00%
Yangquan	阳泉	72.48	13.92	23.77%
Yangzhou	扬州	33.12	-17.30	-34.30%
Yantai	烟台	59.47	-18.64	-23.87%
Yibin	宜宾	56.76	1.29	2.32%
Yinchuan	银川	62.32	-17.22	-21.65%
Yunfu	云浮	44.84	-34.66	-43.60%
Zhangjiakou	张家口	104.86	27.73	35.94%
Zhangzhou	漳州	67.88	-41.68	-38.04%
Zhanjiang	湛江	41.24	-21.65	-34.42%
Zhaoqing	肇庆	59.68	-35.63	-37.39%
Zhengzhou	郑州	66.41	32.54	96.05%
Zhenjiang	镇江	25.68	-17.92	-41.10%
Zhongshan	中山	85.94	11.08	14.80%
Zhuhai	珠海	33.88	-35.84	-51.41%
Zibo	淄博	34.28	-3.38	-8.99%

Source: BloombergNEF, calculated from Baidu data. Note: ***Data updated to December 28, 2022.*** *Δ = change.*

https://www.moroccoworldnews.com/2022/12/353316/morocco-to-ban-travelers-coming-from-china-starting-january-3

Morocco to Ban Travelers Coming from China Starting January 3

All travelers arriving from China, regardless of their nationalities, will be banned from entering Morocco starting January 3.

- **Jihane Rahhou**
-
- **Dec. 31, 2022 7:07 p.m.**

Rabat - Morocco bans travelers coming from China to enter its soil following the "alarming" spike in COVID-19 cases in the Asian country, according to a statement from the foreign affairs ministry.

The decision will enter into force starting January 3, 2023.

In a statement issued on Saturday, Morocco's foreign affairs ministry said "all travelers arriving from China, regardless of their nationalities, will be banned from entering Morocco starting January 3." The decision comes on the backdrop of the rising number of COVID-19 infections in the Asian country.

The ministry explained that it had been closely monitoring the development of the COVID situation in China, adding that the decision to stop the inflow of travelers intends to "avoid a new COVID-19 outbreak in Morocco and the repercussions such an event would entail."

"The decision will enter into force starting January 3, 2023, until further notice," the statement adds.

The ministry said its decision does not "in any way" affect the "strong friendship" ties the two countries share.

China is facing a surge in COVID-19 cases. The Chinese government is responding with a nationwide lockdown that is becoming increasingly less popular in light of the economic downturn.

With the decision to ban Chinese travelers, Morocco is joining a list of **other countries** that include the US, Italy, Japan, South Korea, and Malaysia.

The countries listed have all **introduced** either a complete ban or imposed stricter travel policies on incoming visitors from China.

TomTom | Baidu

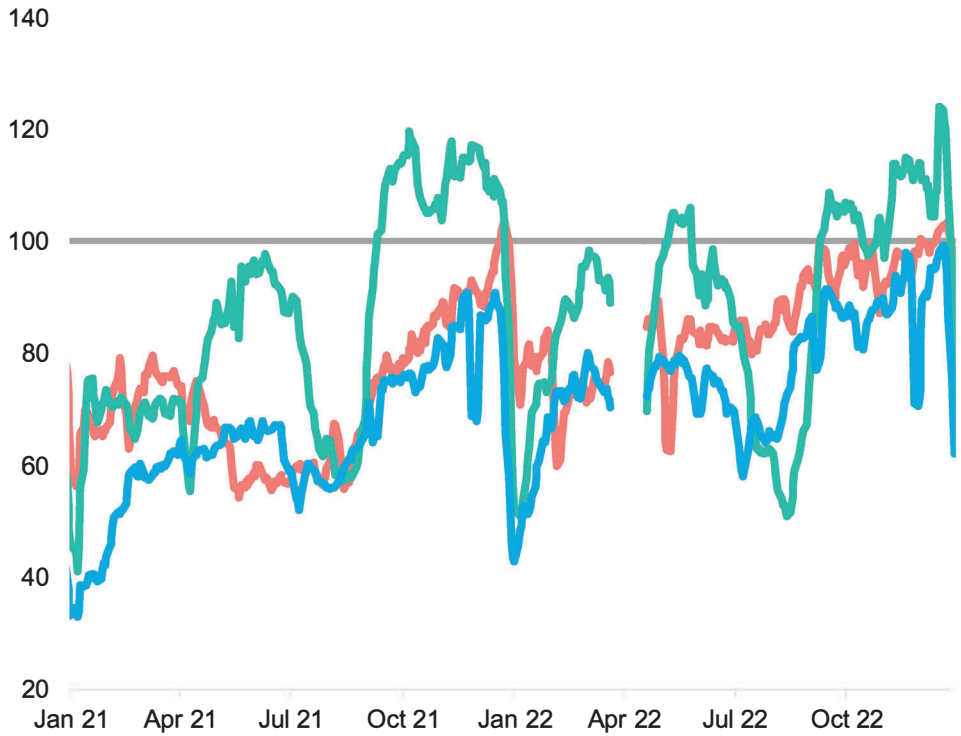
Google mobility data stopped updating in October 2022 and will therefore not be included in future updates.

Comparing the two mobility indicators

Congestion levels drop in Europe and North America; China rises

TomTom congestion index

Indexed to the peak congestion of the average week in 2019 (five-day weekday moving average)



	Latest	Week Δ	Four-week Δ
Europe	**76.2**	-43.9 (-36.6%)	-37.6 (-33.0%)
Asia Pacific	**89.8**	-12.9 (-12.6%)	-10.3 (-10.3%)
North America	**62.1**	-35.4 (-36.3%)	-11.4 (-15.5%)

Source: TomTom road congestion data, BloombergNEF. Note: ***Asia Pacific excludes China. Data updated to December 28, 2022.*** *Δ = change.*

China-15 (Baidu) congestion index

Daily peak congestion levels, indexed to January 2021 (seven-day moving average)

	Latest	Week Δ	Four-week Δ
China-15	**70.90**	26.08 (+58.18%)	-0.47 (-0.65%)

Source: BloombergNEF, calculated from Baidu data. Note: Data updated to ***December 28, 2022****. Δ = change.*

BloombergNEF

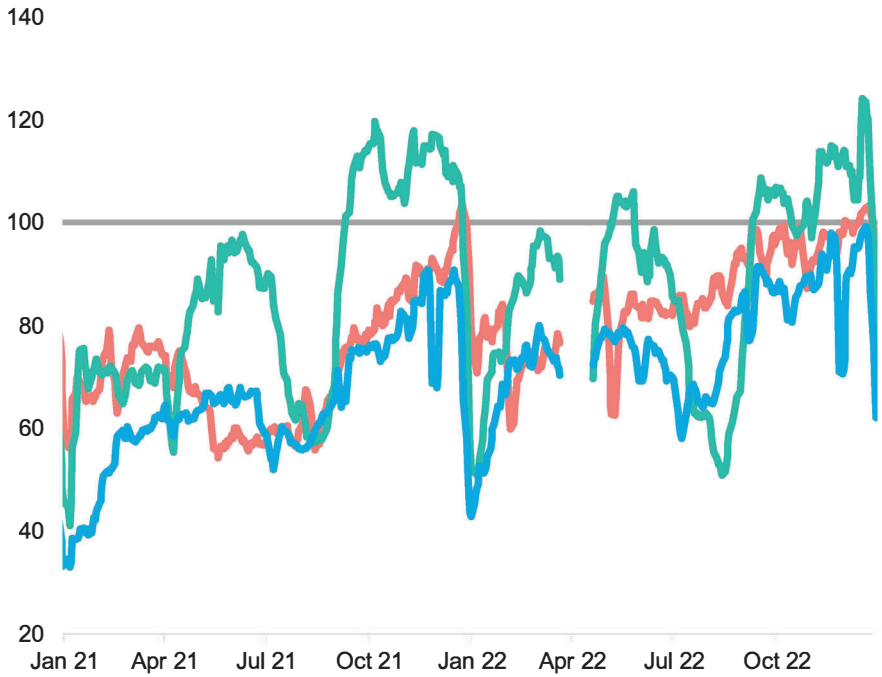
Apple Mobility reports were discontinued on April 14, 2022. We have resumed updating TomTom congestion data, which was previously updated to March 16.

TomTom congestion index

Traffic plunges across much of the globe during holiday season

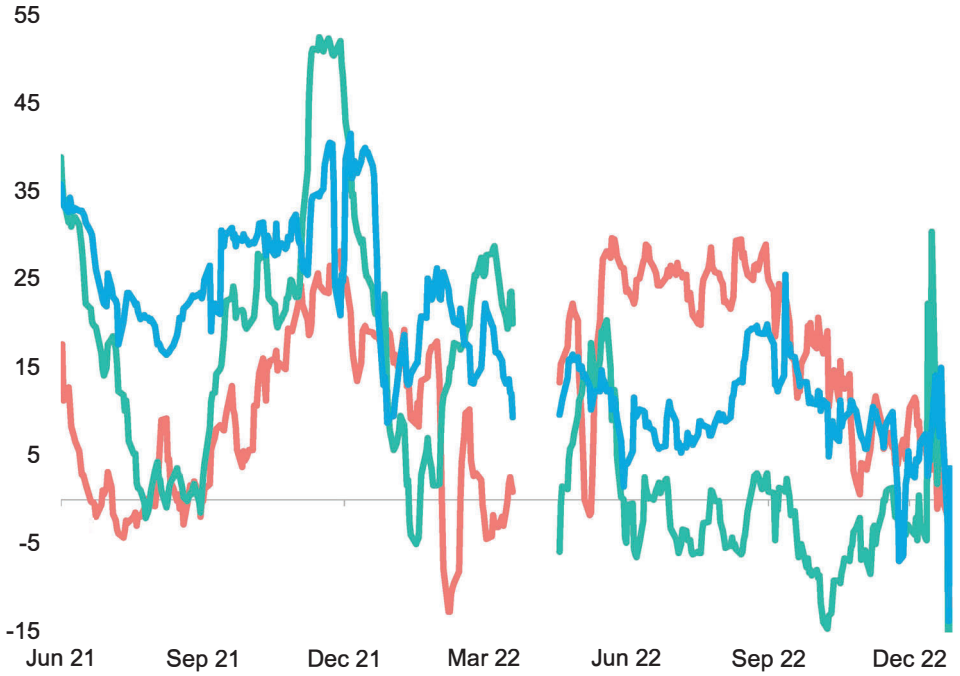
Regional road-congestion index

Indexed to the peak congestion of the average week in 2019 (five-day weekday moving average)



Index point change versus the previous year

Percentage point change vs the year before (seven-day moving average)



	Latest	Week Δ	Four-week Δ
Europe	**76.2**	-43.9 (-36.6%)	-37.6 (-33.0%)
Asia Pacific	**89.8**	-12.9 (-12.6%)	-10.3 (-10.3%)
North America	**62.1**	-35.4 (-36.3%)	-11.4 (-15.5%)

Index point Δ vs year before	Index point Δ vs year before (last week)
-9.12	1.92
-8.29	-6.93
2.32	0.76

Source: TomTom Traffic Index, BloombergNEF. Note: ***Asia Pacific excludes China. Data updated to December 28, 2022,*** *with weekly addition from December 21, 2022. Index point change versus the previous year is obtained by averaging the latest weekly values. Δ = change.*

Dallas Fed Energy Survey - Dallasfed.org

Oil and Gas Expansion Still Solid; Cost Increases Moderate, Supply-Chain Delays Persist

What's New This Quarter

Special questions focus on capital spending in 2023; the oil price firms use for budgeting; expectations for how much input prices will change in 2023; the primary factor weighing on crude oil and natural gas production growth; plans for reducing greenhouse emissions; and expectations for oil and gas support services firms' revenue mix from alternative energy by year-end 2025.

Activity in the oil and gas sector continued growing in fourth quarter 2022, according to oil and gas executives responding to the Dallas Fed Energy Survey. The business activity index—the survey's broadest measure of conditions facing Eleventh District energy firms—remained positive but fell to 30.3 in the fourth quarter from 46.0 in the third. This suggests the pace of expansion decelerated but remained solid as the business activity index stayed above the series average.

Oil and natural gas production increased at a slightly slower pace compared with the prior quarter, according to executives at exploration and production (E&P) firms. The oil production index declined to 25.8 in the fourth quarter from 31.7 in the third. Likewise, the natural gas production index moved down, to 29.4 from 35.6.

Firms reported rising costs for an eighth consecutive quarter, with the indexes remaining elevated. However, the rate of those increases has slowed. Among oilfield services firms, the input cost index was 61.8 versus 83.9 last quarter. Among E&P firms, the finding and development costs index was 52.5, a modest decline from 64.7 last quarter. Additionally, the lease operating expenses index dropped 22 points to 48.4.

It is taking longer for firms to receive materials and equipment, although the pace at which those delays is growing has moderated. The supplier delivery time index remained positive but declined to 14.4 in the fourth quarter from 28.4 in the third. Among oilfield services firms, the measure of lag time in

delivery of services edged down to 20.0 from 21.1, remaining well above average.

Oilfield services firms reported broad-based improvement, with key indexes remaining solidly positive. The equipment utilization index fell to 32.8 in the fourth quarter from 55.2 in the prior quarter. The operating margin index edged up to 25.9 from 25.4. The index of prices received for services remained positive but declined to 43.6 from 64.9.

All labor market indexes in the fourth quarter remained elevated, pointing to strong growth in employment, hours and wages. The aggregate employment index posted an eighth consecutive positive reading but moved down to 25.7 from last quarter's series high of 30.0. The aggregate employee hours index moved down to 27.7 from 33.3 in the prior quarter. The aggregate wages and benefits index remained positive but declined to 40.2 from 47.3.

Optimism waned in the fourth quarter as the company outlook index posted a 10th consecutive positive reading but fell 20 points, below the series average, to 13.1. The overall outlook uncertainty index increased to 40.1 from 35.7, suggesting growing uncertainty, especially among E&P firms. The uncertainty index was 30.9 for services firms versus 45.4 for E&P firms, with 53 percent of E&P firms reporting an increase in uncertainty.

On average, respondents expect a West Texas Intermediate (WTI) oil price of $84 per barrel by year-end 2023; responses ranged from $65 to $160 per barrel. Survey participants expect Henry Hub natural gas prices of $5.64 per million British thermal units (MMBtu) at year-end. For reference, WTI spot prices averaged $73.67 per barrel during the survey collection period, and Henry Hub spot prices averaged $5.93 per MMBtu.

Next release: March 22, 2023

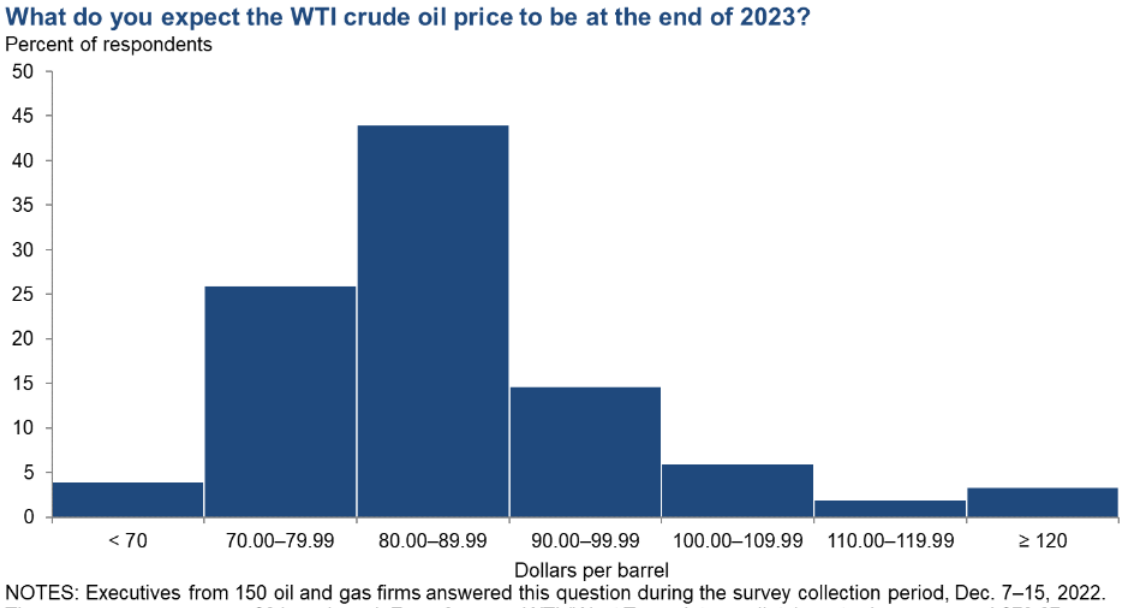
Data were collected Dec. 7–15, and 152 energy firms responded. Of the respondents, 97 were exploration and production firms and 55 were oilfield services firms.

The Dallas Fed conducts the Dallas Fed Energy Survey quarterly to obtain a timely assessment of energy activity among oil and gas firms located or

headquartered in the Eleventh District. Firms are asked whether business activity, employment, capital expenditures and other indicators increased, decreased or remained unchanged compared with the prior quarter and with the same quarter a year ago. Survey responses are used to calculate an index for each indicator. Each index is calculated by subtracting the percentage of respondents reporting a decrease from the percentage reporting an increase. When the share of firms reporting an increase exceeds the share reporting a decrease, the index will be greater than zero, suggesting the indicator has increased over the previous quarter. If the share of firms reporting a decrease exceeds the share reporting an increase, the index will be below zero, suggesting the indicator has decreased over the previous quarter.

Price Forecasts

West Texas Intermediate Crude



NOTES: Executives from 150 oil and gas firms answered this question during the survey collection period, Dec. 7–15, 2022. The average response was $84 per barrel. For reference, WTI (West Texas Intermediate) spot prices averaged $73.67 per barrel during the period.
SOURCES: Federal Reserve Bank of Dallas; Energy Information Administration (reference price).

Downloadable chart | Chart data

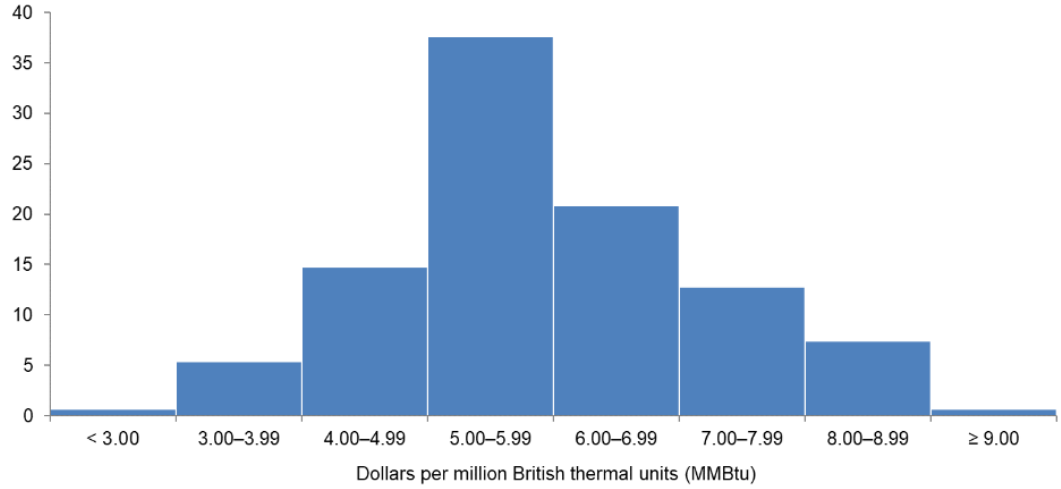
West Texas Intermediate crude oil price (dollars per barrel), year-end 2023				
Indicator	Survey Average	Low Forecast	High Forecast	Price During Survey
Current quarter	$83.63	$65.00	$160.00	$73.67
Prior quarter	N/A	N/A	N/A	N/A

NOTE: Price during survey is an average of daily spot prices during the survey collection period.
SOURCES: Energy Information Administration; Federal Reserve Bank of Dallas.

Henry Hub Natural Gas

What do you expect the Henry Hub natural gas price to be at the end of 2023?

Percent of respondents



NOTES: Executives from 149 oil and gas firms answered this question during the survey collection period, Dec. 7–15, 2022. The average response was $5.64 per MMBtu. For reference, Henry Hub spot prices averaged $5.93 per MMBtu during the period.
SOURCES: Federal Reserve Bank of Dallas; Energy Information Administration (reference price).

Downloadable chart | Chart data

Downloadable chart | Chart data

Henry Hub natural gas price (dollars per MMBtu), year-end 2023				
Indicator	Survey Average	Low Forecast	High Forecast	Price During Survey
Current quarter	$5.64	$2.50	$9.00	$5.93
Prior quarter	N/A	N/A	N/A	N/A

NOTE: Price during survey is an average of daily spot prices during the survey collection period.
SOURCES: Federal Reserve Bank of Dallas; Energy Information Administration.

Special Questions

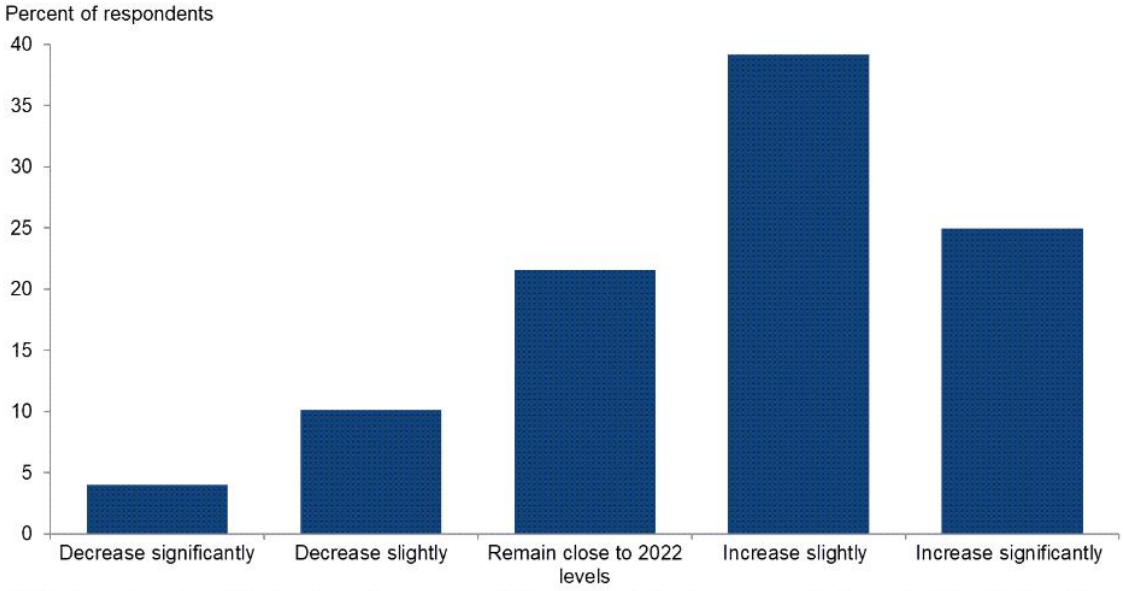
Data were collected Dec. 7–15, 2022; 150 oil and gas firms responded to the special questions survey.

All Firms

What are your expectations for your firm's capital spending in 2023 versus 2022?

Most executives expect their firm's capital spending to rise in 2023 compared with 2022. Thirty-nine percent of executives said they expect capital spending to increase slightly, while an additional 25 percent anticipate a significant increase. Twenty-two percent expect spending in 2023 to remain close to 2022 levels. Only 14 percent anticipate reductions in spending in 2023.

A breakdown of the data for exploration and production (E&P) compared with oil and gas support services can be found in the table below.



NOTE: Executives from 148 oil and gas firms answered this question during the survey collection period, Dec. 7–15, 2022.
SOURCE: Federal Reserve Bank of Dallas.

Downloadable chart | Chart data

SOURCE: Federal Reserve Bank of Dallas.

Downloadable chart | Chart data

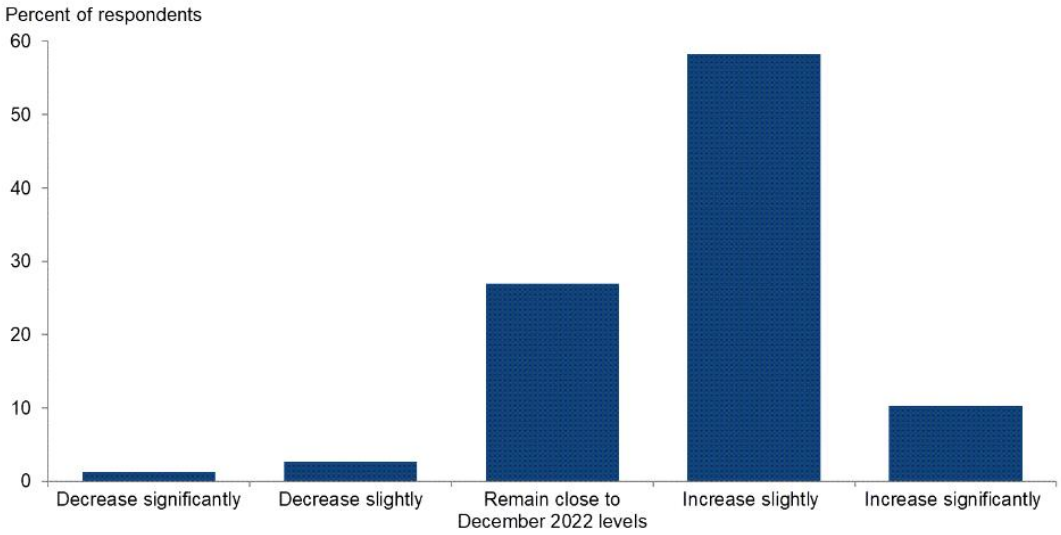
Response	Percent of respondents (among each group)		
	All firms	E&P	Services
Increase significantly	25	27	21
Increase slightly	39	37	43
Remain close to 2022 levels	22	24	17
Decrease slightly	10	9	11
Decrease significantly	4	2	8

NOTES: Executives from 95 exploration and production firms and 53 oil and gas support services firms answered this question during the survey collection period, Dec. 7–15, 2022. The "All" column reports the percentage out of the total 148 responses. The "E&P" column reports the percentage for exploration and production firms and "Services" reports the percentage for oil and gas support services firms. Percentages may not sum to 100 due to rounding.
SOURCE: Federal Reserve Bank of Dallas.

By how much do you expect prices for your firm's key inputs to change from December 2022 to December 2023?

Most executives expect prices for their firm's key inputs to rise in 2023 compared with 2022. Fifty-eight percent of executives said they expect prices for key inputs to increase slightly, while an additional 10 percent anticipate a significant increase. Twenty-seven percent expect prices in 2023 to remain close to 2022 levels. Only 4 percent expect reductions in input prices in 2023.

A breakdown of the data for exploration and production (E&P) compared with oil and gas support services can be found in the table below.



NOTE: Executives from 144 oil and gas firms answered this question during the survey collection period, Dec. 7–15, 2022.
SOURCE: Federal Reserve Bank of Dallas.

Downloadable chart | Chart data

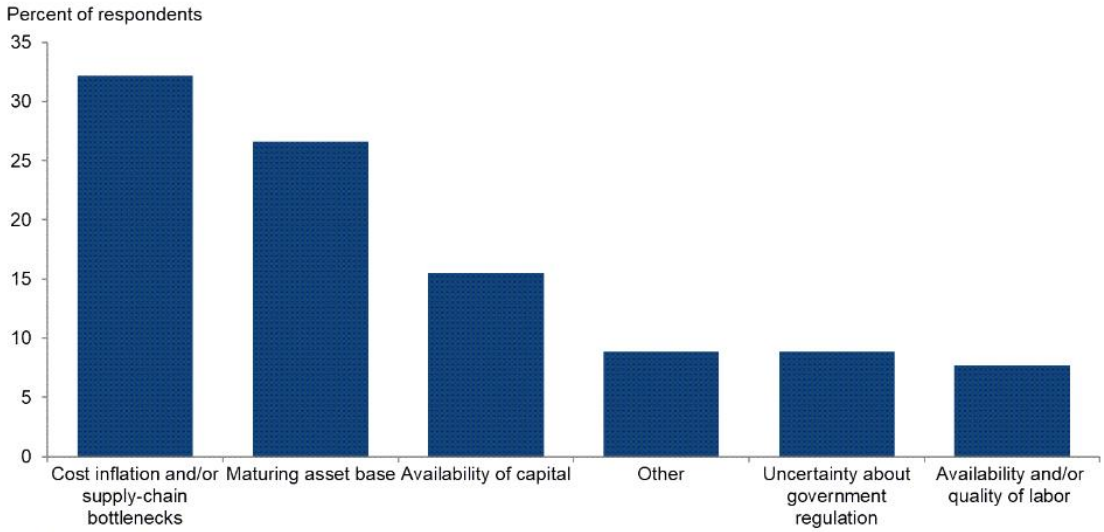
Response	Percent of respondents (among each group)		
	All firms	E&P	Services
Increase significantly	10	14	4
Increase slightly	58	55	64
Remain close to December 2022 levels	27	24	32
Decrease slightly	3	4	0
Decrease significantly	1	2	0

NOTES: Executives from 91 exploration and production firms and 53 oil and gas support services firms answered this question during the survey collection period, Dec. 7–15, 2022. The "All" column reports the percentage out of the total 144 responses. The "E&P" column reports the percentage for exploration and production firms and "Services" reports the percentage for oil and gas support services firms. Percentages may not sum to 100 due to rounding.
SOURCE: Federal Reserve Bank of Dallas.

Exploration and Production (E&P) Firms

Which of the following is the biggest drag on crude oil and natural gas production growth for your firm?

Thirty-two percent of executives at exploration and production (E&P) firms selected "cost inflation and/or supply-chain bottlenecks." A total of 27 percent chose "maturing asset base" and 16 percent indicated "availability of capital." Other options each received 9 percent or less.



NOTE: Executives from 90 exploration and production firms answered this question during the survey collection period, Dec. 7–15, 2022.
SOURCE: Federal Reserve Bank of Dallas.

Which of the following plans does your firm have? (Check all that apply.)

E&P firms were first asked to define their size based on fourth quarter 2022 crude oil production. They were then asked if they had any of the following plans: to reduce carbon emissions; reduce methane emissions; reduce flaring; recycle/reuse water; invest in renewables. Respondents could choose more than one answer for this special question.

Firms were classified as "small" if they produced fewer than 10,000 barrels per day (b/d) or "large" if they produced 10,000 b/d or more. In the U.S., small E&P firms are greater in number, but large E&P firms make up the majority of production (more than 80 percent).

For the larger firms, 65 percent of executives said their firm plans to reduce CO_2 emissions, 65 percent indicated plans to reduce methane emissions, 61 percent to reduce flaring, 48 percent to recycle/reuse water and 17 percent to invest in renewables.

For the smaller firms, 43 percent of executives said their firm plans to reduce flaring, 38 percent anticipate reducing methane emissions, 25 percent plan to recycle/reuse water, 22 percent to reduce CO_2 emissions and 2 percent to invest in renewables. Among the smaller firms, 35 percent said they have no mitigation plans, compared with 17 percent of large E&P firms. Relative to

when this same question was asked in fourth quarter 2021, the share of small firms planning to reduce flaring and/or methane emissions has increased. However, the share with mitigation plans among large firms remains largely unchanged since last year.

Response	Percent of respondents (among each group)		
	Small firms	Large firms	All firms
Plan to reduce CO_2 emissions	22	65	34
Plan to reduce methane emissions	38	65	46
Plan to reduce flaring	43	61	48
Plan to recycle/reuse water	25	48	31
Plan to invest in renewables	2	17	6
None of the above	35	17	30

NOTES: Executives from 83 exploration and production firms answered this question during the survey collection period, Dec. 7–15, 2022. Small firms produced less than 10,000 barrels per day (b/d) in fourth quarter 2022, while large firms produced 10,000 b/d or more. Responses came from 60 small firms and 23 large firms.
SOURCE: Federal Reserve Bank of Dallas.

By how much do you expect your firm to reduce greenhouse gas emissions from 2020 to 2025 in terms of barrel-of-oil equivalent produced?

Of the large firms, 35 percent said their firm plans to reduce greenhouse gas emissions by more than 10 percent from 2020 to 2025. Among executives of small firms, 10 percent said their company plans to reduce greenhouse gas emissions by more than 10 percent from 2020 to 2025.

Relative to when this same question was asked in fourth quarter 2021, the share of firms targeting specific reductions in greenhouse gas emissions has remained largely unchanged. However, relative to when the same question was asked in fourth quarter 2020, more firms are targeting reductions in greenhouse gas emissions of more than 10 percent.

Response	Percent of respondents (among each group)		
	Small firms	Large firms	All firms
0%	18	4	15
More than 0% but not more than 2.5%	15	9	14
More than 2.5% but not more than 5%	8	9	9
More than 5% but not more than 7.5%	3	4	3
More than 7.5% but not more than 10%	1	0	1
More than 10%	10	35	16
Don't know	44	39	43

NOTES: Executives from 94 exploration and production firms answered this question during the survey collection period, Dec. 7–15, 2022. Small firms produced less than 10,000 b/d in fourth quarter 2022, while large firms produced 10,000 b/d or more. Responses came from 71 small firms and 23 large firms.
SOURCE: Federal Reserve Bank of Dallas.

Oil and Gas Support Services

Taking into account the recent passage of the Inflation Reduction Act, what percentage of your firm's revenue do you expect to generate from providing services related to alternative energy (such as offshore/onshore wind, solar, geothermal, hydrogen, and carbon capture use and storage) as of the end of 2025?

Forty-three percent of executives at oil and gas support services firms expect their firm to generate some revenue from alternative energy services as of the end of 2025. Of the firms expecting to generate some revenue from alternative energy services, 35 percent expect more than zero but not more than 20 percent from such services, 6 percent of firms anticipate more than 20 percent but not more than 40 percent, and 2 percent of executives indicated more than 40 percent but not more than 60 percent. The remaining 58 percent of executives said they expect their firm to generate no revenue from alternative energy services as of the end of 2025. The results from this question are comparable to when the question was last asked in fourth quarter 2020, before passage of the Inflation Reduction Act in August 2022. The act is estimated to provide $369 billion in energy-related investments over the next 10 years, mostly related to alternative energy. (Percentages don't sum to 100 due to rounding.)

Response	Percent of respondents
0%	58
More than 0% but not more than 20%	35
More than 20% but not more than 40%	6
More than 40% but not more than 60%	2
More than 60% but not more than 80%	0
More than 80%	0

NOTES: Executives from 52 oil and gas support services firms answered this question during the survey collection period, Dec. 7–15, 2022. Percentages don't sum to 100 due to rounding.
SOURCE: Federal Reserve Bank of Dallas.

Special Questions Comments

Exploration and Production (E&P) Firms

- Energy policies have become so random as to be laughable, except for the fact that the increased vitriol and regulations and fees are quite successful at killing large segments of the energy industry. I have not been so discouraged since I was living in Bakersfield in the mid-'80s when the price dropped to $6 per barrel, and I was a young employee.
- Even the Vatican is telling folks not to invest in oil! The Vatican released its first-ever "faith-consistent investing" guidelines, which directed believers to avoid investing in companies that produce things such as fossil fuels. This is yet another anecdotal example of a larger trend that investors do not want exposure to fossil fuels, and the consequence is that commodity prices are likely to remain "sticky to the high side," given a lack of capital to increase supply in the face of demand that does not appear to be shrinking anytime soon.
- The continued long time to deliver electrical power is a material concern. This delivery of power service drives up costs and leads our company to moderate investment activity. Over the next two to three years, the availability and timely delivery of power is likely in our view to materially reduce oil and gas production growth.
- Emissions reduction is a top engineering challenge for us. Our entire organization has embraced it.

- The 45Q tax credit expansion is causing industrial facilities to do the front-end engineering design work to consider carbon capture and storage along the Gulf Coast. Those who have positioned themselves to provide related services (capture, transportation, sequestration) could benefit.
- I believe that 2023 will be similar to what we've seen in 2022, barring any world-shaking events.
- Most of the wells I have interest in are strippers and make essentially no natural gas, so my emissions are negligible to zero.
- Independents are not inclined to take the initiative on greenhouse-gas emissions reduction without knowing what the payoff will be.

Oil and Gas Support Services Firms

- We are looking at the integration of renewable energy sources into our operations. I doubt it will be more than 5 percent of revenue by 2025, but greater than zero.
- Our increase related to alternative energy as of the end of 2025 would have occurred regardless of the Inflation Reduction Act. One does not automatically relate to the other.

https://www.wsj.com/articles/not-so-fast-on-electric-cars-toyota-biden-subsidies-technical-difficulties-cold-weather-traffic-cyber-11671830734?st=tzhhgsazyt4yvy8

- OPINION

Not So Fast on Electric Cars

Toyota's CEO delivers a timely warning, and many states echo it.

By Allysia Finley

Dec. 25, 2022 6:20 pm ET

A Tesla Model 3 at a charging station in Colonie, N.Y., Nov. 22.PHOTO: PAUL HENNESSY/ZUMA PRESS

Toyota CEO Akio Toyoda recently caused the climate lobby to blow a fuse by speaking a truth about battery electric vehicles that his fellow auto executives dare not. "Just like the fully autonomous cars that we were all supposed to be driving by now," Mr. Toyoda said in Thailand, "I think BEVs are just going to take longer to become mainstream than the media would like us to believe." He added that a "silent majority" in the auto industry share his view, "but they think it's the trend, so they can't speak out loudly."

The Biden administration seems to believe that millions of Americans will rush out to buy electric vehicles if only the government throws enough subsidies at them. Last year's infrastructure bill included $7.5 billion in grants for states to expand their charging networks. But it's a problem when even the states are warning the administration that electric vehicles aren't ready to go mainstream.

Maine notes in a plan submitted to the Federal Highway Administration this summer that "cold temperatures will remain a top challenge" for adoption, since "cold weather reduces EV range and increases charging times." When temperatures drop to 5 degrees Fahrenheit, the cars achieve only 54% of their quoted range. A vehicle that's supposed to be able to go 250 miles between charges will make it only 135 miles on average. At 32 degrees—a typical winter day in much of the country—a Tesla Model 3 that in ideal conditions can go 282 miles between charges will make it only 173 miles.

Imagine if the 100 million Americans who took to the road over the holidays were driving electric cars. How many would have been stranded as temperatures plunged? There wouldn't be enough tow trucks—or emergency medics—for people freezing in their cars.

The Transportation Department is requiring states to build charging stations every 50 miles along interstate highways and within a mile of off-ramps to reduce the likelihood of these scenarios. But most state electrical grids aren't built to handle this many charging stations and will thus require expensive

upgrades. Illinois, for one, warns of "challenges related to sufficient electric grid capacity, particularly in rural areas of the state."

Charging stations in rural areas with little traffic are also unlikely to be profitable and could become "stranded assets," as many states warn. Wyoming says out-of-state traffic from non-Tesla electric vehicles would have to increase 100-fold to cover charger costs under the administration's rules. Tesla has already scoped out premier charging locations for its proprietary network. Good luck to competitors.

New Mexico warns that "poor station maintenance can lead to stations being perpetually broken and unusable, particularly in rural or hard to access locations. If an EV charging station is built in an area without electrical capacity and infrastructure to support its use, it will be unusable until the appropriate upgrades are installed."

Arizona says "private businesses may build and operate a station if a grant pays for the first five years of operations and maintenance" but might abandon the project if it later proves unprofitable. Many other states echo this concern, noting that federal funds could result in stranded assets.

The administration aims to build 500,000 stations, but states will likely have to spend their own money to keep them running. Like other federal inducements, these grants may entice states to assume what could become huge financial liabilities.

Federal funds also come with many rules, including "buy America" procurement requirements, which demand that chargers consist of mostly U.S.-made components. New Jersey says these could "delay implementation by several years" since only a few manufacturers can currently meet them. New York also says it will be challenging to comply with the web of federal rules, including the National Environmental Policy Act, the Americans with Disabilities Act, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and a 1960 federal law that bars charging stations in rest areas.

Oh, and labor rules. The administration requires that electrical workers who install and maintain the stations be certified by the union-backed Electric Vehicle Infrastructure Training Program. New Mexico says much of the state lacks contractors that meet this mandate, which will reduce competition and increase costs.

Technical problems abound too. Virginia says fast-charging hardware "has a short track record" and is "prone to malfunctions." Equipment "previously installed privately in Virginia has had a high failure rate shown in user comments and reports on social media," and "even compatibility with credit card readers has been unexpectedly complicated."

A study this spring led by University of California researchers found that more than a quarter of public direct-current fast-charging stations in the San Francisco Bay Area were unusable. Drivers will be playing roulette every time they head to a station. If all this weren't disconcerting enough, Arizona warns cyber vulnerabilities could compromise customer financial transactions, charging infrastructure, electric vehicles and the grid.

Politicians and auto makers racing to eliminate the internal-combustion engine are bound to crash into technological, logistic and financial realities, as Mr. Toyoda warned. The casualties will be taxpayers, but the administration doesn't seem to care.

The U.S. Will Need Thousands of Wind Farms. Will Small Towns Go Along?
2022-12-30 13:03:40.378 GMT

By David Gelles

(New York Times) -- In the fight against climate change, national goals are facing local resistance. One county scheduled 19 nights of meetings to debate one wind farm.

MONTICELLO, Ill. — Depressed property values. Flickering shadows. Falling ice. One by one, a real estate appraiser rattled off what he said were the deleterious effects of wind farms as a crowd in an agricultural community in central Illinois hung on his every word.

It was the tenth night of hearings by the Piatt County zoning board, as a tiny town debated the merits of a proposed industrial wind farm that would see dozens of enormous turbines rise from the nearby soybean and corn fields. There were nine more hearings scheduled.

“It’s painful,” said Kayla Gallagher, a cattle farmer who lives nearby and is opposed to the project. “Nobody wants to be here.”

In the fight against global warming, the federal government is pumping a record $370 billion into clean energy, President Biden wants the nation’s electricity to be 100 percent carbon-free by 2035, and many states and utilities plan to ramp up wind and solar power.

But while policymakers may set lofty goals, the future of the American power grid is in fact being determined in town halls, county courthouses and community buildings across the country.

The only way Mr. Biden’s ambitious goals will be met is if rural communities, which have large tracts of land necessary for commercial wind and solar farms, can be persuaded to embrace renewable energy projects. Lots of them.

According to an analysis by the National Renewable Energy Laboratory, the United States would need to construct more than 6,000 projects like the Monticello one in order to run the economy on solar, wind, nuclear or other forms of nonpolluting energy.

In Piatt County, population 16,000, the project at issue is Goose Creek Wind, which has been proposed by Apex Clean Energy, a developer of wind and solar farms based in Virginia. Apex spent years negotiating leases with 151 local landowners and trying to win over the community, donating to the 4-H Club and a mental health center.

Now, it was making its case to the zoning board, which will send a recommendation to the county board that will make a final call on whether Apex can proceed. If completed, the turbines, each of them 610 feet tall, would march across 34,000 acres of farmland.

The $500 million project is expected to generate 300 megawatts, enough to power about 100,000 homes. The renewable, carbon-free electricity would help

power a grid that currently is fed by a mix of nuclear, natural gas, coal, and some existing wind turbines.

But with more and more renewable energy projects under construction around the country, resistance is growing, especially in rural communities in the Great Plains and Midwest.

“To meet any kind of clean energy goals which brings consumer benefits and energy independence, you’re going to see an increase in projects,” said JC Sandberg, interim chief executive of the American Clean Power Association. “And with those increases in projects, we are facing more of these challenges.”

On Election Day last month, Apex saw its development efforts for a wind farm in Ohio die when voters in Crawford County overwhelmingly voted to uphold a ban on such projects. On the same day, voters in Michigan rejected ordinances that would have allowed construction of another Apex wind project. Earlier this month, local officials in Monroe County, Mich., extended a temporary moratorium on industrial solar projects, delaying plans by Apex to develop a solar farm in the area.

“Projects have been getting more contentious,” said Sarah Banas Mills, a lecturer at the school for environment and sustainability at the University of Michigan who has studied renewable development in the Midwest. “The low hanging fruit places have been taken.”

In Piatt County, the zoning board decided to conduct a mock trial of sorts. During the first nine hearings, Apex and its witnesses made the case that property values would not decline and that other concerns about wind farms — that they are ugly, that they kill birds, or that the low frequency noise they emit can adversely affect human health — were not major issues.

They won some converts. Meg Miner, 61, a resident who was on the fence about the project, decided to support Apex after considering how the project would help fight climate change.

But others were worried about all the issues that the real estate appraiser mentioned, and more. “I moved here for nature, for trees, for crops,” said Sandy Coyle, who lives nearby and opposed the project. “I’m not interested in living near an industrial wind farm.”

Much of that skepticism appeared to be earnest concern from community members who weren’t sold on the project’s overall merits. On the fringe of the debate, however, was a digital misinformation campaign designed to distort the facts about wind energy.

The website of a group called Save Piatt County!, which opposes the project, is rife with fallacies about renewable energy and inaccuracies about climate science. On Facebook pages, residents opposed to the project shared negative stories about wind power, following a playbook that has been honed in recent years by anti-wind activists, some of whom have ties to the fossil fuel industry. The organizers of the website and Facebook groups did not reply to requests for comment.

As part of the Goose Creek Wind project, Apex has secured a commitment from Rivian, the upstart electric truck company, to buy power from the project, a development that drew skeptical replies in one Facebook group. “Scam artists in it together to fleece middle class taxpayers,” wrote one local resident in response to a news story about the deal. “Wake up.”

That milieu of misinformation appeared to sway some residents.

“These things are intrusive,” said Kelly Vetter, a retiree who opposed the project and disputed the overwhelming scientific consensus that carbon dioxide emitted from the burning of fossil fuels is dangerously warming the planet. “The company’s never going to have the community’s interest at heart.”

Apex declined to comment.

‘Economics takes precedence’

Smack in the middle of the area where Apex wants to erect its turbines sits the Bragg family’s farm, a roughly 1,500-acre plot that on a cold December afternoon was little more than an expanse of mud following the fall harvest and a week of rain.

Braxton Bragg, 40, who grew up on the land and returned following stints in the Peace Corps that took him to Mali and Mongolia, supports the project. He is concerned about climate change, and said he already sees its effects. The rain is harder when it comes, the cold sets in later than it used to, and overall, the growing season is less predictable than it was when his grandfather worked the same land.

But his support for wind comes down to economics. Mr. Bragg has agreed to let Apex site one of its turbines on his property, and expects to earn about $50,000 a year if it is built.

“It’s not going to save the farm or allow me to retire,” he said. “But just having that steady income every year, you know what you’re going to get.”

A few miles down the road is Gallagher Farms, another multigenerational operation. Like Mr. Bragg, Ms. Gallagher, 34, believes in climate change. She has invested in cover crops, which absorb carbon and lock it away in the soil, and other regenerative agriculture practices.

But Ms. Gallagher is opposed to the project. The aerial seeding of cover crops will cost more with wind turbines nearby and make it harder for her to sustainably farm. The use of heavy equipment to install turbines can disrupt drainage patterns in agricultural land, and Ms. Gallagher believes her farm will suffer.

Adding to her frustration is the fact that about 70 percent of the landowners who have agreed to let Apex put turbines on their property live outside Piatt County.

“They don’t live here, so they’re not impacted,” Ms. Gallagher said as she

tended to her cattle before heading to yet another hearing.

More than anything else, Ms. Gallagher fears that the wind turbines, which she would see from her front porch, would disrupt the bucolic land she loves. In the predawn hours, she walks outside and listens to the crickets, which she worries will be drowned out by the low thrum of the turbines. At night, she watches the sun set over a grain silo in the west, and doesn't want the view marred by spinning turbines and flashing lights.

"We all want what's good for society," she said. "But it seems to be coming at the expense of our day to day lives."

Mr. Bragg was sympathetic. "The only real argument that is valid, in my opinion, is that it's going to change people's sunsets and the beauty of living out in the country," he said.

Still, he said, this was working farmland, and it was his right to put it to productive use.

"If you put your nice country house in the middle of my of my business, I'm sorry, there's not much I can do about that," Mr. Bragg said. "I think they probably would do the same thing if they were in my boat. The economics takes precedence over everything."

Landowners like the Braggs would receive about $210 million in lease payments over the project's 30-year life, Apex said. There would be other economic benefits including $90 million in local taxes. And if the project is built, the company said it would it would create eight permanent jobs, and employ nearly 600 people during construction, including men like Brendan Burton.

Mr. Burton, an ironworker who has helped build several nearby wind farms, said the jobs would help fill the void created by factories that have closed or moved overseas.

"We're not building things here like we used to," he said. "We need the jobs."

Mr. Burton added that he wanted to see his community contribute clean energy to the grid as well.

"We can't keep burning coal or natural gas," he said.

'We're going to make people angry'

The debate in Piatt County has been remarkably civil. Similar hearings elsewhere have descended into shouting matches. In some cases, activists with ties to organizations that shield their donors have turned communities against proposed wind and solar projects.

That was the case in Monroe County, Mich., where local officials recently extended a moratorium that is blocking Apex from developing a solar project.

The opposition in Monroe County includes local residents, but also anti-wind activists with ties to groups backed by Koch Industries, which owns oil

refineries, petrochemical plants and thousands of miles of oil and gas pipelines. On Facebook, those skeptical of the Apex project shared negative stories about solar power, and opponents of the project went door to door distributing misinformation.

On another cold night in December, as the 11th hearing on the Goose Creek Wind project began at the Monticello community building, Phil Luetkehans, a lawyer hired by opponents of the project, called more witnesses, including an audiologist, who discussed what he said were the adverse health effects of wind turbines. A lawyer representing Apex cross-examined him, and the hearing stretched for more than four hours.

“Both sides are getting a full opportunity to portray their position and to put forth the facts, and the people who we elect will make those final decisions,” Mr. Luetkehans said. “Some communities end up saying, ‘No, we don’t want an industrial scale wind at this proximity to homes.’ Others say, ‘Yeah, we want the money.’”

Among those in the audience was Michael Beem, a newly elected member of the Piatt County board, which will ultimately decide whether Apex can build its wind farm. From the back of the room, Mr. Beem was bracing himself to make a choice that will undoubtedly leave this rural community divided.

“No matter what decision we make,” he said, “we’re going to make people angry.”

Click Here to see the story as it appeared on the New York Times website.

-0- Dec/30/2022 16:24 GMT

To view this story in Bloomberg click here:
https://blinks.bloomberg.com/news/stories/RNPGA4A30ZR4

https://www.ft.com/content/5680bb94-4fda-4bb5-887a-62ca1b4341fd

Home Depot's Bernie Marcus: 'I'm worried about capitalism'

The nonagenarian co-founder of the DIY chain laments the lack of risk taking in today's business world

Andrew Hill DECEMBER 28 2022

The list of potential obstacles to entrepreneurial success in the US today is long, according to Bernie Marcus, co-founder of Home Depot: human resources executives, government bureaucrats, regulators, socialists, Harvard graduates, MBAs, Harvard MBAs, lawyers, accountants, Joe Biden, the media and "the woke people".

The 93-year-old retailer and billionaire is adamant. If he and co-founder Arthur Blank tried to launch Home Depot today, "we would end up with 15, 16 stores. I don't know that we could go further." As it is, the company's unmistakable orange branding is found on 2,300 warehouse-sized do-it-yourself stores across North America, and the group has a market capitalisation of $300bn and annual revenue of more than $150bn.

"I'm worried about capitalism," Marcus says in a video interview from his home in Boca Raton, Florida. "Capitalism is the basis of Home Depot [and] millions of people have earned this success and had success. I'm talking manufacturers, vendors and distributors and people that work for us [who have been] able to enrich themselves by the journey of Home Depot. That's the success. That's why capitalism works."

Modern counterparts of Marcus and Blank are still out there, the veteran retailer believes. But there is no longer as much incentive to take the risks they took when they opened two stores in Atlanta, Georgia, in 1979, a year after they were abruptly but fortuitously sacked by the home improvement chain they headed. Thanks to "socialism", he says, "nobody works. Nobody gives a damn. 'Just give it to me. Send me money. I don't want to work — I'm too lazy, I'm too fat, I'm too stupid.'"

Marcus knows his views are unpopular in some quarters of the increasingly polarised US. In 2016, and again In 2019, he triggered social media calls for a boycott of Home Depot after publicly backing Donald Trump's presidential campaigns. (Trump wrote on Twitter in 2019: "Fight for Bernie Marcus and Home Depot!", even as the company distanced itself from its co-founder's remarks.)

"We used to have free speech here. We don't have it," Marcus says. "The woke people have taken over the world. You know, I imagine today they can't attack me. I'm 93. Who gives a crap about Bernie Marcus?"

Here, Catherine Lewis, a history professor and co-author with Marcus of his new book Kick Up Some Dust, unmutes herself and gently steps in. "I think a lot of people care about Bernie Marcus," she says, "because you're saving their life every day."

She is right. While one group of irate Americans threatens to cut up their Home Depot store cards in protest at his politics, another group is lining up to hug him and thank him for what he has given back.

We used to have free speech here. We don't have it . . . The woke people have taken over the world. You know, I imagine today they can't attack me. I'm 93. Who gives a crap about Bernie Marcus?

Marcus embodies the version of American capitalism modelled by the likes of Andrew Carnegie. The industrialist spent the last two decades of his life giving away the fortune he had accumulated in half a century of hard-headed dedication to his business. Similarly, Marcus and his wife, Billi, were among the first signatories to the Giving Pledge, set up by Warren Buffett, Bill Gates and Melinda French Gates, under which billionaires promise to donate at least half their fortunes to good causes before they die. Over 30 years, they have donated more than $2bn to more than 500 organisations through their Marcus Foundation.

Their chosen causes are eclectic. Marcus backed the construction of the Georgia Aquarium, at the time of its opening in 2005, the largest in the world ("A lot of people never get to see the ocean. I could bring it to their doorstep," he explains in his book). The foundation has funded research into autism, stem cells, cancer, stroke and military veterans' post-

traumatic stress disorder. It donated money for an integrated emergency response unit for the Centers for Disease Control and Prevention in Atlanta and went on to lobby successfully for the government to repair and upgrade the public health agency's facilities there. Some 30 per cent of Marcus Foundation funds go to Jewish causes, including the Israel Democracy Institute, a think-tank supporting democratic principles that he and George Shultz, former US secretary of state, helped found in 1991. "So I've gone from selling hammers to trying to solve some of these major health issues or education issues or other issues like Israel with the IDI," he says.

Marcus believes in hands-on giving, based on the Jewish concept of tzedakah: "The key is just not writing a cheque but writing a cheque, following the cheque, making sure that it's being used properly and using your entrepreneurial skills that you've had all your life."

In his robust moral hierarchy of billionaire behaviour, Marcus reserves his greatest anger for those who will not give at all, covered in his book in a section entitled "The Problem of Greed". But he also criticises an inexplicable caution among many of those "sitting on a pot of gold": "Too timid to jump in, these are people who took great risks in whatever they did, but they're afraid to take this risk [to get] into the charitable world and help other people. Why, I don't know."

In his 10th decade, Marcus is a cheerful bundle of some of the internal tensions and contradictions that successful businesspeople inevitably accumulate. In resisting attempts to "woke" him, as he puts it, he sticks to the Milton Friedman-inspired line that "the role of a business is to sell a product and make a profit", which lets it employ people and help customers. "The whole idea that a business is set up for social purposes doesn't make sense to me," he says. At the same time, however, he maintains Home Depot "was one of the first companies that was socially conscious". While he was in charge, the group started mobilising its staff, products and trucks to help communities survive and rebuild in the face of natural disasters and terrorism, a role it still fulfils through a non-profit arm.

He says he does not trust government and tries to avoid working with it (the CDC was a rare, and grudging, exception) because "it's bureaucratic [and] politically driven". Yet he has also directed funds to Trump and to Ron DeSantis, the Florida governor, whose success in the recent gubernatorial election came after this interview. "I give money to them because I hope they're going to do the right thing," he says. He will not be drawn on which Republican he would like to see replace Biden, "the worst president in the history of this country". Trump's policies were "spot on", he says, but "it's going to be very interesting in '24 because I think that DeSantis will challenge him. And may the better man win."

And then there is destiny — beshert in Yiddish, which Marcus learnt from his Ukrainian immigrant mother. Marcus attributes his encounters with critical people in his life such as Shultz, or Ken Langone, who helped finance the launch of Home Depot, to beshert. Destiny also played a part when, in 1949, Harvard asked him to pay a $10,000 bribe to dodge an anti-Semitic quota for Jewish medical students. He refused and that experience sent him down a different path into retail, via pharmacies, and fuelled his life-long suspicion of the university's graduates. But he is also clear that you cannot simply wait for beshert. Marcus asserts repeatedly that, in business and in philanthropy, "you have to begin with the belief that you can 'do it yourself'".

That can take its toll. Marcus launched Home Depot when he was already 49. Building a mid-life start-up was hard on his family and on his health. In his book, Marcus writes of Home Depot's early years that "burnout was real, and we were sympathetic, but we also knew that if everyone busted their butt for the customer, the whole company would be successful".

Comparing himself with workaholic contemporaries and friends such as Jack Welch, the late chief executive of General Electric, and Sam Walton, the founder of Walmart, he says "all of these people make sacrifices. They sacrifice time with their families. They sacrifice time with the community. They put their lives on the line into their businesses. But ultimately, the result is something that's special and gives them a terrific return." Despite a heart attack, five bypasses and a replacement aortic valve, Marcus writes he "would rather wear out than rust out".

It is harder for him to joke away what his children and grandchildren missed while he was busting his butt at Home Depot and later at the foundation. "Part of the reason that we wrote the book . . . was apologising to them for not being there for everything that they did," he says.

Marcus does not quite put it this way, but this is itself an act of tzedakah, as well as a belated explanation of what he did for capitalism and what capitalism did for him. His grandchildren are going to read it, he says, and “they’re going to say, grandpa wasn’t a bad guy. He basically did some good stuff.”

This article was amended after first publication to correct Home Depot’s annual revenue figure to $150bn

https://swimco.com/pages/our-story#:~:text=In%201968%20Corinne%20Forseth%E2%80%99s%20daughter%20could%20not%20find,across%20western%20Canada.%20In%201975%2C%20Swimco%20was%20born.

BEGINNINGS

In 1968 Corinne Forseth's daughter could not find a swimsuit to match her team mates on the Barracudas swim team. Her efforts to locate that swimsuit resulted in the beginning of a mail order swimwear business that helped families find matching swimwear for their children in swim programs across western Canada. In 1975, Swimco was born.

When Lori graduated from university, she joined the family business. Swimco developed a customer first service experience that treated customers as friends, provided great products, and the knowledge to fit customers' needs.

NEXT STEPS

The family business grew as that daughter, now Lori Bacon, along with her brother Steve Forseth and husband Dave Bacon, began opening swimwear stores across western Canada. Swimco became the premiere swimwear retail destination in Canada with the widest selection of quality swimwear and beachwear for women, men, and children.

A reputation for an incredible customer service experience was developed through a highly trained staff of individuals with a care and concern for finding the right fit for every customer. The right fit meant providing a wide variety of brands and styles, in colors and sizes that fit and flattered every body. Swimco became the swimwear expert for a generation of Canadians.

NEW BEGINNINGS

The pandemic hit Canadians in March 2020. As stores were ordered closed, Swimco like many retail businesses was forced to temporary layoff 250 people. As stores remained closed, Swimco continued to provide quality swimwear to customers across Canada through their online web store.

Stores slowly opened in the summer months, and the business environment had begun to change. In the fall of 2020, Swimco became insolvent and went into bankruptcy. Through restructuring efforts Swimco has emerged from bankruptcy as an **online only boutique**.

Lori and Dave now lead a small team who continue to provide an excellent customer service experience in an online environment. Our goal is and always has been to help you find a perfect fit so that you can have the confidence to strut on the pool deck, stride down the beach, or take on your next adventure. We want you to Feel Good Half Naked.

Dan Tsubouchi @Energy_Tidbits · 2h

#LNG Game Changer

Novak 12/25 interview. RUS doesn't yet have technology for large-scale LNG projects

Fits 👇12/12 tweet, Novatek Arctic LNG 2 to add 0.87 bcfd capacity, 1/3 of pre-BKR RUS exit capacity 2.6 bcfd

See 👇06/16 thread, key reason #LNG supply short thru 2026

#OOTT

Excerpt

https://tass.ru/interviews/16682646

December 25, 22:00

Interview

Alexander Novak: There is no one to replace Russia in the oil and gas market

Alexander Novak

© Anton Novoderezhkin/ TASS

TASS — Is it realistic for Russia to implement the plans and tasks of the LNG energy strategy in the new conditions, given that the country does not yet have its own technology for large-scale liquefaction of gas?

Novak - Now the increase in LNG production in Russia has become even more relevant, since it can be supplied to different parts of the world and not depend on any country. In the near future, we expect to increase production to 64 million tons per year, and by 2035 to reach the level of 100 million tons.

As for large-scale LNG, since 2014 we have been engaged in import substitution of LNG technologies, subsidizing the creation of equipment. Already now there is a Russian liquefaction technology "Arctic Cascade" at the Yamal LNG plant with a capacity of 1 million tons. In the future, it can be brought to 2-3 million tons. In parallel, equipment with a capacity of 5-6 million tons is being developed by the structures of Rosatom, Novatek and Gazprom.

Work is also underway to create Russian heat exchangers for large-capacity LNG. When they make them, then it will be possible to say that Russia has its own technology of large-scale LNG.

Dan Tsubouchi @Energy_Tidbits · Dec 12, 2022

#LNG Game Changer.

No Baker Hughes big turbines = Lower RUS LNG capacity.

...

5,124 1 2 14

Dan Tsubouchi @Energy_Tidbits · 4h

China speeding to herd immunity.

Covid peaked in most populous cities Beijing #2 w/ 21 mm, Tianjin #4 w/ 14 mm. Guangzhou #5 w/ 14 mm. Chengdu #7 w/ 9 mm.

Fits 👇12/15 tweet @vitolnews @michaelwmuller J shaped recovery in CN demand #Oil transportation fuels as soon as Q2

#OOTT

新浪财经 Economic news scrolls > text

https://finance.sina.com.cn/jjxw/2023-01-01/doc-imxyseti2417973.shtml

Economic news scrolls > text

Guangzhou: The epidemic has peaked and is expected to enter the end of the epidemic before the Spring Festival

2023 year 01 month 01 day 12:58 TAKE A LOOK AT THE NEWS KNEWS

Sina Finance APPReduce the fontEnlarge the fontcollectionWeiboWechatshare

On January 1, the reporter learned from the Guangzhou Municipal Health Commission that after a high plateau period of more than a week, since December 23, the number of fever outpatient visits in the city began to fall from a high level, and the number of single-day visits dropped from 560,000 at the peak to 19,000.

According to research, the epidemic of new coronavirus infection in Guangzhou has peaked, and it is expected to enter the end of the epidemic before the Spring Festival in 2023.

Massive information and accurate interpretation are all in the Sina Finance APP

> **Dan Tsubouchi** @Energy_Tidbits · Dec 15, 2022
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> Nike swoosh or J shaped recovery in China demand transportation fuels. See 👇 Vitol @michaelwmuller inbound international air travel to China as soon as Q2. Freedom of travel + population less scared of Virus = China move faster to herd immunity. @sean_evers ...

5,251 3 3 15

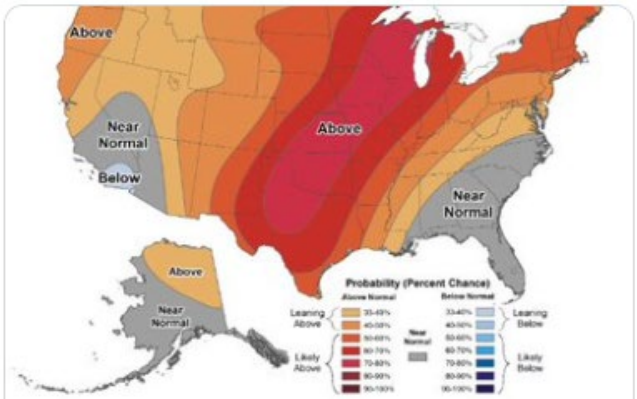
Dan Tsubouchi @Energy_Tidbits · 20h

No wonder HH #NatGas is ~$4.50.

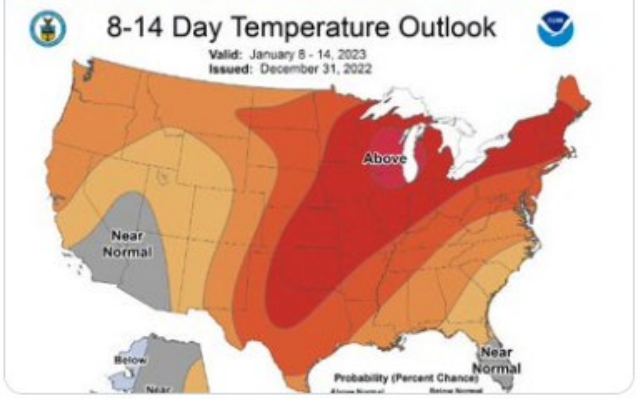
No change to forecasts, still expect warmer than normal temps across almost all the US thru mid-Jan, which is normally peak winter temperature driven demand period.

Thx @NOAA.

#OOTT



https://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php



3,495 2 10

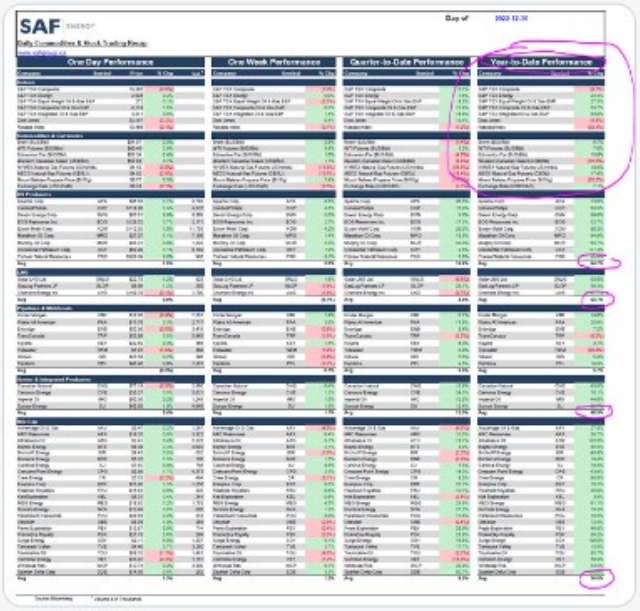
Dan Tsubouchi @Energy_Tidbits · 20h

Massive outperformance from #Oil #NatGas stocks in 2022 vs indexes and vs oil/gas prices.

Dow -8.8%
Nasdaq -33.1%
TSX -8.7%
WTI +7.0%
HH +18.6%
AECO +17.4%

TSX composite oil & gas E&P +53.7%
Exxon +80.3%
CNQ +43.6%
CVE +70.1%
IMO +44.6%
SU +35.7%
Cdn mid cap E&P +56.0%

#OOTT



1,660 1 6

Dan Tsubouchi @Energy_Tidbits · 21h

Who will follow Morocco in banning travelers coming from China?

Or will others follow US, Italy, Japan, etc in just doing mandatory testing for any travelers from China?

Thx @MoroccoWNews. #OOTT

moroccoworldnews.com

Morocco to Ban Travelers Coming from China Starting January 3

Morocco bans travelers coming from China to enter its soil following the "alarming" spike in COVID-19 cases in the Asian country, accordin...

964 1 1

Dan Tsubouchi @Energy_Tidbits · 23h

#Vortexa crude #Oil floating storage at 12/30 est 93.49 mmb, +4.76 mmb WoW vs revised up by +9.62 mmb 12/23 of 88.73 mmb. Last several weeks average 89.5 mmb (was 87.4 mmb). Thx @Vortexa @business. #OOTT

Vortexa Crude Oil Floating Storage Estimate Posted Dec 31 at 10am MT

Source: Bloomberg, Vortexa

Posted Dec 31, 10am MT

Date	FZWWFST VT... Last Px
Fr 12/30/2022	93489
Fr 12/23/2022	88734
Fr 12/16/2022	66097
Fr 12/09/2022	93469
Fr 12/02/2022	90319
Fr 11/25/2022	101.508k
Fr 11/18/2022	92871
Fr 11/11/2022	76732
Fr 11/04/2022	90004
Fr 10/28/2022	98051
Fr 10/21/2022	87631

Dec 24, 10am MT

Date	FZWWFST VT... Last Px
Fr 12/23/2022	79111
Fr 12/16/2022	68337
Fr 12/09/2022	94117
Fr 12/02/2022	90397
Fr 11/25/2022	103.708k
Fr 11/18/2022	98330
Fr 11/11/2022	77867
Fr 11/04/2022	90147
Fr 10/28/2022	98760
Fr 10/21/2022	87871
Fr 10/14/2022	86443

Dec 17, 10am MT

Date	FZWWFST VT... Last Px
Fr 12/16/2022	66351
Fr 12/09/2022	88547
Fr 12/02/2022	90188
Fr 11/25/2022	101.218k
Fr 11/18/2022	96973
Fr 11/11/2022	76573
Fr 11/04/2022	88482
Fr 10/28/2022	99688
Fr 10/21/2022	89570
Fr 10/14/2022	87538
Fr 10/07/2022	81918

Source: Bloomberg, Vortexa

1,642 1 6

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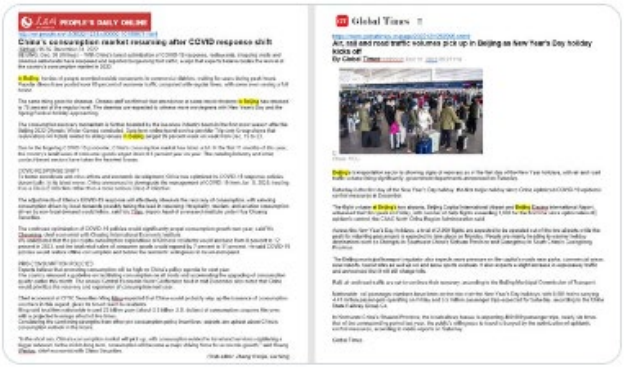
Dan Tsubouchi @Energy_Tidbits · Dec 31, 2022

China moving quickly to herd immunity.

Covid peaked in Beijing = immediate ramp up in getting back out to restaurants, malls, cinemas & travel.

Fits 👇12/15 tweet @vitolnews @michaelwmuller J shaped recovery in CN demand #Oil transportation fuels as soon as Q2.

#OOTT



> **Dan Tsubouchi** @Energy_Tidbits · Dec 29, 2022
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> China moving quickly to herd immunity.
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> Covid cases peaked in most populous cities Beijing #2 w/ 21 mm, Tianjin #4 w/ 14 mm. Chengdu #7 w/ 9 mm.
> ...

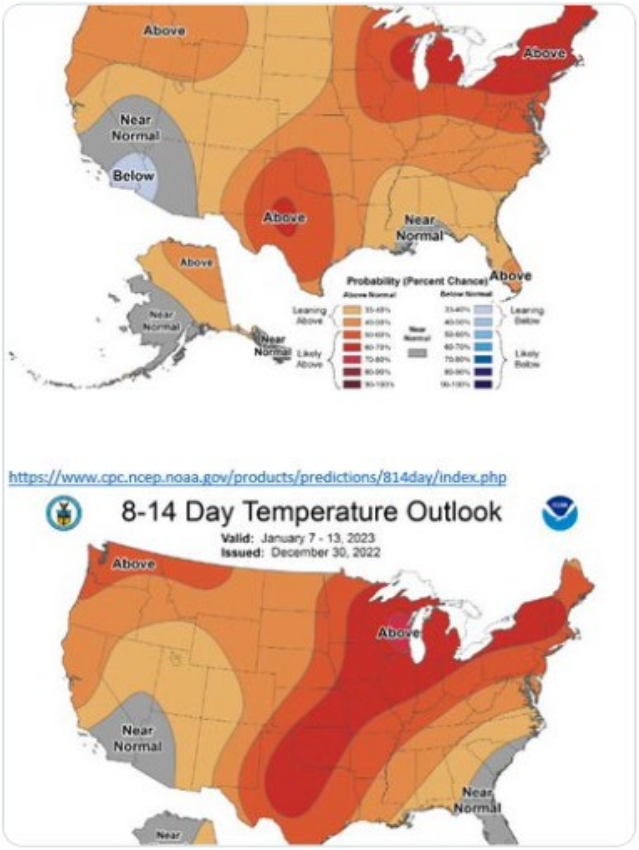
2,623 · 2 · 11

Dan Tsubouchi @Energy_Tidbits · Dec 30, 2022

Why HH #NatGas is down to $4.45.

Warmer than normal temps forecast for across almost all the US thru mid-Jan, which is normally peak winter temperature driven demand period.

Thx @NOAA.
#OOTT



3,176 3 2 13

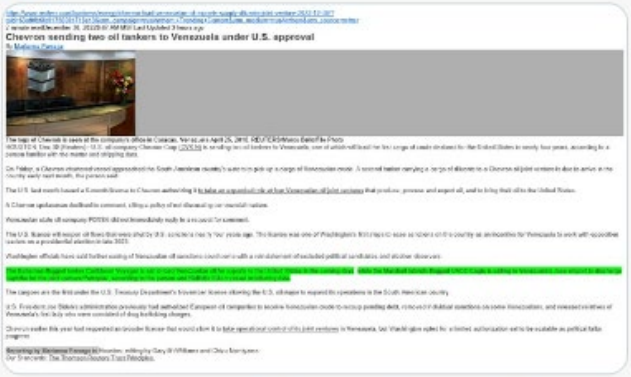
Dan Tsubouchi @Energy_Tidbits · Dec 30, 2022

Chevron increasing VEN #Oil production without drilling a well & exports to PADD 3.

1st tanker of VEN oil to hit US in ~4 yrs.

1st tanker of US #Naptha to VEN to blend with extra heavy to increase oil to flow ie. just blending, no new wells needed.

Thx @mariannaparraga!
#OOTT



Chevron sending two oil tankers to Venezuela under U.S. approval

1,406 4 7

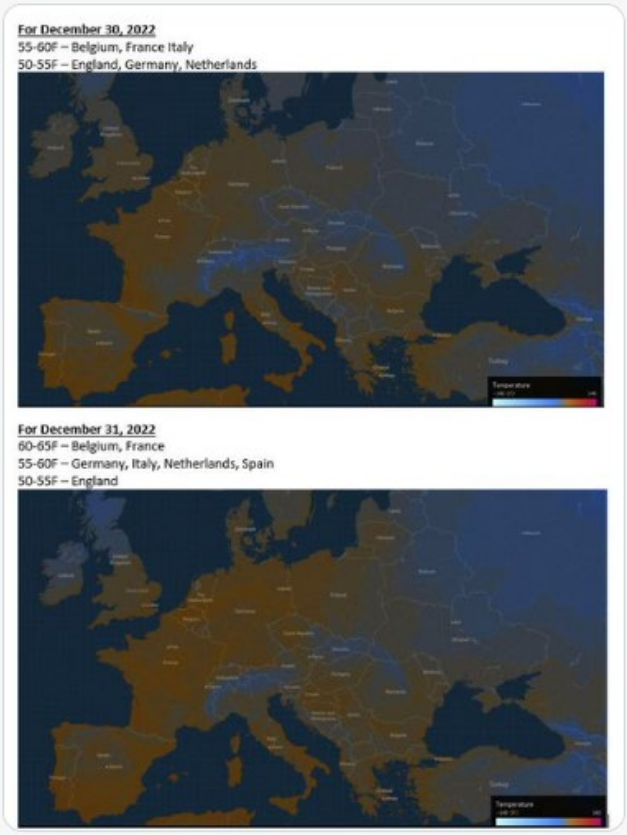
Dan Tsubouchi @Energy_Tidbits · Dec 30, 2022

Negative for EU #NatGas #LNG demand & prices.

"it's been unbelievably warm here in Europe right now" "It's going to be T-shirt weather in Berlin this New Year's Eve" @GuyJohnsonTV on @bsurveillance opening.

👇@business max temp map for 12/30, 12/31.

#OOTT



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Dan Tsubouchi @Energy_Tidbits · Dec 29, 2022

China moving quickly to herd immunity.

Covid cases peaked in most populous cities Beijing #2 w/ 21 mm, Tianjin #4 w/ 14 mm. Chengdu #7 w/ 9 mm.

Fits 👇 12/15 tweet @vitolnews @michaelwmuller J shaped recovery in CN demand #Oil transportation fuels as soon as Q2.

#OOTT


PEOPLE'S DAILY ONLINE

Steps taken to ensure COVID preparedness

By WANG XIAOYU (China Daily) 10:45, December 30, 2022

[illegible]

> **Dan Tsubouchi** @Energy_Tidbits · Dec 15, 2022
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> Nike swoosh or J shaped recovery in China demand transportation fuels. See 👇 Vitol @michaelwmuller inbound international air travel to China as soon as Q2. Freedom of travel + population less scared of Virus = China move faster to herd immunity. ...

6,208 · 5 · 8

Dan Tsubouchi @Energy_Tidbits · Dec 29, 2022

Positive for Cdn oil diffs.

@TCEnergy says #Keystone returned to service today, Affected Segment will operate under plans approved by PHMSA.

Assume mean per 👇@PHMSA_DOT 12/09 restart limited to 80% of operating pressure at time of leak.

#OOTT

fely completes controlled restart of Keystone Pipeline's Cushing Extension

mber 29, 2022

airs, inspections and testing we proceeded with a controlled restart of the Cushing Extension, safely returning the Keystone Pipeli xtension will operate under plans approved by the U.S. Pipeline and Hazardous Materials Safety Administration (PHMSA).

e System is now operational to all delivery points. As always, we continue to monitor the system 24/7 as we deliver the energy cu y on. The pipeline system will operate with additional risk-mitigation measures, including reduced operating pressures. We maint ongoing safety-led response and will fully remediate the incident site. We will share the learnings from the investigation as they b

ngoing oversight and expertise of the U.S. Environmental Protection Agency (EPA), the Kansas Department of Health and Environ cal, state and federal agencies. Our team has been overwhelmed by the kind support of Washington County landowners and the c

provide updates as information becomes available.

Dan Tsubouchi @Energy_Tidbits · Dec 9, 2022

#Keystone Force Majeure

@PHMSA_DOT on "Affected Segment" (south leg to Cushing). No hint of when PHMSA will approve a "Restart", but limited to 80% of operating pressure ...

2,616 1 3 6

Dan Tsubouchi @Energy_Tidbits · Dec 29, 2022

A data blip?

or is china moving faster to herd immunity so more who just had weak Covid are getting out and driving?

China road traffic for week ending 12/28 was +26.08% to 70.90 of Jan 2021 levels.

Thx @BloombergNEF Philip Geurts, Caudio Lubis, Wayne Tan #OOTT

5,626 2 7 28

Dan Tsubouchi Retweeted

Dan Tsubouchi @Energy_Tidbits · Dec 29, 2022

great sunrise in san jose del cabo looking over the practice range at Palmilla golf club

2,157 1 1 14

Dan Tsubouchi @Energy_Tidbits · Dec 29, 2022

#Oil #JetFuel demand recovery risk

> **Dan Tsubouchi** @Energy_Tidbits · Dec 29, 2022
>
> What will countries do as Chinese New Year travel approaches?
>
> China may be opening in and out international travel, but what will others do? only testing?
>
> 1st 2 flights into Milan with mandatory testing had 38% and 52% positive testing.
>
> #OOTT
>
> news.sky.com/story/covid-pa...

1,721 3 1

Dan Tsubouchi @Energy_Tidbits · Dec 29, 2022

What will countries do as Chinese New Year travel approaches?

China may be opening in and out international travel, but what will others do? only testing?

1st 2 flights into Milan with mandatory testing had 38% and 52% positive testing.

#OOTT

news.sky.com

'50% of passengers' to Italy from China have COVID - as Beijing issue...

Beijing's announcement means millions of Chinese people could go abroad for next month's Lunar New Year holiday. Concerns China's ...

3,225 2 5 3

Dan Tsubouchi @Energy_Tidbits · Dec 28, 2022

North Dakota lowers its 2022 exit rate and 2023 forecast again.

See 👇

07/20: exit 2022 of 1.3 mmbd

08/17: 2023 of 1.2 mmbd

12/27: current (exit 2022) 1.1 mmbd, next year should be "pretty flat"

#OOTT

https://www.kfyrtv.com/2022/12/27/2022-north-dakota-oil-gas-production-growth-slower-than-expected/

2022: North Dakota oil and gas production growth slower than expected

By Michael Anthony
Published: Dec. 27, 2022 at 12:23 PM MST | Updated: 8 hours ago

BISMARCK, N.D. (KUMV) - The Bakken saw very slow growth in oil and gas production this past year.
The region was rebranded as "Mature" by top operators in February, meaning they expected flat production going forward. Currently, the Bakken produces 1.1 million barrels per day, which was lower than the 1.3 million operators had hoped for by the end of the year.
"Significant players in North Dakota's production are talking one or two percent growth next year, so pretty flat," said Lynn Helms, North Dakota Department of Mineral Resources Director.
Helms says several factors are affecting growth including price uncertainty, federal policies, and lack of workforce.
"If I had a magic wand, I would wave it and there would be a large herd of oil and gas workers up here and the NYMEX oil price would go to 98 dollars," said Helms.
Despite the flat growth, advancements in technology such as enhanced oil recovery and longer laterals will help to keep production going for decades.

Excerpt SAF Group July 24, 2022 Energy Tidbits memo https://safgroup.ca/news-insights/

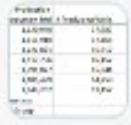
North Dakota expects oil production +2% YoY to exit 2022 around 1.3 mmbl/d
We always look to the local North Dakota oil media for extra insights on the monthly North Dakota production data based on comments at the monthly press conference on the new oil and gas production data. This week the Williston Herald [LINK] report had a number of good insights that aren't in the monthly Director's Cut report. (i) 2022 exit +2% YoY to ~1.3 mmbl/d. The Williston Herald wrote "*We anticipate that June will show a full recovery from that and that July is actually going to show a significant increase in production, so we are marching towards that maybe 7 percent production increase of rate year, which would put us in the neighborhood of 1.3 million a day by year-end. I think that's kind of what the target is for industry.*" (ii) The Bakken was still about 60,000 b/d not fully recovered from April, but North Dakota expects June oil production will be a full recovery. (iii) The Williston Herald wrote "*One surprise for the May report's stats, Helms said, was the jump in inactive well counts to more than 2,400 wells. "A large part of that is we had a large group of wells on non-completed well waivers," Helms said. "And the commission had institute (it's a policy to allow people who had drilled new Bakken wells to leave them in a non-completed status. But that expired, because oil price is so high. (And) it expired when load limits went off in the month of May."* Our Supplemental Documents package include the Williston Herald report.

Excerpt SAF Group Aug 21, 2022 Energy Tidbits memo https://safgroup.ca/news-insights/

North Dakota sees oil production ~1.2 mmb/d next year, ~1.4 mmb/d at peak
We always look to the local North Dakota oil media for extra insights from the monthly North Dakota Director of Mineral Resources Lynn Helms press conference on the monthly North Dakota production data. This week the Williston Herald [LINK] report had a number of good insights that aren't in the monthly Director's Cut report. (i) Helms is projecting production to grow to 1.2 mmb/d within the next year and to 1.4 mmb/d by end of 2025. When asked about peak production, Helms stated "*So, we really believe that within the next year, production is going to grow to 1.2 million barrels a day. And looking a little bit further out, we think by the end of the 2020s, we can achieve and sustain 1.4 million barrels a day. So it's a slow growth curve.*" (ii) The full potential of production continues to be held back by workforce and gas takeaway issues. The article highlighted "Gas takeaway capacity continues to do well in the state, Helms said, with an average 94 percent capture rate statewide. *But the state's oil production is bumping up against its ceiling on gas takeaway. That's a potentially big limiting factor for further Bakken production growth. Natural gas prices are on the one hand providing incentive for industry to continue adding gas takeaway infrastructure, but, in the short-term, it's also an incentive to limit oil production to get attractively priced gas to market. Another thing that's hampering the growth of Bakken oil production right now are continued workforce issues. It takes around two months to hire and train a crew, whether it's a drilling rig, hydraulic fracturing or workover rig crew.*" Our Supplemental Documents package include the Williston Herald report.

Prepared by SAF Group https://safgroup.ca/news-insights/

↩ **Dan Tsubouchi** @Energy_Tidbits · Dec 28, 2022



Increasing # well completions will be needed to keep Bakken #oil flat, let alone grow.

Best indicator for "Mature" Bakken is average #Oil rate per producing well keeps declining. ...

18.4K 2 12 23

Dan Tsubouchi @Energy_Tidbits · Dec 28, 2022

Increasing # well completions will be needed to keep Bakken #oil flat, let alone grow.

Best indicator for "Mature" Bakken is average #Oil rate per producing well keeps declining.

See 👇SAF Group table of NDIC data

#OOTT

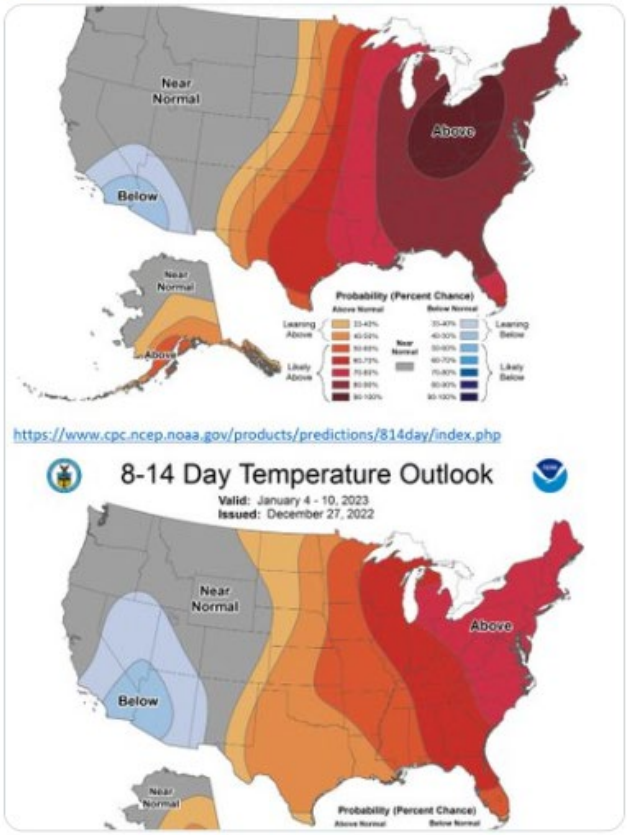
North Dakota Oil Production			
	Production b/d	# Producing Wells	Ave Prod/Well
Oct-22	1,120,940	17,787	63.0
Oct-21	1,111,910	17,163	64.8
Oct-20	1,222,871	15,512	78.8
Oct-19	1,517,796	16,157	93.9
Oct-18	1,391,877	15,344	90.7
Oct-17	1,185,499	14,250	83.2
Oct-16	1,043,207	13,457	77.5
Source: NDIC Director's Cut			
Prepared by SAF Group			

22.5K 3 20 52

Dan Tsubouchi @Energy_Tidbits · Dec 27, 2022

Here's why HH #NatGas stayed just above $5 (closed today $5.28) despite brutal cold and blizzards that hammered the US the past few days.

@NOAA updated 6-10, 8-14 day outlook forecasts turning well above normal temperatures in the populous east half of US.
#OOTT



https://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php

5,281 2 5 8

Dan Tsubouchi @Energy_Tidbits · Dec 27, 2022

Lucky, its been mild winter in EU/Japan

Even so, good indicator of tight/short? #LNG supply, Japan gas/power co's will consider promising shippers [LNG] to pay for any potential damage that is
normally covered by insurers"

Thx @SStapczynski @shoko_oda @Inajima17
#OOTT #NatGas

Japan Utilities to Still Take Russian LNG Even Without Insurance
2022-12-27 09:15:45.154 GMT
By Stephen Stapczynski, Shoko Oda and Tsuyoshi Inajima
(Bloomberg) -- Japan's liquefied natural gas importers are moving to continue receiving deliveries of the fuel from Russia, even if shipping coverage for risks related to the war in Ukraine end.
Several Japanese gas and power companies will consider promising shippers to pay for any potential damage that is normally covered by insurers, according to people with knowledge of the matter. This comes after insurance companies said they will stop providing coverage for marine hull war risks in Russian, Ukrainian and Belarusian territorial waters from Jan. 1.
The LNG importers need the fuel from Russia and can't lose shipments, so are willing to bear the financial risk in the unlikely scenario that there is damage to the vessel, the people said. Colder weather across Japan is boosting consumption of gas, and purchasing a replacement LNG shipment from the spot market is exceedingly expensive.
Read more: Japan's LNG Buyers Check How Insurance Halt Will Affect Supplies
While importers are showing a willingness to forgo insurance, the Japanese government is seeking for a continuance of the shipping coverage. The trade ministry and the Financial Services Agency sent a letter to the General Insurance Association of Japan, requesting it to consider increasing marine hull coverage, an official at the ministry said Tuesday, confirming an earlier report from Nikkei. An official at the FSA also confirmed.
The government has repeatedly emphasized that the Sakhalin-2 project is important for the country's energy security. Japan relies on Russia for about 9% of its LNG, and almost all imports from the nation are from the project.
The General Insurance Association of Japan received a letter from the government agencies, a spokesperson for the organization said, declining to comment on details of the letter. The organization is preparing to share the letter to member insurance companies, according to the spokesperson.
Spokespeople for Tokio Marine Holdings Inc., Sompo Holdings Inc. and MS&AD Insurance Group Holdings Inc. said they will continue to negotiate with re-insurers.

--With assistance from Nao Sano.

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To view this story in Bloomberg click here: https://blinks.bloomberg.com/news/stories/RNUDGT0AFB4

1,701 1 1 6

Dan Tsubouchi @Energy_Tidbits · Dec 27, 2022

#Oil and markets up this morning

story is 👇yesterday's China removal of quarantine restrictions on visitors

#OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Dec 26, 2022
>
> Not just herd immunity, but more support for China fuels rebound in Q2 if not earlier
>
> National Health Commission: effective Jan 8, China will not impose quarantine on personnel & commodities entering China
>
> Fits 👇12/15 tweet @michaelwmuller rebound in CN fuels.
>
> #OOTT twitter.com/Energy_Tidbits…
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> 12/1282691.shtml
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> wngrade Class A management of COVID-19 to (
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>
> lass A management of COVID-19 to Class B from January 8, 2023, National Health Co
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> ntine on personnel and commodities entering the country, and will no longer require
> isk areas according to infection after downgrading management, said NHC.

1,653 · 1 · 1

Dan Tsubouchi @Energy_Tidbits · Dec 26, 2022

2/2. ...conditions can go 282 miles between charges will make it only 173 miles. Imagine if the 100 million Americans who took to the road over the holidays were driving electric cars. How many would have been stranded as temperatures plunged. #OOTT

wsj.com
Opinion | Not So Fast on Electric Cars
Toyota's CEO delivers a timely warning, and many states echo it.

2,403 1 2 7

Show this thread

Dan Tsubouchi @Energy_Tidbits · Dec 26, 2022

1/2. EVs to take longer to replace ICE.

headline "I think BEVs are just going to take longer to become mainstream than the media would like us to believe" @ToyotaMotorCorp CEO.

@AllysiaFinley also reports at 32F, typical winter day in much of US, Tesla 3 that in ideal ..

#OOTT

5,679 1 7 14

Show this thread

Dan Tsubouchi @Energy_Tidbits · Dec 26, 2022

"we have no concrete evidence" on which state actor blew up #NordStream says Sweden's top counterintelligence official reports @RebeccaRuiz.

is RUS just good at disguising or Who Dunnit?

#NatGas #OOTT

nytimes.com

In Nord Stream Mystery, Baltic Seabed Provides a Nearly Ideal Crime ...

As investigators piece together clues, Russia has quietly taken steps to begin expensive repairs on the giant gas pipeline, complicating theorie...

1,912 1 1 3

Dan Tsubouchi @Energy_Tidbits · Dec 26, 2022

Not just herd immunity, but more support for China fuels rebound in Q2 if not earlier

National Health Commission: effective Jan 8, China will not impose quarantine on personnel & commodities entering China

Fits 👇12/15 tweet @michaelwmuller rebound in CN fuels.

#OOTT

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wngrade Class A management of COVID-19 to (

022 11:19 PM

lass A management of COVID-19 to Class B from January 8, 2023, National Health Co

ntine on personnel and commodities entering the country, and will no longer require

isk areas according to infection after downgrading management, said NHC.

Dan Tsubouchi @Energy_Tidbits · Dec 26, 2022

Key #Oil call for 2023 - China reaches herd immunity, looks like in Q1.

@business China Cities' Covid Case Estimates Suggest Peak in Jan, may have seen 37 mm cases in a single ...

6,165 5 10

Dan Tsubouchi @Energy_Tidbits · Dec 26, 2022

Discounted Russia #LNG for China, India, others?

Better be a warm Jan/Feb in Japan if Sakhalin-2 #LNG supplies gets impacted by insurers stoppage.

Thx @SStapczynski @shoko_oda @lnajima17

#OOTT #NatGas

> **Stephen Stapczynski** @SStapczynski · Dec 25, 2022
> Japan's energy security at risk after insurers said they will stop providing shipping coverage on Russian LNG 🇯🇵⚠️🇷🇺
>
> 🚢 Japan LNG buyers are assessing the impact of halt to marine war insurance
> ⚡ Japan says it needs Russian LNG to avoid future shortages
>
> bloomberg.com/news/articles/...
> Show this thread

3,670 · 1 · 4

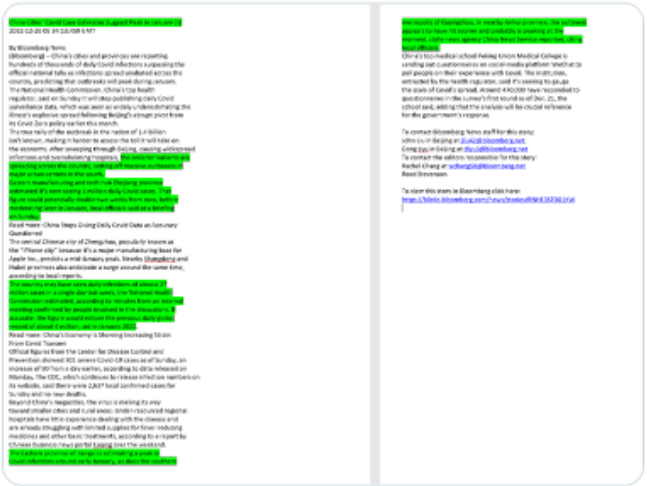
Dan Tsubouchi @Energy_Tidbits · Dec 26, 2022

Key #Oil call for 2023 - China reaches herd immunity, looks like in Q1.

@business China Cities' Covid Case Estimates Suggest Peak in Jan, may have seen 37 mm cases in a single day last wk

Sets up 👇12/15 tweet @michaelwmuller rebound in CN fuels demand as early as Q2

#OOTT



> **Dan Tsubouchi** @Energy_Tidbits · Dec 15, 2022
>
> 
>
> Nike swoosh or J shaped recovery in China demand transportation fuels. See 👇 Vitol @michaelwmuller inbound international air travel to China as soon as Q2. Freedom of travel + population less scared of Virus = China move faster to herd immunity. @sean_evers ...

10.9K · 2 · 23

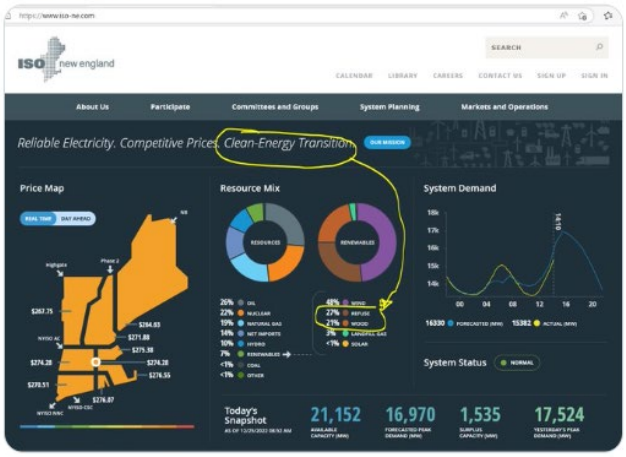
Dan Tsubouchi @Energy_Tidbits · Dec 25, 2022

ICYMI.

Beyond the headline that #Oil is providing 27% of @isonewengland electricity resource this morning.

See 👇, #CleanEnergy Transition includes burning refuse and wood for electricity generation.

#NatGas #OOTT



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