Energy Tidbits

Shell CEO “world is desperately in need of natural gas" and needs to "make up for the long-term loss of Russian supplies"

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AMERICAN GAS ASSOCIATION
Interoffice Memorandum

TO: Distribution Date: **January 30, 2023**

FROM: Paul Pierson

SUBJECT: Weekly Heating Degree Day Data

HEATING DEGREE DAY SUMMARY

For the week ending January 28, the weather in the United States was 18.5 percent warmer than last year and 9.0 percent warmer than normal. All regions experienced warmer temperatures than last year except the Mountain and Pacific regions. All regions experienced warmer temperatures than normal except the W.S. Central, Mountain, and Pacific regions. For the month of December, the weather in the United States was 28.3 percent colder than last year and 0.1 percent warmer than normal.

WEEKLY COMPARISON

Week Ending	2022/ 2023	2021/ 2022	Normal	% Change: 22/23 from 21/22		% Change: 22/23 from Normal	
10/01/22	41	20	36	105.0	Colder	13.9	Colder
10/08/22	50	15	48	233.3	Colder	4.2	Colder
10/15/22	56	30	61	86.7	Colder	8.2	Warmer
10/22/22	89	58	76	53.4	Colder	17.1	Colder
10/29/22	75	77	91	2.6	Warmer	17.6	Warmer
11/05/22	72	111	106	35.1	Warmer	32.1	Warmer
11/12/22	97	95	122	2.1	Colder	20.5	Warmer
11/19/22	194	127	139	52.8	Colder	39.6	Colder
11/26/22	161	152	155	5.9	Colder	3.9	Colder
12/03/22	165	137	170	20.4	Colder	2.9	Warmer
12/10/22	163	161	185	1.2	Colder	11.9	Warmer
12/17/22	188	139	197	35.3	Colder	4.6	Warmer
12/24/22	254	183	209	38.8	Colder	21.5	Colder
12/31/22	200	156	218	28.2	Colder	8.3	Warmer
01/07/23	152	214	223	29.0	Warmer	31.8	Warmer
01/14/23	179	208	226	13.9	Warmer	20.8	Warmer
01/21/23	178	229	225	22.3	Warmer	20.9	Warmer
01/28/23	202	248	222	18.5	Warmer	9.0	Warmer
Cumulative	**2516**	**2360**	**2709**	**6.6**	**Colder**	**7.1**	**Warmer**

MONTHLY COMPARISON

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

HEATING DEGREE DAYS BY CENSUS REGION FOR THE WEEK ENDING January 28, 2023

Region	2022/ 2023	2021/ 2022	Normal	% Change: 22/23 from 21/22		% Change: 22/23 from Normal	
New England	213	311	275	31.5	Warmer	22.5	Warmer
Middle Atlantic	204	306	263	33.3	Warmer	22.4	Warmer
E N Central	249	343	294	27.4	Warmer	15.3	Warmer
W N Central	289	334	311	13.5	Warmer	7.1	Warmer
South Atlantic	161	210	180	23.3	Warmer	10.6	Warmer
E S Central	171	219	186	21.9	Warmer	8.1	Warmer
W S Central	146	154	135	5.2	Warmer	8.1	Colder
Mountain	261	229	227	14.0	Colder	15.0	Colder
Pacific	129	105	116	22.9	Colder	11.2	Colder
United States	**202**	**248**	**222**	**18.5**	**Warmer**	**9.0**	**Warmer**

CUMULATIVE HEATING DEGREE DAYS BY CENSUS REGION

Region	2022/ 2023	2021/ 2022	Normal	% Change: 22/23 from 21/22		% Change: 22/23 from Normal	
New England	2841	2994	3335	5.1	Warmer	14.8	Warmer
Middle Atlantic	2734	2736	3140	0.1	Warmer	12.9	Warmer
E N Central	3186	3101	3543	2.7	Colder	10.1	Warmer
W N Central	3640	3351	3819	8.6	Colder	4.7	Warmer
South Atlantic	1934	1796	2107	7.7	Colder	8.2	Warmer
E S Central	1941	1815	2162	6.9	Colder	10.2	Warmer
W S Central	1360	1087	1492	25.1	Colder	8.8	Warmer
Mountain	3198	2720	3123	17.6	Colder	2.4	Colder
Pacific	1652	1454	1553	13.6	Colder	6.4	Colder
United States	**2516**	**2360**	**2709**	**6.6**	**Colder**	**7.1**	**Warmer**

The regional degree day statistics stated in this memo are weighted by gas home heating customers instead of by population.
A heating degree day is a measure of the coldness of the weather experienced, based on the extent to which the daily mean temperature falls below 65 degrees Fahrenheit. A daily mean temperature represents the sum of the high and low reading, divided by two.
Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration

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	R-47	R3,592
February	E3,227	E2,870	223	E2,647	6	-288	658	37	3,061
March	E3,614	E3,225	267	E2,958	6	R-379	163	34	2,784
April	E3,520	E3,152	257	E2,895	6	R-342	-214	R23	R2,368
May	E3,667	E3,296	266	E3,030	6	-384	-403	R-6	R2,242
June	E3,557	E3,215	259	RE2,956	4	-322	-324	R4	R2,318
July	E3,690	E3,330	276	E3,055	6	R-300	-180	R2	R2,583
August	E3,699	E3,349	270	RE3,079	6	R-320	-206	*	R2,560
September	RE3,638	RE3,281	265	RE3,016	4	R-293	-436	R-2	R2,290
October	RE3,769	RE3,394	275	RE3,119	5	-317	-422	R-18	R2,367
November	E3,677	E3,292	269	E3,023	4	-309	71	-12	2,777
2022 11-month	**E39,649**	**E35,603**	**2,871**	**E32,732**	**60**	**-3,569**	**-298**	**16**	**28,941**
2021 11-month	**37,986**	**34,044**	**2,563**	**31,481**	**60**	**-3,476**	**-248**	**-159**	**27,658**
2020 11-month	**37,124**	**33,114**	**2,479**	**30,635**	**58**	**-2,447**	**-777**	**-138**	**27,331**

[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.

* Volume is between -500 MMcf and 500 MMcf.

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 5. U.S. natural gas exports, 2020-2022

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

	2022 11-month YTD	2021 11-month YTD	2020 11-month YTD	November	October	September	August	2022 July
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	853,599	828,556	819,213	90,179	72,738	61,926	74,120	68,521
Mexico	1,915,703	1,987,501	1,826,232	160,986	R171,766	R169,159	R181,124	R188,178
Total pipeline exports	**2,769,302**	**2,816,057**	**2,645,445**	**251,165**	**R244,505**	**R231,086**	**R255,244**	**R256,699**
LNG								
Exports								
By vessel								
Antigua and Barbuda	21	4	0	2	2	3	2	2
Argentina	66,939	81,371	15,068	0	0	0	2,202	9,448
Bahamas	447	450	220	35	40	43	53	45
Bangladesh	12,663	37,734	10,660	0	0	0	0	0
Barbados	93	263	216	1	0	0	0	0
Belgium	76,971	5,584	31,946	0	7,190	9,165	3,589	0
Brazil	71,998	283,468	81,899	0	3,439	0	10,542	5,192
Chile	30,131	118,943	70,822	0	0	3,365	0	6,917
China	93,988	436,253	168,875	17,308	26,919	10,275	10,272	784
Colombia	5,703	2,247	4,626	0	3,699	0	606	0
Croatia	71,083	33,015	0	5,122	2,922	9,073	7,824	4,600
Dominican Republic	44,179	47,126	21,050	0	3,469	3,196	3,357	6,532
Egypt	0	0	0	0	0	0	0	0
France	533,089	136,889	86,485	50,655	R41,959	57,943	33,885	53,443
Germany	1	0	0	1	0	0	0	0
Greece	66,161	34,403	45,021	421	4,424	0	10,763	12,922
Haiti	106	133	101	0	0	8	11	8
India	108,379	193,015	114,160	10,138	7,005	10,528	10,265	13,902
Indonesia	3,323	2,051	0	505	625	509	967	0
Israel	0	8,906	15,834	0	0	0	0	0
Italy	109,042	34,210	68,453	3,205	0	8,355	15,462	R9,914
Jamaica	1,369	25,163	14,678	137	144	240	110	121
Japan	188,685	330,650	233,668	24,396	R10,684	7,005	20,156	18,189
Jordan	0	0	6,872	0	0	0	0	0
Kuwait	57,018	34,476	17,293	0	3,299	7,038	6,415	5,382
Lithuania	73,932	30,919	22,587	3,708	7,072	3,541	7,579	7,947
Malaysia	0	0	0	0	0	0	0	0
Malta	5,273	5,427	2,648	2,928	0	0	0	0
Mexico	3,292	15,200	34,408	0	0	0	0	0
Netherlands	338,436	150,985	82,257	20,645	R39,703	30,924	50,020	R32,637
Nicaragua	0	1	0	0	0	0	0	0
Pakistan	3,074	45,818	36,934	0	0	0	0	0
Panama	13,509	8,436	12,493	3,833	0	0	0	0
Poland	113,519	49,161	29,867	3,453	7,095	16,917	6,885	17,780
Portugal	59,558	56,235	33,211	3,732	7,005	5,806	3,202	6,412
Singapore	22,876	20,918	28,341	0	6,523	0	0	6,275
South Korea	263,816	415,282	276,609	14,069	R34,628	19,736	36,033	34,342
Spain	392,810	182,483	186,383	26,445	26,369	21,263	26,140	34,396
Taiwan	97,535	87,316	51,894	3,592	9,041	9,753	8,901	9,353
Thailand	25,988	14,548	32,622	0	0	3,673	3,607	0
Turkiye	174,088	150,429	103,769	31,430	R10,333	5,458	0	0
United Arab Emirates	0	0	10,110	0	0	0	0	0
United Kingdom	395,130	134,730	129,822	76,693	46,040	51,467	21,263	3,797
By truck								
Canada	68	108	2	0	19	0	0	0
Mexico	1,391	1,102	776	153	R175	94	103	76
Re-exports								
By vessel								
Argentina	0	0	2,164	0	0	0	0	0
Brazil	0	0	82	0	0	0	0	0
Japan	0	0	387	0	0	0	0	0
South Korea	0	0	387	0	0	0	0	0
United Kingdom	0	0	0	0	0	0	0	0
Total LNG exports	**3,525,683**	**3,215,455**	**2,085,700**	**302,608**	**R309,823**	**295,379**	**300,215**	**300,415**
CNG								
Canada	2	211	357	*	R1	*	*	R1
Total CNG exports	**2**	**211**	**357**	*	**R1**	*	*	**R1**
Total exports	**6,294,987**	**6,031,722**	**4,731,502**	**553,774**	**R554,328**	**R526,465**	**R555,459**	**R557,114**

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2020-2022

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

	2022						2021	
	June	May	April	March	February	January	Total	December
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	68,763	77,512	79,930	104,177	74,313	81,420	937,124	108,568
Mexico	R181,700	R185,965	R176,440	R169,885	R155,032	R175,467	2,154,457	166,956
Total pipeline exports	**R250,463**	**R263,477**	**R256,370**	**R274,061**	**R229,345**	**R256,887**	**3,091,580**	**275,524**
LNG								
Exports								
By vessel								
Antigua and Barbuda	3	2	3	2	0	2	8	3
Argentina	25,246	20,111	9,933	0	0	0	83,449	2,077
Bahamas	47	42	34	43	31	34	486	36
Bangladesh	0	3,346	0	3,421	5,896	0	37,734	0
Barbados	0	0	0	34	31	28	297	34
Belgium	7,023	3,441	7,341	17,743	7,691	13,786	5,584	0
Brazil	3,857	15,303	3,448	2,236	10,660	17,322	307,714	24,246
Chile	0	9,943	3,530	3,214	0	3,162	121,881	2,938
China	7,329	0	10,217	7,527	3,357	0	453,304	17,050
Colombia	912	0	0	0	0	486	2,247	0
Croatia	7,925	8,543	6,763	3,358	5,870	9,084	36,133	3,117
Dominican Republic	5,838	4,964	3,645	6,530	0	6,647	53,095	5,969
Egypt	0	0	0	0	0	0	0	0
France	37,564	47,150	56,343	64,415	39,646	50,084	170,780	33,892
Germany	0	0	0	0	0	0	0	0
Greece	9,633	12,650	1,336	4,116	8,094	1,802	39,708	5,305
Haiti	13	9	11	10	16	20	137	4
India	10,653	7,152	14,223	10,438	7,210	6,866	196,218	3,203
Indonesia	0	0	0	0	717	0	3,269	1,218
Israel	0	0	0	0	0	0	8,906	0
Italy	7,137	21,696	15,519	7,088	13,629	7,037	34,210	0
Jamaica	48	144	135	92	111	86	25,276	113
Japan	21,561	24,024	13,231	17,697	10,214	21,527	354,948	24,297
Jordan	0	0	0	0	0	0	0	0
Kuwait	8,105	14,204	7,298	0	5,277	0	34,476	0
Lithuania	6,729	11,237	13,770	5,700	3,131	3,518	30,919	0
Malaysia	0	0	0	0	0	0	0	0
Malta	0	0	0	0	2,345	0	5,427	0
Mexico	3,292	0	0	0	0	0	15,200	0
Netherlands	34,420	28,902	28,395	24,922	31,591	16,279	174,339	23,354
Nicaragua	0	0	0	0	0	0	1	0
Pakistan	0	0	3,074	0	0	0	45,818	0
Panama	623	1,192	1,536	0	3,069	3,255	8,436	0
Poland	14,282	18,224	13,882	3,831	7,475	3,695	56,320	7,159
Portugal	5,582	3,888	6,632	10,728	3,703	2,868	65,865	9,630
Singapore	3,352	0	0	6,725	0	0	20,918	0
South Korea	25,054	17,538	13,813	19,289	27,489	21,824	453,483	38,201
Spain	29,639	40,337	40,259	59,224	39,359	49,379	215,062	32,579
Taiwan	6,892	15,975	9,541	12,161	6,115	6,211	99,350	12,034
Thailand	6,920	3,419	0	0	4,880	3,490	14,548	0
Turkiye	7,542	7,281	6,637	16,629	43,697	45,081	188,849	38,420
United Arab Emirates	0	0	0	0	0	0	0	0
United Kingdom	3,326	10,608	39,775	56,799	25,301	60,060	195,046	60,315
By truck								
Canada	8	8	15	0	4	13	128	20
Mexico	105	115	122	144	157	148	1,250	148
Re-exports								
By vessel								
Argentina	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0
Japan	0	0	0	0	0	0	0	0
South Korea	0	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	0	0	0
Total LNG exports	**300,659**	**351,448**	**330,463**	**364,116**	**316,766**	**353,791**	**3,560,818**	**345,363**
CNG								
Canada	*	0	0	*	0	0	211	0
Total CNG exports	*****	**0**	**0**	*****	**0**	**0**	**211**	**0**
Total exports	**R551,123**	**R614,925**	**R586,833**	**R638,177**	**R546,111**	**R610,678**	**6,652,609**	**620,886**

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2020-2022

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

	2021							
	November	October	September	August	July	June	May	April
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	85,136	62,464	72,023	71,586	68,264	69,528	70,561	74,567
Mexico	165,449	184,472	178,746	193,710	197,623	198,242	192,549	182,918
Total pipeline exports	**250,585**	**246,936**	**250,769**	**265,296**	**265,887**	**267,770**	**263,110**	**257,485**
LNG								
Exports								
By vessel								
Antigua and Barbuda	2	0	3	0	0	0	0	0
Argentina	0	0	1,950	14,363	22,798	19,312	16,226	4,485
Bahamas	34	36	43	56	46	48	45	46
Bangladesh	0	0	3,276	7,085	0	3,493	6,948	10,219
Barbados	27	25	33	27	31	22	19	30
Belgium	0	0	0	0	0	0	2,100	0
Brazil	10,715	40,769	38,282	34,204	39,637	32,293	19,726	11,615
Chile	2,956	6,364	7,929	16,262	19,913	0	17,598	10,293
China	50,228	42,202	48,584	51,662	42,222	42,319	37,731	50,474
Colombia	0	0	436	919	0	0	0	892
Croatia	9,416	0	0	2,980	3,299	2,923	3,364	3,666
Dominican Republic	2,780	5,619	0	5,901	1,806	4,670	5,283	2,905
Egypt	0	0	0	0	0	0	0	0
France	10,021	9,333	6,578	7,111	0	3,683	11,926	36,120
Germany	0	0	0	0	0	0	0	0
Greece	7,629	1,515	799	3,607	6,651	0	6,796	0
Haiti	8	17	10	24	8	18	12	3
India	14,807	10,548	23,941	20,592	13,090	16,503	28,259	13,752
Indonesia	456	477	1,118	0	0	0	0	0
Israel	0	0	2,855	0	0	0	0	3,225
Italy	0	0	0	3,401	6,826	3,425	2,923	6,896
Jamaica	715	1,858	2,931	2,907	0	2,927	2,925	2,370
Japan	33,947	37,666	10,290	19,979	24,895	39,783	25,058	28,756
Jordan	0	0	0	0	0	0	0	0
Kuwait	0	6,193	10,333	3,298	0	7,126	0	3,705
Lithuania	0	0	3,282	1,677	6,469	3,285	3,049	3,078
Malaysia	0	0	0	0	0	0	0	0
Malta	0	0	2,498	0	0	0	0	2,928
Mexico	0	1,088	0	0	758	0	0	0
Netherlands	8,829	17,157	10,424	7,347	10,597	3,030	26,611	17,060
Nicaragua	0	0	0	0	1	0	0	0
Pakistan	2,490	3,138	9,642	3,319	13,428	3,376	0	3,323
Panama	0	911	0	1,390	0	0	2,341	0
Poland	7,068	3,270	0	0	6,619	10,635	3,581	7,382
Portugal	5,380	10,459	3,696	6,382	3,296	5,538	10,765	7,358
Singapore	3,728	0	0	0	3,449	0	3,089	3,660
South Korea	30,787	33,836	31,375	50,101	39,314	55,918	46,033	21,683
Spain	22,821	35,638	31,274	23,068	8,630	7,833	5,234	22,974
Taiwan	3,404	7,123	5,789	6,728	20,653	3,097	10,157	6,594
Thailand	0	0	0	3,707	0	0	3,453	7,388
Turkiye	47,330	19,385	24,176	0	5,591	0	3,017	0
United Arab Emirates	0	0	0	0	0	0	0	0
United Kingdom	30,648	3,302	3,099	0	0	0	10,586	13,877
By truck								
Canada	8	8	19	18	16	7	18	15
Mexico	160	182	150	147	97	105	48	48
Re-exports								
By vessel								
Argentina	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0
Japan	0	0	0	0	0	0	0	0
South Korea	0	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	0	0	0
Total LNG exports	**306,397**	**298,119**	**284,813**	**298,262**	**300,143**	**271,368**	**314,922**	**306,818**
CNG								
Canada	0	0	0	14	16	27	25	29
Total CNG exports	**0**	**0**	**0**	**14**	**16**	**27**	**25**	**29**
Total exports	**556,982**	**545,055**	**535,583**	**563,572**	**566,046**	**539,165**	**578,056**	**564,333**

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2020-2022

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

	2021				2020			
	March	February	January	Total	December	November	October	September
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	91,301	78,198	84,927	903,520	84,307	81,358	72,833	62,211
Mexico	183,051	137,381	173,360	1,990,809	164,577	166,135	185,799	182,068
Total pipeline exports	**274,352**	**215,579**	**258,287**	**2,894,329**	**248,884**	**247,493**	**258,632**	**244,279**
LNG								
Exports								
By vessel								
Antigua and Barbuda	0	0	0	0	0	0	0	0
Argentina	2,238	0	0	15,068	0	0	0	0
Bahamas	39	29	28	257	36	31	25	20
Bangladesh	3,566	0	3,148	10,660	0	0	0	0
Barbados	14	19	17	241	25	15	17	14
Belgium	3,484	0	0	31,946	0	3,633	3,285	0
Brazil	21,977	13,118	21,132	111,826	29,927	30,191	22,427	0
Chile	21,320	6,524	9,784	80,615	9,793	3,252	6,836	3,277
China	28,476	3,415	38,940	214,401	45,525	45,083	35,115	11,245
Colombia	0	0	0	4,626	0	0	0	2,548
Croatia	7,367	0	0	3,275	3,275	0	0	0
Dominican Republic	5,577	5,689	6,895	26,050	5,000	5,106	5,909	0
Egypt	0	0	0	0	0	0	0	0
France	33,678	14,851	3,587	90,237	3,752	3,390	6,639	0
Germany	0	0	0	0	0	0	0	0
Greece	6,805	0	600	48,403	3,382	3,543	0	7,027
Haiti	10	11	12	118	17	11	9	8
India	17,381	13,776	20,367	124,402	10,241	10,299	17,762	10,514
Indonesia	0	0	0	0	0	0	0	0
Israel	2,826	0	0	15,834	0	0	0	3,041
Italy	10,739	0	0	68,453	0	3,083	0	0
Jamaica	2,458	2,365	3,708	17,052	2,374	0	2,514	2,610
Japan	27,673	18,271	64,331	287,672	54,004	32,967	31,554	6,855
Jordan	0	0	0	6,872	0	0	0	3,578
Kuwait	3,821	0	0	17,293	0	0	3,603	3,508
Lithuania	3,228	6,851	0	28,879	6,291	3,621	6,191	3,308
Malaysia	0	0	0	0	0	0	0	0
Malta	0	0	0	2,648	0	0	0	0
Mexico	0	13,354	0	34,408	0	3,056	7,398	3,285
Netherlands	24,204	22,777	2,949	85,573	3,316	6,684	3,603	6,671
Nicaragua	0	0	0	0	0	0	0	0
Pakistan	3,421	0	3,682	36,934	0	3,436	10,009	9,853
Panama	3,279	0	516	12,764	271	1,448	433	3,228
Poland	3,507	7,099	0	36,900	7,033	0	3,157	0
Portugal	0	3,360	0	36,922	3,711	5,830	3,564	6,853
Singapore	3,303	0	3,688	28,341	0	7,658	3,416	0
South Korea	32,203	18,094	55,936	316,227	39,617	49,103	14,239	32,126
Spain	13,900	3,733	7,377	199,966	13,583	9,907	14,118	15,206
Taiwan	13,450	0	10,319	64,363	12,470	6,216	3,636	9,007
Thailand	0	0	0	32,622	0	3,705	0	0
Turkiye	3,619	20,652	26,659	123,957	20,188	12,817	0	3,611
United Arab Emirates	0	0	0	10,110	0	0	0	0
United Kingdom	17,440	34,343	21,436	160,199	30,378	26,544	17,191	3,664
By truck								
Canada	0	0	0	10	8	0	0	0
Mexico	19	63	83	822	46	52	68	73
Re-exports								
By vessel								
Argentina	0	0	0	2,164	0	0	0	0
Brazil	0	0	0	82	0	0	82	0
Japan	0	0	0	387	0	0	82	0
South Korea	0	0	0	387	0	0	82	0
United Kingdom	0	0	0	0	0	0	0	0
Total LNG exports	**321,023**	**208,394**	**305,196**	**2,389,963**	**304,263**	**280,682**	**222,963**	**151,128**
CNG								
Canada	36	32	32	386	29	35	26	17
Total CNG exports	**36**	**32**	**32**	**386**	**29**	**35**	**26**	**17**
Total exports	**595,411**	**424,004**	**563,515**	**5,284,678**	**553,176**	**528,210**	**481,621**	**395,424**

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2020-2022

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

	2020							
	August	July	June	May	April	March	February	January
Exports								
Volume (million cubic feet)								
Pipeline								
Canada	61,881	71,778	66,516	67,752	71,722	86,579	77,354	99,231
Mexico	185,867	181,152	162,927	145,242	138,544	166,550	151,071	160,875
Total pipeline exports	**247,748**	**252,930**	**229,442**	**212,994**	**210,266**	**253,130**	**228,425**	**260,106**
LNG								
Exports								
By vessel								
Antigua and Barbuda	0	0	0	0	0	0	0	0
Argentina	2,249	2,218	2,229	8,372	0	0	0	0
Bahamas	21	15	18	20	23	20	13	15
Bangladesh	0	3,614	0	3,406	0	0	0	3,640
Barbados	14	15	20	20	15	28	26	33
Belgium	0	0	0	1,348	3,324	3,724	9,872	6,761
Brazil	3,520	0	0	0	0	6,891	10,433	8,438
Chile	7,428	1,515	3,313	11,068	14,098	3,216	10,731	6,087
China	13,699	10,358	0	14,535	21,140	17,699	0	0
Colombia	550	0	0	0	0	0	1,003	525
Croatia	0	0	0	0	0	0	0	0
Dominican Republic	2,772	0	0	2,554	1,838	2,872	0	0
Egypt	0	0	0	0	0	0	0	0
France	0	0	0	9,546	16,336	23,491	20,520	6,563
Germany	0	0	0	0	0	0	0	0
Greece	0	6,544	1,076	3,430	3,233	8,892	0	11,276
Haiti	11	8	7	10	8	9	11	7
India	10,319	7,404	10,100	10,534	16,674	17,245	0	3,309
Indonesia	0	0	0	0	0	0	0	0
Israel	3,001	3,317	3,277	0	0	3,197	0	0
Italy	6,734	3,232	12,998	6,452	3,135	9,895	16,616	6,308
Jamaica	0	0	0	0	5,770	1	2,914	869
Japan	22,541	10,618	21,836	13,729	18,387	21,845	21,360	31,975
Jordan	0	0	0	3,294	0	0	0	0
Kuwait	6,886	0	0	0	3,297	0	0	0
Lithuania	0	0	3,049	3,473	2,945	0	0	0
Malaysia	0	0	0	0	0	0	0	0
Malta	0	0	0	0	0	0	48	2,600
Mexico	3,701	0	0	0	0	7,037	3,167	6,764
Netherlands	0	6,746	6,870	6,826	10,305	13,772	14,099	6,681
Nicaragua	0	0	0	0	0	0	0	0
Pakistan	3,412	0	0	0	3,334	0	3,567	3,323
Panama	0	0	0	3,070	0	906	3,408	0
Poland	0	0	3,385	6,258	3,523	3,583	6,677	3,282
Portugal	0	0	0	0	10,777	0	6,187	0
Singapore	2,967	3,690	0	0	0	10,610	0	0
South Korea	13,814	10,492	28,171	20,921	24,258	28,095	11,071	44,320
Spain	3,222	13,679	9,640	29,360	22,943	23,657	20,240	24,412
Taiwan	0	0	2,953	6,662	0	6,987	7,115	9,317
Thailand	0	3,254	0	7,397	11,049	3,783	3,435	0
Turkiye	0	3,222	0	6,661	14,030	6,489	24,303	32,637
United Arab Emirates	3,359	3,277	0	3,474	0	0	0	0
United Kingdom	0	2,908	0	0	0	20,202	28,884	30,428
By truck								
Canada	0	0	0	0	0	0	0	2
Mexico	78	72	61	18	23	123	87	122
Re-exports								
By vessel								
Argentina	2,164	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0
Japan	0	0	0	0	0	0	0	305
South Korea	0	0	0	0	0	0	0	305
United Kingdom	0	0	0	0	0	0	0	0
Total LNG exports	**112,462**	**96,200**	**109,002**	**182,438**	**210,466**	**244,269**	**225,786**	**250,305**
CNG								
Canada	20	37	43	39	35	38	34	33
Total CNG exports	**20**	**37**	**43**	**39**	**35**	**38**	**34**	**33**
Total exports	**360,230**	**349,167**	**338,486**	**395,472**	**420,767**	**497,437**	**454,245**	**510,444**

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

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	E36,659	E11,970	E154,806	E12,526	E355,454	E3,634	E230,690	E88,700	E196,604
September	29,288	RE34,405	RE11,100	RE151,415	RE11,565	RE346,479	RE3,572	RE233,548	RE88,797	RE189,795
October	31,122	RE35,321	RE11,358	RE155,324	RE12,745	RE363,758	RE3,589	RE246,278	RE90,623	RE195,926
November	30,934	E33,728	E10,914	E151,398	E12,020	E351,855	E3,414	E236,453	E84,550	E195,534
2022 11-month	**336,960**	**E393,707**	**E122,659**	**E1,668,788**	**E133,236**	**E3,661,267**	**E36,439**	**E2,427,620**	**E919,619**	**E2,086,763**
2021 11-month	**321,621**	**411,182**	**129,233**	**1,722,426**	**140,058**	**3,117,605**	**35,531**	**2,036,530**	**911,333**	**2,081,815**
2020 11-month	**307,168**	**441,530**	**158,104**	**1,830,294**	**150,259**	**2,928,985**	**34,828**	**1,781,607**	**798,945**	**2,177,805**

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	E238,265	E632,014	E897,401	E23,500	E255,603	E81,633	E32,294	E68,280	E3,349,415
September	RE236,726	E613,657	RE882,979	RE22,110	RE245,734	RE81,528	E31,485	RE66,585	RE3,280,768
October	RE241,859	RE629,461	RE916,265	RE22,236	RE251,647	RE87,054	RE31,967	RE67,558	RE3,394,092
November	E236,585	E605,616	E883,858	E21,366	E255,623	E82,719	E30,821	E64,342	E3,291,729
2022 11-month YTD	**E2,508,924**	**E6,872,330**	**E9,567,079**	**E239,721**	**E2,667,405**	**E908,391**	**E342,524**	**E709,807**	**E35,603,240**
2021 11-month YTD	**2,353,029**	**6,949,173**	**9,002,846**	**218,868**	**2,518,860**	**1,017,491**	**364,211**	**712,567**	**34,044,380**
2020 11-month YTD	**2,558,308**	**6,500,582**	**8,565,555**	**222,681**	**2,360,474**	**1,202,435**	**372,007**	**722,177**	**33,113,745**

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.

https://www.tcenergy.com/announcements/2023-02-01-tc-energy-provides-coastal-gaslink-project-update/

Feb 01 2023

TC Energy provides Coastal GasLink Project update

CALGARY, Alberta, Feb. 01, 2023 (GLOBE NEWSWIRE) -- News Release – TC Energy Corporation (TSX, NYSE: TRP) (TC Energy or the Company) today announced updated cost estimates for the Coastal GasLink Project (the Project). The Project continues to face material cost pressures that include challenging conditions in the Western Canadian labour market; shortages of skilled labour; impacts of contractor underperformance and disputes; as well as other unexpected events like drought conditions and erosion and sediment control challenges.

A comprehensive cost and schedule risk analysis (CSRA) was conducted to assess current market conditions and potential risks and uncertainties facing the remaining project scope. As a result of the CSRA, TC Energy's estimate of the costs to complete the Project has increased to approximately $14.5 billion. This estimate excludes potential cost recoveries and incorporates contingencies for certain factors that may be outside of the Company's control such as labour conditions; contractor performance; and weather-related events.

TC Energy expects to fund the incremental revised project costs and is actively pursuing cost mitigants and recoveries that may partially offset a portion of these costs, some of which may not be conclusively determined until after the Project is in service. Coastal GasLink is working closely with its prime contractors on implementing productivity improvement strategies targeting mechanical completion by year-end 2023, with commissioning and clean-up work continuing into 2024 and 2025. The CSRA review also considered the potential impact of an extension of construction well into 2024. In that event, costs would increase further by up to $1.2 billion. Due to the increase in the expected cost of the Project and the additional funding required, TC Energy will recognize an impairment to its equity investment in Coastal GasLink LP in its fourth quarter 2022 financial results.

The Coastal GasLink Project continues to make significant progress having reached approximately 83 per cent overall completion. The entire route has been cleared, grading is more than 94 per cent complete and over 485 km of the approximately 670 km pipeline has been backfilled with restoration activities underway in many areas. The Wilde Lake Compressor Facility has commenced commissioning work with the introduction of natural gas expected in March, representing another significant milestone in reaching our targeted mechanical completion later this year. Once complete, Coastal GasLink will be Canada's first direct link for LNG deliveries that will further support displacing 60 to 90 million tonnes of CO2 emissions annually, an important step along the energy transition.

TC Energy's overall 2023 capital expenditure outlook has been revised to approximately $11.5 to $12.0 billion, reflecting the deferral of certain project spending, expected cost-saving initiatives and incremental funding requirements associated with Coastal GasLink.

"We are disappointed with the increase in the Coastal GasLink Project costs. We continue to be laser-focused on safely completing this critical piece of energy infrastructure at the lowest possible cost, which will enable Canada's first direct path for LNG exports," said TC Energy President and CEO François Poirier. "The Project will provide substantive benefits for Indigenous and local communities across the Project route, our customers, the Western Canadian Sedimentary Basin, as well as playing a vital role in enabling global energy security and emissions reduction contributing to global climate goals," added Poirier.

The Company's resilient portfolio of high-quality, utility-like assets continues to deliver consistent and sustainable cash flow growth. We remain committed to growing our dividend at an annual rate of three to five per cent and accelerating our deleveraging target from 2026.

As previously announced, we are advancing a $5+ billion asset divestiture program this year. We anticipate a combination of strong market interest and compelling valuations will support upsizing the program to fully fund our industry-leading secured capital program and achieve our deleveraging target. We maintain our intent to cease the discounted Dividend Reinvestment Plan following the dividend declarations for the quarter ending June 30, 2023.

"Our strategic priorities for 2023 remain unchanged. Our focus is on safe project execution and operational excellence, strengthening our balance sheet and financial flexibility, enhancing returns on our assets, and advancing our decarbonization and low-carbon opportunities," said Poirier.

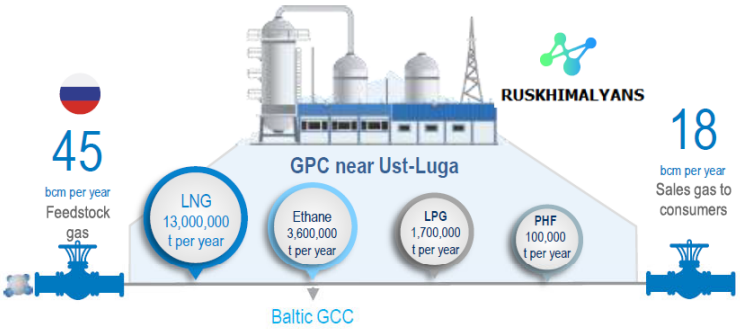
About TC Energy
We're a team of 7,000+ energy problem solvers working to move, generate and store the energy North America relies on. Today, we're taking action to make that energy more sustainable and more secure. We're innovating and modernizing to reduce emissions from our business. And, we're delivering new energy solutions – from natural gas and renewables to carbon capture and hydrogen – to help other businesses and industries decarbonize too. Along the way, we invest in communities and partner with our neighbours, customers and governments to build the energy system of the future.

TC Energy's common shares trade on the Toronto (TSX) and New York (NYSE) stock exchanges under the symbol TRP. To learn more, visit us at TCEnergy.com.

FORWARD-LOOKING INFO

Gazprom May 27, 2021 Slide Deck

Gas Processing Complex of Complex for Processing Ethane-containing Gas near Ust-Luga



CO-FOUNDERS OF RUSKHIMALYANS:

50% GAZPROM

50% JSC RUSGAZDOBYCHA

GAZPROM'S LARGEST PROJECT IN LIQUEFIED NATURAL GAS PRODUCTION

The Complex will have a capacity of 13 million tons per year:
two production trains with a capacity of 6.5 million tons per year each

https://www.kommersant.ru/doc/5796591?from=top_main_1
30.01.2023, 01:11

Gazprom rotates turbines

The company can install Russian cars at an LNG plant in the Baltic

According to Kommersant, For the LNG plant in Ust-Luga, Ruskhimalyans (50% each from Gazprom and Rusgazvydobuvannya) can purchase Russian GTD-110M turbines. These machines will be installed instead of Japanese gas turbines Mitsubishi Heavy Industries, which refused to fulfill the contract. Compressors for the project, which were also to be supplied by the Japanese, can be ordered from Kazancompressormash. The change in the composition of critical equipment to the Russian one, according to experts, can shift the launch of the project by 12-15 months, and the lower maneuverability of the GTD-110M will negatively affect the production of LNG.

Ruschimalliance is considering the purchase of three GTD-110M gas turbines (one of them is a reserve) from the United Engine Corporation (UEC, part of Rostec) for its LNG plant in Ust-Luga, Kommersant sources familiar with the situation say. These machines should replace the H100 gas turbines with a capacity of about 120 MW of the Japanese Mitsubishi Heavy Industries (MHI), which, according to Kommersant's interlocutors, refused to supply amid sanctions. The final decision has not been made, negotiations are still underway, said one of the interlocutors of "Kommersant". The change in the composition of the equipment will delay the launch of the LNG plant in Ust-Luga, two Sources told Kommersant.

Ruschimalliance plans to build an integrated gas processing and liquefaction plant in Ust-Luga. The source of raw materials for the project was to be the old fields of Western Siberia, where a large amount of ethane-

containing (fatty) gas is produced. As a result of its processing, it is planned to produce up to 4 million tons of ethane and 2.2 million tons of liquefied petroleum gases per year.

Most of the methane will be liquefied, two lines are planned to produce 13 million tons of LNG per year. In October 2021, the company announced that there would be a third line of 6.5 million tons. The first line was supposed to be launched at the end of 2024, the second - in 2025, the third line, according to Kommersant, - in 2026.

The implementation of LNG projects in the Russian Federation is difficult after the introduction of EU sanctions prohibiting the supply of key equipment for large-scale liquefaction. In the case of the Ust-Luga plant, Germany's Linde was responsible for the supply as an EPC contractor, the company at the end of 2021 signed a contract with MHI for four H100 gas turbines and ten centrifugal compressors. As Kommersant reported on June 21, 2022, after the outbreak of hostilities in Ukraine, Linde refused to fulfill the contract. Now the compressors are planned to be ordered from Kazancompressormash. But in the line of the manufacturer there are no machines for GTD-110M, it is necessary to develop more powerful compressors, two sources say to Kommersant, without specifying how long it will take.

Gazprom refused to comment, the HMS did not respond to Kommersant's request. Rostec reported that there are no contracts yet, so "there is nothing to comment on." But they stressed that the GTD-110M is the only domestic high-power turbine that "has passed all the tests, exists "in iron" and is ready for serial deliveries." GTD-110M is not yet widely used in the market. Its development resumed in 2013, but the previous sample collapsed during tests in 2018. Rostec on January 18 announced that it had completed the production of the first serial turbine. The new sample was tested at the Ivanovo CCGT of Inter RAO, then it is planned to be installed at the Udarnaya TPP of Rostec in the Krasnodar Territory. From 2024, UEC wants to produce two turbines per year, the capacity has already been reserved for three machines for the Novocherkassk GRES of Gazprom Energoholding. Rostec believes that the machine should become the basis for the modernization of old thermal power plants.

Changing the pool of suppliers means making major changes to the project documentation, will require a lot of time and, of course, re-passing the state examination, says Sergey Kondratyev from the Institute of Energy and Finance. This, according to his estimates, can lead to a delay of 12-15 months. Based on the fact that initially the project involved the construction of two lines of the LNG plant with the installation of two H100 gtu with a capacity of 115 MW for each stage, and now Ruschimalliance is replacing them with turbines of similar capacity, we can conclude that Gazprom orders equipment only for the first stage of the LNG plant, adds Mr. Kondratyev.

Independent expert Yuri Melnikov believes that the GTD-110M turbine cannot be called a full-fledged replacement for the H100 MHI, which has been in commercial operation since 2010. He notes that the H100 is a twin-shaft turbine (the twin-shaft version gives greater maneuverability of the turbine), ready to work as a mechanical drive, including at large LNG plants for 4-6 million tons per year. GTD-110M is a single-shaft machine, which was originally created only to work as part of power plants. For example, the rotor of a single-shaft turbine for power plants rotates at a constant frequency of 3,000 revolutions per minute.

"This is not a case for a mechanical drive at all - it needs a wide range of frequency control by definition," the expert explains. It is theoretically possible to use the GTD-110M to drive compressors, he specifies, but "the risks of such a decision are difficult to assess."

Tatyana Dyatel

https://timesofoman.com/article/126215-oman-lng-signs-binding-term-sheet-agreement-with-turkish-bota

Oman LNG signs binding term-sheet agreement with Turkish BOTAŞ

Business Monday 30/January/2023 15:31 PM
By: ONA

Muscat: Oman LNG announced the signing of a binding term-sheet agreement with Turkish BOTAŞ Petroleum Pipeline Corporation (BOTAS) to supply 1 million metric tonnes per annum (mtpa) of LNG, starting in 2025. This agreement helps to strengthen Oman LNG's partnership with international firms in the energy and LNG industry.

The signed term-sheet agreement will see Oman LNG supplying BOTAS with a total volume of 1 million metric tonnes per annum of LNG based on a 10-year contract, starting from 2025; helping to emphasize Oman LNG's role in leveraging the Sultanate of Oman's reputation and Oman LNG as a reliable and trusted LNG supplier, coupled with the effective management of business processes to produce clean energy delivered to customers around the world safely and reliably.

The agreement was signed here, in the presence of Eng. Salim bin Nasser Al Aufi, Minister of Energy and Minerals by Hamed Mohammed Al Nu'amani, CEO of Oman LNG and Burhan Ozcan, Chairman of the Board and General Manager of BOTAS Petroleum Pipeline Corporation.

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.

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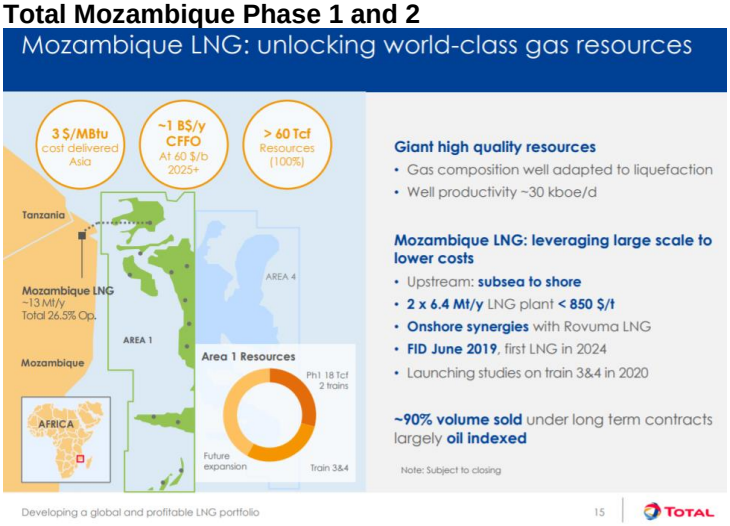
Total Mozambique Phase 1 and 2



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

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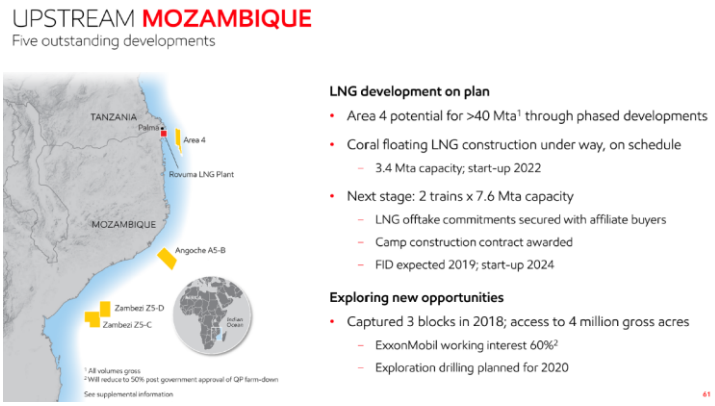
continuing thru the 2020s. And we believe all LNG forecasts included this 5.0 bcf/d to be in service in the 2020s as Mozambique had been considered the best positioned LNG supply to access Asia after Australia and Papua New Guinea. (i) Eni Coral Sul (Rovuma Basin) FLNG of 0.45 bcf/d planned in service 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

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[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

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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

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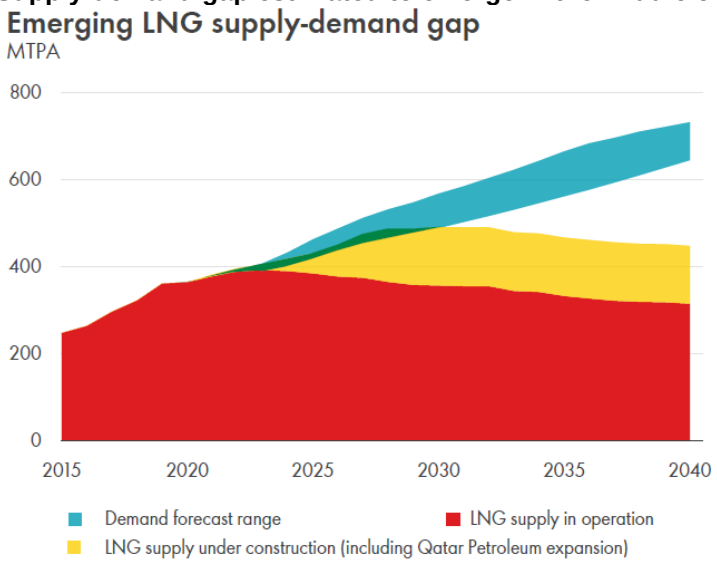
would have reflected some delay, perhaps 1 year, at Mozambique but would be surprised if they put a 2-3 year delay in for the 5 bcf/d from Total Phase 1 +2 and Exxon Rozuma Phase 1. Compared to their LNG Outlook 2020, it looks like there was no change for their estimate of global natural gas demand growth 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

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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.

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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

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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.*

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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

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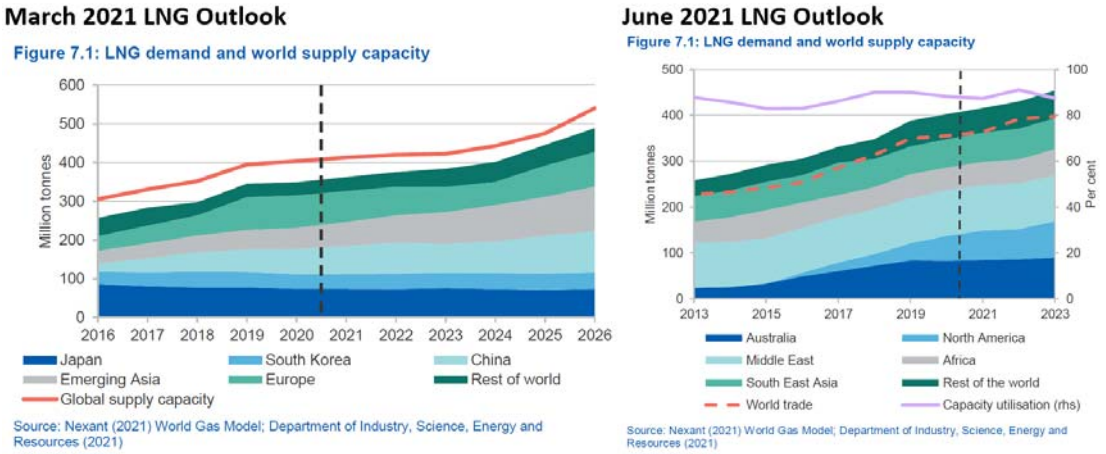
demand that we highlight later in the blog. They didn't say anything else specific on Mozambique but, surely they have to also be delaying the follow on Total Phase 2 of 1.3 bcf/d and Exxon Rozuma Phase 1 of 2.0 bcf/d.

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."*

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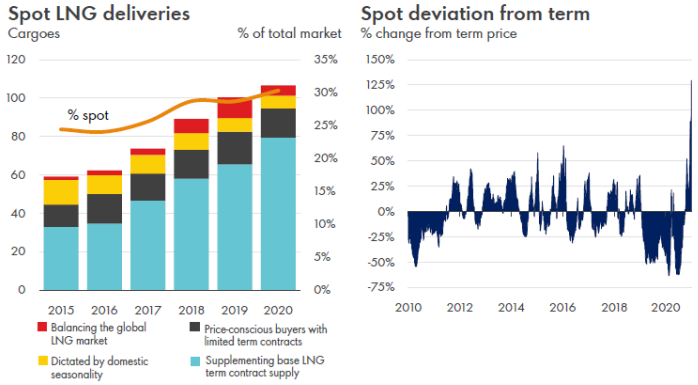
Spot LNG deliveries and Spot deviation from term price



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.

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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%*

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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.

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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.

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https://totalenergies.com/media/news/press-releases/mozambique-lng-totalenergies-entrusts-jean-christophe-rufin-independent

Mozambique LNG: TotalEnergies Entrusts Jean-Christophe Rufin with an Independent Mission to Assess the Humanitarian Situation in Cabo Delgado Province

02/03/2023

News

Download the Press Release (pdf - 152 KB)

Paris, February 3, 2023 – Patrick Pouyanné, Chairman and CEO of TotalEnergies, visited the Cabo Delgado province of Mozambique today to review the security and humanitarian situation. He visited the Afungi industrial site, the resettlement village of Quitunda, the towns of Palma and Mocimboa da Praia and met with President Filipe Nyusi to discuss the security and humanitarian situation in Cabo Delgado province, where the Mozambique LNG project is located.

During this visit, Patrick Pouyanné said he has entrusted Jean-Christophe Rufin, a recognized expert in humanitarian action and human rights, with an independent mission to assess the humanitarian situation in Cabo Delgado province. This mission will also evaluate the actions taken by Mozambique LNG and will propose any additional actions to be implemented, if required. The report of this mission will be delivered at the end of February and its conclusions will be shared with all Mozambique LNG's partners, who shall decide whether the conditions are met for resuming project activities.

On April 26, 2021, considering the evolution of the security situation in the north of Cabo Delgado province, Mozambique LNG had decided to withdraw all project personnel from the Afungi site. This situation also led the Mozambique LNG project partners to declare force majeure.

"Since 2021, the situation in Cabo Delgado province has improved significantly, thanks in particular to the support provided by the African countries that committed themselves to restore peace and security, said **Patrick Pouyanné, CEO of TotalEnergies.** The lifting of the force majeure and the resumption of activities at the Mozambique LNG project site require, in particular the restoration of security in the region, the resumption of public services and the return to normal life for the people of the region. The mission entrusted to Jean-Christophe Rufin should enable Mozambique LNG's partners to assess whether the current situation allows for a resumption of activities while respecting human rights."

Mozambique LNG is the first onshore development of a liquefied natural gas (LNG) plant in the country. The project includes the development of the Golfinho and Atum fields located in Offshore Area 1 and the construction of two liquefaction trains with a total capacity of 13,1 million tons per annum (mtpa).

TotalEnergies EP Mozambique Area 1 Limitada, a wholly owned subsidiary of Total SE, holds a 26.5% interest alongside ENH Rovuma Área Um, S.A. (15%), Mitsui E&P Mozambique Area1 Limited (20%), ONGC Videsh Rovuma Limited (10%), Beas Rovuma Energy Mozambique Limited (10%), BPRL Ventures Mozambique B.V. (10%), and PTTEP Mozambique Area 1 Limited (8.5%).

About Jean-Christophe Rufin

Medical doctor, involved in the humanitarian movement since 1977, he has carried out numerous field missions in Nicaragua, Eritrea, Sudan and the Philippines. He was Vice President of Doctors Without Borders (1991-92) and President of Action Against Hunger – ACF (2003-2006). He served as advisor to France's Secretary of State for Human Rights from 1986 to 1988, cultural and cooperation attaché in Brazil from 1988 to 1989, advisor to the French Minister of Defense, in charge of peacekeeping operations from 1993 to 1994, and French Ambassador to Senegal and Gambia from 2007 to 2010.

***

About TotalEnergies in Mozambique

Present in Mozambique since 1991, the Company operates in the Exploration & Production and Marketing & Services segments. TotalEnergies Marketing Moçambique SA is a major player in the downstream petroleum products market with a nationwide gas stations network, industrial and mining customers, lubricants and logistics. In December 2021, TotalEnergies strengthens its presence in Mozambique with the acquisition of BP's service station network, petroleum product sales business and logistics assets. TotalEnergies EP Mozambique Area 1 Limitada, a wholly owned subsidiary of TotalEnergies, operates Mozambique LNG with a 26.5% participating interest.

About TotalEnergies

TotalEnergies is a global multi-energy company that produces and markets energies: oil and biofuels, natural gas and green gases, renewables and electricity. Our more than 100,000 employees are committed to energy that is ever more affordable, cleaner, more reliable and accessible to as many people as possible. Active in more than 130 countries, TotalEnergies puts sustainable development in all its dimensions at the heart of its projects and operations to contribute to the well-being of people.

TotalEnergies Contacts

Italy December Natural Gas Balance: Statistical Summary (Table)
2023-02-01 17:08:55.349 GMT

By Giovanni Salzano
(Bloomberg) -- Following is a summary of the December natural gas monthly balance report from the Italian Industry Ministry in Rome:

	Dec. 2022	Dec. 2021	YoY% Change	Jan.-Dec. 2022	Jan.-Dec. 2021	YoY% Change
	Million cubic meters					
National Production	287	287	-0.1%	3,341	3,343	0.0%
Imports	5,933	7,089	-16.3%	72,380	72,592	-0.3%
Entry point:						
Mazzara del Vallo	2,302	1,943	18.5%	23,554	21,169	11.3%
Gela	295	208	42.1%	2,619	3,231	-18.9%
Tarvisio	719	2,930	-75.5%	13,976	29,061	-51.9%
Passo Gries	346	612	-43.6%	7,587	2,170	249.7%
Melengugno	802	787	1.9%	10,320	7,214	43.0%
Panigaglia (1)	229	0	0.0%	2,244	1,054	112.9%
Cavarzere (1)	841	591	42.3%	8,242	7,219	14.2%
Livorno (1)	389	0	0.0%	3,786	1,416	167.5%
Gorizia	7	18	-59.8%	26	39	-34.4%
Others	3	0	793.0%	25	19	31.0%
Exports	515	249	107.1%	4,587	1,543	197.2%
Stocks Change	-1,670	-2,545	-34.4%	2,591	-1,591	-262.9%
Gross Domestic Consumption	7,376	9,674	-23.8%	68,543	75,983	-9.8%

NOTE: All figures are expressed in millions of cubic meters. (1) Include consumptions and leakages. SOURCE: Ministry of productive activities

News by category:

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News
European Parliament

https://www.europarl.europa.eu/news/en/press-room/20230130IPR70207/meps-say-work-on-ukraine-s-eu-future-must-start-now

MEPs say work on Ukraine's EU future must start now

Press Releases

PLENARY SESSION

AFET

Today

- EU and Ukraine should work towards the start of Ukraine's EU accession negotiations
- EU should step up military, economic and humanitarian support for Kyiv
- Call for tenth package of sanctions against Moscow

MEPs see Ukraine as a future member of the European Union © European Union 2023 – EP

Ahead of the EU-Ukraine summit, MEPs reaffirm their commitment to Ukraine's EU membership, reiterating the need for a merit-based accession process.

On Thursday, Parliament adopted a resolution detailing its expectations for the upcoming summit between EU and Ukrainian political leaders in Kyiv on 3 February. Addressing Ukraine's EU membership perspective, the text demands the EU "work towards the start of the accession negotiations and to support a roadmap outlining the next steps to enable Ukraine's accession to the EU single market". Restating their commitment to Ukraine's future EU membership following the country's formal application on 28 February 2022, MEPs stress that accession is a merit-based process involving respect for relevant procedures, and the fulfilment of EU related reforms and accession criteria.

They also invite the Ukrainian authorities to introduce substantial reforms to effectively align with EU membership criteria as soon as possible.

EU should step up its support to Ukraine

Parliament urges EU member states to increase and accelerate their military assistance to Kyiv, in particular the provision of weapons, but also essential political, economic, infrastructural, financial and humanitarian support.

It also calls on leaders at the forthcoming EU-Ukraine summit to prioritise a comprehensive recovery package for Ukraine. This package must focus on relief, reconstruction and recovery in the short-, medium- and long-term. Support would further help encourage economic growth in Ukraine after the war.

Assessing Ukraine's reconstruction needs, the resolution also reiterates Parliament's call for the use of frozen assets of the Russian Central Bank as well as assets of Russian oligarchs to finance post-war reconstruction.

Tougher EU action against Moscow needed

Emphasising the importance of EU countries continuing to show unity in the face of Russia's aggression, MEPs call on member states to adopt a tenth package of sanctions against Moscow as soon as possible and to continuously and proactively propose new sectors and individuals for targeting.

Parliament also calls for the sanctioning of companies such as Lukoil and Rosatom, which are still present on the EU market. Officials involved in a broad range of illegal activities, including forced deportations and the administration of fake referenda on occupied Ukrainian territory, should also be subject to sanction.

The resolution finally reiterates MEPs' calls for an immediate and full embargo on EU imports of fossil fuels and uranium from Russia, and for the Nord Stream 1 and 2 gas pipelines in the Baltic Sea to be completely abandoned.

The text was adopted with 489 votes in favour, 36 against with 49 abstentions.

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

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

Tags Operations

Feb. 1, 2023

Total system nominations for the Trans Mountain Pipeline system are apportioned by 0 percent for February 2023. The pipeline will be running full at its maximum capacity.

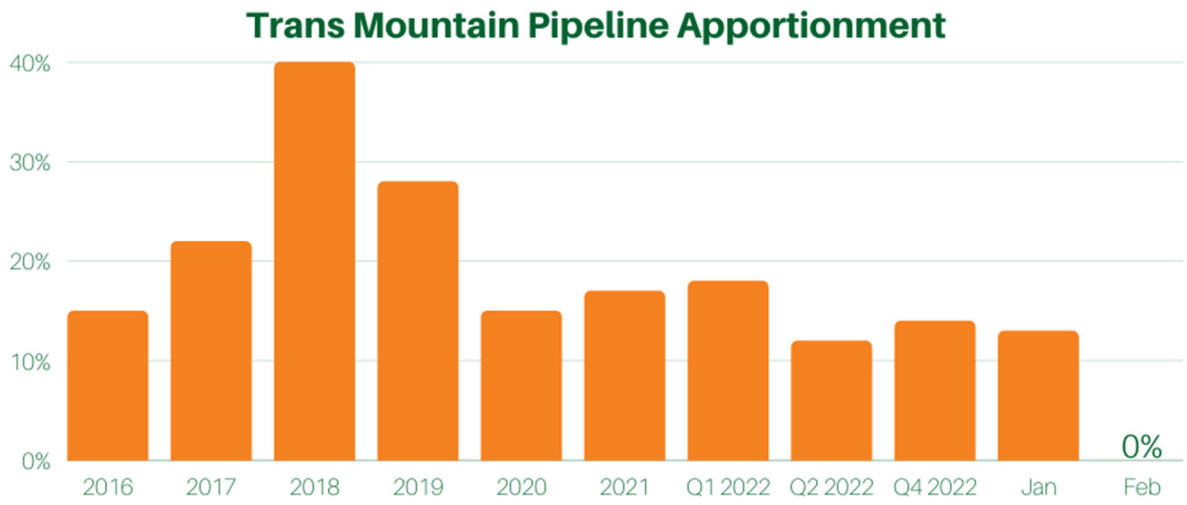
What is pipeline 'apportionment' and why is it important?

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.

https://www.pemex.com/saladeprensa/boletines_nacionales/Paginas/2023-002-nacional.aspx

PEMEX exceeds the oil production barrier of one million 800 thousand barrels

29/01/2023 | 2

- **With preliminary figures as of January 29, oil production averages one million 870 thousand barrels per day**

So far in January, Petróleos Mexicanos (PEMEX) continues to exceed the oil production barrier of one million 800 thousand barrels, registering in the period from January 1 to 29, 2023 a volume produced of one million 870 thousand barrels per day.

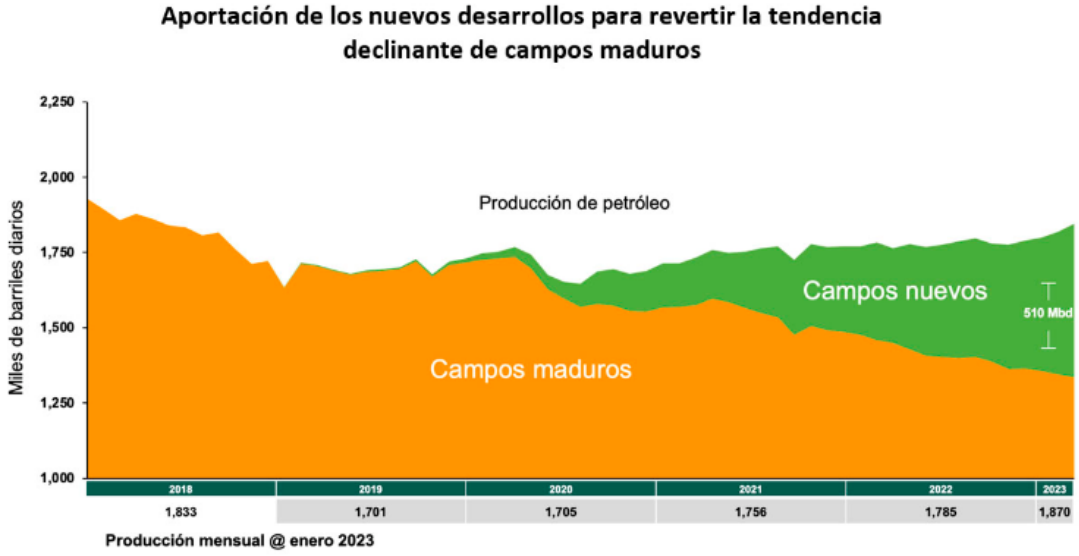
Already last December there had been a considerable increase in production, exceeding the goal of one million 800 thousand barrels. But it was in January of this year that this goal was widely exceeded, with the entry into production of important producing wells belonging to the new oil fields, mainly Quesqui and Tupilco.

PEMEX changed the course of the investment strategy that the institution followed in past administrations. Since December 2018, it focused on directing and focusing its investment resources on areas where it had experience and competitive advantages: exploring on land and in shallow water areas that were highly likely to find oil and also have important infrastructure developed.

The change of strategy proved successful. In just a couple of years, PEMEX technicians made important discoveries of oil fields, including the Quesqui and Tupilco fields.

Another change of strategy was to accelerate the development of these discoveries. In record time, the development of these new fields has been achieved to achieve the extraction of oil from these deposits, in addition to using existing infrastructure that has allowed to lower investment costs.

As of January 2023, the production of the new oil fields stands at 510 thousand barrels per day, which has made it possible to compensate for the decline in production of mature fields.



In the coming weeks PEMEX will be incorporating more production wells, which are in the final phase of drilling, which guarantees the continuity of the path of growth of oil production.

Mentions of Pemex may refer to Petróleos Mexicanos or any of the its Subsidiary Productive Enterprises.

https://www.opec.org/opec_web/en/press_room/7092.htm

JMMC reaffirmed their commitment to the DoC which extends to the end of 2023 as agreed in the 33rd OPEC and Non-OPEC Ministerial Meeting (ONOMM) on 5th of October 2022

No 01/2023
Vienna, Austria
01 Feb 2023

The 47th Meeting of the Joint Ministerial Monitoring Committee (JMMC) took place via videoconference on Wednesday, 01 February 2023.

The Committee reviewed the crude oil production data for the months of November and December 2022 and noted the overall conformity for participating OPEC and non-OPEC countries of the Declaration of Cooperation (DoC).

The Members of the JMMC reaffirmed their commitment to the DoC which extends to the end of 2023 as agreed in the 33rd OPEC and Non-OPEC Ministerial Meeting (ONOMM) on 5th of October 2022, and urged all participating countries to achieve full conformity and adhere to the compensation mechanism.

The Committee thanked the OPEC (48th) is scheduled for 3 April 2023.

https://www.wsj.com/articles/israel-strikes-iran-amid-new-international-push-to-contain-tehran-11675004979?mod=hp_lead_pos10

- WSJ NEWS EXCLUSIVE
- WORLD

Israel Strikes Iran Amid International Push to Contain Tehran

Israeli, American officials discuss new ways to combat Iranian operations

An image grab taken from a video that reportedly shows an explosion in Isfahan, Iran.PHOTO: AGENCE FRANCE-PRESSE/GETTY IMAGES

By Dion Nissenbaum Follow in Tel Aviv, Benoit Faucon Follow in London and Gordon Lubold Follow in Washington
Updated Jan. 29, 2023 3:56 pm ET

Israel carried out a drone strike targeting a defense compound in Iran, as the U.S. and Israel look for new ways to contain Tehran's nuclear and military ambitions, according to U.S. officials and people familiar with the operation.

Iranian officials said that the country's air defenses had fended off an attempted attack by three small quadcopters targeting a munitions factory in the city of Isfahan, right next to a site belonging to the Iran Space Research Center, which has been sanctioned by the U.S. for its work on Iran's ballistic-missile program.

Iran said its air defenses brought down one of the drones while the two others exploded above the warehouse, causing minor damage to the roof.

Iranian Foreign Minister Hossein Amir-Abdollahian called the blast a cowardly strike.

"Such actions cannot impact the determination and intent of our experts for peaceful nuclear progress," he said, according to government news service PadDolat.

The Israeli military declined to comment.

The strike marks the first known attack carried out by Israel under the new far-right coalition government led by Prime Minister Benjamin Netanyahu, who sanctioned a series of bold operations inside Iran when he last served in that role from 2009 to 2021.

Israel's latest strike comes as Israeli and American officials are discussing new ways to combat Iran's destabilizing operations, including its deepening military cooperation with Russia.

Central Intelligence Agency Director William Burns made an unannounced trip to Israel last week to discuss Iran and other regional issues, according to people familiar with his visit. Secretary of State Antony Blinken is scheduled to arrive in Israel on Monday to continue the U.S.-Israel talks about Iran and other regional issues.

Last week, the U.S. and Israel carried out their largest-ever joint military exercise involving more than 7,500 personnel from both countries and a series of scenarios to test their ability to take out air-defense systems and refuel jet planes—both of which could be key elements of a major military strike on Iran.

Israel's top general told The Wall Street Journal last week that Israel and the U.S. were preparing for the worst.

Gen. Herzi Halevi, the Israel Defense Forces' chief of staff, said that the military exercises sent "a very clear message to Iran: If Iran makes mistakes, offense capabilities are getting ready."

Efforts by President Biden to resurrect a nuclear containment deal with Iran have come to a standstill, but the U.S. has yet to develop an alternative. Mr. Netanyahu has been pushing the U.S. to take a tougher stance against Iran.

 The strike marks the first known attack carried out by Israel under the new far-right coalition government led by Prime Minister Benjamin Netanyahu, wearing the blue tie.PHOTO: RONEN ZVULUN/SHUTTERSTOCK

At the same time, the U.S. has been pressing Israel to do more to help Ukraine in its war with Russia, especially now that Tehran is providing Moscow with hundreds of drones used to attack Ukraine. Israel has rebuffed pressure to send Ukraine direct military aid, which Russian politicians have warned would imperil Israeli relations with Moscow.

Russia and Israel have had a yearslong understanding that has allowed Israeli warplanes to repeatedly strike Iranian targets inside Syria, where Moscow provides air defenses for President Bashar al-Assad. Israel is worried that open support for Ukraine could imperil its ability to strike Iranian targets in Syria.

Mr. Netanyahu's new government isn't expected to offer Ukraine direct military support. But it is expected to continue carrying out covert strikes against Iran's nuclear and military program.

Strikes like the one over the weekend help damage Iran's ability to help Russia with the war in Ukraine.

"This is a smart trifecta where Israel can hurt Iran, help Ukraine, and not risk its strategic interests in Syria or run the risk of the diversion of its sensitive military technology to Russia and into Iran," said Mark Dubowitz, chief executive officer of the Foundation for Defense of Democracies, a Washington-based think tank critical of Iran.

"Explosive night in Iran," Mykhailo Podolyak, an adviser to Ukraine's president, wrote on Twitter in response to the blast in Iran. "[Ukraine] did warn you."

When Mr. Netanyahu was last in office, he oversaw a series of Israeli strikes on Iran involving small drones like those used over the weekend, according to former Israeli and U.S. officials. His successor, Naftali Bennett, embraced a strategy he called the "Octopus Doctrine," under which Israel carried out strikes not just against Tehran's proxies in the Middle East, like Hezbollah, but also against Iran itself as the head of the so-called octopus.

In 2021, Iran's Atomic Energy Organization said it had thwarted an attack by two quadcopter drones on one of its facilities. Last May, quadcopters were used to target a military site used to develop drone, missile and nuclear technology outside Tehran.

The main target of Saturday's strike was a warehouse located behind a mall in Isfahan that Iran said was an ammunition storehouse. Video of the explosion posted on social media by witnesses captured a small explosion above a building that appeared to cause minimal damage.

Satellite imagery released on Sunday appeared to show minor damage to the building.

Ronen Solomon, an independent intelligence analyst and author of the Intelli Times blog, said that the small size of the blast indicated that the target wasn't an ammunition storehouse. Instead, he said, it could have been a lab or military-logistics site.

Public figures in Iran suggested Israel and its Western allies were behind the attack.

“They both need to learn that punishment comes with failure too,” said Mohammad Marandi, who is close to the government and was previously a spokesman for Iran’s nuclear-negotiations team.

Mr. Solomon said satellite imagery showed the warehouse is located across the street from a site belonging to a unit of the Iran Space Research Center—a U.S.-sanctioned organization that has worked with the Shahid Hemmat Industrial Group, which is responsible for Iran’s ballistic missile programs, and the Iranian Ministry of Defense.

The Wall Street Journal was able to confirm Mr. Solomon’s information. Social-media channels close to the Islamic Revolutionary Guard Corps separately showed a satellite image of the targeted site, which matches the exact area where the Isfahan unit of the Space Research Center is located.

A missile plant owned by the Shahid Hemmat Industrial Group on a site west of Tehran was reportedly targeted by an Israeli strike in September 2021.

—Dov Lieber in Tel Aviv and Aresu Eqbali in Tehran contributed to this article.

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Corrections & Amplifications

https://www.imax.com/content/imax-rings-record-breaking-chinese-new-year-with-34-million

IMAX® RINGS IN RECORD-BREAKING CHINESE NEW YEAR WITH $34 MILLION

JAN 30, 2023

Led by $26.3 Million Gross for "The Wandering Earth 2", IMAX Helps Advance Stunning Turnaround of Chinese Box Office

SHANGHAI AND NEW YORK — January 30, 2023 — set a new box office record for Chinese New Year with $34 million over the six-day holiday period concluding Friday, January 27. Total grosses for the holiday — historically the peak moviegoing period in this pivotal cinema market — exceeded the Company's previous record set in 2021 by 3% and topped its 2022 results by a whopping 54%.

The record-breaking performance underscored the stunning turnaround of the Chinese box office in 2023. The IMAX China network fully reopened less than two months ago following COVID-related closures, with more than a third of IMAX locations in China closed as recently as the first week of December. Through January 26, overall Chinese box office year to date is $1.2 billion — more than double North American box office which stands at $513 million over the same period.

• China Film Group's "The Wandering Earth 2" led the way with $26.3 million in box office across the IMAX network — good for 8.2% of the film's total gross on less than 1% of screens.
• "The Wandering Earth 2" is now the third highest grossing IMAX release of all time for the Chinese New Year 6-day period.
• 2023 marks the first time IMAX has ever had a $25 million-plus grossing Chinese film and Hollywood film ("Avatar: The Way of Water") in Chinese theatres at the same time.
• "The Wandering Earth 2" also received a limited North American release for the holiday, where IMAX earned 30% of the film's three-day opening gross in only 31 locations.

"Our historic results for Chinese New Year — along with the strong performance of the 'Avatar' sequel and forthcoming release of key Hollywood titles in China — make it clear that the market is normalizing, and IMAX is getting back to business in China," said Rich Gelfond, CEO of IMAX. "If IMAX is breaking records in China with the market still in 'recovery," it's exciting to think about our potential as the year progresses — particularly as more Hollywood blockbusters are released into the market."

IMAX China's diverse slate for the holiday also included Huanxi Media and Maoyan's "Full River Red", the period drama that marks the fifth collaboration between IMAX and director Zhang Yimou. The Chinese New Year IMAX slate was rounded out by animated film "Deep Sea" produced by Enlight Film, and espionage thriller "Hidden Blade" produced by Bona Film and Xiyue Film.

"We commend and extend our gratitude to our filmmaking and studio partners this holiday season for delivering one of the strongest and most diverse Chinese New Year slates that we've ever seen," said Daniel Manwaring, CEO of IMAX China. "The fact that daily box office held and, in some cases, grew throughout the holiday are a strong indicator of the quality of these releases, and the strong pent-up demand among Chinese moviegoers."

The strong Chinese New Year results lifted IMAX to its best January ever for local language box office with an estimated $45.7 million through the weekend. Indian epic "Pathaan" from Yash Raj Films also

debuted this weekend with $2.5M of IMAX box office — the biggest IMAX global opening weekend ever for a local Indian title — and helped lift IMAX to a $21 million global weekend.

The Chinese New Year slate will continue to play in the IMAX China alongside Disney/Lightstorm's "Avatar: The Way of Water", which will continue its successful run in China until mid-February. Also in February, Disney/Marvel's "Black Panther: Wakanda Forever" and "Ant-Man and The Wasp: Quantumania" will debut in IMAX to audiences across China.

About IMAX Corporation

IMAX, an innovator in entertainment technology, combines proprietary software, architecture, and equipment to create experiences that take you beyond the edge of your seat to a world you've never imagined. Top filmmakers and studios are utilizing IMAX theaters to connect with audiences in extraordinary ways, and, as such, IMAX's network is among the most important and successful theatrical distribution platforms for major event films around the globe. Streaming technology company SSIMWAVE, an IMAX subsidiary, is a leader in AI-driven video quality solutions for media and entertainment companies.

IMAX is headquartered in New York, Toronto, and Los Angeles, with additional offices in London, Dublin, Tokyo, and Shanghai. As of September 30, 2022, there were 1,703 IMAX theater systems (1,622 commercial multiplexes, 12 commercial destinations, 69 institutional) operating in 87 countries and territories. Shares of IMAX China Holding, Inc., a subsidiary of IMAX Corporation, trade on the Hong Kong Stock Exchange under the stock code "1970."

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About IMAX China

IMAX China is a subsidiary of IMAX Corporation and was incorporated as a limited liability company under the laws of Cayman Islands. IMAX China was established by IMAX Corporation specifically to oversee the expansion of IMAX's business throughout Greater China. Shares of IMAX China trade on the Hong Kong Stock Exchange under the stock code "1970".

For additional information please contact:

https://www.norges-bank.no/aktuelt/nyheter-og-hendelser/Foredrag-og-taler/2021/2021-12-21-borsum/

Ownership and climate risk in the GPFG - on the instruments for managing climate risk in the GPFG

Speech by Deputy Governor Øystein Børsum, 21 December 2021.
Actual performance may differ from published text

Introduction

Climate challenges are an engaging theme.

Figure: Emissions must be reduced

The world economy, as it operates today, is not sustainable. It must be, and then emissions must go down. It concerns us all - and not least our common fund. With a broadly diversified, global portfolio and a long horizon, we are in many ways burdened with the world economy.

Norges Bank is a financial investor. We will secure and create financial value for future generations. It is our task as manager of the fund. But how the assignment is carried out can also have an impact beyond the purely financial. Among other things, in the transition to a low-emission society. What our role should be - what our work should consist of - is what I want to talk about today.

This summer, an expert group submitted a report to the Ministry of Finance with recommendations on how climate risk should be managed in the fund. During the autumn, we at Norges Bank worked to assess the proposals and look at how they can be implemented.

A couple of days ago, the Executive Board sent its response to the Ministry of Finance. In the bank's management of climate risk, a lot is already being done, and we are outlining even more ambitious plans for the future. As a long-term and global investor with ownership interests in several thousand companies, we have a financial interest in the companies adapting to the risk and opportunities that climate change entails in a good way.

We propose that Norges Bank be a driving force for the companies we are invested in to adjust to net zero emissions over time - that the companies we invest in reflect the restructuring that the world has to go through.

The fund as an investor

Our characteristics as an investor

The climate risk in the fund is related to who we are as an investor and our overall investment strategy. In short: The fund is large, broadly diversified, long-term and close to the index.

Chart: Large, broadly diversified, long-term and index-linked

Of the fund's more than 12,000 billion, 70 per cent is invested in shares. With that, we are one of the world's largest shareholders. We are owners of 9000 companies in 70 countries.

And we are long-term. By using only the real return, the fund can in principle be perpetual.

The strategy is based somewhat simply on the following: If we are to achieve the best balance between expected return and risk, we must spread the investments widely and own a little of everything in the market. There is a solid professional basis for this approach.

How climate risk is relevant to the fund

What does this way of managing the fund have to say for the fund's climate risk? By spreading the investments widely, we are protected against incidents that only affect individual companies or special sectors. But we can not protect ourselves from events or developments that affect everyone.

The fund is exposed to two types of climate risk - physical risk and transition risk.

Transition risk is about whether the *companies* we own will manage the transition to a low-emission economy. Here the challenge is very different across sectors and companies.

Chart: Transition risk and the fund

The fund's equity investments can be categorized according to transition risk as assessed by the research company MSCI today. The blue bars in the figure show shares of the fund's portfolio. The white bars show the emissions in the companies. The companies that have ended up in the category «restructuring» have high emissions and must therefore restructure significantly. They make up 14 percent of the equity portfolio. The rest are companies that are either considered to be neutrally positioned or are considered to make a positive contribution to a green transition. The latter are thus part of the solution. [1]

Physical risk is more directly linked to climate change. The easiest to think about are acute events such as extreme weather, but also more gradual changes such as warmer climates, droughts and increased sea levels can affect individual investments in both negative and positive directions.

In a scenario where the world does not succeed in the transition to a low-emission economy, the risk increases, also for the fund, because the consequences of major climate change will be felt everywhere. As owners of shares, bonds and real assets, we are invested in everything from real estate and infrastructure, forestry and the food industry to all kinds of production capital. All of these are investments that can be affected by changes in the environment, including heat waves, floods and fires. We own a little of everything.

For a large, long-term, global fund, there will be nowhere to hide.

Climate risk is a long-term and important risk that the fund must deal with.

What does a long-term goal of net zero emissions mean for the fund?

A key recommendation from the expert group is that Norges Bank's responsible management be given a long-term goal of working towards net zero emissions from the companies in which the fund is invested. Norges Bank supports this recommendation.

Some may interpret this as a plan to sell shares in companies with large emissions.

But that is not our approach, nor is it the expert group's proposal. Instead of selling ourselves out, we will through active ownership be a *driving force* for the companies to adapt. In order to influence, we must actually be owners.

And we believe that ownership work works.

It works because we are big. Norges Bank is among the ten largest owners in about half of the companies we are invested in, and we have experienced that the companies listen when we talk.

Responsible management - a chain of instruments

Figure: Responsible management - a chain of instruments

Responsible management is our foremost tool in the work with climate risk and climate-related investment opportunities. I will now consider some important parts of this work. We are already doing a lot, and now we want to do even more.

The work can be grouped into three: The work we do towards the markets, towards the companies and with the portfolio. Together, this constitutes a coherent chain of instruments. I can not take a full review of the work here, but will highlight some points.

Default setting

The first point, standard setting, is about standards for reporting and measuring companies' climate risk.

Good common standards are important. This enables us as managers to assess the companies' prospects, prioritize ownership work and make good investment decisions.

But not just us. Better reporting will make the financial markets more well-functioning and better able to allocate capital. International standards provide equal conditions across markets and set the list for all companies. We, and other major investors, have an important role to play in contributing to the development of these standards.

Among the particularly important initiatives we have supported are climate reporting from the Task Force on Climate-Related Financial Disclosures (TCFD). Such reporting has been voluntary, but we believe that it must now become a requirement. Another issue we are working on is a comprehensive standard for sustainability reporting in line with the recently launched International Sustainability Standards Board (ISSB).

We will also work for good standards for reporting on companies' indirect emissions in the value chain, so-called "framework 3". In many sectors, this is crucial for understanding the companies' climate risk. We will also work with other climate-related issues where international standards may be appropriate. The use of various forms of climate quotas can be an example of this.

Our work with the companies starts with setting clear expectations.

We have formulated our expectations in our own expectations documents. In the climate area, we already expect companies to have a climate strategy, set emission targets, report on developments and stress test their business models against different climate scenarios. Going forward, it is natural for us to emphasize the horizon towards zero emissions. This will provide a clearer direction for the exercise of ownership.

Exercise of ownership

The exercise of ownership will be central to the work to manage the fund's climate risk. Not least, the dialogue with the companies is important.

Figure: Climate is more often a theme in the dialogue

The dialogue with the companies follows our expectations. Last year we had about 3,000 meetings with the companies, and as you can see from this figure, sustainability is increasingly on the agenda.

Going forward, we will increase ownership activity on climate, both in scope and depth.

We will give particular priority to ownership activity towards the companies that have the largest emissions, towards those that have not published their own climate plans or have inadequate climate reporting. We will also strengthen the ownership activity aimed at the financial sector, which is indirectly exposed to climate risk through lending and investments.

The dialogue is adapted to the sector and situation. Steel and cement are an example. These companies currently have large emissions, but are also manufacturers of products we also need in a low-emission society. Therefore, the dialogue is precisely about transition plans, much about the technological measures and investments needed for change. We also address the need for industry standards and lobbying, which is a significant challenge.

Figure: Companies report better on climate

We see signs that the work is working. For example, when we analyze the reporting from 1,500 companies, we see that the companies we have been actively involved in have made greater progress in reporting on climate strategy than the other companies. Of course, we should not take all the credit for these advances. But there is progress.

In the future, we will report more about the dialogue with the companies, what they are about and changes we see. That it is visible is a tool in itself.

Reporting and voting

The dialogue with the companies will not succeed in all cases. We can then hold the boards responsible for their decisions through our voting. This year, we have, among other things, in six cases voted against renewed confidence in board members due to inadequate management of climate risk. This sounds small, but in the future we will work to use this tool to a greater extent than today.

We have started by announcing our voting five days before the actual voting. What we do is noticed.

Another alternative is to promote shareholder proposals, alone or together with others. In the past year, we have supported 19 shareholder proposals on climate. One of those who gained a majority led to a large international company initiating work on reporting on emissions in the value chain ("Box 3"). Going forward, we will also consider promoting our own shareholder proposals.

Risk-based divestments

A last resort, when the exercise of ownership does not succeed, is the sale. It will not be the case that we automatically sell out if the ownership work does not succeed. But in some cases it can be the result.

Norges Bank can sell out of a company on a financial basis. This is what we call risk-based divestments. These are companies that we believe handle climate risk in a very deficient way - and thus provide an increased financial risk. This is about avoiding companies that we believe do not have sustainable business models.

Figure: More than half of the sales are related to climate

Risk-based divestments are active decisions made by Norges Bank, which draw on the fund's framework for deviations from the benchmark index. In the period 2012-2020, we have made more than 300 such sales, and more than half have been linked to climate change.

We are ready to do more of this in the future.

As a continuation of risk-based divestments, we have also begun to systematically assess companies' sustainability risk before entering the fund's benchmark index.

The fund is managed close to the index. Risk-based divestments will therefore mainly be relevant for smaller companies. For larger companies, we have more limited room for maneuver, as such sales will to a greater extent draw on the framework for deviations from the benchmark index.

The behavioral criterion

Figure - Responsible management - a chain of instruments

This takes me over to the second form of divestiture, namely exclusion on ethical grounds. The fund's ethical guidelines contain both a product-based coal criterion and a behavior-based climate criterion.

The latter includes companies that are linked to serious environmental damage or to an unacceptable degree lead to greenhouse gas emissions.

The Council on Ethics advises observing or excluding a company based on this criterion. Based on their recommendations, the Executive Board of Norges Bank makes the final decision based on these recommendations. A decision on exclusion means that the company is excluded from both the portfolio and the benchmark index. It therefore does not draw on our framework for deviations.

It is our experience that the practice of this criterion is complex and that it requires broad insight and detailed information about companies' activities and plans.

Norges Bank expects that we will - in light of the work I have talked about today - gather further detailed information about the companies' climate risk and climate plans. We will share this information with the Council on Ethics.

Downsizing or exclusion is the last link in the chain of instruments, but far from the most important. We plan for Norges Bank to be a driving force for the companies in the portfolio to adjust to net zero emissions over time. Active ownership is the key tool.

End

Before I conclude, I would like to mention that we invest in companies that can contribute to solutions to the climate challenges, both through the environmental mandates and in the rest of equity management. We are now also in the process of building up a portfolio of high-quality wind and solar power plants.

The first environmental mandates were established in December 2009, and have had positive learning effects for several parts of the organization. As we write in the letter to the ministry, we will in future draw more on the competence of the managers of the environmental mandates in other parts of the administration.

Overall: Our ambition is for us to be a leader in responsible management. In collaboration with other large investors, we will contribute to the development of standards and methods for reporting. We will strengthen our dialogue with companies about climate both in scope and depth, and utilize the entire toolbox we have as an investor. We will influence companies to take the restructuring seriously. We expect concrete plans, not empty words or greenwashing! And not least - we must have a clear voice in our ownership work.

Footnote

[1] The calculations are based on the analysis company MSCI's classification of companies' transition risk. 80 per cent of the market value of the fund's equity portfolio ends up in the group of companies that are neutrally exposed to transition risk.

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PMI

Caixin China General Manufacturing PMI Press Release

2023.01

财新 Caixin

Embargoed until 0945 CST (0145 UTC) 1 February 2023

Caixin China General Manufacturing PMI™

Production levels move closer to stabilisation as COVID-19 measures relaxed

The recent relaxation of COVID-19 containment measures helped to ease pressure on China's manufacturing sector during January. Output fell at the softest pace for five months, while the downturn in new orders also moderated. Nevertheless, there were reports that the pandemic and relatively subdued market conditions continued to impact customer demand and operations. Notably, staff absences contributed to a further drop in employment and a renewed rise in backlogs. Pressure on supply chains meanwhile eased, with delivery times increasing only slightly, and cost pressures remained mild.

When considering the 12-month outlook for output, firms expressed the strongest optimism since April 2021, supported by hopes that economic conditions and new business will rebound.

The headline seasonally adjusted Purchasing Managers' Index™ (PMI™) – a composite indicator designed to provide a single-figure snapshot of operating conditions in the manufacturing economy – rose from 49.0 at the end of 2022 to 49.2 in January, to signal a decline in the health of China's manufacturing sector for the sixth month in a row. That said, the rate of deterioration eased from December and was only marginal.

The relative improvement in the headline index was partially due to a softer fall in production volumes at the start of the year. Output fell at a marginal pace that was the softest in five months, with some firms noting that the easing of COVID-19 containment measures had reduced pressure on operations.

Nevertheless, firms reported that demand conditions remained relatively subdued overall, and this contributed to a further fall in overall new work. In line with the trend for output, the rate decline eased since December and was marginal. New export business also contracted further amid reports of relatively weak global demand conditions.

Supply chains moved closer to stabilisation at the start of 2023, with average lead times for inputs increasing only slightly. While a number of firms mentioned that the rollback of containment measures had helped to ease strain on supply chains, logistics had yet to recover fully in some areas amid worker shortages.

Although purchasing activity fell further in January, the rate of reduction eased notably compared to December and was the slowest for three months. At the same time, inventories of both pre- and post-production items fell at quicker rates as firms often made greater use of current stocks in light of muted customer demand.

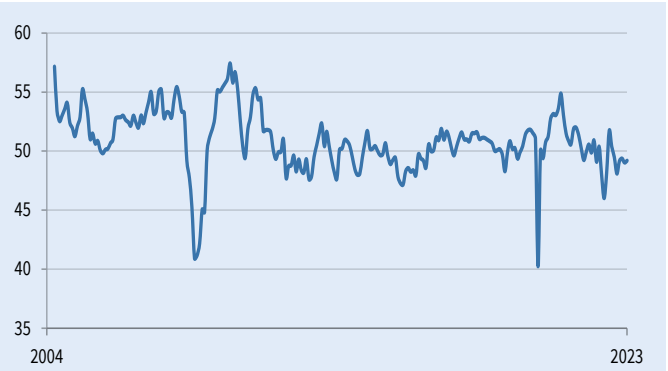
Workforce numbers at manufacturing firms continued to fall in January, though at a slower rate than at the end of 2022. According to panellists, staff resignations and absences due to COVID-19 illness weighed on headcounts. Insufficient staffing levels contributed to a renewed upturn in backlogs of work, albeit one that was marginal overall.

Average input costs increased at the quickest rate in seven months in January. That said, the rate of inflation remained much slower than the historical average. At the same time, selling prices fell slightly as pricing power was constrained by efforts to stimulate sales.

The return to more normal business operations, and hopes that the economy and new business will rebound, helped to lift business confidence at the start of the year. Notably, the degree of optimism was the highest recorded since April 2021.

China General Manufacturing PMI

sa, >50 = improvement since previous month



Sources: Caixin, S&P Global

Key findings:

Softer falls in output and new orders

Supply chain pressures ease

Confidence around the outlook hits highest since April 2021

New Export Orders Index

sa, >50 = growth since previous month

Sources: Caixin, S&P Global

Employment Index

sa, >50 = growth since previous month

Sources: Caixin, S&P Global

Commenting on the China General Manufacturing PMI™ data, Dr. Wang Zhe, Senior Economist at Caixin Insight Group said:

"The Caixin China General Manufacturing PMI in January rose 0.2 points from the previous month to 49.2, remaining in contractionary territory for the sixth consecutive month, as manufacturing activity remained sluggish after a shift in Covid-19 control policies.

"Both manufacturing supply and demand continued to shrink last month, as Covid infections remained high. Output and total new orders shrank for the fifth and sixth straight months, respectively, but the contraction was milder than in December. Due to mounting recession risks overseas, external demand remained weak, with the reading for new export orders also contracting for the sixth consecutive month.

"Employment continued to shrink. Surging Covid infections impacted the number of people at work, keeping the subindex in contractionary territory for the 10th month running. The situation caused backlogs of work to rise for the first time since May 2022. But the rate of expansion was only marginal.

"Prices remained stable in January. Input and output prices diverged for the fourth consecutive month. The rise in input prices was mainly driven by elevated raw material costs, metals in particular, whereas output prices dropped given the sluggish market activity. Meanwhile, output prices at consumer goods makers climbed slightly.

"Suppliers' delivery times greatly improved. With Covid controls optimized, the subindex for suppliers' delivery times grew significantly from December. But it stayed below 50, suggesting that logistics had not returned to normal. In January, the quantity of purchases, stocks of raw materials, and inventories of finished products all shrank for the third consecutive month.

"Optimism continued to improve among businesses in January. The reading for manufacturers' expectations for future output reached the highest since April 2021. Businesses expressed stronger confidence in an economic recovery following the easing of Covid containment measures.

"Overall, the pandemic continued to take a toll on the economy in January. Supply and demand weakened, overseas demand was sluggish, employment declined, and logistics hadn't fully recovered, while the quantity of purchases shrank, inventories dropped, and manufacturers faced growing pressure on profitability. But optimism in the sector continued to improve as businesses expected a post-Covid economic recovery.

"Since Covid controls were optimized at the end of 2022, China has seen a surge in Covid infections. According to the Chinese Center for Disease Control and Prevention, the numbers of fever clinic visits nationwide and people hospitalized with Covid peaked in late December and early January, respectively, and have declined since then.

"After being hit by the latest wave of Covid infections, the primary focus of economic work should be on accelerating economic recovery and promoting normalized production and social orders. Improving expectations, restoring confidence, increasing income, expanding consumption, and stimulating domestic demand will be among the priorities. There is still uncertainty in how the pandemic will develop, so full preparation should be made to deal with the next wave of the virus. China will still need to effectively coordinate pandemic containment with economic and social development."

Survey methodology

The Caixin China General Manufacturing PMI™ is compiled by S&P Global from responses to questionnaires sent to purchasing managers in a panel of around 650 private and state-owned manufacturers. The panel is stratified by detailed sector and company workforce size, based on contributions to GDP. For the purposes of this report, China is defined as mainland China, excluding Hong Kong SAR, Macao SAR and Taiwan.

Survey responses are collected in the second half of each month and indicate the direction of change compared to the previous month. A diffusion index is calculated for each survey variable. The index is the sum of the percentage of 'higher' responses and half the percentage of 'unchanged' responses. The indices vary between 0 and 100, with a reading above 50 indicating an overall increase compared to the previous month, and below 50 an overall decrease. The indices are then seasonally adjusted.

The headline figure is the Purchasing Managers' Index™ (PMI). The PMI is a weighted average of the following five indices: New Orders (30%), Output (25%), Employment (20%), Suppliers' Delivery Times (15%) and Stocks of Purchases (10%). For the PMI calculation the Suppliers' Delivery Times Index is inverted so that it moves in a comparable direction to the other indices.

Underlying survey data are not revised after publication, but seasonal adjustment factors may be revised from time to time as appropriate which will affect the seasonally adjusted data series.

For more information on the survey methodology, please contact: economics@ihsmarkit.com.

Survey dates and history

Data were collected 09-23 January 2023.

Data were first collected April 2004.

About PMI

Purchasing Managers' Index™ (PMI™) surveys are now available for over 40 countries and also for key regions including the eurozone. They are the most closely watched business surveys in the world, favoured by central banks, financial markets and business decision makers for their ability to provide up-to-date, accurate and often unique monthly indicators of economic trends.

https://ihsmarkit.com/products/pmi.html

About Caixin

Caixin is an all-in-one media group dedicated to providing financial and business news, data and information. Its multiple platforms cover quality news in both Chinese and English. Caixin Insight Group is a high-end financial research, data and service platform. It aims to be the builder of China's financial infrastructure in the new economic era.

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https://www.wsj.com/articles/bps-ceo-plays-down-renewables-push-11675249471?mod=hp_lead_pos4

- WSJ NEWS EXCLUSIVE

BP's CEO Plays Down Renewables Push as Returns Lag

Bernard Looney seeks to sharpen strategic focus, with less emphasis on environmental goals

By Jenny Strasburg Follow

Updated Feb. 1, 2023 8:29 am ET

LONDON—BP PLC BP 0.17%increase; green up pointing triangle Chief Executive Bernard Looney plans to dial back elements of the oil giant's high-profile push into renewable energy, according to people familiar with recent discussions.

Mr. Looney has said he is disappointed in the returns from some of the oil giant's renewable investments and plans to pursue a narrower green-energy strategy, the people said. He has told some people close to the company that BP needs to do more to convince shareholders of its strategy to maximize profits in areas where it has a competitive advantage, including its legacy oil-and-gas operations.

In some of the conversations, Mr. Looney has said he plans to place less emphasis on so-called ESG goals—a catchall term for environmental, social and governance—to help clarify that those aren't distracting the company from its ability to deliver profits, the people said.

Mr. Looney, the people said, is casting the moves as a modest short-term course correction rather than a major strategic pivot for the 114-year-old company.

Analysts and some investors say pledges by BP to shift away from fossil fuels and into renewable energy risk handicapping the company's performance. Many companies are struggling to transition to new green technologies while still relying heavily on traditional energy sources.

A BP spokesman referred to previous public statements Mr. Looney and BP have made about the company's strategy, including its commitment to reducing carbon emissions and shifting investments to green energy. Mr. Looney declined to comment through the spokesman.

BP is scheduled to report full-year earnings Feb. 7 after consecutive bumper quarters boosted by massive profit in its natural-gas trading arm. The company will update investors on its strategic progress at that time, the spokesman said.

Mr. Looney, a 32-year BP veteran, took over as CEO in early 2020 and soon announced commitments to shrink greenhouse-gas emissions, including from oil and gas the company sells. Analysts said at the time that the new targets went further than rivals' plans. Investors questioned how renewables could make up for fossil-fuel businesses that typically produced higher—if volatile—returns.

Shares of BP and London-based rival Shell PLC over the past several years have lagged behind those of U.S. competitors, especially the biggest, Exxon Mobil Corp. BP shares are up about 7% from the end of January 2020, having recovered from pandemic lows, while Exxon shares have nearly doubled over the same period.

As European oil companies, BP and Shell face greater investor and government scrutiny over their carbon-reduction plans than do U.S. rivals, which have stuck more to their core oil-and-gas businesses. Still, overall, the sector globally has been caught between some large investors and governments calling for these companies to move away from fossil fuels, while others demand the profits those assets can generate.

BP shares climbed more than 1% on Wednesday morning in early trading.

Mr. Looney has said in some of the recent discussions that the company will continue its push into renewable energy, but with a finer-tuned focus to avoid spreading resources too thinly or relying too heavily on renewables in its broader strategy. He has suggested that areas of continued emphasis will include developing climate-friendly hydrogen, biogas and electric-vehicle partnerships and charging networks, the people said.

He and other BP executives have suggested that the company could play down future investment in areas including solar energy and offshore wind, according to some of the people.

Discussions about the company's direction have caused rifts inside BP over the past year, people close to the company say.


BP CEO Bernard Looney has said he is disappointed with returns from some of the company's renewable investments, according to people familiar with the discussions.PHOTO: KAMRAN JEBREILI/ASSOCIATED PRESS

Mr. Looney's comments follow a challenging three years as CEO for the 52-year-old Irishman. He took over the role as the pandemic was beginning to destroy global energy demand and kneecap U.S. and European major oil companies. BP in 2020 suffered brutal losses and, like peers, slashed its dividend.

Since then, major oil companies have come roaring back with record profits, making them a target of ire from governments and consumers struggling with high energy prices amid Russia's war in Ukraine. BP and other majors in the past year have showered investors with tens of billions of dollars in share buybacks and dividends, in response to shareholder demands for cash after years of lackluster returns.

BP has said it plans by 2030 to slash its fossil-fuel production by 40% from 2019 levels. Mr. Looney has set a target of increasing investments in what it calls "transition growth businesses" including renewable energy and convenience-store operations to around 50% of total capital spending by 2030, up from more than 40% by 2025. Mr. Looney and his lieutenants have said the company is balancing its deeper push into low-emission projects while still nurturing legacy cash cows like oil-and-gas production and trading.

In February 2022, executives sought to reassure investors by saying BP intends to sustain earnings from oil and gas at $30 billion to $35 billion annually, excluding taxes and other factors, through this decade despite the planned production cuts. They said BP would do that by cutting costs and focusing on high-margin production such as offshore drilling in the Gulf of Mexico.

That outlook compares with BP's target to make more than $10 billion a year by 2030 from renewable energy, biogas and other businesses outside of oil-and-gas production.

Electric-vehicle partnerships and charging networks would remain a focus under the proposed shift in BP's strategy.PHOTO: PETER NICHOLLS/REUTERS

Finance chief Murray Auchincloss a year ago told The Wall Street Journal in an interview that the fossil-fuel production cuts wouldn't have a big impact on cash flow, "but there are still some parts of the sector that didn't understand that."

BP has argued that renewable-energy returns will prove more stable than oil-and-gas profit over the long haul, helping its strategy pay off.

But the path has been rocky. In 2020, BP spent $1.1 billion to acquire 50% stakes in two Northeastern U.S. offshore-wind developments from Norwegian rival Equinor ASA, an early player in offshore wind. The move marked BP's entry into the offshore-wind market. Other wind-project developers and investors still consider the price BP paid as inflated.

BP said the stakes and its new strategic partnership with Equinor would open up opportunities elsewhere in the U.S. offshore-wind market. But project managers with other companies have seen BP shying away from expanding its U.S. offshore-wind ambitions as initially described, according to people familiar with the matter. BP balked at the last minute last year at joining Equinor in competing for wind-energy rights off California, some of the people say.

In October 2022, BP agreed to buy U.S. biogas producer Archaea Energy Inc. in a $4.1 billion deal including $3.3 billion in cash. It was BP's biggest acquisition since 2018.

"One of the misconceptions about our strategy is that we're going from oil to renewables. That is not what we are doing," Mr. Looney said in a February 2022 podcast interview with Nicolai Tangen, head of Norges Bank Investment Management, the sovereign-wealth fund that invests Norway's oil wealth and is one of BP's biggest investors.

Mr. Looney went on to say that oil and gas remain core to BP and will help fund its "transition growth engines" like electric-vehicle charging and bioenergy. "Transition does not equal lower returns," he said on the podcast.

 Oil and gas would remain core to BP and help fund its transition to renewables under the proposed adjustment.PHOTO: ALEX KRAUS/BLOOMBERG

Write to Jenny Strasburg at jenny.strasburg@wsj.com

Lightsource bp alone has 16 gigawatts in its pipeline – up from 9.8 gigawatts this time last year and just 1.6 gigawatts in 2018.

And, of course, we are now entering the offshore wind sector, which is growing faster than any other form of renewable energy.

I am really excited about the partnership we have agreed to create with Equinor. They are a world-class offshore wind company and we look forward to growing with them.

[PAUSE]

But let me be clear.

We know what happens when volume becomes more important than value.

And therefore we will only pursue opportunities that we believe can generate the disciplined returns we expect, and our shareholders expect.

And that links to the fourth question.

Can we deliver the 8-10% returns from renewables?

The answer is very simply – yes.

We actually believe we can do better, and these returns could turn out to be conservative. But let me take you through why we have absolute confidence in our plan.

It is firstly based on experience – specifically with Lightsource bp

Since we formed the partnership at the start of 2018, Lightsource bp has expanded its presence from 5 to 13 countries.

As I mentioned, it has grown its project pipeline from 1.6 gigawatts to 16.

And it has delivered 17 projects since 2018.

They typically achieve returns in the 8 to 10% range.

So how do we get to 8 to 10% across our renewables portfolio as a whole?

First, we know returns start at around 5 to 6% on an equity basis in a competitive auction.

Second, we believe that through our extensive experience in operations and project management – we can add value through applying our processes. We have track record here. For example in Biofuels – where we have, and more recently through bp Bunge, have increased the efficiency in harvesting by 50% since 2016.

Third, we'll integrate with the rest of bp. Through Trading where we have a long track record – over 30 years – of delivering close to a 2% return uplift. Or through the application of our digital expertise to drive additional performance. Or by bundling our renewables offer with different forms of energy along with our Natural Climate Solutions and offsets portfolio, to give customers what they want – clean, low cost and firm energy.

Fourth, we will use leverage which is typical in this industry.

The combination of these four areas gets us to 8-10%.

Beyond this – we have the choice to optimize the portfolio – to farm down or not – and if we do – that could add a further 1 to 2%.

So yes – we are confident we can deliver the returns we are targeting.

Now the fifth and final question – why bp? What is our competitive advantage – really?

Especially in this new world.

And there are four reasons:

First – our strong track record in operations and project management.

Second – our focus on relationships and partnerships around the world,

Third – our approach to digital and how we are using it to drive cost benefits and generate incremental value

Fourth – integration, and specifically our ability to integrate at a global level and across energy vectors.

Starting with operations and project management.

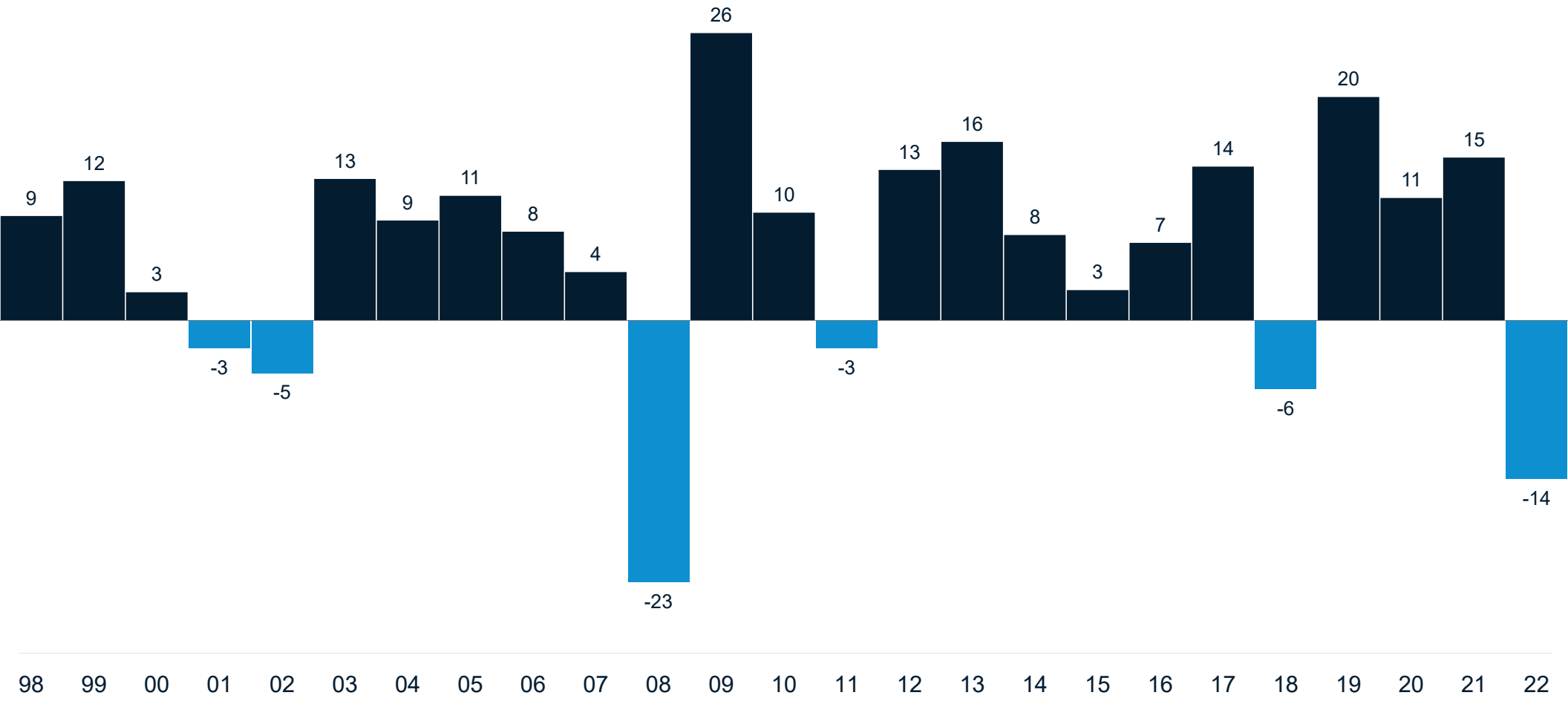
Today we are strong in oil and gas, strong in refining and have demonstrated how many of these technical skills are transferable.

We have an exceptional global project management organisation – top

Second worst year in the history of the fund

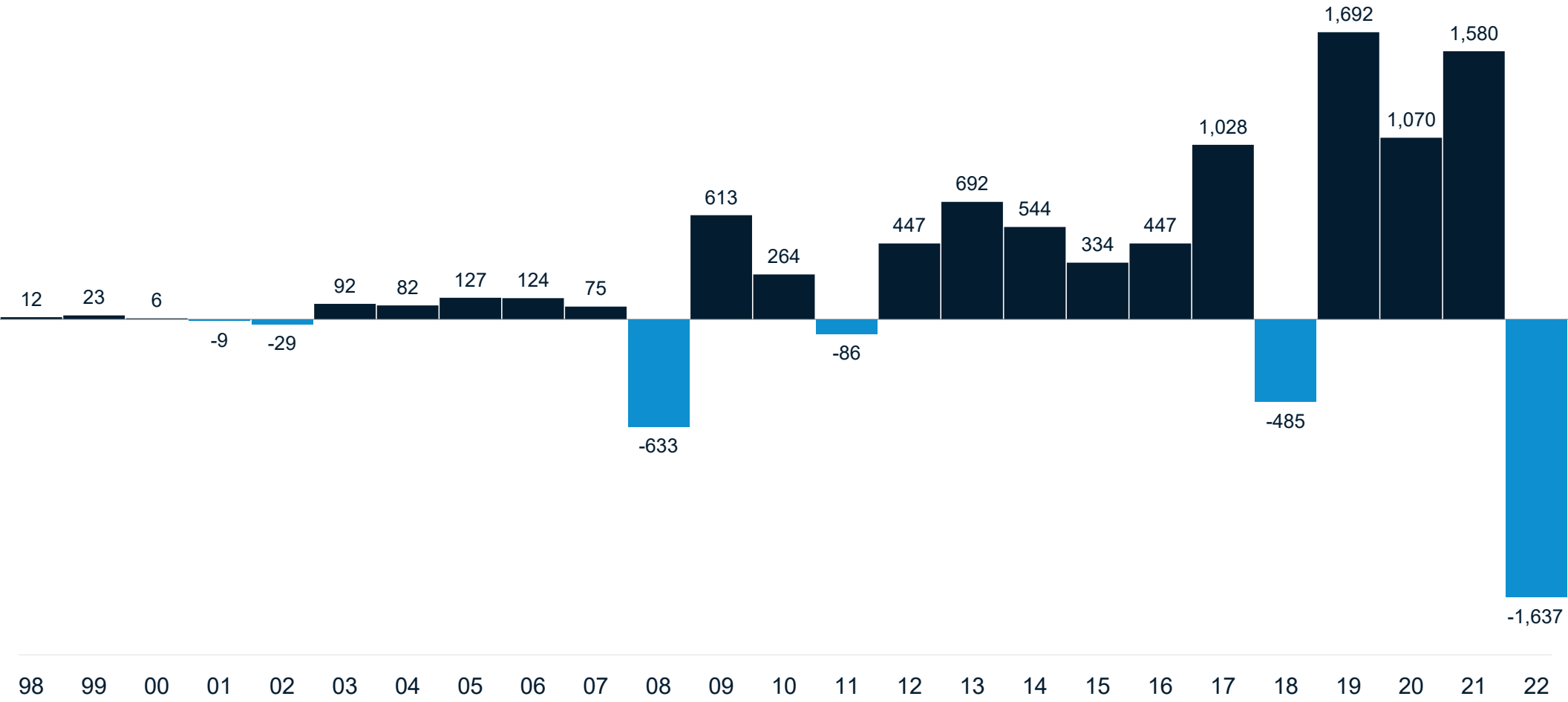
Measured in percent.

Measured in the fund's currency basket



Biggest loss in return ever measured in kroner

Billion kroner



Strong negative return in the equity market

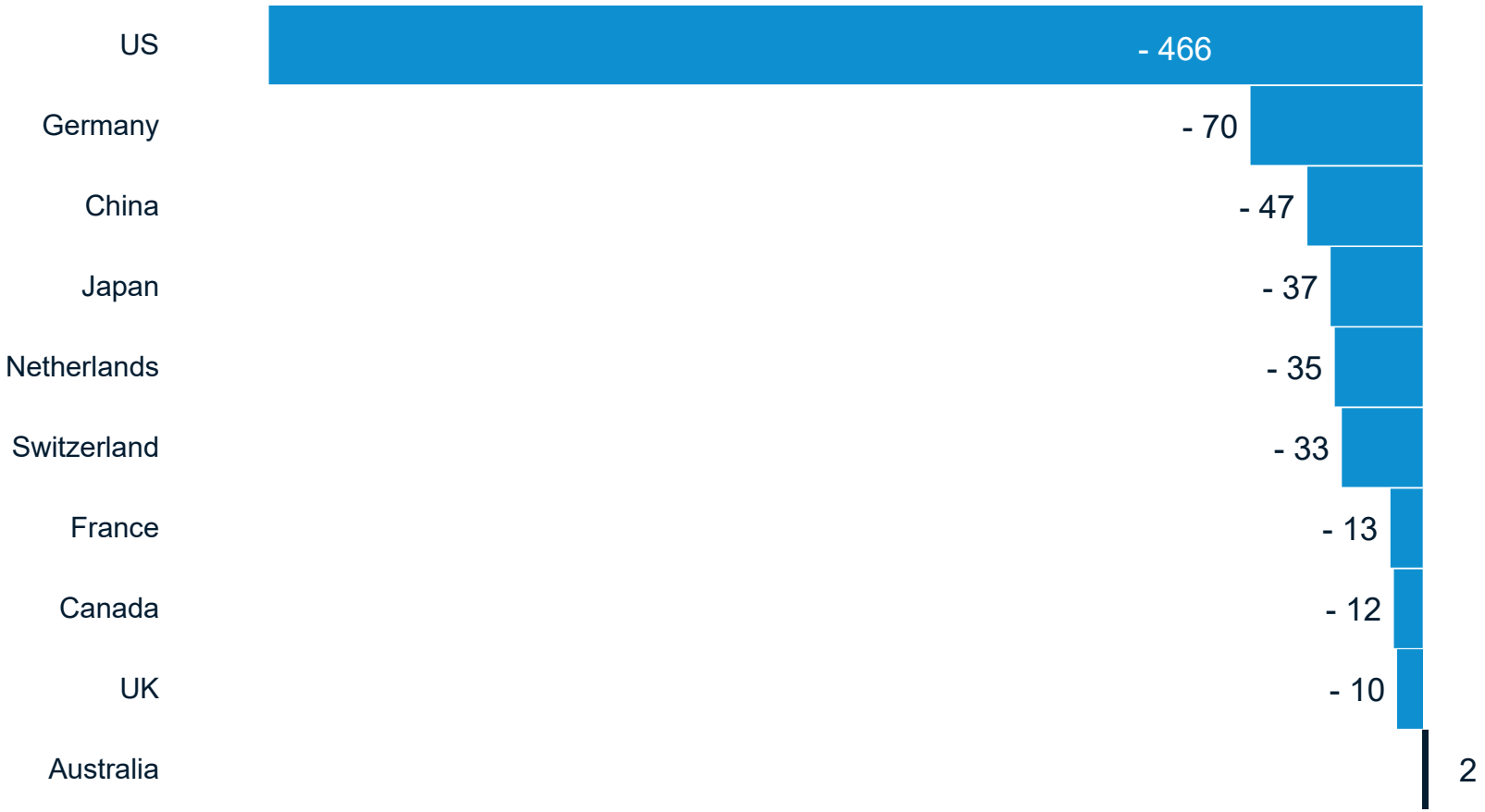
Dollar. Percent

FTSE Global All Cap

Extremely low return in the US market

As at 31.12.2022

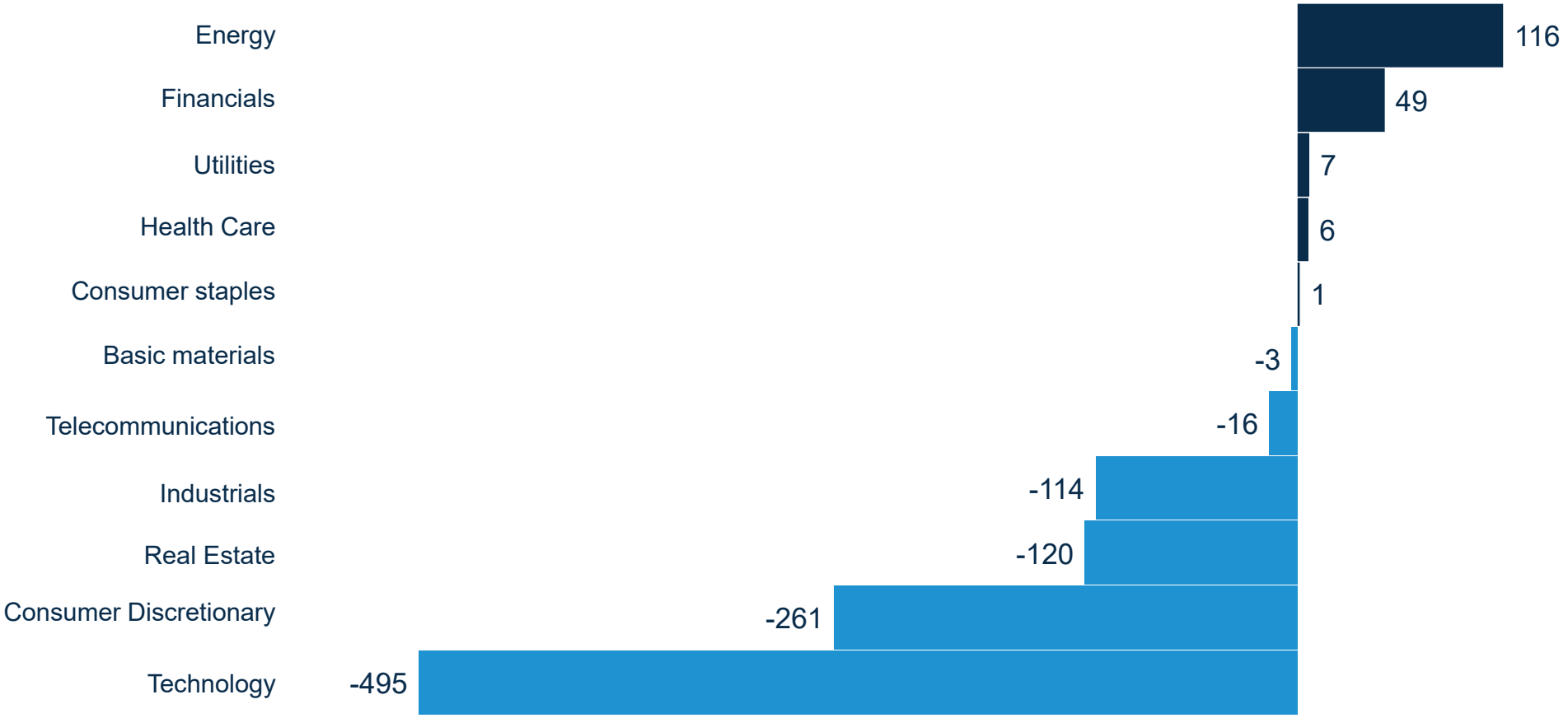
Billion kroner



The strongest sectors in the past, are now the weakest

Billion kroner

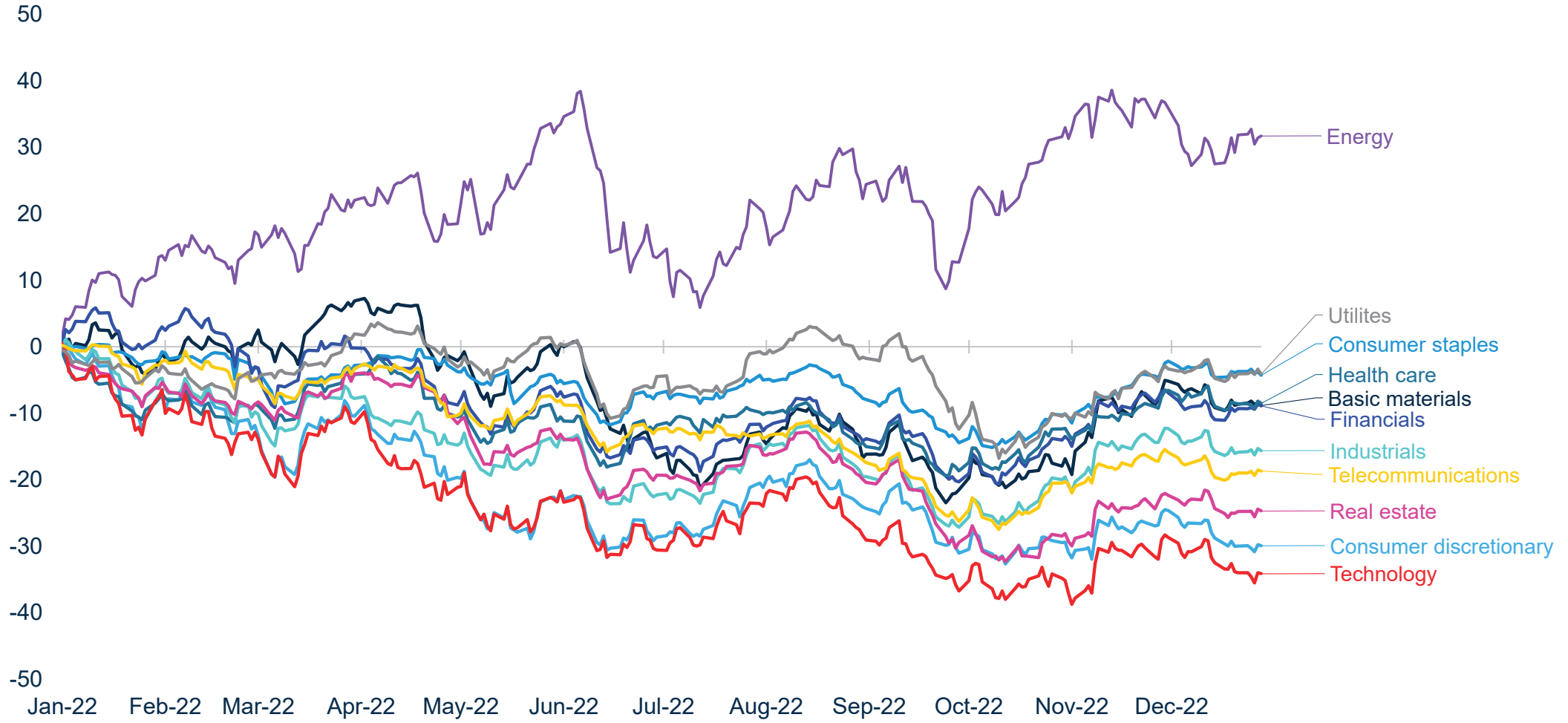
FTSE industry classification
As at 31.12.2022



Energy was the only sector with positive return

FTSE Global All Cap

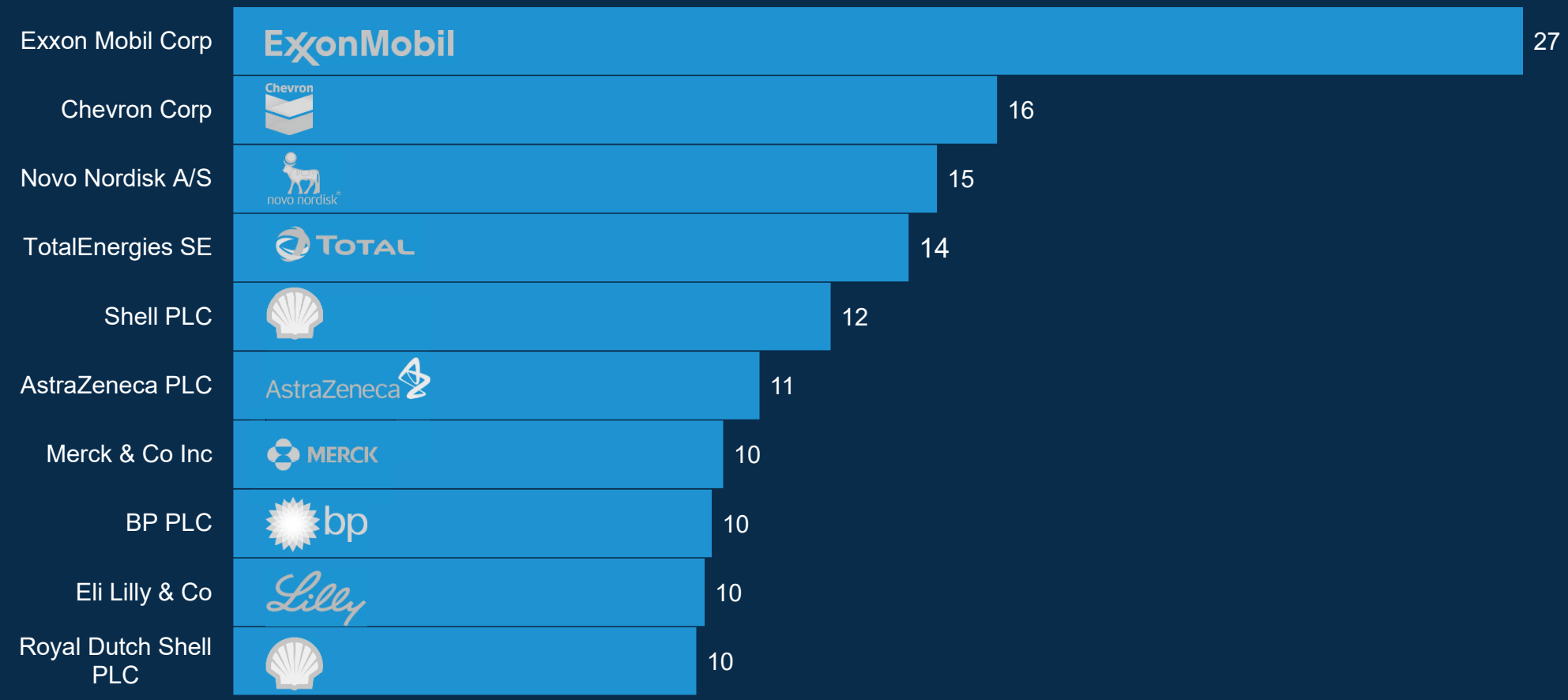
Dollar. Percent



Energy companies contributed most positively to the absolute return

As at 31.12.2022

Billion kroner



https://www.politico.com/news/2023/01/29/whale-deaths-new-jersey-offshore-wind-00079462

Why whale deaths are dividing environmentalists — and firing up Tucker Carlson

Since December, at least nine whales have been stranded on beaches in New Jersey and New York.

The body of a humpback whale lies on a beach in Brigantine, N.J., after it washed ashore on Jan. 13, 2023. | Wayne Parry/AP Photo

By **RY RIVARD**
01/29/2023 07:00 AM EST

Dead whales are usually a sure-fire way to unite environmentalists — but not in New Jersey.

Instead, a recent spate of beached whales in the Northeast is exposing rifts among activists, energizing Republicans and threatening to complicate one of President Joe Biden's top energy goals.

Since December, at least nine whales have been stranded on beaches in New Jersey and New York. The deaths are happening as pre-construction work ramps up on offshore wind farms, which are a key part of the nation and New Jersey's climate change strategy.

There is no evidence the wind work and whale deaths are linked. But Clean Ocean Action, a 40-year-old nonprofit, believes the two things happening at once may be more than just a fluke.

Real or rhetorical, the claim is stirring a new political debate.

The group, which has been one of the few environmental organizations to criticize offshore wind, is using the whale deaths to push for a halt of offshore wind development until officials can figure out what is going on. Its message is spreading.

Clean Ocean Action is now a strange bedfellow with conservative media figure Tucker Carlson, six Republican lawmakers in the New Jersey Legislature who represent coastal districts and Rep. Jeff Van Drew (R-N.J.), who co-chairs the congressional offshore wind caucus and is its only Republican member.

Carlson is running a series of segments called "The Biden Whale Extinction." In mid-January, he called wind energy "the DDT of our time" and a guest on the show said, without offering specific evidence, that wind developers' survey ships were "carpet bombing the ocean floor with intense sound" that would confuse whales.

Van Drew has called on Gov. Phil Murphy to pause offshore wind activity in New Jersey.

"Since offshore wind projects were being proposed by Governor Murphy to be built off the coast of New Jersey, I have been adamantly opposed to any activity moving forward until research disclosed the impacts these projects would have on our environment and the impacts on the fishing industry," Van Drew, whose South Jersey district includes several coastal counties, said in a statement.

Murphy, like the president, has made offshore wind a key component of his clean energy plans.

At least one moderate Democrat is expressing hesitation, too. New Jersey state Sen. Vin Gopal, who represents part of coastal Monmouth County, said he's "very concerned" about any ties between wind and the whales.

The political headache couldn't come at a worse time for the offshore wind industry, which is already struggling to finance wind farms, including Ocean Wind 1, which would be New Jersey's first.

Biden has set a national goal of 30 gigawatts of offshore wind by 2030, enough energy to power 10 million homes, and Murphy set a state level goal of 11 gigawatts by 2040. To achieve these goals, developers in New Jersey and other states will need to quickly install hundreds of giant wind turbines miles off the coast. So far, just one major project in the region, the South Fork wind farm in New York, has broken ground.

Clean Ocean Action Executive Director Cindy Zipf said she has no evidence to tie the whale deaths to offshore wind, beyond that there is an unprecedented number of whales dying on beaches and an unprecedented amount of offshore wind work getting underway. But there's also no evidence to prove there isn't a connection.

Cindy Zipf speaks at a press conference on the beach in Atlantic City, N.J., on Jan. 9, 2023. | Wayne Parry/AP Photo

For years, Zipf's group has argued the federal government has skimped on monitoring new wind infrastructure planned for the ocean and isn't certain of the effect sonic mapping of the ocean floor and an increase in ship traffic will have.

Wind supporters from the New Jersey chapters of the Sierra Club and League of Conservation Voters say talk of a connection with whales is baseless and no reason to stop the development of clean energy. They say an already-warming ocean is a known threat to whales and clean power from wind energy could help stop climate change.

Federal regulators from the Bureau of Ocean Energy Management gave offshore wind supporters a hand by telling reporters last week that there is no evidence construction would exacerbate or compound whale deaths. The kind of sound surveys being done by offshore wind companies has not been linked to stranded whales, they said.

BOEM has been monitoring an unusual number of whale deaths since 2016 and found that about 40 percent of the animals they examined were struck by some ship or entangled in fishing gear. Those sorts of threats are old but may become more common because whales are following their prey closer to shore — something that may be a result of climate change.

There are no wind farms off the New Jersey coast yet, though surveys of the seafloor using sound have been conducted.

Worries that sonic mapping might be affecting whales' navigation are overblown, said Erica Staaterman, an expert at the federal government's Center for Marine Acoustics. Staaterman said during the call with reporters that there's a "pretty big difference" between the relatively brief and targeted sound mapping used by offshore wind and the very loud sounds used by oil and gas companies to take measurements deep beneath the seafloor.

She didn't make it explicit, but there is a political point there: if conservative media is so concerned about the whales, why are they opposed to offshore wind but pushing offshore drilling?

Because it isn't clear why the whales are dying, the absence of evidence is being used as evidence of regulatory absence.

"It doesn't seem to me that they have conducted very much review of anything, which is what we're calling for," Zipf said in an interview after the media briefing by federal regulators.

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Other environmental groups like the Sierra Club have been scrambling to tamp down the speculation and undo the notion that offshore wind is killing whales. At the same time, they're trying to point out hypocrisy among offshore wind's foes.

"I wouldn't call for commercial shipping to stop because I know it's unreasonable. It's trade. I know it's not going to stop," New Jersey Sierra Club Director Anjuli Ramos-Busot said in an interview. "So I find it unreasonable to call for the pause or moratorium on offshore wind — which is going to save us all."

Last year, the East Coast's largest port, the Port of New York and New Jersey, saw nearly 3,000 ships come and go, a figure that vastly undercounts all the ocean traffic in the region and dwarfs the number of vessels that have anything to do with offshore wind.

In New Jersey, Murphy's offshore wind hopes are already meeting headwinds because of basic economics.

Guests tour the five turbines of America's first offshore wind farm, owned by Orsted, off the coast of Block Island, R.I., on Oct. 17, 2022. | David Goldman/AP Photo

Orsted, the Danish developer behind what would be New Jersey's first offshore wind farm, said late last year it's worried about making money on the project and other large projects approved in other states.

The state Board of Public Utilities, which controls Orsted's return on the project, has received well over 100 public comments since December opposing offshore wind and citing whale deaths.

Wind supporters point out that some of the opposition to offshore wind is coordinated and involves misinformation supported by fossil fuel interests.

At a press conference organized by the New Jersey League of Conservation Voters and the Sierra Club, Jody Stewart of the New Jersey Organization Project, a group formed after Hurricane Sandy to help with recovery and to protect shores from extreme weather, said if there is any investigation it should be of the coordinated industry campaign to "stir up opposition among locals."

"They're the ones taking this narrative of whales dying because of offshore wind and running with it — not regular people, not people who live here," she said.

That's a harder criticism to pin on Clean Ocean Action, which was founded to fight ocean dumping and does beach cleanups, opposes offshore drilling and helped block liquefied natural gas facilities along the New Jersey coast.

There is some evidence, from inland waterways, that the federal government has advanced wind-related projects without fully exploring the threat new shipping routes pose to wildlife.

Last summer, the Delaware Riverkeeper Network alleged federal fisheries officials ignored how construction and operation of a New Jersey port being created to help the wind industry could harm fish, especially a rare type of Atlantic sturgeon in the river. In an email later obtained by the group, federal officials appeared to acknowledge they hadn't used the best available information about how boats might kill river sturgeon. But that didn't halt construction at the wind port.

Privately, offshore wind supporters wonder if Clean Ocean Action's argument is more about NIMBYism than environmentalists.

Zipf rejects this.

"Clean Ocean Action's mission is solely to protect the ocean, that is our mission, and, you know, being a voice for the ocean oftentimes makes us a lone voice for a period of time until others understand the scope and the threat to the ocean is a threat to us all," she said.

- **FILED UNDER:**
- WIND,
- ENVIRONMENT,
- NEW JERSEY,
- TUCKER CARLSON,
- NEW YORK,

https://www.fao.org/worldfoodsituation/foodpricesindex/en/

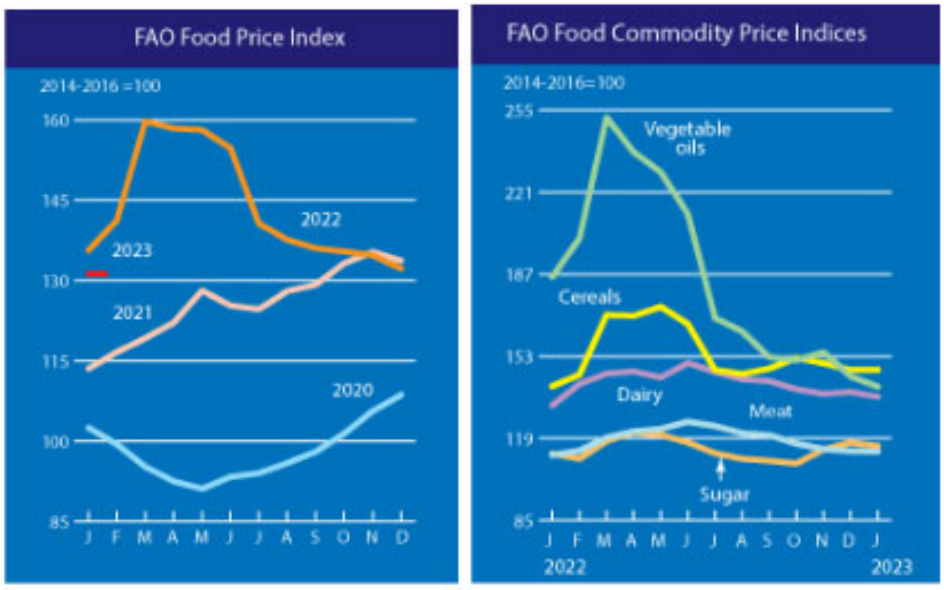
FAO Food Price Index

The FAO Food Price Index (FFPI) is a measure of the monthly change in international prices of a basket of food commodities. It consists of the average of five commodity group price indices weighted by the average export shares of each of the groups over 2014-2016. A feature article published in the June 2020 edition of the Food Outlook presents the revision of the base period for the calculation of the FFPI and the expansion of its price coverage, to be introduced from July 2020. A November 2013 article contains technical background on the previous construction of the FFPI.

Monthly release dates for 2023: 6 January, 3 February, 3 March, 7 April, 5 May, 2 June, 7 July, 4 August, 8 September, 6 October, 3 November, 8 December.

FAO Food Price Index continues to decline

Release date: 03/02/2023



» The **FAO Food Price Index*** (FFPI) averaged 131.2 points in January 2023, down 1.1 points (0.8 percent) from December, marking the 10th consecutive monthly decline. With this latest decline, the index has fallen 28.6 points (17.9 percent) from the peak it reached in March 2022. The drop in the index in January was driven by declines in the price indices of vegetable oils, dairy and sugar, while those of cereals and meat remained largely stable.

» The **FAO Cereal Price Index** averaged 147.4 points in January, up fractionally (0.1 percent) from December and 6.7 points (4.8 percent) above its level one year ago. Among the major cereals, world prices of rice and maize rose, while those of barley and wheat fell in January. International rice prices increased by 6.2 percent month-on-month, influenced by tighter availabilities, a strong local demand in some Asian exporting countries and exchange rate movements. World maize prices also increased, albeit marginally (0.5 percent), mostly influenced by a strong demand for exports from Brazil and concerns over dry conditions in Argentina, offsetting a downward trend in US export prices amidst slow sales. Among other coarse grains, world prices of sorghum increased slightly (0.9 percent), mainly influenced by the strength in maize markets and lower production in the United States of America, the top global exporter, while the decline in barley prices (1.0 percent) reflected spillover from the global wheat market. Meanwhile, international wheat prices fell for a third consecutive month in January, by 2.5 percent, as global supplies increased with larger than previously estimated production in Australia and the Russian Federation.

» The **FAO Vegetable Oil Price Index** averaged 140.4 points in January, down 4.2 points (2.9 percent) month-on-month and standing nearly 25 percent below its level a year ago. The decrease reflected lower world prices of palm, soy, sunflowerseed and rapeseed oils. In January, international palm oil prices dropped for the second consecutive month, largely weighed by subdued global import demand, as major importers replenished their stocks during the past few months. World soyoil quotations also fell moderately, linked to sluggish import demand due to uncompetitive

prices compared with those of other vegetable oils, as well as improved weather conditions in Argentina lately, raising production prospects. In the case of sunflower and rapeseed oils, international prices fell on ample global export supplies.

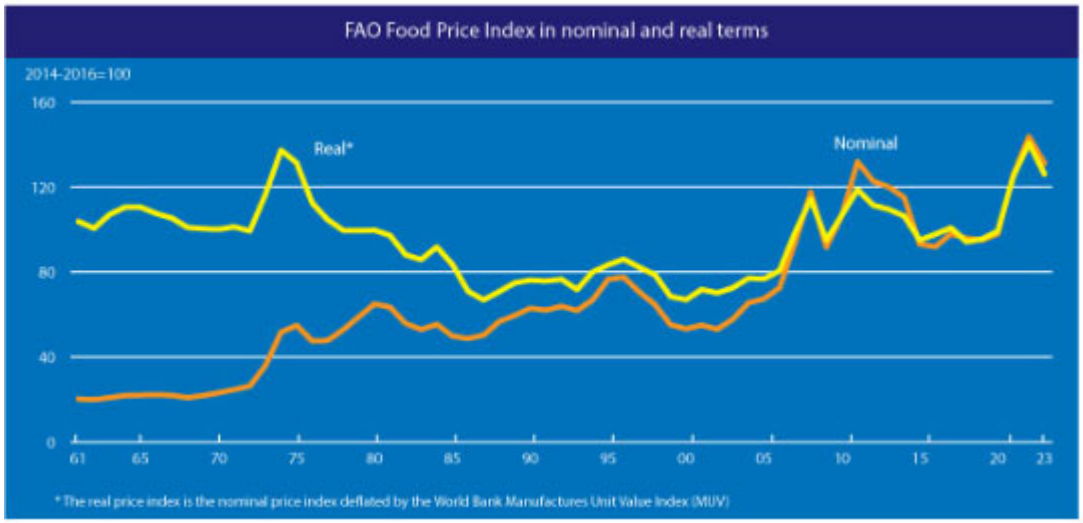
» **The FAO Dairy Price Index** averaged 136.2 points in January, down 2.0 points (1.4 percent) from December, hitting its lowest level in 12 months. The decline in January reflected lower international prices of butter and milk powders. World butter prices fell for the seventh consecutive month, underpinned by subdued import demand for long-term supplies at prevailing prices, stemming from market expectations for prices to fall further and increased supplies from Oceania. Meanwhile, international whole milk powder prices declined on lighter demand from leading importers and increased supplies from New Zealand, despite seasonally declining milk output. Skim milk powder prices also fell, mainly due to a sluggish global demand. By contrast, world cheese prices increased slightly, driven by a recovery in food services and retail sales in Western Europe, following the new-year holidays, and currency movements.

» **The FAO Meat Price Index*** averaged 113.6 points in January, down marginally (0.1 points and 0.1 percent) from December, continuing the decline for the seventh consecutive month, but it still stood 1.5 points (1.3 percent) above its year-earlier level. Lower world prices of poultry, bovine and pig meats underpinned the decline in the index in January. World poultry meat prices fell further as global export availabilities from leading suppliers continued to exceed import demand, despite widespread avian influenza outbreaks. Meanwhile, pig meat prices fell slightly due to ample supplies of slaughter-ready pigs, especially in Brazil and the United States of America, and lower-than-expected imports by China ahead of the Spring Festival. Likewise, international bovine meat prices declined, with increased supplies of slaughter-ready cattle, mainly in Oceania. By contrast, ovine meat prices rose on higher import demand, notwithstanding increased slaughter volumes in Australia.

» The **FAO Sugar Price Index** averaged 115.8 points in January, down 1.3 points (1.1 percent) from December, marking the first decline after sharp increases registered in the previous two months. The January decline in international sugar price quotations was mainly triggered by the good harvest progress in Thailand and favourable weather conditions benefiting sugarcane crop development in key growing areas of Brazil. Concerns over lower crop yields in India, which could affect export availabilities, contained more substantial sugar price declines. Also, the hike in gasoline prices in Brazil, which supported demand for ethanol, and the strengthening of the Brazilian real against the United States dollar contributed to limiting the downward pressure on world sugar prices.

** Unlike for other commodity groups, most prices utilized in the calculation of the FAO Meat Price Index are not available when the FAO Food Price Index is computed and published; therefore, the value of the Meat Price Index for the most recent months is derived from a mixture of projected and observed prices. This can, at times, require significant revisions in the final value of the FAO Meat Price Index which could in turn influence the value of the FAO Food Price Index.*

To access benchmark export quotations of various foodstuffs and national retail/wholesale prices of foods please visit FAO's Food Price Monitoring and Analysis (FPMA) Tool



FAO food price index

		Food Price Index [1]	Meat [2]	Dairy [3]	Cereals [4]	Vegetables Oils [5]	Sugar [6]
2005		**67.4**	**71.8**	**77.2**	**60.8**	**64.4**	61.2
2006		**72.6**	**70.5**	**73.1**	**71.2**	**70.5**	91.4
2007		**94.3**	**76.9**	**122.4**	**100.9**	**107.3**	62.4
2008		**117.5**	**90.2**	**132.3**	**137.6**	**141.1**	79.2
2009		**91.7**	**81.2**	**91.4**	**97.2**	**94.4**	112.2
2010		**106.7**	**91.0**	**111.9**	**107.5**	**122.0**	131.7
2011		**131.9**	**105.3**	**129.9**	**142.2**	**156.5**	160.9
2012		**122.8**	**105.0**	**111.7**	**137.4**	**138.3**	133.3
2013		**120.1**	**106.2**	**140.9**	**129.1**	**119.5**	109.5
2014		**115.0**	**112.2**	**130.2**	**115.8**	**110.6**	105.2
2015		**93.0**	**96.7**	**87.1**	**95.9**	**89.9**	83.2
2016		**91.9**	**91.0**	**82.6**	**88.3**	**99.4**	111.6
2017		**98.0**	**97.7**	**108.0**	**91.0**	**101.9**	99.1
2018		**95.9**	**94.9**	**107.3**	**100.8**	**87.8**	77.4
2019		**95.1**	**100.0**	**102.8**	**96.6**	**83.2**	78.6
2020		**98.1**	**95.5**	**101.8**	**103.1**	**99.4**	79.5
2021		**125.7**	**107.7**	**119.1**	**131.2**	**164.9**	109.3
2022		**143.7**	**118.9**	**142.4**	**154.7**	**187.8**	114.5
2022	January	**135.6**	112.1	132.6	140.6	185.9	112.7
	February	**141.2**	113.9	141.5	145.3	201.7	110.5
	March	**159.7**	119.3	145.8	170.1	251.8	117.9
	April	**158.4**	121.9	146.7	169.7	237.5	121.5
	May	**158.1**	122.9	144.2	173.5	229.2	120.4
	June	**154.7**	125.9	150.2	166.3	211.8	117.3
	July	**140.6**	124.1	146.5	147.3	168.8	112.8
	August	**137.6**	121.1	143.4	145.6	163.3	110.5
	September	**136.0**	120.3	142.7	147.9	152.6	109.7
	October	**135.4**	116.8	139.3	152.3	151.3	108.6
	November	**134.7**	114.6	137.4	150.1	154.7	114.4
	December	**132.2**	113.7	138.2	147.3	144.6	117.2
2023	January	**131.2**	113.6	136.2	147.4	140.4	115.8

1 Food Price Index: Consists of the average of 5 commodity group price indices mentioned above, weighted with the average export shares of each of the groups for 2014-2016: in total 95 price quotations considered by FAO commodity specialists as representing the international prices of the food commodities are included in the overall index. Each sub-index is a weighted average of the price relatives of the commodities included in the group, with the base period price consisting of the averages for the years 2014-2016.

2 Meat Price Index: Based on 35 average export unit values/market prices of four meat types (bovine, pig, poultry and ovine) from 10 representative markets. Within each meat type, export unit values/prices are weighted by the trade shares of their respective markets, while the meat types are weighted by their average global export trade shares for 2014-2016. Quotations for the two most recent months may consist of estimates and be subject to revision.

3 Dairy Price Index: Computed using 8 price quotations of four dairy products (butter, cheese, SMP and WMP) from two representative markets. Within each dairy product, prices are weighted by the trade shares of their respective markets, while the dairy products are weighted by their average export shares for 2014-2016.

4 Cereals Price Index: Compiled using the International Grains Council (IGC) wheat price index (an average of 10 different wheat price quotations), the IGC maize price index (an average of 4 different maize price quotations), the IGC barley price index (an average of 5 different barley price quotations), 1 sorghum export quotation and the FAO All Rice Price Index. The FAO All Rice Price Index is based on 21 rice export quotations, combined into four groups consisting of Indica, Aromatic, Japonica and Glutinous rice varieties. Within each varietal group, a simple average of the relative prices of appropriate quotations is calculated; then the average relative prices of each of the four rice varieties are combined by weighting them with their (fixed) trade shares for 2014-2016. The Cereal Price Index combines the relative prices of sorghum, the IGC wheat, maize and barley price indices (re-based to 2014-2016) and the FAO All Rice Price Index by weighing each commodity with its average export trade share for 2014-2016.

5 Vegetable Oil Price Index: Consists of an average of 10 different oils weighted with average export trade shares of each oil product for 2014-2016.

6 Sugar Price Index: Index form of the International Sugar Agreement prices with 2014-2016 as base.

https://www.naked capitalism.com/2023/01/rural-americans-arent-included-in-inflation-figures-and-for-them-the-cost-of-living-may-be-rising-faster.html

Rural Americans Aren't Included in Inflation Figures – and for Them, the Cost of Living May Be Rising Faster

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By Stephan Weiler, the William E. Morgan Endowed Chair as Professor of Economics at Colorado State University, and Tessa Conroy, an economic development specialist at the University of Wisconsin-Madison /Extension. Originally published at The Conversation.

When the Federal Reserve convenes at the end of January 2023 to set interest rates, it will be guided by one key bit of data: the U.S. inflation rate. The problem is, that stat ignores a sizable chunk of the country – rural America.

Currently sitting at 6.5%, the rate of inflation is still high, even though it has fallen back slightly from the end of 2022.

The overall inflation rate, along with core inflation – which strips out highly volatile food and energy costs – is seen as key to knowing whether the economy is heating up too fast, and guided the Fed as it imposed several large 0.75 percentage point interest rate increases in 2022. The hope is that raising the benchmark rate, which in turn increases the costs of taking out a bank loan or mortgage, for example, will help reduce inflation back to the Fed target of around 2%.

But the main indicator of inflation, the consumer price index, is compiled by looking at the changes in price specifically urban Americans pay for a set basket of goods. Those living in rural America are not surveyed.

As economists who study rural America, we believe this poses a problem: People living outside America's cities represent 14% of the U.S. population, or around 46 million people. They are likely to face different financial pressures and have different consumption habits than urbanites.

The fact that the Bureau of Labor Statistics surveys only urban populations for the consumer price index makes assessing rural inflation much more difficult – it may even be masking a rural-urban inflation gap.

To assess if such a gap exists, one needs to turn to other pricing data and qualitative analyses to build a picture of price growth in nonurban areas. We did this by focusing on four critical goods and services in which rural and urban price effects may be significantly different. What we found was rural areas may indeed be suffering more from inflation than urban areas, creating an underappreciated gap.

1. The cost of running a car in the country

Higher costs related to cars and gas can contribute to a urban-rural inflation gap, severely eating into any discretionary income for families outside urban areas, a 2022 report found.

This is likely related to there being considerable differences in vehicle purchases, ownership and lengths of commutes between urban and rural Americans.

Car ownership is integral to rural life, essential for getting from place to place, whereas urban residents can more easily choose cheaper options like public transit, walking or bicycling. This has several implications for expenses in rural areas.

Rural residents spend more on car purchases out of necessity. They are also more likely to own a used car. During the first year of the COVID-19 pandemic, there was a huge increase in used car prices as a result of a lack of new vehicles due to supply chain constraints. These price increases likely affected remote areas disproportionately.

Rural Americans tend to drive farther as part of their day-to-day activities. Because of greater levels of isolation, rural workers are often required to make longer commutes and drive farther for child care, with the proportion of those traveling 50 miles (80 kilometers) or more for work having increased over the past few years. In upper

Midwest states as of 2018, nearly 25% of workers in the most remote rural counties commute 50 miles (80 kilometers) or more, compared with just over 10% or workers in urban counties.

Longer journeys mean cars and trucks will wear out more quickly. As a result, rural residents have to devote more money to repairing and replacing cars and trucks – so any jump in automotive inflation will hit them harder.

Though fuel costs can be volatile, periods of high energy prices – such as the one the U.S. experienced through much of 2022 – are likely to disproportionately affect rural residents given the necessity and greater distances of driving. Anecdotal evidence also suggests gas prices can be higher in rural communities than in urban areas.

2. Rising cost of eating at home – and traveling for groceries

As eating away from home becomes more expensive, many households may choose to eat in more often to cut costs. But rural residents already spend a larger amount on eating at home – likely due in part to the slimmer choices available for eating out.

This means they have less flexibility as food costs rise, particularly when it comes to essential grocery items for home preparation. And with the annual inflation of the price of groceries outpacing the cost eating out – 11.8% versus 8.3% – dining at home becomes comparably more expensive.

Rural Americans also do more driving to get groceries – the median rural household travels 3.11 miles (5 kilometers) to go to the nearest grocery store, compared with 0.69 miles (1.1 kilometers) for city dwellers. This creates higher costs to feed a rural family and again more vehicle depreciation.

Rural grocery stores are also dwindling in number, with dollar stores taking their place. As a result, fresh food in particular can be scarce and expensive, which leads to a more limited and unhealthy diet. And with food-at-home prices rising faster than prices at restaurants, the tendency of rural residents to eat more at home will see their costs rising faster.

3. The cost of growing old and ill outside cities

Demographically, rural counties trend older – part of the effect of younger residents migrating to cities and college towns for either work or educational reasons. And older people spend more on health insurance and medical services. Medical services overall have been rising in cost too, so those older populations will be spending more for vital doctors visits.

Again with health, any increase in gas prices will disproportionately hit rural communities more because of the extra travel needed to get even primary care. On average, rural Americans travel 5 more miles (8 kilometers) to get to the nearest hospital than those living in cities. And specialists may be hundreds of miles away.

4. Cheaper home costs, but heating and cooling can be expensive

Rural Americans aren't always the losers when it comes to the inflation gap. One item in rural areas that favors them is housing.

Outside cities, housing costs are generally lower, because of more limited demand. More rural Americans own their homes than city dwellers. Since owning a home is generally cheaper than renting during a time of rising housing costs, this helps insulate homeowners from inflation, especially as housing prices soared in 2021.

But even renters in rural America spend proportionately less. With housing making up around a third of the consumer price index, these cost advantages work in favor of rural residents.

However, poorer-quality housing leaves rural homeowners and renters vulnerable to rising heating and cooling costs, as well as additional maintenance costs.

Inflation – a disproportionate burden

While there is no conclusive official quantitative data that shows an urban-rural inflation gap, a review of rural life and consumption habits suggests that rural Americans suffer more as the cost of living goes up.

Indeed, rural inflation may be more pernicious than urban inflation, with price increases likely lingering longer than in cities.