Energy Tidbits

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Produced by: Dan Tsubouchi

Supplemental Documents

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

Ryan Dunfield
Principal, CEO
rdunfield@safgroup.ca

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

Ryan Haughn
Principal, Energy
rhaughn@safgroup.ca

Table 1. Summary of natural gas supply and disposition in the United States, 2016-2021
(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]
2016 Total	**32,592**	**28,400**	**1,808**	**26,592**	**57**	**671**	**340**	**-216**	**27,444**
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									
January	3,385	2,981	208	2,773	5	-74	730	-25	3,409
February	3,067	2,709	189	2,520	5	-97	586	-4	3,010
March	3,396	3,019	211	2,809	5	-121	257	-43	2,907
April	3,329	2,934	205	2,729	5	-132	-401	4	2,205
May	3,432	3,055	213	2,842	5	-161	-494	-67	2,126
June	3,317	2,969	207	2,761	5	-159	-452	-36	2,119
July	3,412	3,084	215	2,869	5	-163	-270	-31	2,410
August	3,467	3,159	220	2,939	5	-165	-303	-35	2,441
September	3,399	3,054	213	2,841	5	-186	-440	-2	2,217
October	3,571	3,200	223	2,977	5	-215	-364	-75	2,328
November	3,496	3,120	218	2,902	5	-218	159	-70	2,779
December	3,621	3,232	226	3,007	5	-225	433	-73	3,148
Total	**40,892**	**36,515**	**2,548**	**33,968**	**62**	**-1,915**	**-558**	**-458**	**31,099**
2020									
January	E3,590	E3,182	234	E2,948	6	-248	571	20	3,296
February	E3,342	E2,959	212	E2,747	6	-216	535	-40	3,033
March	E3,561	E3,166	235	E2,931	6	-284	49	6	2,708
April	E3,372	E3,002	214	E2,788	6	-231	-306	-12	2,245
May	E3,298	E2,934	212	E2,722	5	-209	-448	1	2,071
June	E3,225	E2,876	226	E2,651	5	-151	-358	-11	2,135
July	E3,383	E3,023	241	E2,783	6	-139	-161	4	2,493
August	E3,388	E3,037	240	E2,797	4	-148	-227	-21	2,404
September	E3,273	E2,914	230	E2,684	4	-221	-323	30	2,174
October	E3,379	E2,996	238	E2,757	5	-282	-92	-64	2,323
November	E3,370	E2,990	231	E2,760	5	R-316	-4	R-4	2,440
December	E3,508	E3,094	225	E2,869	6	R-287	587	R-17	3,158
Total	**E40,690**	**E36,173**	**2,737**	**E33,436**	**64**	**R-2,732**	**-178**	**R-107**	**30,482**
2021									
January	E3,506	E3,100	232	E2,868	5	-279	707	-15	R3,286
February	RE2,924	RE2,577	170	RE2,407	6	-155	781	R-5	R3,034
March	RE3,484	RE3,083	229	RE2,854	5	R-353	59	R43	2,608
April	E3,396	E3,013	237	E2,776	5	-352	-174	-12	2,244
2021 4-Month YTD	**E13,310**	**E11,773**	**869**	**E10,904**	**22**	**-1,140**	**1,373**	**12**	**11,171**
2020 4-Month YTD	**E13,866**	**E12,308**	**894**	**E11,414**	**23**	**-979**	**849**	**-25**	**11,282**
2019 4-Month YTD	**13,177**	**11,642**	**812**	**10,830**	**20**	**-423**	**1,172**	**-68**	**11,531**

[a] Monthly natural gas plant liquid (NGPL) production, gaseous equivalent, is derived 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] Supplemental gaseous fuels data are collected only on an annual basis except for the Dakota Gasification Co. coal gasification facility which provides data each month. The ratio of annual supplemental fuels (excluding Dakota Gasification Co.) to the sum of dry gas production, net imports, and net withdrawals from storage is calculated. This ratio is applied to the monthly sum of these three elements. The Dakota Gasification Co. monthly value is added to the result to produce the monthly supplemental fuels estimate.

[d] Monthly and annual data for 2016 through 2019 include underground storage and liquefied natural gas storage. Data for January 2020 forward include underground storage only. See Appendix A, Explanatory Note 5, for 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): 35 for 2019; -11 for 2018; 14 for 2017; and 70 for 2016. See Appendix A, Explanatory Note 7, for full discussion.

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

R Revised data.

E Estimated data.

RE Revised estimated data.

Notes: Data for 2016 through 2018 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.

Sources: 2016-2019: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2019*. January 2020 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, *Natural Gas Imports and Exports*. See Table 7 for detailed source notes for Marketed Production. See Appendix A, Notes 3 and 4, for discussion of computation and estimation procedures and revision policies.

Table 5

Table 5. U.S. natural gas exports, 2019-2021

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

	2021 4-Month YTD	2020 4-Month YTD	2019 4-Month YTD	2021 April	2021 March	2021 February	2021 January
Exports							
Volume (million cubic feet)							
Pipeline							
Canada	328,633	334,886	343,344	74,207	R91,301	R78,198	R84,927
Mexico	673,296	617,041	575,321	179,505	183,051	137,381	173,360
Total Pipeline Exports	**1,001,929**	**951,927**	**918,666**	**253,711**	**R274,352**	**R215,579**	**R258,287**
LNG							
Exports							
By Vessel							
Argentina	6,724	0	4,369	4,485	2,238	0	0
Bahamas	142	70	50	46	39	29	28
Bangladesh	16,932	3,640	0	10,219	3,566	0	3,148
Barbados	79	103	62	30	14	19	17
Belgium	3,484	23,680	3,390	0	3,484	0	0
Brazil	67,842	25,762	7,719	11,615	21,977	13,118	21,132
Canada	0	0	0	0	0	0	0
Chile	47,922	34,132	22,367	10,293	21,320	6,524	9,784
China	117,668	38,839	6,851	46,837	28,476	3,415	38,940
Colombia	892	1,528	5,869	892	0	0	0
Croatia	11,033	0	0	3,666	7,367	0	0
Dominican Republic	21,067	4,709	2,942	2,905	5,577	5,689	6,895
Egypt	0	0	0	0	0	0	0
France	88,236	66,910	45,249	36,120	30,341	18,188	3,587
Greece	7,405	23,402	3,394	0	6,805	0	600
Haiti	36	36	2	3	10	11	12
India	65,275	37,229	28,208	13,752	17,381	13,776	20,367
Israel	6,051	3,197	0	3,225	2,826	0	0
Italy	17,635	35,954	20,640	6,896	10,739	0	0
Jamaica	10,900	9,554	2,320	2,370	2,458	2,365	3,708
Japan	139,032	93,873	49,189	28,756	27,673	18,271	64,331
Jordan	0	0	7,317	0	0	0	0
Kuwait	7,526	3,297	0	3,705	3,821	0	0
Lithuania	13,157	2,945	0	3,078	3,228	6,851	0
Malaysia	0	0	0	0	0	0	0
Malta	2,928	2,648	413	2,928	0	0	0
Mexico	13,354	16,968	38,434	0	0	13,354	0
Netherlands	66,989	44,857	26,851	17,060	24,204	22,777	2,949
Pakistan	10,426	10,224	6,647	3,323	3,421	0	3,682
Panama	3,795	4,314	6,461	0	3,279	0	516
Poland	17,988	17,066	16,877	7,382	3,507	7,099	0
Portugal	10,718	16,964	17,498	7,358	0	3,360	0
Singapore	14,288	10,610	14,200	7,297	3,303	0	3,688
South Korea	127,916	108,049	65,744	21,683	32,203	18,094	55,936
Spain	47,985	91,252	34,195	22,974	13,900	3,733	7,377
Taiwan	30,363	23,419	6,349	6,594	13,450	0	10,319
Thailand	7,388	18,267	0	7,388	0	0	0
Turkey	50,930	77,459	19,281	0	3,619	20,652	26,659
United Arab Emirates	0	0	6,787	0	0	0	0
United Kingdom	87,095	79,514	17,753	13,877	17,440	34,343	21,436
By Truck							
Canada	15	2	1	15	0	0	0
Mexico	213	355	311	48	R19	63	83
Total LNG Exports	**1,141,431**	**930,826**	**487,739**	**306,818**	**R317,686**	**211,730**	**305,196**
CNG							
Canada	0	140	88	0	0	0	0
Total CNG Exports	**0**	**140**	**88**	**0**	**0**	**0**	**0**
Total Exports	**2,143,360**	**1,882,892**	**1,406,493**	**560,529**	**R592,038**	**R427,309**	**R563,483**

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2019-2021

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

							2020
	Total	December	November	October	September	August	July
Exports							
Volume (million cubic feet)							
Pipeline							
Canada	R902,449	R84,307	R81,358	72,833	62,211	60,810	71,778
Mexico	1,990,809	164,577	166,135	185,799	182,068	185,867	181,152
Total Pipeline Exports	**R2,893,258**	**R248,884**	**R247,493**	**258,632**	**244,279**	**246,677**	**252,930**
LNG							
Exports							
By Vessel							
Argentina	17,232	0	0	0	0	4,413	2,218
Bahamas	257	36	31	25	20	21	15
Bangladesh	10,660	0	0	0	0	0	3,614
Barbados	241	25	15	17	14	14	15
Belgium	31,946	0	3,633	3,285	0	0	0
Brazil	111,908	29,927	30,191	22,508	0	3,520	0
Canada	0	0	0	0	0	0	0
Chile	80,615	9,793	3,252	6,836	3,277	7,428	1,515
China	214,401	45,525	45,083	35,115	11,245	13,699	10,358
Colombia	4,626	0	0	0	2,548	550	0
Croatia	3,275	3,275	0	0	0	0	0
Dominican Republic	26,050	5,000	5,106	5,909	0	2,772	0
Egypt	0	0	0	0	0	0	0
France	90,237	3,752	3,390	6,639	0	0	0
Greece	48,403	3,382	3,543	0	7,027	0	6,544
Haiti	118	17	11	9	8	11	8
India	124,402	10,241	10,299	17,762	10,514	10,319	7,404
Israel	15,834	0	0	0	3,041	3,001	3,317
Italy	68,453	0	3,083	0	0	6,734	3,232
Jamaica	17,052	2,374	0	2,514	2,610	0	0
Japan	288,058	54,004	32,967	31,636	6,855	22,541	10,618
Jordan	6,872	0	0	0	3,578	0	0
Kuwait	17,293	0	0	3,603	3,508	6,886	0
Lithuania	28,879	6,291	3,621	6,191	3,308	0	0
Malaysia	0	0	0	0	0	0	0
Malta	2,648	0	0	0	0	0	0
Mexico	34,408	0	3,056	7,398	3,285	3,701	0
Netherlands	85,573	3,316	6,684	3,603	6,671	0	6,746
Pakistan	36,934	0	3,436	10,009	9,853	3,412	0
Panama	12,764	271	1,448	433	3,228	0	0
Poland	36,900	7,033	0	3,157	0	0	0
Portugal	36,922	3,711	5,830	3,564	6,853	0	0
Singapore	28,341	0	7,658	3,416	0	2,967	3,690
South Korea	316,613	39,617	49,103	14,321	32,126	13,814	10,492
Spain	199,966	13,583	9,907	14,118	15,206	3,222	13,679
Taiwan	64,363	12,470	6,216	3,636	9,007	0	0
Thailand	32,622	0	3,705	0	0	0	3,254
Turkey	123,957	20,188	12,817	0	3,611	0	3,222
United Arab Emirates	10,110	0	0	0	0	3,359	3,277
United Kingdom	160,199	30,378	26,544	17,191	3,664	0	2,908
By Truck							
Canada	10	8	0	0	0	0	0
Mexico	822	46	52	68	73	78	72
Total LNG Exports	**2,389,963**	**304,263**	**280,682**	**222,963**	**151,128**	**112,462**	**96,200**
CNG							
Canada	386	29	35	26	17	20	37
Total CNG Exports	**386**	**29**	**35**	**26**	**17**	**20**	**37**
Total Exports	**R5,283,607**	**R553,176**	**R528,210**	**481,621**	**395,424**	**359,159**	**349,167**

See footnotes at end of table.

Table 5

Table 5. U.S. natural gas exports, 2019-2021

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

	2020						2019
	June	May	April	March	February	January	Total
Exports							
Volume (million cubic feet)							
Pipeline							
Canada	66,516	67,752	71,722	86,579	77,354	99,231	971,334
Mexico	162,927	145,242	138,544	166,550	151,071	160,875	1,865,329
Total Pipeline Exports	**229,442**	**212,994**	**210,266**	**253,130**	**228,425**	**260,106**	**2,836,662**
LNG							
Exports							
By Vessel							
Argentina	2,229	8,372	0	0	0	0	39,293
Bahamas	18	20	23	20	13	15	156
Bangladesh	0	3,406	0	0	0	3,640	3,419
Barbados	20	20	15	28	26	33	211
Belgium	0	1,348	3,324	3,724	9,872	6,761	23,897
Brazil	0	0	0	6,891	10,433	8,438	54,298
Canada	0	0	0	0	0	0	0
Chile	3,313	11,068	14,098	3,216	10,731	6,087	90,357
China	0	14,535	21,140	17,699	0	0	6,851
Colombia	0	0	0	0	1,003	525	6,518
Croatia	0	0	0	0	0	0	0
Dominican Republic	0	2,554	1,838	2,872	0	0	10,334
Egypt	0	0	0	0	0	0	0
France	0	9,546	16,336	23,491	20,520	6,563	117,791
Greece	1,076	3,430	3,233	8,892	0	11,276	14,643
Haiti	7	10	8	9	11	7	42
India	10,100	10,534	16,674	17,245	0	3,309	91,481
Israel	3,277	0	0	3,197	0	0	0
Italy	12,998	6,452	3,135	9,895	16,616	6,308	68,655
Jamaica	0	0	5,770	1	2,914	869	13,892
Japan	21,836	13,729	18,387	21,845	21,360	32,280	201,085
Jordan	0	3,294	0	0	0	0	32,332
Kuwait	0	0	3,297	0	0	0	10,308
Lithuania	3,049	3,473	2,945	0	0	0	3,455
Malaysia	0	0	0	0	0	0	3,698
Malta	0	0	0	0	48	2,600	413
Mexico	0	0	0	7,037	3,167	6,764	143,371
Netherlands	6,870	6,826	10,305	13,772	14,099	6,681	81,361
Pakistan	0	0	3,334	0	3,567	3,323	26,787
Panama	0	3,070	0	906	3,408	0	10,221
Poland	3,385	6,258	3,523	3,583	6,677	3,282	38,042
Portugal	0	0	10,777	0	6,187	0	53,342
Singapore	0	0	0	10,610	0	0	31,440
South Korea	28,171	20,921	24,258	28,095	11,071	44,625	270,025
Spain	9,640	29,360	22,943	23,657	20,240	24,412	166,684
Taiwan	2,953	6,662	0	6,987	7,115	9,317	27,397
Thailand	0	7,397	11,049	3,783	3,435	0	6,635
Turkey	0	6,661	14,030	6,489	24,303	32,637	30,611
United Arab Emirates	0	3,474	0	0	0	0	20,561
United Kingdom	0	0	0	20,202	28,884	30,428	118,662
By Truck							
Canada	0	0	0	0	0	2	25
Mexico	61	18	23	123	87	122	1,105
Total LNG Exports	**109,002**	**182,438**	**210,466**	**244,269**	**225,786**	**250,305**	**1,819,399**
CNG							
Canada	43	39	35	38	34	33	263
Total CNG Exports	**43**	**39**	**35**	**38**	**34**	**33**	**263**
Total Exports	**338,486**	**395,472**	**420,767**	**497,437**	**454,245**	**510,444**	**4,656,324**

See footnotes at end of table.

Table 5. U.S. natural gas exports, 2019-2021

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

	2019						
	December	November	October	September	August	July	June
Exports							
Volume (million cubic feet)							
Pipeline							
Canada	109,175	92,089	76,246	71,573	78,302	68,613	61,809
Mexico	151,308	158,633	171,535	162,649	168,089	167,902	156,440
Total Pipeline Exports	**260,483**	**250,722**	**247,781**	**234,222**	**246,391**	**236,515**	**218,249**
LNG							
Exports							
By Vessel							
Argentina	0	0	0	0	0	13,066	13,120
Bahamas	11	14	8	2	20	11	25
Bangladesh	3,419	0	0	0	0	0	0
Barbados	20	20	25	17	17	17	13
Belgium	10,407	3,293	3,402	3,404	0	0	0
Brazil	0	3,279	3,345	6,117	12,868	6,949	9,116
Canada	0	0	0	0	0	0	0
Chile	7,207	3,484	6,608	9,811	6,297	9,382	19,012
China	0	0	0	0	0	0	0
Colombia	0	0	0	0	649	0	0
Croatia	0	0	0	0	0	0	0
Dominican Republic	501	0	2,927	2,857	0	0	1,108
Egypt	0	0	0	0	0	0	0
France	14,758	26,946	14,228	6,740	3,249	0	0
Greece	7,752	0	0	0	0	0	0
Haiti	12	8	4	9	3	2	3
India	7,090	6,933	6,961	14,355	7,294	3,485	3,215
Israel	0	0	0	0	0	0	0
Italy	12,764	6,345	0	3,230	6,082	9,963	3,072
Jamaica	2,435	2,464	0	0	2,946	837	0
Japan	21,226	17,603	24,504	28,084	17,506	21,242	14,582
Jordan	0	0	0	3,616	3,277	3,449	7,342
Kuwait	0	0	0	0	3,401	3,405	0
Lithuania	3,455	0	0	0	0	0	0
Malaysia	0	3,698	0	0	0	0	0
Malta	0	0	0	0	0	0	0
Mexico	9,696	3,273	6,437	10,442	13,681	24,209	16,955
Netherlands	13,405	10,099	3,456	3,431	6,688	3,386	3,310
Pakistan	3,253	3,247	3,472	6,512	0	3,656	0
Panama	0	478	0	0	0	0	3,282
Poland	7,013	3,432	3,489	0	3,537	3,694	0
Portugal	6,345	0	6,621	2,924	6,051	6,994	6,908
Singapore	3,375	0	3,463	0	0	3,570	3,435
South Korea	38,139	24,962	42,233	10,818	16,995	32,663	20,402
Spain	13,874	19,985	13,704	37,938	15,861	3,297	13,506
Taiwan	3,658	3,736	3,138	0	7,207	0	0
Thailand	0	0	0	3,234	0	0	0
Turkey	536	7,266	3,528	0	0	0	0
United Arab Emirates	0	0	0	3,325	3,502	3,487	3,459
United Kingdom	30,054	39,957	26,260	3,303	1,335	0	0
By Truck							
Canada	0	1	14	9	0	0	0
Mexico	93	86	139	95	113	101	92
Total LNG Exports	**220,498**	**190,610**	**177,966**	**160,274**	**138,578**	**156,865**	**141,956**
CNG							
Canada	25	30	28	15	15	20	20
Total CNG Exports	**25**	**30**	**28**	**15**	**15**	**20**	**20**
Total Exports	**481,006**	**441,362**	**425,775**	**394,511**	**384,983**	**393,400**	**360,226**

See footnotes at end of table.

Table 5

Table 5. U.S. natural gas exports, 2019-2021

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

	2019				
	May	April	March	February	January
Exports					
Volume (million cubic feet)					
Pipeline					
Canada	70,182	71,333	93,182	91,561	87,269
Mexico	153,452	139,750	149,514	135,514	150,544
Total Pipeline Exports	**223,633**	**211,083**	**242,696**	**227,074**	**237,813**
LNG					
Exports					
By Vessel					
Argentina	8,737	4,369	0	0	0
Bahamas	14	14	11	14	11
Bangladesh	0	0	0	0	0
Barbados	21	17	14	14	17
Belgium	0	0	3,390	0	0
Brazil	4,905	1,201	3,283	3,234	0
Canada	0	0	0	0	0
Chile	6,188	9,429	10,005	2,933	0
China	0	0	0	3,464	3,387
Colombia	0	0	2,935	0	2,934
Croatia	0	0	0	0	0
Dominican Republic	0	0	0	2,942	0
Egypt	0	0	0	0	0
France	6,621	17,092	20,853	0	7,303
Greece	3,497	0	0	3,394	0
Haiti	0	2	0	0	0
India	13,942	6,742	7,446	6,989	7,030
Israel	0	0	0	0	0
Italy	6,560	0	6,684	3,454	10,502
Jamaica	2,890	0	2,320	0	0
Japan	7,149	14,231	7,143	10,320	17,495
Jordan	7,332	3,622	0	3,695	0
Kuwait	3,502	0	0	0	0
Lithuania	0	0	0	0	0
Malaysia	0	0	0	0	0
Malta	0	413	0	0	0
Mexico	20,244	10,406	7,038	6,681	14,310
Netherlands	10,734	13,010	10,452	3,390	0
Pakistan	0	0	3,282	3,365	0
Panama	0	0	3,191	3,269	0
Poland	0	3,414	3,701	0	9,762
Portugal	0	3,489	0	3,720	10,289
Singapore	3,397	320	6,631	7,249	0
South Korea	18,069	13,000	18,013	17,750	16,981
Spain	14,325	10,139	10,678	6,748	6,631
Taiwan	3,309	6,349	0	0	0
Thailand	3,401	0	0	0	0
Turkey	0	2,969	0	6,483	9,829
United Arab Emirates	0	6,787	0	0	0
United Kingdom	0	0	3,669	3,711	10,373
By Truck					
Canada	0	0	0	1	0
Mexico	75	87	73	48	104
Total LNG Exports	**144,913**	**127,102**	**130,814**	**102,866**	**126,957**
CNG					
Canada	22	28	29	15	16
Total CNG Exports	**22**	**28**	**29**	**15**	**16**
Total Exports	**368,568**	**338,213**	**373,539**	**329,954**	**364,787**

See footnotes at end of table.

Table 7

Table 7. Marketed production of natural gas in selected states and the Federal Gulf of Mexico, 2016-2021

(million cubic feet)

Year and Month	Alaska	Arkansas	California	Colorado	Kansas	Louisiana	Montana	New Mexico	North Dakota	Ohio
2016 Total	**332,749**	**823,196**	**205,025**	**1,685,755**	**244,795**	**1,784,396**	**47,921**	**1,229,647**	**531,997**	**1,437,285**
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										
January	30,503	47,446	16,800	166,325	16,063	259,035	3,773	137,823	67,939	213,497
February	26,728	42,215	15,513	149,040	14,237	242,105	3,094	128,379	59,030	192,836
March	29,346	46,206	16,922	163,990	15,820	267,517	3,505	144,822	68,666	213,497
April	28,816	44,463	16,548	161,094	15,613	260,790	3,551	142,363	67,998	208,200
May	29,028	44,901	16,754	166,254	14,898	270,459	3,814	154,100	70,250	215,140
June	26,889	42,696	16,254	162,749	15,558	265,731	3,756	142,240	65,418	208,200
July	25,348	43,847	16,890	166,425	15,695	278,216	3,782	148,454	70,026	235,693
August	22,876	43,500	16,969	167,799	15,638	276,770	3,732	157,091	75,259	235,693
September	24,494	41,793	16,262	159,310	15,038	266,661	3,667	156,608	72,447	228,090
October	27,409	43,088	16,228	174,373	15,157	279,489	3,607	156,870	78,045	236,995
November	28,256	41,725	15,659	172,363	14,436	270,787	3,474	153,617	77,478	229,350
December	29,669	42,825	16,024	178,991	14,944	286,082	3,507	164,968	79,195	236,995
Total	**329,361**	**524,705**	**196,823**	**1,988,714**	**183,097**	**3,223,642**	**43,263**	**1,787,334**	**851,750**	**2,654,186**
2020										
January	30,018	E42,586	E15,661	E177,810	E13,349	E279,056	E3,580	E164,472	E74,489	E210,045
February	28,537	E39,455	E14,414	E165,333	E13,487	E251,755	E3,303	E158,434	E72,155	E179,594
March	29,219	E41,233	E15,135	E177,377	E14,598	E266,118	E3,587	E169,340	E78,018	E199,544
April	27,513	E40,141	E14,685	E171,025	E13,802	E262,712	E3,113	E159,064	E66,217	E193,938
May	27,076	E41,498	E14,944	E166,654	E13,796	E273,665	E2,616	E150,531	E48,821	E207,596
June	25,545	E39,113	E14,620	E161,714	E13,173	E263,819	E2,689	E152,401	E47,485	E198,554
July	26,779	E40,172	E14,826	E168,601	E13,465	E265,507	E3,144	E163,516	E57,433	E209,347
August	26,846	E41,148	E13,115	E168,528	E13,292	E257,893	E3,164	E168,443	E65,306	E207,182
September	26,978	E39,501	E12,635	E162,274	E12,745	E254,678	E3,035	E165,194	E67,978	E198,167
October	29,080	E41,014	E12,391	E165,226	E12,623	E263,309	E3,189	E179,908	E71,638	E200,302
November	29,575	E39,388	E12,034	E159,417	E10,865	E266,951	E3,059	E173,956	E69,830	E196,183
December	31,161	E40,183	E12,247	E161,889	E12,770	E276,772	E3,107	E172,786	E69,697	E207,905
Total	**338,329**	**E485,432**	**E166,709**	**E2,005,848**	**E157,963**	**E3,182,236**	**E37,587**	**E1,978,044**	**E789,065**	**E2,408,358**
2021										
January	31,632	E39,964	E12,033	E159,724	E12,578	E271,669	E3,168	E176,770	E69,019	E206,660
February	28,365	RE30,061	RE10,749	RE143,329	RE9,965	RE220,985	RE2,750	RE149,598	RE58,860	RE170,668
March	31,481	RE39,884	RE12,049	RE156,420	RE12,322	RE281,133	RE3,099	RE184,278	RE68,853	RE190,444
April	29,514	E37,852	E11,707	E155,765	E12,266	E273,185	E3,043	E181,662	E67,907	E184,489
2021 4-Month YTD	**120,992**	**E147,761**	**E46,538**	**E615,238**	**E47,131**	**E1,046,972**	**E12,060**	**E692,307**	**E264,639**	**E752,261**
2020 4-Month YTD	**115,288**	**E163,415**	**E59,895**	**E691,545**	**E55,235**	**E1,059,642**	**E13,584**	**E651,310**	**E290,879**	**E783,122**
2019 4-Month YTD	**115,393**	**180,331**	**65,783**	**640,448**	**61,733**	**1,029,447**	**13,924**	**553,387**	**263,633**	**828,030**

See footnotes at end of table.

Table 7. Marketed production of natural gas in selected states and the Federal Gulf of Mexico, 2016-2021
(million cubic feet) – continued

Year and Month	Oklahoma	Pennsylvania	Texas	Utah	West Virginia	Wyoming	Other States	Federal Gulf of Mexico	U.S. Total
2016 Total	**2,468,312**	**5,210,209**	**7,225,472**	**365,268**	**1,384,458**	**1,662,909**	**559,985**	**1,200,669**	**28,400,049**
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									
January	262,662	576,440	736,511	23,200	169,050	123,341	39,938	90,159	2,980,505
February	240,995	519,802	675,802	21,049	154,910	110,816	35,450	76,741	2,708,742
March	265,283	578,820	756,354	23,387	171,516	122,319	39,386	92,033	3,019,390
April	262,767	560,062	725,217	22,794	167,816	120,098	38,325	87,201	2,933,716
May	269,586	571,803	778,371	23,623	171,305	128,510	38,958	87,724	3,055,477
June	259,034	556,708	764,324	22,904	174,784	121,743	37,916	81,638	2,968,544
July	268,965	583,186	803,273	23,091	180,524	115,230	38,313	66,820	3,083,779
August	268,025	585,405	836,414	23,374	181,927	119,242	38,473	91,215	3,159,401
September	265,447	568,646	785,566	22,150	181,343	124,724	37,254	84,108	3,053,609
October	278,887	589,800	823,698	22,494	201,950	127,708	37,486	86,698	3,199,983
November	263,368	597,779	790,664	21,704	196,185	122,272	36,837	83,634	3,119,588
December	269,990	608,342	825,421	22,099	204,446	124,473	37,106	87,378	3,232,454
Total	**3,175,008**	**6,896,792**	**9,301,616**	**271,870**	**2,155,757**	**1,460,477**	**455,443**	**1,015,349**	**36,515,188**
2020									
January	E263,734	E607,697	E827,368	E21,856	E205,973	E122,406	E36,673	E84,739	E3,181,514
February	E243,139	E579,980	E771,344	E20,472	E197,173	E107,668	E34,050	E78,343	E2,958,634
March	E257,387	E616,101	E832,144	E21,805	E207,724	E116,328	E35,794	E84,669	E3,166,123
April	E235,642	E599,921	E772,841	E20,462	E202,046	E111,375	E29,768	E77,588	E3,001,855
May	E217,154	E598,263	E733,502	E19,555	E213,671	E106,760	E34,244	E63,304	E2,933,650
June	E222,324	E569,002	E733,102	E19,317	E215,274	E104,033	E33,369	E60,713	E2,876,248
July	E226,843	E614,943	E766,509	E20,241	E222,115	E108,027	E34,642	E67,343	E3,023,452
August	E226,344	E630,016	E788,459	E19,713	E224,409	E106,139	E33,367	E43,410	E3,036,773
September	E222,010	E582,197	E746,302	E19,027	E218,495	E103,457	E32,048	E47,449	E2,914,169
October	E219,403	E616,334	E760,569	E19,777	E225,807	E103,648	E34,202	E37,087	E2,995,509
November	E224,327	E619,815	E747,332	E18,991	E224,659	E103,334	E32,797	E57,936	E2,990,450
December	E228,057	E655,636	E763,930	E19,165	E237,246	E103,915	E33,648	E64,048	E3,094,164
Total	**E2,786,366**	**E7,289,906**	**E9,243,402**	**E240,382**	**E2,594,591**	**E1,297,092**	**E404,602**	**E766,630**	**E36,172,542**
2021									
January	E221,544	E657,704	E775,706	E19,235	E234,432	E105,897	E33,444	E68,505	E3,099,685
February	RE163,094	RE585,221	RE588,953	RE17,815	E208,571	RE95,863	RE29,898	RE62,427	RE2,577,173
March	RE219,365	RE647,663	RE774,928	RE20,318	E227,218	RE106,393	RE34,145	RE72,858	RE3,082,849
April	E213,642	E618,491	E773,871	E19,825	E225,103	E103,427	E32,897	E68,674	E3,013,321
2021 4-Month YTD	**E817,645**	**E2,509,079**	**E2,913,457**	**E77,193**	**E895,323**	**E411,579**	**E130,385**	**E272,464**	**E11,773,027**
2020 4-Month YTD	**E999,902**	**E2,403,700**	**E3,203,698**	**E84,596**	**E812,915**	**E457,777**	**E136,284**	**E325,338**	**E12,308,126**
2019 4-Month YTD	**1,031,707**	**2,235,123**	**2,893,884**	**90,430**	**663,292**	**476,574**	**153,099**	**346,134**	**11,642,352**

E Estimated data.

RE Revised estimated data.

Notes: For 2020 forward, state monthly marketed production is estimated from gross withdrawals using historical relationships between the two. 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 are individually collected 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 2020, Federal Offshore Pacific is included in California. All data for Alaska are obtained 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 due to independent rounding.

Sources: 2016-2019: U.S. Energy Information Administration (EIA), *Natural Gas Annual 2019*, Bureau of Safety and Environmental Enforcement (BSEE), IHS Markit, Enverus DrillingInfo, and BENTEK Energy. January 2020 through current month: Form EIA-914, *Monthly Crude Oil and Lease Condensate, and Natural Gas Production Report*; and EIA computations.

https://www.spglobal.com/platts/en/market-insights/latest-news/electric-power/063021-pickup-in-commercial-talks-boosts-chenieres-hopes-on-mid-scale-lng-project

- 30 Jun 2021 | 19:39 UTC

Pickup in commercial talks boosts Cheniere's hopes on mid-scale LNG project

HIGHLIGHTS

Progress in needed deals expected over 12-18 months

Exec also address emissions, opportunities, M&A

Author Harry Weber

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.

The comments during a S&P Global Platts Commodities Focus podcast are the most specific the biggest US LNG exporter has been on a time frame for commercializing the up to 11 million mt/year Stage 3 project since the start of the coronavirus pandemic in early 2020.

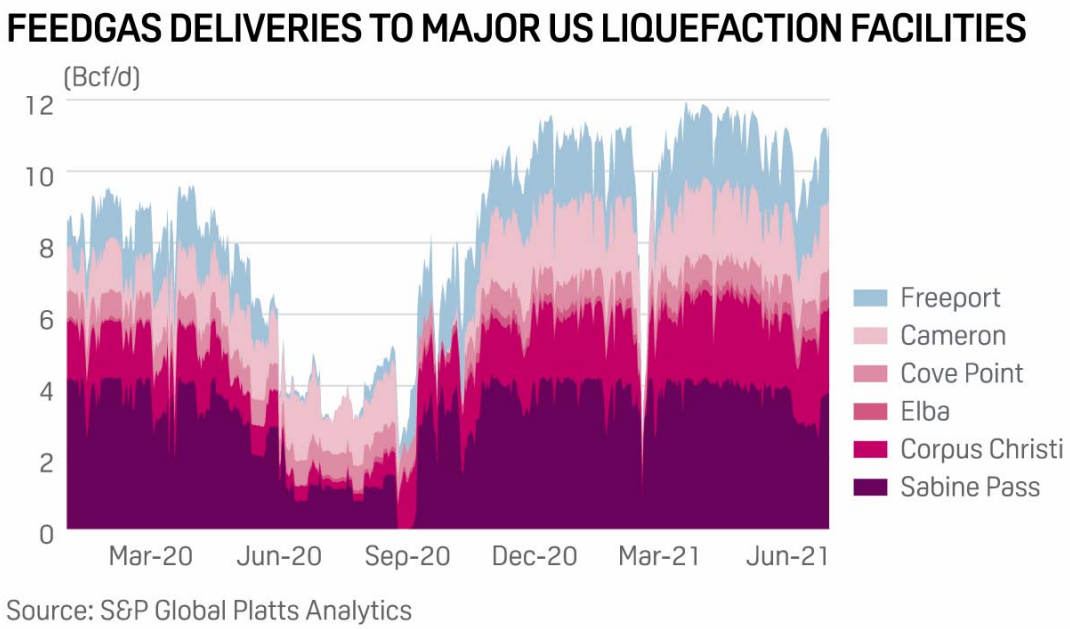
They reflect renewed talks that some operators and developers have been having with commodity traders, utilities and other end-users amid tightening global supplies and the strongest pricing levels for deliveries into Asia and Europe in years.

While Cheniere's time horizon for commercializing Stage 3 is a bit longer than recent estimates from Freeport LNG for its Train 4 expansion, Tellurian for its Driftwood LNG project and NextDecade for its Rio Grande LNG project, it has stuck mostly to the traditional strategy for selling new capacity that served it well for building Sabine Pass Liquefaction in Louisiana and Corpus Christi Liquefaction in Texas.

It also has been focused on securing buyers for excess capacity that it identified from its existing trains and pursuing initiatives to reduce its carbon footprint.

"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."

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."



Cheniere has not yet made a final investment decision on the mid-scale liquefaction expansion it has proposed to build. It has said that it would sanction the expansion only after signing additional commercial agreements and obtaining adequate financing. Cheniere, which also needs to secure an engineering, procurement, and construction contract for the project, signed agreements in 2019 with US gas producers Apache and EOG Resources to market a combined 1.7 million mt/year of LNG supplies from the Stage 3 expansion

In terms of Cheniere's corporate sustainability and climate-related efforts, the company is pursuing a program to quantify the life-cycle emissions of the LNG cargoes it produces. Cheniere views its role in the energy transition as a leader, given its size and full-service platform. It believes an all-of-the-above strategy that includes employing technologies like carbon capture and underground storage that have had mixed success in other sectors of the US energy industry is the right approach for LNG, Feygin said.

"There will be CCUS projects that are attractive and relatively feasible, and there will be CCUS projects that are science projects and require tremendous achievement in terms of technological advancement and economic improvement," he said. "So, we are of the view that we're not going to let the perfect be the enemy of the good."

Emissions transparency

He said the emissions transparency efforts are "a step on a long-term journey and long-term commitment to not just be the leader on this front for US LNG, where Cheniere of course is the largest exporter, but also for the world."

"It is only a starting point and it is a starting point that we are perfectly positioned to build on with our producer relationships, our relationships with our infrastructure partners and our downstream partners," Feygin said.

He cited a study Cheniere participated in with shipping partner GasLog and others to provide more definitive data on methane emissions from LNG-powered vessels.

Feygin also addressed Cheniere's challenges, opportunities, and views on M&A.

The biggest challenge, he said, is figuring out the right commercial solutions to crack a framework in which most of the supply that will come online in the next five to 10 years is already baked into industry estimates.

"No one is surprising the market with an additional 5 or 10 million tons," Feygin said. "The probability is that supply is actually going to surprise to the downside in the next couple of years."

Upstream and M&A

With that in mind, the growing economies in Asia present the biggest opportunity for Cheniere. It is also optimistic about LNG bunkering and LNG into Europe.

One thing Cheniere does not appear to be interested in anytime soon is a merger, major acquisition or expansion into the upstream, to produce some of the feedgas it uses at its liquefaction facilities.

"We don't see any strategic reason to be in the upstream business," Feygin said.

He said Cheniere also does not currently see any "compelling opportunity that would lead us down the path of M&A," though he added that the company's view is "not for a lack of looking and evaluating."

Record LNG Imports by Drought-Hit Brazil Worsen Market Tightness
2021-07-01 07:20:39.272 GMT

By Ann Koh and Stephen Stapczynski
(Bloomberg) -- Brazil's worst drought in a century has helped push its imports of liquefied natural gas to a record high, boosting inflation concerns and exacerbating a crunch that has seen prices jump around the world.
The increased demand comes as European buyers struggle to rebuild inventories before winter, sending local prices to the highest in 15 years, while Asian utilities are forced to raise bids for spot cargoes to the highest seasonal levels in about a decade. The higher prices have also fueled concerns about the impact on economies as they emerge from the global pandemic.
Brazil is expected to have received about 660,000 tons of LNG in June, beating the previous high of 610,000 tons in December, according to Mathew Ang, a market analyst at data and analytics firm Kpler. State-run energy company Petroleo Brasileiro S.A. increased its purchases of the super-chilled gas for power generation to offset reduced hydropower production, according to traders.
The nation's switch to the more expensive power plants burning natural gas, diesel or coal has raised concerns about inflation. The drought has also hit other Latin American nations, leading Mexico to cut electricity output from dams even as demand for air-conditioning rises.
Argentina is also stocking up supplies for the start of the southern hemisphere summer in December, and has sought four partial LNG cargoes for August and September delivery, according to traders. Meanwhile, gas producers in Latin America have cut exports this year because of maintenance work in Peru and a drop in domestic production in Trinidad, according to Kpler's Ang.

To contact the reporters on this story:
Ann Koh in Singapore at akoh15@bloomberg.net;
Stephen Stapczynski in Singapore at sstapczynsk1@bloomberg.net
To contact the editors responsible for this story:
David Stringer at dstringer3@bloomberg.net
Rob Verdonck

To view this story in Bloomberg click here:
https://blinks.bloomberg.com/news/stories/QVJQ8CT0G1KW

Excerpt – Australia "Resources and Energy Quarterly June 2021" [LINK]

7.1 Summary

- Asian LNG spot prices and oil-linked contract prices are expected to remain relatively flat over the outlook period, as the LNG market remains well supplied and oil prices stabilise above US$60 a barrel.
- Australian export volumes are forecast to increase by 5.3% to 83 million tonnes in 2021–22, as technical issues are resolved at the Prelude and Gorgon LNG plants. Export volumes are forecast to be relatively flat in 2022–23.
- Australia's LNG exports earnings are forecast to increase from an estimated $32 billion in 2020–21 to $49 billion in 2021–22, as oil-linked contract prices rise sharply.

7.2 World trade

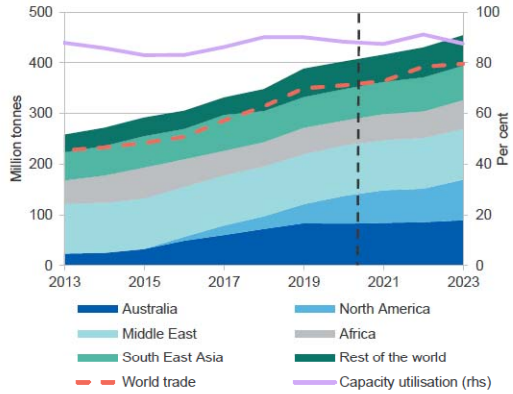
LNG trade growth to gain steam

In 2020, global LNG trade reached 355 million tonnes, a modest increase of 1.5% (Figure 7.1). This improvement was in stark contrast to the strong growth from previous years, reflecting the impacts of the COVID-19 pandemic on LNG demand. Global LNG trade growth picked up in the first half of 2021, as the economic impacts of COVID-19 eased, and as a bitterly cold northern hemisphere winter raised heating demand. The cold northern hemisphere winter also reduced gas storage in major importing nations, which lifted restocking demand in the following months.

LNG trade is expected to rise by 2.5% in 2021, as the energy demand impacts of the COVID-19 pandemic impact fade. Trade is then expected to increase by 7.7% in 2022 and 1.6% in 2023.

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.

Figure 7.1: LNG demand and world supply capacity



Source: Nexant (2021) World Gas Model; Department of Industry, Science, Energy and Resources (2021)

7.3 World imports

Japanese LNG demand to cool in response to rising nuclear generation

Japan imported 18 million tonnes of LNG in the three months to April 2021, marginally higher year-on-year (Figure 7.2). Since late 2020, Japanese imports have risen, due to strong heating demand during an exceptionally cold winter. LNG import demand has also been supported by nuclear outages, with nuclear generation hitting a 3-year low during the 2020–21 winter period. Although nuclear generation has recovered in subsequent months, these gains have been moderate, as only nine of Japan's 33 operable nuclear reactors have gained approval to restart since the Fukushima nuclear accident in 2011.

Excerpt - Australia "Resources and Energy Quarterly March 2021" [LINK]

7.1 Summary

- Asian LNG spot prices and oil-linked contract LNG prices are expected to increase modestly over the projection period, as the global LNG market remains well supplied and oil prices stabilise.
- Australian export volumes are forecast to decline to 78 million tonnes in 2020–21, due to technical issues at the Prelude and Gorgon LNG plants. Exports are then forecast to recover to 81 million tonnes in 2021–22, and remain around these levels out to 2025–26 (see *Australia section*).
- Australia's LNG exports earnings (in real terms) are forecast to increase from $33 billion in 2020–21 to $45 billion in 2025–26, as prices recover.

7.2 World trade

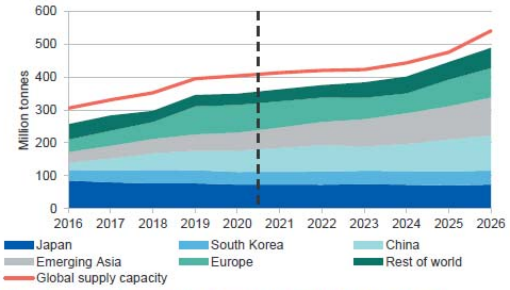
LNG trade to increase over the projection period

In 2020, global LNG trade reached 349 million tonnes, a modest increase of 1.0% (Figure 7.1). This improvement was in stark contrast to the strong growth from previous years, reflecting the impacts of the COVID-19 pandemic on LNG demand. In recent months, global LNG trade has picked up, driven by structural factors — such as the easing impacts of the COVID-19 pandemic and returning demand growth in emerging Asia — and seasonal factors — such as a colder-than-normal Northern Hemisphere winter.

Global LNG trade is expected to increase in 2021 and 2022, growing by about 6.0% a year. Between 2023 and 2026, trade is assumed to grow by an average annual rate of 3.7%. Ongoing demand growth is expected to result in a tightening of the global LNG market, as demand approaches supply capacity.

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.

Figure 7.1: LNG demand and world supply capacity



Source: Nexant (2021) World Gas Model; Department of Industry, Science, Energy and Resources (2021)

7.3 World imports

Japanese LNG imports to fall as nuclear power returns

Japan imported 75 million tonnes of LNG in 2020, 4.7% lower than in 2019 (Figure 7.2). Import losses were related to the impact of the COVID-19 pandemic, though the impacts were moderated by coal-to-gas switching, nuclear plant outages and strong heating demand in the lead up to an exceptionally cold winter.

Nuclear generation is estimated to have hit a 3-year low during the 2020–21 winter period. At the time of writing, only nine of Japan's 42 nuclear reactors have gained approval to restart since Fukushima in 2011. Another 16 reactors are currently seeking approval for restart, and could be online by 2022.

Higher nuclear generation is expected to cause Japan's LNG imports to fall in 2021 and 2022, and will more than offset any increases to LNG imports from the assumed economic recovery. However, the pace of

https://www.thehindubusinessline.com/companies/lngs-share-of-indian-gas-demand-to-rise-to-70-by-2030-petronet-ceo/article34845886.ece

LNG's share of Indian gas demand to rise to 70% by 2030: Petronet CEO

Reuters NEW DELHI | Updated on June 18, 2021

Replacing about 30% of the country's crude oil imports with LNG would save $10 billion at current global oil price of $74/barrel, he said

The share of liquefied natural gas (LNG) in India's gas consumption could rise to 70% from the current 50% in 10 years, and new import terminals are needed, the chief executive of the country's top gas importer said.

Prime Minister Narendra Modi has set a target to raise the share of natural gas in the country's energy mix to 15% by 2030 from the current 6.3% to cut its carbon footprint.

To meet that target India's gas consumption needs to rise to 640 million standard cubic metres a day (mmscmd) from the current 155 mmscmd, AK Singh, chief executive of Petronet LNG, said at ET Energy Leadership summit.

Huge invesments by Indian cos

Indian companies are investing billions of dollars to strengthen gas infrastructure, including laying 15,000-kilometer pipelines to supply cleaner fuel to households and industries. India currently has 17,000 kms of gas pipeline network.

Also, LNG projects of 19 million tonnes per annum (mtpa) capacity are under construction and plans are afoot to increase use of LNG in trucks and buses.

"With limited increase in domestic gas supply LNG will play a major role in catering to this incremental demand and share of LNG in natural gas consumption is likely to increase from the present 55% to 70% in coming 9-10 years," Singh said.

Petronet operates two LNG terminals in India accounting for about 53% of the nation's existing 42.5 mtpa import capacity.

Singh said India needed to increase its LNG import capacity to 155 mtpa "considering 80% utilisation" to boost use of the cleaner fuel.

India imports about 85% of its oil needs. He said replacing about 30% of the country's crude oil imports with LNG would save $10 billion at current global oil price of $74/barrel.

Published on June 18, 2021

https://qp.com.qa/en/MediaCentre/Pages/ViewNews.aspx?NType=News

Qatar Petroleum has received offers for double the equity available in the North Field East project (NFE)"

DOHA, Qatar • 23 June 2021 – His Excellency Mr. Saad Sherida Al-Kaabi, Minister of State for Energy Affairs, The President and CEO of Qatar Petroleum, said Qatar Petroleum has received offers for double the equity available to potential partners in the bidding process for the North Field East project.

His Excellency Al-Kaabi stated that Qatar Petroleum was in the process of evaluating commercial offers received for participation in the largest LNG development in the world with a capacity of 32 million tons per annum of LNG, and that Qatar Petroleum had received offers that cover double the offered equity stake. His Excellency Al-Kaabi also noted that as part of the same process, Qatar Petroleum had received offtake commitments/ sales and purchase agreements for double the 32 million tons per annum volume on offer.

The NFE project is unique in the LNG world because of its advanced environmental characters, including significant carbon capture and sequestration capacity.

These remarks were made during a Qatar Economic Forum session on “Energy Shifts” in which His Excellency Al-Kaabi was a panelist along with Mr. Ben van Beurden, the CEO of Royal Dutch Shell, Mr. Patrick Pouyanné, the Chairman and CEO of TotalEnergies and Mr. Darren Woods, the Chairman and CEO of ExxonMobil.

The session, which was also broadcast on Bloomberg TV and its media platforms, focused on the energy transition and the underlying climate change concerns driving net zero emissions targets.
In discussing the ongoing energy transition, His Excellency Al-Kaabi said “We see natural gas and the energy transition - joined at the hip- and gas/ LNG is part of the solution for a longer term transition. We are investing the majority of our CAPEX in LNG, but we are also investing in renewables such as solar, here in Qatar but also worldwide.”

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.”

On Carbon Capture and Sequestration, His Excellency Al-Kaabi highlighted the fact that Qatar started decarbonizing its LNG a while ago, and that it currently captures and sequesters two million tons per annum of CO2, which will grow to 9 million tons by 2030. “We are doing it very responsibly and we will be part of the solution for the long term,” Minister Al-Kaabi added.

The panelists warned that energy transition is not only about the producers, but also about end users and their consuming behaviors. His Excellency Al-Kaabi also highlighted the fact that the energy transition needs to take into consideration the requirements of the developing world, including the 0.8-1.0 billion people who are deprived of electricity and basic fuels today to ensure a balanced approach that takes human development and economic growth in these developing nations into account, and that actions taken need to be responsible for the collective wellbeing of all of humanity.

In concluding his remarks, His Excellency Al-Kaabi said that in the effort to put policies in place to reduce CO2 level, there is a challenge represented by the bill that has to be paid to bridge that gap, and called for collective work for a carbon pricing mechanism that is fair and equitable and that can be applied seamlessly on a global basis.

The Qatar Economic Forum, Powered by Bloomberg, brings together some of the world’s leaders and the most influential thinkers, executives, and policy makers to prepare a blueprint for the next stage of global growth. Discussion themes during the Qatar Economic Forum cover issues such as leadership in a post-pandemic world, changes to the human-technology nexus, a more sustainable global economy, markets and investing, power and trade flows, and the future of commerce.
There

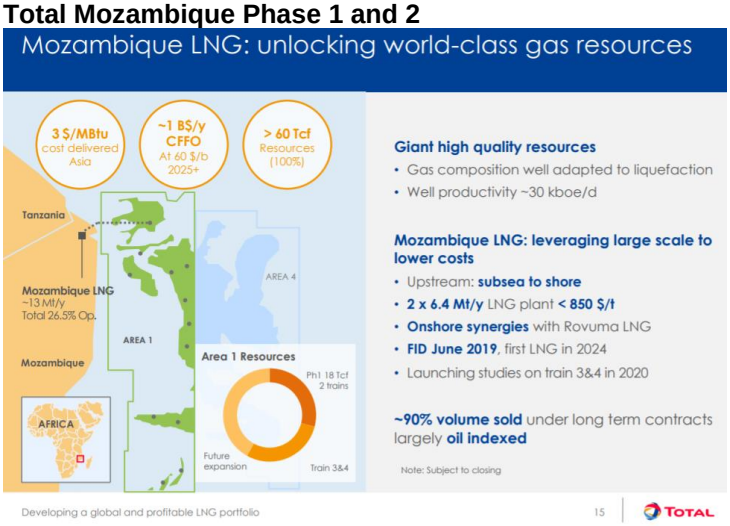
Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?

Posted Wednesday April 28, 2021. 9:00 MT

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

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

Total Mozambique Phase 1 and 2



Source: Total Investor Day September 24, 2019

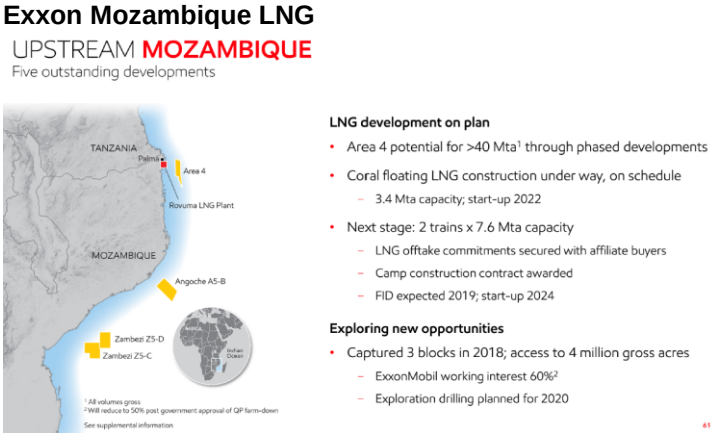
Total's Mozambique force majeure is no surprise, especially the need to the restoration of security and stability "in a sustained manner". Yesterday, Total announced [LINK] "*Considering the evolution of the security".* No one should be surprised by the force majeure or the sustained manner caveat. SAF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

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

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

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

Exxon Mozambique LNG



Source: Exxon Investor Day March 6, 2019

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

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

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

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

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

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

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

Source: IEA

On Track | More Efforts Needed | Not on Track

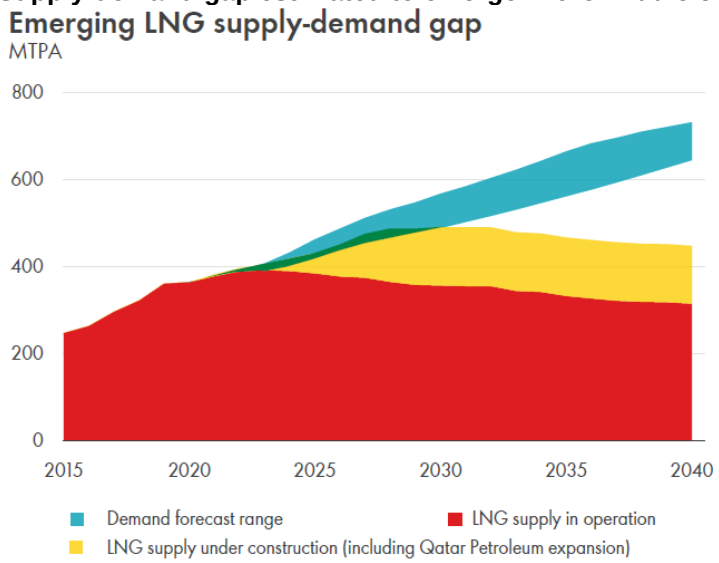
Source: IEA Tracking Clean Energy Progress, June 2020

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

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

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

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



Source: Shell LNG Outlook 2021, Feb 25, 2021

<u>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..</u> 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.

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

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

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

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

Spot LNG Cargoes Have Become Too Expensive for Korean Importers
2021-07-01 07:28:54.403 GMT

By Stephen Stapczynski
(Bloomberg) -- South Korea's major liquefied natural gas buyers are balking at sky-high prices of the super-chilled fuel, indicating that the rally is reducing short-term demand.
South Korean end-users, including Korea Gas Corp. and Posco, will rely on inventories for the rest of the summer and don't need to buy extra cargoes, according to traders with knowledge of the plans. They will wait until the end of the summer to return to the spot market, as they expect milder weather will curb prices, the traders said, requesting anonymity to discuss private details.
A spokesperson for Posco said the company has no plans to buy spot at this point, and will wait until prices start to fall. A spokesman for Korea Gas said it is too early to determine if the utility won't need more LNG for the summer, and it can't rule out summer purchases.
Meanwhile, buyers from India to China continue to procure summer shipments of the fuel to meet strong domestic demand. The Japan-Korea Marker, the spot LNG benchmark for North Asia, has more than doubled since March and is trading at the highest seasonal level since 2013 due to China's economic rebound, numerous supply disruptions and intensifying competition from gas-hungry rivals in Europe and South America.
South Korean importers, the third-largest in the world, typically aren't too price sensitive, as they can pass fuel costs along to customers, so a move to temporarily exit the prompt spot market may have an impact and help to limit price gains.
To be sure, the strategy is a gamble that could leave South Korea ill-prepared for the upcoming winter, especially if the region is hit by colder-than-normal weather. Lower-than-average stocks and expected deliveries are likely to be enough to meet summer demand, BloombergNEF said in a report last month.

--With assistance from Heesu Lee.

To contact the reporter on this story:
Stephen Stapczynski in Singapore at sstapczynsk1@bloomberg.net
To contact the editors responsible for this story:
David Stringer at dstringer3@bloomberg.net
Jeff Sutherland

Bloomgerg @TheTerminal: JAPAN POWER: Fuel Crunch Fears Rise as Rain Cuts Solar Output
2021-06-28 03:46:08.816 GMT

By Stephen Stapczynski
(Bloomberg) -- Fears that utilities will be caught without enough fuel this summer have re-emerged as thermal power generation jumps and rainy weather curbs solar output.
Kansai Electric Power Co., one of the nation's biggest power generators, recently purchased a shipment of liquefied natural gas for August and is seeking another cargo for the same month, according to traders with knowledge of the matter. This is a stark reversal to just a few weeks ago, when Kansai had said it wouldn't buy spot cargoes due to sufficient supply from long-term contracts.
Rainy or cloudy weather is forecast to continue across most of the country through July 4, according to the Japan Meteorological Agency. Available gas-fired power capacity is expected to top 70 gigawatts by the end of this week, a more than 50% increase from the start of June, according to data from the Japan Electric Power Exchange.
Utilities are facing one of the toughest summers in the last several years after the government warned of a potential supply crunch, which is compounded by the unpredictable nature of solar energy. While several nuclear reactors and older thermal facilities are slated to restart and add much-needed supply, a sudden spike of hot weather could catch some utilities unprepared.
To make matters worse, natural gas prices around the world are surging on a lack of spot supply. If a Japanese utility needs to procure an LNG cargo at the last minute, they may be forced to pay at sky-high rates, similar to what happened in the previous winter.
In the short-term, power prices may also be supported by forecasts for warmer-than-normal nationwide temperatures for the next nine days.
Japan's 24-hour average spot electricity price for next-day delivery settled at 7.65 yen per kilowatt-hour on Monday, up 4.1% from a week ago, according to data compiled from JEPX.
* Baseload Tokyo power futures for June delivery on EEX settled at 7.09 yen/kWh on Friday, down 2.3% from the previous week
** July contract -7.6% w/w to 10.42 yen
** August contract -4.5% w/w to 14.09 yen

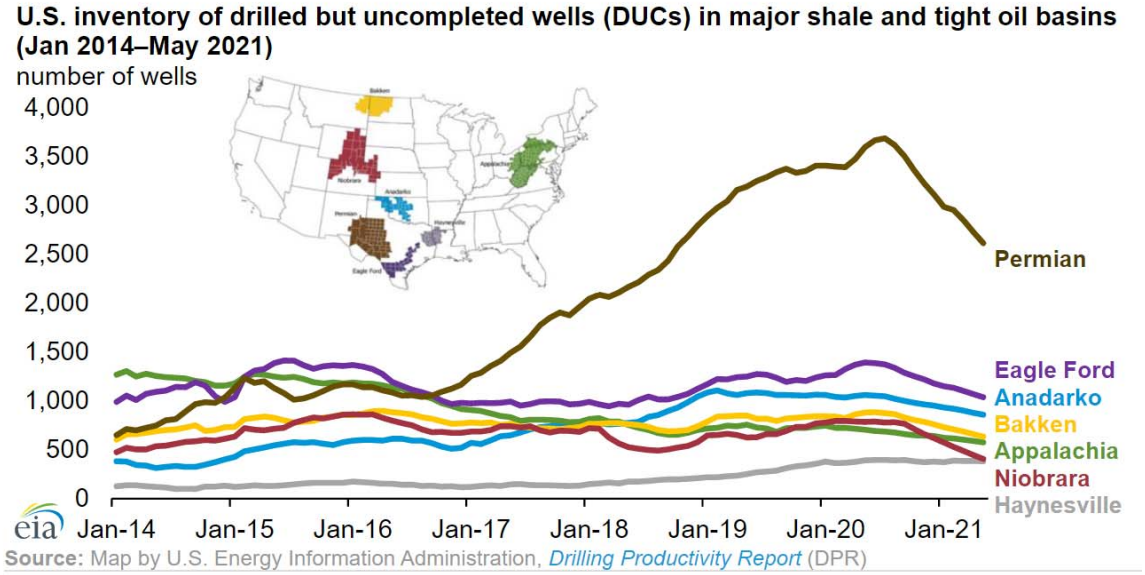
2-week demand/supply forecast from the nation's grid manager from June 24: *T
==========
| Peak Power | Peak Power | Reserve Rate
Date | Demand (MW) | Supply (MW) | (%)
==========
7/9/2021| 129,468| 161,365| 24.6
7/8/2021| 129,583| 161,863| 24.9
7/7/2021| 125,022| 153,564| 22.8
7/6/2021| 127,242| 153,631| 20.7
7/5/2021| 134,062| 164,789| 22.9
7/4/2021| 103,689| 140,988| 36
7/3/2021| 108,777| 146,536| 34.7
7/2/2021| 129,016| 156,895| 21.6
7/1/2021| 129,142| 161,022| 24.7
6/30/2021| 124,255| 160,287| 29
6/29/2021| 123,800| 155,523| 25.6
6/28/2021| 121,210| 149,011| 22.9
6/27/2021| 94,874| 130,820| 37.9
6/26/2021| 98,570| 140,123| 42

To contact the reporter on this story:
Stephen Stapczynski in Singapore at sstapczynsk1@bloomberg.net

https://www.eia.gov/todayinenergy/detail.php?id=48537

JUNE 28, 2021

EIA estimates drilled but uncompleted wells for key oil and natural gas basins



We release an updated inventory of what we consider drilled but uncompleted wells (DUCs) each month in our *Drilling Productivity Report* (DPR). We publish updates to DUC estimates by region in a publicly accessible spreadsheet. In May 2021, the most recent month available, we estimated that the United States has about 6,521 DUCs in seven major tight oil and shale natural gas basins, up from about 4,425 DUCs in 2013, the earliest year in the data series. Nearly 40% of DUCs (or 2,616 DUCs) are in the Permian Basin, located in western Texas and eastern New Mexico.

We estimate that the U.S. DUC inventory peaked at 8,874 DUCs in June 2020. From June 2020 through May 2021, we estimate that DUCs declined by 27%, or by 2,353 DUCs. Since the COVID-19 pandemic began, exploration and production (E&P) companies have cut capital expenditures, deployed fewer rigs, and reduced oil and natural gas production in response to lower demand and lower prices. DUCs help operators produce oil and natural gas at a lower cost.

We estimate DUCs by examining the difference between records of drilled wells and completed wells each month; the difference equals the net change in the DUC inventory, or well count. Our DUC inventory estimates depend on assumptions about the wells reported to FracFocus.

We estimate that most DUC wells are completed and begin producing hydrocarbons within one year after they are drilled. However, the timeline for completing wells can vary based on a variety of factors, including the prices of crude oil, petroleum products, and natural gas.

E&P companies maintain DUC well inventories to ensure the well completion rate remains flexible. For instance, E&P companies coordinate the drilling and completion of wells to minimize operational delays. Generally, E&P companies maintain a DUC backlog that can sustain oil or natural gas production for several months so that they always have wells they can complete quickly. Because new oil and natural gas wells have decline rates that can be as high as 60%–70%, E&P operators need a constant supply of new wells that are ready to be completed to maintain steady production levels.

You can find the monthly updates to our DUC inventory on our website in the *Drilling Productivity Report*.

Principal contributors: Christopher Peterson, Jozef Lieskovksy

https://www.rystadenergy.com/newsevents/news/press-releases/shale-revival-us-drilled-but-uncompleted-wells-already-at-pre-covid-19-levels-and-await-fracking/

Shale revival: US drilled but uncompleted wells already at pre-Covid-19 levels and await fracking

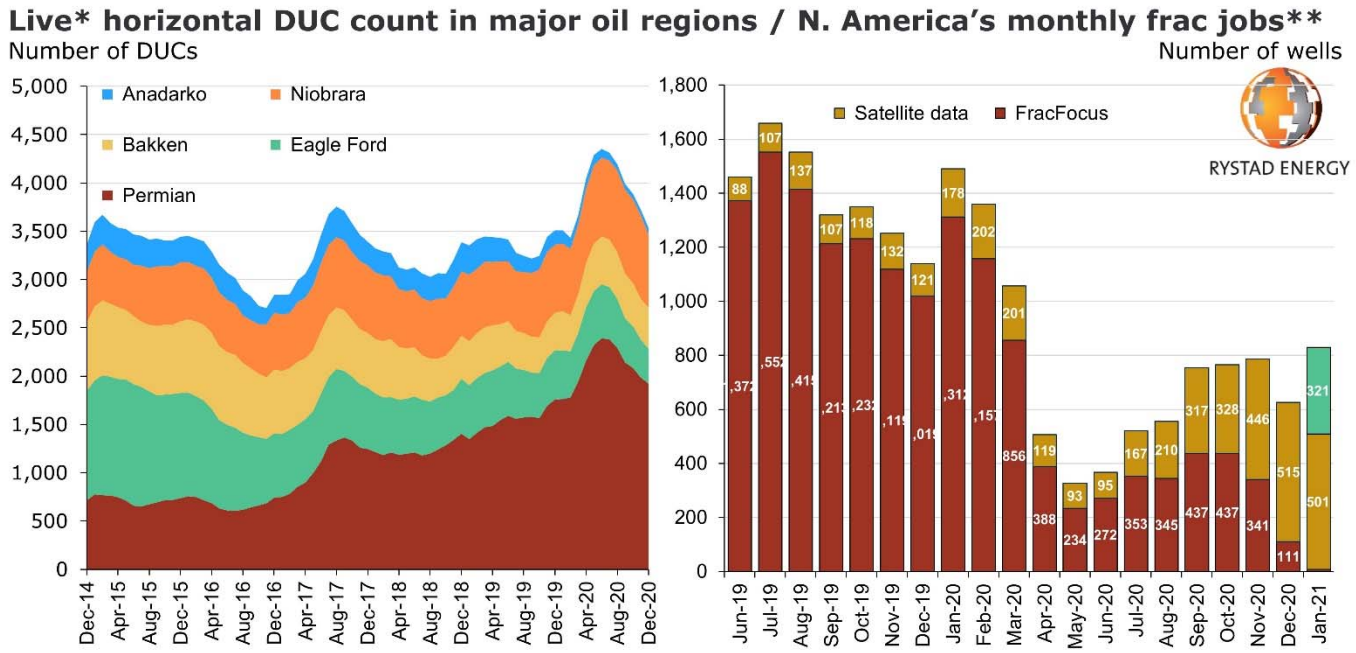
January 25, 2021

The number of drilled but uncompleted wells (DUCs) that accumulated at the height of the pandemic has already subsided to pre-Covid-19 levels in the US, a Rystad Energy analysis shows. After swelling to a multi-year high of 6,548 wells in June 2020, the number of such wells in the country's major oil regions* slimmed down to around 5,700 wells by the end of December 2020.

The inventory of 'live' DUCs, which excludes tentatively abandoned wells drilled a long time ago, also declined by around 800 wells in the same period, from 4,353 in June to 3,528 in December. The current level of horizontal oil 'live' DUC count is comparable to the level seen in early 2020, just before the market downturn started.

"Given the recent recovery in oil prices, the industry is enjoying the flexibility of further accelerating fracking activity beyond current levels in the first half of the year. Such an acceleration could be delivered, as can be implied from the ratio of the current 'live' DUC inventory to the run rate of fracking, which is still in the six-to-eight-month range, compared to the normal level of about three months seen in 2018-2019," says Artem Abramov, Head of Shale Research at Rystad Energy.

As of 21 January 2021, we identified 626 started frac operations in North America for December 2020 and we expect the month's fact-based coverage to be almost complete. For January 2021, we project that there will be 830 wells fracked, the highest monthly total after March 2020, when the Covid-19 induced downturn began.



*Includes all horizontal wells which are not classified as abandoned and viewed as good completion candidates in future

**The 321 wells highlighted in green for January 2021 is our conservative estimate for the remaining frac jobs of the month. Actual count reaches Jan. 19th

Source: Rystad Energy ShaleWellCube

Learn more in Rystad Energy's ShaleWellCube.

Back to DUCs, nearly all major oil regions followed the national trend in 2020, first exhibiting an unusual inventory build-up in the second quarter and then moving toward a gradual depletion in the second half of the year. The Permian Basin accounted for around 55% of the total horizontal 'live' oil DUC inventory as of December 2020, at around 1,900, and it accounted for a comparable share of the drawdown through the second half of the year, as the basin's 'live' DUCs peaked at 2,400 wells in June 2020.

The magnitude of the anomaly in the inventory, accumulated through the second quarter, is now shrinking gradually, but it remains significant. Looking at the breakdown of the total DUC inventory by vintage, or the spud year, one can easily spot thick tails, or a slow depletion of 2019 and 2020 vintages. In particular, a significant number of wells spudded in the fourth quarter of 2019 and the first quarter of 2020 were subject to delayed completions, and many of them were still part of the inventory as of December 2020.

If we look at the 4Q19-1Q20 spud vintages combined, then, as of December 2020, 1,633 wells were still in inventory, with a 48% depletion from the level of 3,246 wells seen in April 2020. The eight-month depletion pace in the three previous years was normally observed in the 80-83% range. This implies that, as of today, there are still around 1,100 horizontal oil DUCs that would have been completed by now in a normal activity environment.

If a fracking increase materializes, DUC wells from 4Q19-1Q20 will be completed faster, but it will also require the industry to increase rig counts quicker to achieve a smoother transition from a DUC-driven activity phase to a normal operational mode. In other words, this scenario is possible, but it will require an increase in the reinvestment rates from what operators have currently budgeted for 2021.

Given the current environment of capital discipline and focus on free cash flow generation, we expect the industry to largely stick with its original fracking programs in the first half of the year, but probably allocate some additional capex to a more significant increase in the rig count. This will result in an upside in frac activity from the second half of the year, and certain deviations from the maintenance program will be visible toward the end of the year, assuming that WTI holds above the $50 per barrel mark.

For more analysis, insights and reports, clients and non-clients can apply for access to Rystad Energy's Free Solutions and get a taste of our data and analytics universe.

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Contacts

Artem Abramov
Head of Shale Research
Phone: +47 24 00 42 00
artem.abramov@rystadenergy.com

Lefteris Karagiannopoulos
Media Relations Manager

Phone: +47 90228994
lefteris.karagiannopoulos@rystadenergy.com

https://www.pemex.com/saladeprensa/boletines_regionales/Paginas/2021-021_cddelcarmen.aspx

Pemex controls gas and fire emanation in the submarine pipeline near the KU-C satellite platform in the Campeche Sound

02/07/2021 | City of Carmen 21

Ciudad del Carmen, Camp. - At 05:15 am today a gas leak was registered in the 12-inch submarine pipeline and the presence of fire in the sea, 150 meters from the KU-C satellite platform, located in the Campeche Sonda belonging to the Ku-Maloob-Zaap Production Asset, attached to the Northeast Offshore Region Production Sub-Directorate of PEMEX Exploración y Producción.

The incident was dealt with immediately when the security protocols were activated and with the accompaniment of nearby firefighting vessels such as Santa Cruz Island, Campeche Bay and Bourbon Alienor.

In addition, the interconnection valves in the pipeline were closed, extinguishing the fire and the gas release, ending the contingency around 10:45 am and restoring normal operating conditions. No injuries or evacuees are reported.

Petróleos Mexicanos will carry out a root cause analysis of this incident.

https://www.reuters.com/business/energy/fire-offshore-pemex-platform-gulf-mexico-under-control-2021-07-02/

July 2, 20214:15 PM MDTLast Updated 10 minutes ago

Energy

'Eye of fire' in Mexican waters snuffed out, says national oil company

Adriana BarreraMarianna Parraga

2 minute read

MEXICO CITY, July 2 (Reuters) - A fire on the ocean surface west of Mexico's Yucatan peninsula early on Friday has been extinguished, state oil company Pemex said, blaming a gas leak from an underwater pipeline for sparking the blaze captured in videos that went viral.

Bright orange flames jumping out of water resembling molten lava was dubbed an "eye of fire" on social media due to the blaze's circular shape, as it raged a short distance from a Pemex oil platform.

The fire began in an underwater pipeline that connects to a platform at Pemex's flagship Ku Maloob Zaap oil development, the company's most important, four sources told Reuters earlier.

Ku Maloob Zaap is located just up from the southern rim of the Gulf of Mexico.

Pemex said no injuries were reported, and production from the project was not affected after the gas leak ignited around 5:15 a.m. local time.

The company, which has a long record of major industrial accidents at its facilities, added it also shut the valves of the 12-inch-diameter pipeline.

Angel Carrizales, head of Mexico's oil safety regulator ASEA, wrote on Twitter that the incident "did not generate any spill." He did not explain what was burning on the water's surface.

Ku Maloob Zaap is Pemex's biggest crude oil producer, accounting for more than 40% of its nearly 1.7 million barrels of daily output.

"The turbomachinery of Ku Maloob Zaap's active production facilities were affected by an electrical storm and heavy rains," according to an incident report shared by one of Reuters' sources. Those details were not mentioned in Pemex's statement.

Company workers used nitrogen to control the fire, according to one of the sources.

Pemex added that it would investigate the cause of the incident.

Reporting by Adriana Barrera and Marianna Parraga; Additional reporting by David Alire Garcia; Writing by Anthony Esposito; Editing by Daina Beth Solomon, Philippa Fletcher and David Gregorio

Russia Oil, Condensate Output Fell While OPEC+ Eased Limits (1)
2021-07-02 09:33:29.108 GMT

By Olga Tanas and Dina Khrennikova
(Bloomberg) -- Russia reduced oil production in June after keeping it almost flat in May, despite more generous quotas from the OPEC+ alliance.
Producers pumped 42.64 million tons of crude and condensate last month, according to preliminary data from the Energy Ministry's CDU-TEK unit. That's about 10.419 million barrels a day, or 0.5% less than in May, Bloomberg calculations show, based on a 7.33 barrels-per-ton conversion rate.
It's difficult to assess Russia's adherence to the output agreement between the Organization of Petroleum Exporting Countries and its allies, as CDU-TEK doesn't provide a breakdown between crude and condensate, which is excluded from the deal.
If Russia produced the same level of condensate as in May -- about 930,000 barrels a day -- then daily crude output would be some 9.489 million barrels, slightly above its June quota of 9.457 million barrels.
"This output drop may be because Russia is still trying to get back in line with its compliance and the Energy Ministry is trying to enforce some discipline," said Ron Smith, senior oil and gas analyst at BCS Global Markets.
Russia's compliance with the OPEC+ deal increased to 94% in May from 91% the previous month, the International Energy Agency said in its latest monthly report. The Energy Ministry didn't immediately respond to Bloomberg's request for comment about the level of adherence in June, or the reasons for the decline in total output last month.
Most of Russia's companies increased average daily output of crude and condensate in June compared with May. Rosneft PJSC, which accounts for about 40% of the nation's supply, produced 0.3% higher excluding unit Bashneft, which pumped 18% more. Lukoil PJSC, the second-largest producer, raised by almost 1%, and Gazprom Neft PJSC 1.1%.
But Tatneft PJSC pumped on average 3.3% lower and Surgutneftegas PJSC 0.6%. Slavneft, a joint venture of Rosneft and Gazprom Neft, reduced production of crude and condensate by 5.6%.
Under the deal with OPEC+, Russia was allowed to raise its crude-only production by a total of 116,000 barrels a day from May to July. The group's talks on supplies in August and beyond stumbled on Thursday after the United Arab Emirates blocked a preliminary agreement to raise overall output by 400,000 barrels a day each month from August to December.
The coalition's Joint Ministerial Monitoring Committee is scheduled to meet again on Friday, after which all OPEC+

ministers will convene.
Should the OPEC+ agree on further hikes, Russia will be able to boost its oil production quickly in August, according to analysts from Bank of America, Fitch, Wood & Co., Renaissance Capital and BCS Global Markets.
"I don't see any problems with crude production, and for sure Russia can increase its output by over 100,000 barrels a day in August should OPEC+ reach a consensus," Smith said.

To contact the reporters on this story:
Olga Tanas in Moscow at otanas@bloomberg.net;
Dina Khrennikova in Moscow at dkhrennikova@bloomberg.net
To contact the editors responsible for this story:
James Herron at jherron9@bloomberg.net
Amanda Jordan, Rakteem Katakey

https://www.cnbc.com/2021/07/04/uae-unconditionally-supports-opec-supply-increase-minister-says.html

UAE ‘unconditionally’ supports OPEC+ supply increase, but says no to a bad deal

PUBLISHED SUN, JUL 4 20216:03 AM EDT

Dan Murphy@DAN_MURPHY Hadley Gamble@_HADLEYGAMBLE

The United Arab Emirates has pushed back on OPEC+ leaders Saudi Arabia and Russia, claiming its “sovereign right” to negotiate fairer terms for an oil production increase.

“For us, it wasn’t a good deal,” UAE Minister of Energy and Infrastructure Suhail Al Mazrouei told CNBC’s Hadley Gamble, referring to OPEC+ production cuts which were based on a “level of production that goes back to 2018.”

“We knew that the UAE position in that agreement was the worst in terms of comparing our current capacity with the level of production” he said.

“But an agreement is an agreement.”

Asked if the UAE would be willing to walk away, the minister said “we cannot extend the agreement or make a new agreement under the same conditions. We have the sovereign right to negotiate that.”

The comments come after the United Arab Emirates blocked some aspects of an OPEC+ proposal to increase output on Friday, seeking better terms for itself.

“Let’s increase the production, and talk about the extension and the agreement and the conditions associated with it at a later meeting,” he said, adding that the UAE unconditionally supports a supply increase.

“We are meeting on Monday, and I think we are all in agreement that we need to do something regarding the increase in production,” Al Mazrouei said. “The issue is putting a condition on that increase, which is the extension of the agreement,” he added.

High risk

The high stakes standoff comes as oil prices surge above $75 dollars a barrel for the first time in two years. Failure to reach a deal on Monday could risk the market recovery, and even unravel the fragile OPEC+ alliance if the deadlock is left unresolved.

“We have plenty of time to meet and discuss the terms of the extension with justification that can involve independent bodies to review it” he said. “I’m still hopeful that by Monday we will segregate the two decisions,” he added.

The UAE threatened to leave OPEC late last year, and an exit would almost certainly trigger a repeat of the OPEC+ price war that pushed oil prices to -$40 in April last year.

“It’s not wise nor a target for anyone to raise prices to a level that the world economy cannot handle,” he said. “We think we need to do it and we need to do it for August” Al Mazrouei added.

Baseline dispute

At the core of the current proposal is a plan to increase production by 2 million barrels per day (mb/d) between August and December in 400,000 barrels per day monthly installments. OPEC+ also plans to extend its production cut agreement from April 2022 to December 2022.

“Now we think that linking the extension of the agreement for a reference that goes back to 2018, and for a period that starts from 2022, is just not realistic, because this is four years” Al Mazrouei said.

“That is totally unfair.”

The UAE has spent billions investing in its oil production capacity, seeking to ramp up output. With Iran also set to return to the oil market in the coming months, the UAE sees good scope to review the terms.

“UAE crude oil production in October 2018 was 3.160 mb/d. But it increased to 3.841 mb/d in April 2020. By changing the base, UAE can increase its production drastically & immediately,” tweeted Anas Alhajji, Managing Partner at Energy Outlook Advisors.

“They do not want OPEC+ agreement to limit their production and potential,” he added.

In what could perhaps be another sign of strain in the relationship, Saudi Arabia moved to restrict travel to the UAE late Friday, citing the pandemic.

Asked about the silence from the White House on the production group’s internal dispute, Mazrouei replied “Happy fourth of July.”

https://www.reuters.com/business/energy/saudi-aramco-seeks-financing-advisor-gas-pipeline-deal-sources-2021-06-29/

June 29, 20213:36 AM MDTLast Updated 2 hours ago

Energy

Saudi Aramco seeks financing advisor for gas pipeline deal -sources

Saeed AzharHadeel Al SayeghYousef Saba

2 minute read

DUBAI, June 29 (Reuters) - Saudi Aramco (2222.SE) has invited banks to pitch for an advisory role to help finance the sale of a significant minority stake in its gas pipelines, the oil giant's second major midstream deal after a $12.4 billion deal for oil pipelines, three sources said.
Aramco has already hired Morgan Stanley (MS.N) as an M&A advisor and the financing advisory role is up for grabs among banks, two of the sources said.

The gas pipeline stake sale will be a "copy paste" of the oil pipeline deal, one of the sources said.

Aramco has used a lease and lease-back agreement to sell a 49% stake of newly formed Aramco Oil Pipelines Co to the buyer and rights to 25 years of tariff payments for oil carried on its pipelines.

The pipeline deal was backed by nearly $11 billion in debt underwritten by eight banks and subsequently syndicated to an additional 10 banks, two sources told Reuters earlier.

Japanese lender MUFG (8306.T) had advised on the financing for the oil pipeline assets and was in a strong position for the new role though Aramco has not made any decision yet, the two sources said.

Aramco, Morgan Stanley and MUFG declined to comment.

Aramco's sale of a minority stake in its oil pipelines for $12.4 billion to a consortium led by EIG Global Energy Partners was its largest deal since a record $29.4 billion initial public offering in late 2019. The deal closed on June 20.

India Regains 90% of Pre-Virus Gasoline Sales as Demand Rebounds
2021-07-01 08:49:44.340 GMT

By Debjit Chakraborty
(Bloomberg) -- India's gasoline consumption has rebounded to 90% of pre-virus levels as motorists took back to the roads with Covid-19 curbs being eased, helping underpin optimism about a recovery in global energy demand.
Average daily sales of the automobile fuel expanded by more than a fifth in June from the previous month, when demand was hurt by a devastating second coronavirus wave that swept the country. Sales of diesel, which accounts for more than half of oil consumption, were 13% higher than May, but remained 19% weaker than in the same period in 2019.
The recovery in energy consumption in India adds to signs of a bounceback in energy demand, which has been led by China, the U.S. and Europe, and has spurred a powerful rally in futures prices. The revival comes as the Organization of Petroleum Exporting Countries and its allies may decided to boost production at a meeting on Thursday, with Russia seeking to increase supplies.
India is expecting fuel demand to get back to pre-virus levels by the end of 2021, according to Oil Minister Dharmendra Pradhan. "There are signs of demand resurgence," Pradhan said at a Bloomberg summit on Tuesday. "We are confident by the end of the year, we will be in a very robust position to restore our original consumption behavior."
Diesel and gasoline -- which together account for more than half of nationwide oil consumption -- had plunged by about 30% of 2019 levels last month as daily infections surged at a world-beating pace of more than 400,000 cases. That's since fallen back below 50,000, prompting a reopening of the economy.
Some of the nation's biggest refiners such as Indian Oil Corp. have also started ramping up crude processing.
Spokespeople for Indian Oil, Bharat Petroleum Corp., and Hindustan Petroleum Corp., declined to comment. The three retailers account for more than 90% of the nation's fuel sales.
Here's a table of the preliminary data:
*T

June 1-30 ('000 Tons)		Y/y	Vs. June 2019
Diesel	5,356.7	-1.8%	-18.8%
Gasoline	2,120.3	5.7%	-10.4%
LPG	2,237.8	9.5%	26.3%
Jet	233.4	9.9%	-61.7%

*T

To contact the reporter on this story:
Debjit Chakraborty in New Delhi at dchakrabor10@bloomberg.net
To contact the editors responsible for this story:
Serene Cheong at scheong20@bloomberg.net
Jake Lloyd-Smith

Oil Stored in South Korea Now Less Than Half of Peak in 2020 (1)
2021-07-01 08:44:23.774 GMT

By Sharon Cho
(Bloomberg) -- Crude stored in onshore tanks in South Korea has fallen to less than half of its peak last year -- when the pandemic eviscerated demand -- as traders shy away from hoarding oil due to a very bullish market structure.
Volumes in tank farms operated by state-run Korea National Oil Corp. leased to third-party companies have dropped to less than 10 million barrels from a high of around 20 million barrels in 2020, according to people familiar with the matter who asked not to be identified as the information is private.
See also: Key U.S. Oil Storage Hub Seen Depleting as Producers Hold Tight
South Korea ran out of lease-able storage in April last year as a global glut of crude spurred ascramble for space. However, the energy demand recovery and the shift to a backwardated market -- where near-term contracts are more expensive than those further out -- has reduced the incentive to store crude for extended periods.
The on-shore tank space is currently being leased by international companies such as Trafigura Group and Unipec, the trading arm of China International United Petroleum & Chemicals Co., to easily supply nearby customers including Chinese independent refiners. The tanks are located in the southern part of the country in Yeosu and Geoje.
On Thursday, London's Brent crude for September settlement was $4.04 a barrel pricier than the March 2022 contract, compared with about a $2 a barrel discount in April last year.

To contact the reporter on this story:
Sharon Cho in Singapore at ccho28@bloomberg.net
To contact the editors responsible for this story:
Serene Cheong at scheong20@bloomberg.net
Andrew Janes, Jake Lloyd-Smith

To view this story in Bloomberg click here:

Vortexa Global Crude Oil Floating Storage As of June 25, 2021

Courtesy of Bloomberg @TheTerminal and Vortexa

Crude Oil in Floating Storage Falls 17% in Past Week: Vortexa
2021-06-28 07:00:01.426 GMT

By Bloomberg Automation
(Bloomberg) -- The amount of crude oil held around the world on tankers that have been stationary for at least 7 days fell to 76.05m bbl as of June 25, Vortexa data show.
* That's the lowest since April 2020, and down 17% from 91.14m bbl on June 18
* Asia Pacific down 14% w/w to 49.12m bbl; lowest since April 2020
* Middle East down 32% w/w to 7.21m bbl; lowest since February
* Europe up 57% w/w to 7.02m bbl
* West Africa down 6.5% w/w to 3.74m bbl
* North Sea up 18% w/w to 3.09m bbl
* U.S. Gulf Coast down 100% w/w to 0.00k bbl; lowest since December
* Company Exposure:
** Asia: Cosco Shipping Energy Transportation Co., HMM Co. Ltd., Mitsui O.S.K. Lines Ltd., Nippon Yusen KK
** Europe: Euronav NV, Frontline, Vopak
** U.S.: DHT Holdings, International Seaways, Nordic American Tankers, Teekay Tankers, Tsakos Energy Navigation
* NOTE:
** Vortexa data exclude FPSO units, oil products and Iranian condensate
** Crude oil transferred by STS isn't included until that volume has been stationary on receiving vessel for 7 days
** Data don't include vessels booked for floating storage until they are actually stationary for the minimum period
** See VTXA or DATA FLOAT for more data, which is subject to revisions, and see NI TANTRA for all tanker-tracking stories
** See SPOT FREIGHT for freight rate assessments using shipbroker data

To contact Bloomberg News for this story:
+1-212-617-2000 or newsauto@bloomberg.net

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OIL DEMAND MONITOR: Europe's Planes Roused From Their Big Sleep
2021-06-29 08:42:16 GMT

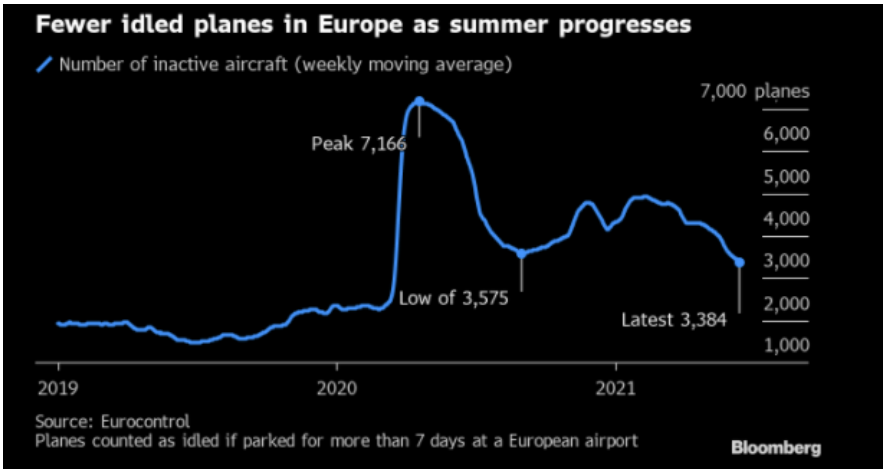
- **U.K. airline seat capacity nudges above 1 million per week**
- **Utilization above 2019 in key refining regions of China, U.S.**

By Stephen Voss

Planes are waking up again all over Europe as travel swells. Of the 5,000 additional planes parked at aerodromes due to the pandemic, more than half have resumed service. That's boosting demand for the worst hit oil product -- jet fuel.

The total worldwide number of commercial flights on Monday was 29% below two years earlier, according to the latest seven-day moving average of volume tracked by FlightRadar24, compared with 40% in late February. The gap between 2021 and a normal year is closing gradually, with Europe still the main region significantly lagging.

Flights in the European air zone have risen steadily since early May though, and have now narrowed the deficit against 2019 levels to 47%, according to data from Eurocontrol, an agency that helps coordinate traffic. Until the past couple of weeks the gap had been consistently wider than 50% during the pandemic, aside from two days just before Christmas.



Another way to see the outlook for jet fuel demand is to count the number of inactive planes. At the peak in April 2020, almost 7,200 were left "asleep," parked on the concrete aprons and taxiways across the European air zone, Brussels-based Eurocontrol said in a study. A normal year would see a range of about 1,500 to 2,000 parked planes.

The renewed wave of Covid-19 infections earlier this year pushed the number of inactive planes back up again, to almost 5,000, but that has steadily declined in the past three months, down to about 3,400 in mid-June.
"As summer 2021 gets under way, the gentle recovery in flights is seeing more aircraft brought back into service: more than 800 since the start of May, leaving our airports with the fewest inactive aircraft since the pandemic began," Eurocontrol said in the report. "A good sign for the summer ahead."

Airline seat capacity in the U.K. finally nudged above 1 million for the week ended June 28, according to OAG Aviation. That's still 74% below the 3.9 million available in the same week of 2019. Other nations are much closer to the pre-pandemic year, with China and the U.S. trailing by 4% and 13%, respectively, while India and France were both down by about 45%.

Most countries in Europe and North America are on a path toward lifting pandemic restrictions as infection rates drop, allowing travel and business activity to resume. That's not true for all parts of the world, with Namibia running out of vaccine doses and almost half of Australia's population in lockdown to contain a spread of the delta variant.

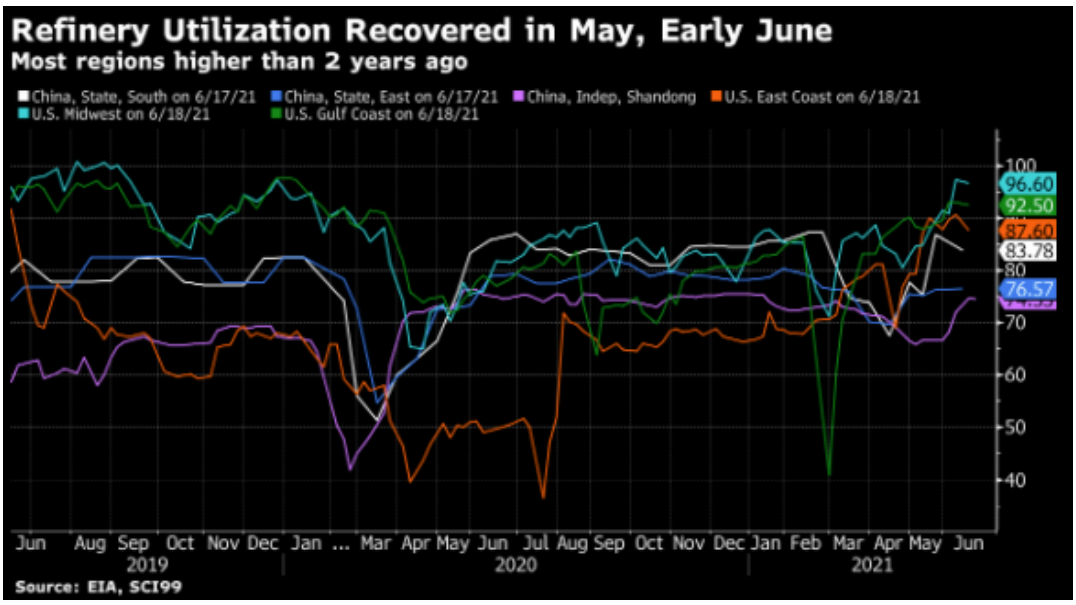
“You’re seeing a very strong demand recovery,” which had been led by China, manufacturing and goods and is now led more by U.S., Europe, services and travel, Trafigura Group’s Chief Economist Saad Rahim said in a Bloomberg TV interview last week.

Oil prices could hit $100 a barrel as soon as next year, if the conditions are right, he said.

Refining Strength

In another sign of the strength of oil markets, all of the three most important refining regions in China and two of the three key areas in the U.S. are using more of their capacity than they were this time two years ago. The U.S. Gulf Coast region lags, but only by 4 percentage points.

The increased refinery runs have whittled down oil stockpiles in China to the lowest this year, at 974.2 million barrels in the week to June 22, according to market intelligence firm Kayrros, which bases its estimates on satellite images. That reduction, plus declines in floating storage and U.S. stockpiles, may give members of the OPEC+ alliance confidence that the market is tight enough for them to increase production when they meet this week.



London Traffic

Among Western Europe’s five biggest cities, London had the most road congestion on Monday morning.

Commuters took an additional 38 minutes on top of a road journey that would normally take 1 hour on empty roads in the U.K. capital at 8 a.m. Monday, according to data collected by navigation technology company TomTom NV. That’s 2% more than the same as the typical congestion time in 2019, with Paris the next closest at 18% down from the pre-pandemic level. New York congestion was 48% lower.

While the U.K. lags in terms of opening up its international air routes, car usage is pretty much back to normal. Data from two different government departments show nationwide car usage, gasoline sales and diesel sales were all about 7% below the level seen just before the pandemic hit.

Toll road traffic data for Italy, Spain and France show similar percentages, all between about 8% and 9% lower than the equivalent week of 2019, according to Atlantia Group, which operates motorways across the continent. Similar data from Atlantia collected for some parts of central and southern America show Brazil’s road volumes recently weakening to 11% below 2019 levels and Mexico reasonably steady at 4% above.

U.S. drivers are also back to normal, according to a weekly measure by the Department of Transportation which counted 17.2 billion miles traveled on interstate highways by all kinds of vehicles in the week ended June 20. That's 0.2% above the same week of 2019.

The Bloomberg weekly oil-demand monitor uses a range of high-frequency data series to help identify trends that may become clearer later in more comprehensive monthly figures.

Following are the latest indicators, in the four tables below. The first two show fuel demand and mobility, the next shows air travel globally and the last is refinery activity:

Measure	Location	% y/y	% vs 2019	% m/m	Freq.	Latest as of Date	Latest Value	Source
Gasoline demand	U.S.	+9.7	-0.3	-0.4	w	June 18	9.44m b/d	EIA
Distillates demand	U.S.	+14	-0.5	-12	w	June 18	3.95m b/d	EIA
Jet fuel demand	U.S.	+97	-17	+13	w	June 18	1.58m b/d	EIA
Total oil products demand	U.S.	+13	-0.6	+4	w	June 18	20.8m b/d	EIA
All vehicles miles traveled	U.S.		+0.2		w	June 20	17.2b miles	DoT
Passenger car VMT	U.S.		-2		w	June 20	n/a	DoT
Truck VMT	U.S.		+10		w	June 20	n/a	DoT
All motor vehicle use index	U.K.	+26	-3	unch	d	June 21	97	DfT
Car use	U.K.	+29	-7	+1	d	June 21	93	DfT
Heavy goods vehicle use	U.K.	+16	+8	-1	d	June 21	108	DfT

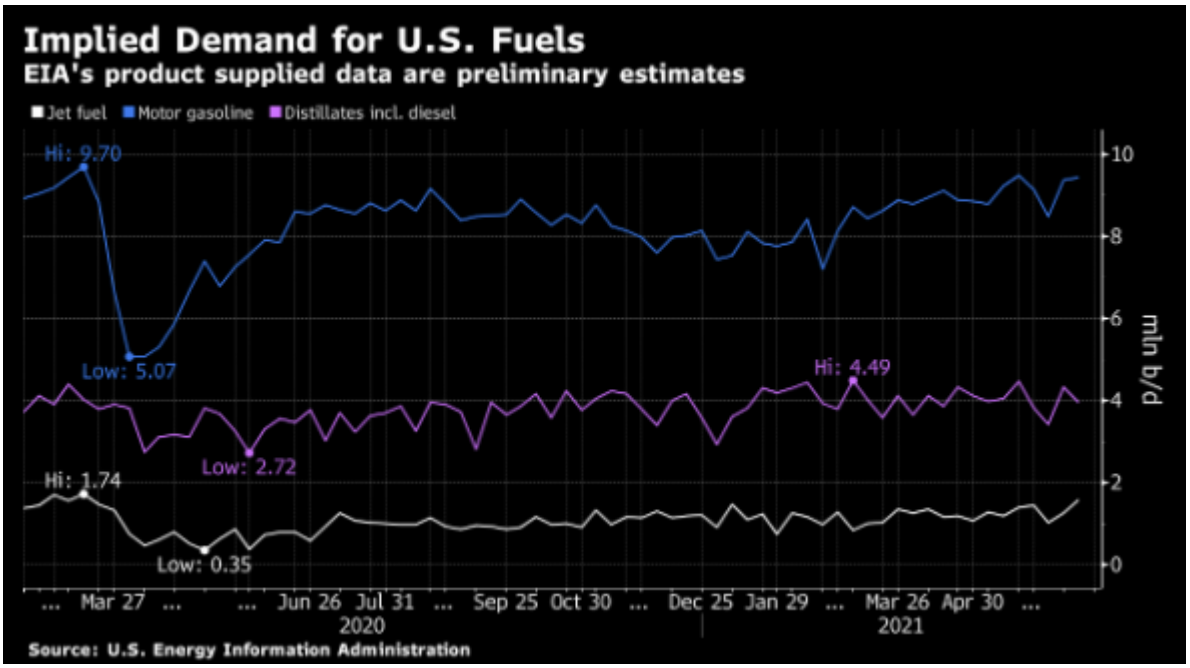
Gasoline (petrol) avg sales per filling station	U.K.	+39	-6.6	+5.9	w	June 20	6,785 liters/d	BEIS
Diesel avg sales per station	U.K.	+27	-7.4	+0.8	w	June 20	9,661 liters/d	BEIS
Total road fuels sales per station	U.K.	+32	-7	+2.9	w	June 20	16,447 liters/d	BEIS
Gasoline	India	-3.5	-21	+13	2/m	June 1-15	905k tons	Bberg
Diesel	India	-7.5	-21	+12	2/m	June 1-15	2.48m tons	Bberg
Jet fuel	India	+13	-66	-17	2/m	June 1-15	107k tons	Bberg
Total Products	India	-1.5	-21	-11	m	May 2021	15.11m tons	PPAC
Passenger car traffic	Poland	+9	-1	+4.9	w	June 27	24,075	GDDKiA
Heavy goods traffic	Poland	+15	+8	-3.7	w	June 27	4,763	GDDKiA
Toll roads volume	France	+8.5	-8.4		w	June 20	n/a	Atlantia
Toll roads volume	Italy	+17	-9.3		w	June 20	n/a	Atlantia
Toll roads volume	Spain	+56	-8.3		w	June 20	n/a	Atlantia
Toll roads volume	Brazil	+15	-11		w	June 20	n/a	Atlantia
Toll roads volume	Chile	+93	-12		w	June 20	n/a	Atlantia
Toll roads volume	Mexico	+26	+4.2		w	June 20	n/a	Atlantia
All vehicles traffic	Italy	+58		+25	m	May	n/a	Anas
Heavy vehicle traffic	Italy	+23		+1.6	m	May	n/a	Anas
Gasoline	Portugal	+28	-16	+5.1	m	May	79k tons	ENSE
Diesel	Portugal	+12	-12	-0.1	m	May	380k tons	ENSE
Jet fuel	Portugal	+298	-68	+39	m	May	46k tons	ENSE
Gasoline	Spain	+132	+1.1		m	May	440k m3	Exolum
Diesel	Spain	+29	-6.6		m	May	2077k m3	Exolum
Jet fuel	Spain	+246	-70		m	May	189k m3	Exolum

The frequency column shows d for data updated daily, w for weekly, 2/m for twice a month and m for monthly.

* In DfT U.K. data, the column showing versus 2019 is actually showing the change versus the first week of February 2020, to represent the pre-Covid era.

** In BEIS U.K. data, the column showing versus 2019 is actually showing the change versus the average of Jan. 27-March 22, 2020, to represent the pre-Covid era.

*** Polish GDDKiA weekly data is compared against appropriate prior-year weeks that also contained the Corpus Christi national holiday.

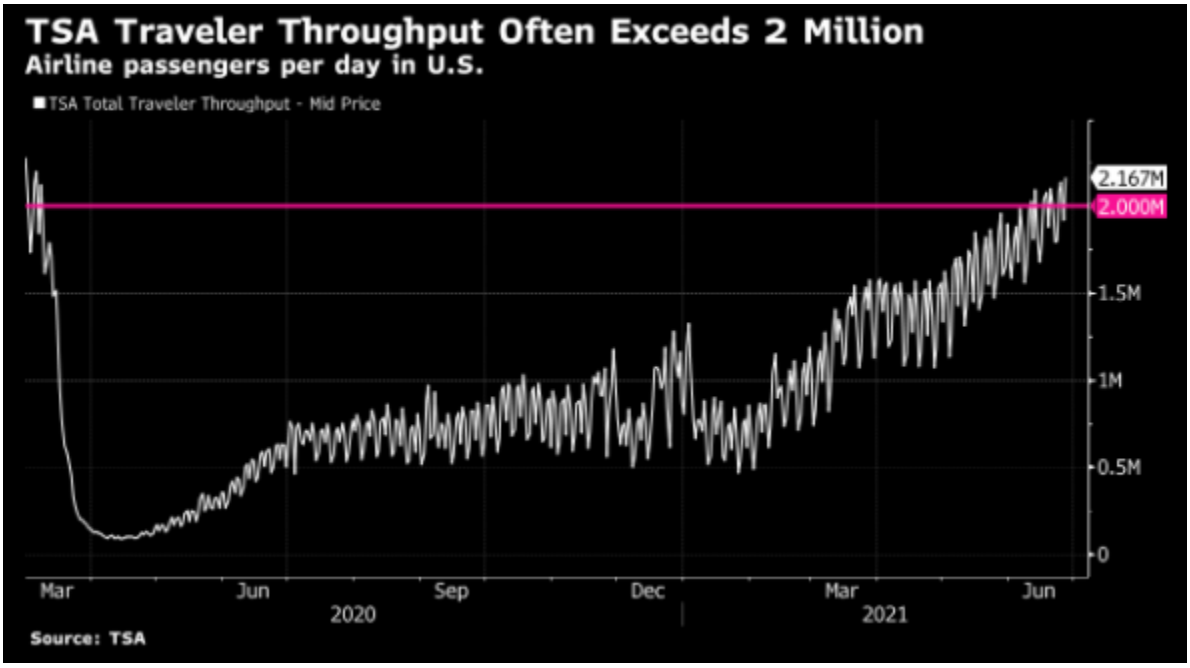


Measure	Location	% chg vs 2019	% chg m/m	June 28	Jun. 21	Jun. 14	Jun. 7	May 31	May 24	May 17	May 10	May 3	Apr. 26
		(June 28)				Minutes of congestion at 8am local time							
Congestion	Tokyo	-27	+2	27	28	30	27	26	29	31	28	7	32
Congestion	Mumbai	-87	+167	5	5	4	4	2	2	3	2	1	2
Congestion	New York	-48	+800	16	16	22	23	2	20	17	19	20	20
Congestion	Los Angeles	-51	+480	17	16	19	20	3	21	19	19	20	18
Congestion	London	+2	+1180	38	37	39	40	3	41	40	41	2	44
Congestion	Rome	-74	-48	13	36	34	49	24	38	34	40	29	37
Congestion	Madrid	-56	-30	16	18	22	27	22	23	19	24	1	28
Congestion	Paris	-18	-2	37	44	42	42	37	3	32	31	29	23
Congestion	Berlin	-45	-30	19	28	28	28	26	3	25	24	23	28
Congestion	Mexico City	-51	+8	24	21	26	24	22	23	23	14	20	23
Congestion	Sao Paulo	-47	-17	23	26	23	26	28	23	22	22	24	22

Source: TomTom. Note: M/m comparison is June 28 vs May 31. London and U.S. cities had reduced traffic on May 31 due to public holidays, thus exaggerating the m/m change. TomTom has been unable to provide Chinese data since late April.

Air Travel:

Measure	Location	% chg y/y	% chg vs 2019	% chg m/m	Freq.	Latest as of Date	Latest Value	Source
Airline passenger throughput	U.S.	+242	-7.7	+31	d	June 27	2.17m people	TSA
Commercial flights	Worldwide	+78	-29	+11	d	June 28	87,880	FlightRadar24
Air traffic (flights)	Europe		-47	+42	d	June 28	19,978	Eurocontrol
Seat capacity	Worldwide	+57	-35		w	June 28	75.52m	OAG
Seat cap.	China	+24	-4.2		w	June 28	15.94m	OAG
Seat cap.	U.S.	+107	-13		w	June 28	18.87m	OAG
Seat cap.	India	-18	-45		w	June 28	2.17m	OAG
Seat cap.	Japan	-23	-58		w	June 28	1.74m	OAG
Seat cap.	Australia	+290	-37		w	June 28	1.36m	OAG
Seat cap.	Brazil	+211	-41		w	June 28	1.54m	OAG
Seat cap.	France	+112	-46		w	June 28	1.42m	OAG
Seat cap.	Germany	+76	-59		w	June 28	1.40m	OAG
Seat cap.	U.K.	+69	-74		w	June 28	1.02m	OAG



Refineries:

Measure	Location	y/y chg	vs 2019 chg	m/m chg	Latest as of Date	Latest Value	Source
Crude intake	U.S.	+16%	-7.1%	+5.7%	June 18	16.1m b/d	EIA
Utilization	U.S.	+18 ppt	-2 ppt	+5.2 ppt	June 18	92.2 %	EIA
Utilization	Gulf Coast U.S.	+16 ppt	-3.6 ppt	+4.2 ppt	June 18	92.5 %	EIA
Utilization	East Coast U.S.	+38 ppt	+2.9 ppt	-2.4 ppt	June 18	87.6%	EIA
Utilization	Midwest U.S.	+15 ppt	+3.3 ppt	+8.9 ppt	June 18	96.6 %	EIA
Apparent Oil Demand	China	-0.9%		+4.8%	May 2021	13.58m b/d	NBS
Indep. refs run rate	Shandong, China	unch	+12 ppt	+7.8 ppt	June 25	74.5 %	SCI99
State refs run rate	East China	-2.3 ppt	+2.5 ppt	+1.3 ppt	June 17	76.6 %	SCI99
State refs run rate	South China	-2.1 ppt	+4.1 ppt	+8.5 ppt	June 17	83.8 %	SCI99

NOTE: All of the refinery data is weekly, except for SCI99 state refineries, which is twice per month, and the NBS apparent demand, which is usually monthly.

With assistance from Julian Lee

To contact the reporter on this story:
Stephen Voss in London at sev@bloomberg.net

To contact the editors responsible for this story:
Will Kennedy at wkennedy3@bloomberg.net
John Deane

PMI

Caixin China General Manufacturing PMI Press Release

2021.06

财新
Caixin

Caixin China General Manufacturing PMI™

PMI edges down to three-month low in June

The Chinese manufacturing sector expanded at a softer pace in June, with firms recording slower increases in both output and new orders. Companies indicated that the recent uptick in COVID-19 cases and supply chain difficulties weighed on output, while the pandemic dampened demand both at home and abroad. Companies continued to add to their staff numbers, however, as capacity pressures persisted. At the same time, input cost inflation eased notably on the month, which led to a slower rise in prices charged.

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 – edged down from 52.0 in May to 51.3 in June, to signal a further modest improvement in the health of the sector. The reading was the lowest recorded in three months, however.

The headline Index was partly dampened by a softer increase in production at the end of the second quarter. The latest upturn was the slowest recorded since March 2020 and only slight. Panellists stated that the pandemic and difficulties obtaining inputs had weighed on growth.

Total new business likewise expanded at a slower rate in June. The modest increase was the softest seen for three months. Firms often linked higher sales to an ongoing improvement in underlying market demand. However, there were reports that the recent uptick in COVID-19 cases at home and abroad had dampened overall growth. Notably, new export work was broadly stagnant in June.

In line with the trend for new work, June data signalled a slower increase in purchasing activity, which rose modestly overall. The time taken for items to be delivered to manufacturers continued to lengthen solidly, however. Firms frequently mentioned that a lack of stock at vendors and logistical delays related to the pandemic had hampered supplier performance.

On the employment front, goods producers added to their workforce numbers again in June. Though marginal, the rate of job creation was the second-strongest since January 2013, with a number of companies attributing the upturn to sustained increases in new work and efforts to expand capacity. At the same time, backlogs of work rose for the fourth month in a row, though the rate of accumulation was only slight.

Manufacturers reported an increase in stocks of purchased items for the first time in six months, albeit only marginal. At the same time, inventories of finished goods fell at a solid and accelerated rate as firms increased their usage of current stocks to fulfil new orders.

Inflationary pressures meanwhile eased in June. Though sharp, the rate of input price inflation softened to a seven-month low. Higher cost burdens were overwhelmingly linked to greater raw material prices. At the same time, prices charged by manufacturers rose at the slowest rate since February.

Business confidence towards the year-ahead outlook for output remained strong in June, amid expectations that global economy will continue to recover from the pandemic. That said, the degree of optimism was unchanged from May's four-month low.

China General Manufacturing PMI

sa, >50 = improvement since previous month

Sources: Caixin, IHS Markit

Key findings:

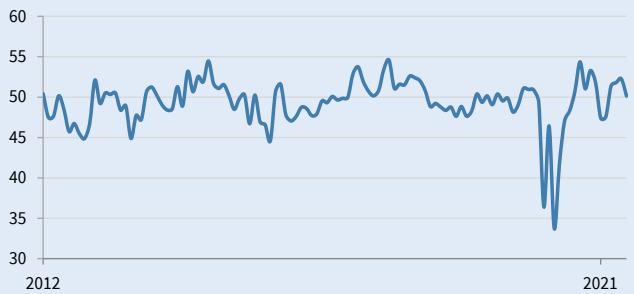
Softest increase in output for 15 months

Total new order growth slows as export sales stagnate

Employment continues to increase, as cost pressures ease

New Export Orders Index

sa, >50 = growth since previous month



Sources: Caixin, IHS Markit

Employment Index

sa, >50 = growth since previous month

Sources: Caixin, IHS Markit

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

"The Caixin China General Manufacturing PMI came in at 51.3 in June, down from 52 the previous month. The June reading marked the 14th consecutive month of expansion.

"Both supply and demand in the manufacturing sector continued to expand. The gauges for output and total new orders in June remained in expansionary territory for the 16th consecutive month and the 13th consecutive month, respectively, though the rates of expansion were slower than the previous month. The measure for new export orders dropped at a steeper pace than those for output and total new orders. Surveyed enterprises said the resurgence of Covid-19 in Guangdong province and overseas impacted both supply and demand.

"The job market continued to improve. Employment expanded for the third straight month in June, with the rate of expansion faster than the previous month. The measure for employment hit the highest point in seven months and was also the second highest since January 2013. Enterprises accelerated hiring, showing that continued improvement in demand was increasingly being reflected in the job market.

"Inflationary pressure remained as price measures stayed high. Both the gauges for input costs and output prices in June fell seven points from the previous month, but still remained in expansionary territory. The upwards trend for prices that has lasted for months moderated. Enterprises said the main causes of rising costs were the high prices of industrial metals and energy commodities. As a result, factory-gate prices continued to increase, though at a slower pace.

"Manufacturing enterprises' delivery times continued to lengthen. Their stocks of purchases increased, while stocks of finished goods fell. The shortage of finished goods and the resurgence of the coronavirus in southern China lengthened suppliers' delivery times. As a result, some manufacturing enterprises replenished their stocks, with the gauge for stocks of purchases rising into expansionary territory for the first time in six months. Due to rising demand, the gauge for stocks of finished goods remained in contractionary territory for four months in a row.

"Overall, the manufacturing sector continued to stably expand in June, despite the impact of the pandemic. Both demand and supply in the sector remained stable, as did external demand, showing the momentum of economic recovery still remained in the post-epidemic period. The job market continued to improve and businesses were highly optimistic, with the measure for future output expectations in June higher than the long-term average. Inflationary pressures eased somewhat, but manufacturing enterprises' purchasing prices and factory-gate prices still rose. The shortage of raw materials continued in some regions. The manufacturing sector has gradually returned to normal. In the second half of this year, the low base effect from last year will weaken. Inflationary pressure, coupled with the economic slowdown, is still a serious challenge for China."

Survey methodology

The Caixin China General Manufacturing PMI™ is compiled by IHS Markit from responses to questionnaires sent to purchasing managers in a panel of around 500 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 10-22 June 2021.

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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About IHS Markit

IHS Markit (NYSE: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 business and government customers, including 80 percent of the Fortune Global 500 and the world's leading financial institutions.

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Contact

Dr. Wang Zhe
Senior Economist
Caixin Insight Group
T: +86-10-8590-5019
zhewang@caixin.com

Ma Ling
Brand and Communications
Caixin Insight Group
T: +86-10-8590-5204
lingma@caixin.com

Annabel Fiddes
Economics Associate Director
IHS Markit
T: +44 1491 461 010
annabel.fiddes@ihsmarkit.com

Joanna Vickers
Corporate Communications
IHS Markit
Telephone +44 207 260 2234
joanna.vickers@ihsmarkit.com

https://newsroom.aaa.com/2021/06/aaa-more-than-47m-americans-to-celebrate-with-an-independence-day-getaway/

AAA: More Than 47M Americans to Celebrate With an Independence Day Getaway

Travel expected to increase 40% compared to last July 4, reaching the second-highest travel volume on record

Julie Hall, APRManager, AAA Public Relations

JuHall@national.aaa.com407-444-8003

6/22/2021

ORLANDO, Fla. (June 22, 2021)—More than 47.7 million Americans will take to the nation's roadways and skies this Independence Day (July 1–5), as travel volumes are expected to nearly fully recover to pre-pandemic levels. In fact, this will be the second-highest Independence Day travel volume on record, trailing only 2019. Overall, just 2.5% fewer Americans are expected to travel this year compared to Independence Day in 2019. This represents an increase of nearly 40% compared to last year, when total travel fell to 34.2 million.

While all modes of travel will see increased demand this Independence Day, road trips continue to dominate this summer. Despite the highest gas prices in seven years, more than 91% of holiday travel will be by car. An expected 43.6 million Americans will drive to their destinations, the highest on record for this holiday and 5% more than the previous record set in 2019. With 3.5 million people planning to fly, air travel volumes this Independence Day will reach 90% of pre-pandemic levels, and increase 164% compared to last year.

"Travel is in full swing this summer, as Americans eagerly pursue travel opportunities they've deferred for the last year-and-a-half," said Paula Twidale, senior vice president, AAA Travel. "We saw strong demand for travel around Memorial Day and the kick-off of summer, and all indications now point to a busy Independence Day to follow."

Another 620,000 Americans are expected to travel by other modes this Independence Day, an increase of over 72% compared to last year, but 83% lower than in 2019. This includes travel by bus and train, and also the return of cruising. Cruise lines have announced limited sailings resuming from U.S. ports beginning in late June. For those who make the personal decision to take a cruise, AAA reminds them that a travel agent can help advise on cancelation policies, what you can expect on your cruise, and travel insurance options to help protect your health and travel investment before and during your vacation.

2021 Independence Day Holiday Travelers

	Total	Automobile	Air	Other (Bus, Train, Cruise)
2021 (Forecast)	47.7M	43.6M	3.5M	620,000
2020 (Actual)*	34.2M	32.5M	1.3M	359,000
2019 (Actual)	48.9M	41.5M	3.9M	3.5M
Change (2019 to 2021)	−2.5%	+5.1%	−10.3%	−82.5%
Change (2020 to 2021)	+39.6%	+34.1%	+163.8%	+72.7%

**AAA did not issue an Independence Day holiday travel forecast in 2020 due to the COVID-19 pandemic. However, actual travel volumes were recorded after the holiday for comparison purposes this year.*

Top Destinations & Resources to Plan Your Trip

AAA Travel booking data also indicate a strong travel recovery for summer. Theme parks in Orlando and southern California, as well destinations including Denver, Las Vegas and Seattle are topping the list of Independence Day destinations this year.

Top Independence Day Travel Destinations:

1. Orlando, FL
2. Anaheim, CA
3. Denver, CO
4. Las Vegas, NV
5. Seattle, WA
6. Chicago, IL
7. New York, NY
8. Atlanta, GA
9. Boston, MA
10. Kahului, Maui, HI

**Based on AAA Travel advance air and tour bookings, July 1–5, 2021*

When planning a trip, refer to the new AAA Digital TourBook guides, now available for destinations across the U.S., Canada, Mexico and the Caribbean at TourBook.AAA.com. Available on smartphone, tablet or desktop, the new interactive guides feature detailed destination information, must-see attractions, sample itineraries and more.

To meet the needs of today's travelers, AAA is enhancing its Diamond inspections. Hotels that meet AAA's standards for cleanliness, condition and new surface cleanliness testing will now be recognized as Inspected Clean and then assigned a Diamond designation. AAA inspectors will start conducting testing to identify Inspected Clean properties later this month. In the meantime, travelers can look for AAA's Best of Housekeeping badge for peace of mind. Prior to any hotel stay, call ahead to ensure your hotel is open and ask what precautions they are taking to protect guests.

Long Delays Expected for Drivers

INRIX, in collaboration with AAA, predicts drivers will experience the worst congestion heading into the holiday weekend as commuters leave work early and mix with holiday travelers, along with the return trip on Monday mid-day. Major metro areas across the U.S. could see nearly double the delays verses typical drive times, with drivers in Boston and San Francisco likely to experience nearly three-times the delays.

"With travelers eager to hit the road this summer, we're expecting nationwide traffic volumes to increase about 15% over normal this holiday weekend. Drivers around major metro areas must be prepared for significantly more delay," says Bob Pishue, transportation analyst, INRIX. "Knowing when and where congestion will build can help drivers avoid the stress of sitting in traffic. Our advice is to avoid traveling on Thursday and Friday afternoon, along with Monday mid-day."

Worst Corridors and Times to Travel

Metro Area	Corridor	Peak Congestion	% over Normal
Atlanta	I-75 N, Jodeco Road to Jenkinsburg Road	Friday, 1:00–3:00PM	50%
Boston	I-95 S, MA-10 to Sanford Road	Monday, 3:00–5:00PM	330%
Chicago	I-90 E, W Roosevelt Road to I-294	Friday, 4:00–6:00PM	50%
Detroit	I-75 N, 12 Mile Road to Oakland St	Friday, 3:00–6:00PM	50%
Houston	I-10 W, Bernardo Road to Pin Oak Road	Saturday, 8:00–10:00AM	50%
Los Angeles	I-405 N, I-5 to Jefferson Blvd	Friday, 3:00–5:00PM	10%
New York	I-278 E, Bronx River to Williamsburg St	Thursday, 3:00–5:00PM	30%
San Francisco	CA-17 N, Lark Ave to Mt Hermon Road	Monday, 6:00–8:00PM	340%
Seattle	I-5 S, Capitol Blvd (Olympia) to JBLM	Friday, 1:00–3:00PM	20%
Washington DC	I-95 S, Route 3 to Dumfries Road	Thursday, 2:00–4:00PM	30%

Source: INRIX

Daily Worst and Best Times to Travel

Date	Worst Time	Best Time
Thursday	3:00 – 5:00PM	After 7:00PM
Friday	4:00 – 5:00PM	Before 12:00PM
Saturday	11:00AM – 1:00PM	After 2:00PM
Sunday	Free flow expected	
Monday	4:00 – 5:00PM	Before 1:00PM

Source: INRIX

Travelers: Prepare for Higher Prices

While AAA found average airfares have declined 2% compared to last Independence Day, travelers can expect to find higher prices for hotels and car rentals as demand climbs. Mid-range hotel rates have increased between 32% and 35%, with average nightly rates ranging between $156 and $398 for AAA Two Diamond and AAA Three Diamond hotels, respectively.

Daily car rental rates have increased 86% compared to last Independence Day, topping out at $166. Consumers have experienced high costs and limited availability of rental cars in some markets, due to the chip shortage impacting auto manufacturers. This production delay has presented a domino effect as rental car companies work to increase their inventory of new vehicles in time to meet the increased demand for domestic road travel.

The 43.6 million Americans expected to travel by car this Independence Day can expect gas prices to be the most expensive since 2014 with the national average likely to remain above $3 per gallon.

“Higher gas prices won’t deter road trippers this summer. In fact, we’re expecting record-breaking levels of car travel this July Fourth,” said Jeanette C. McGee, AAA spokesperson. “Though prices will remain above $3 a gallon, travelers are likely to look for more free activities or eat out less, but still take their vacations as planned.”

AAA members can save on gas by joining the Fuel Rewards at Shell program. Save 30 cents per gallon on your first fill-up at Shell when you join between July 1 and August 31, 2021. Join now at AAA.com/Shell.

More Tips for Travelers

While many aspects of daily life start to return closer to a pre-pandemic normal, AAA cautions that the travel landscape has changed. Remember to exercise caution while traveling, and consider working with a travel agent to plan your trip. They can help if you need to make any last-minute changes to travel plans, explore travel insurance options and help you plan a vacation that meets your needs and comfort-level this summer.

Although the CDC advises that fully vaccinated people can travel domestically at low risk to themselves, it's important to keep in mind that some local and state travel restrictions may still remain in place. Travelers can refer to AAA's COVID-19 Travel Restrictions Map and TripTik.AAA.com for the latest information to help plan their trip.

For travelers who are not vaccinated but choose to travel, CDC recommends that you practice social distancing, wear a mask, wash your hands and get tested for COVID-19 before and after travel.

Regardless of vaccination status, masks are required on planes, buses, trains, and other forms of public transportation traveling into, within, or out of the United States and in U.S. transportation hubs such as airports and stations.

Make Sure Your Car is Road Trip-Ready

Before hitting the road, AAA reminds motorists to plan their route in advance and ensure their vehicle is ready, to help avoid a breakdown along the way. AAA expects to rescue more than 460,000 Americans at the roadside this Independence Day weekend.

AAA makes it easy to request assistance—by phone or text (1-800-AAA-HELP), app or online—and members can track the service technician's progress en route to their vehicle. Also, don't leave home without an emergency roadside kit and continue to pack extra snacks or meals as well as cleaning supplies, including disinfecting wipes.

Regardless of how you plan to get to your destination, AAA advises travelers to seek the advice of a knowledgeable travel agent to help plan their trips this Independence Day. To get started and to learn more, visit AAA.com/Travel.

Methodology:

AAA's projections are based on economic forecasting and research by IHS Markit. For the purposes of this forecast, the Independence Day holiday travel period is defined as Thursday, July 1 through Monday, July 5. When the Fourth of July falls on any day of the week other than a Wednesday, it is considered to be a five-day holiday period. The travel forecast was prepared the week of June 1, 2021.

In cooperation with AAA, IHS Markit developed a unique methodology to forecast actual domestic travel volumes, using macroeconomic drivers such as employment, output, household net worth, asset prices including stock indices, interest rates, housing market indicators, and variables related to travel and tourism, including prices of gasoline, airline travel and hotel stays. For the 2021 Independence Day holiday travel forecast, IHS Markit also examined changes in the IHS Markit containment index regarding COVID-19–related restrictions and activity.

About AAA:
AAA provides more than 62 million members with automotive, travel, insurance and financial services through its federation of 30 motor clubs and more than 1,000 branch

offices across North America. Since 1902, the not-for-profit, fully tax-paying AAA has been a leader and advocate for safe mobility. Drivers can request roadside assistance, identify nearby gas prices, locate discounts, book a hotel or map a route via the AAA Mobile app. To join, visit AAA.com.

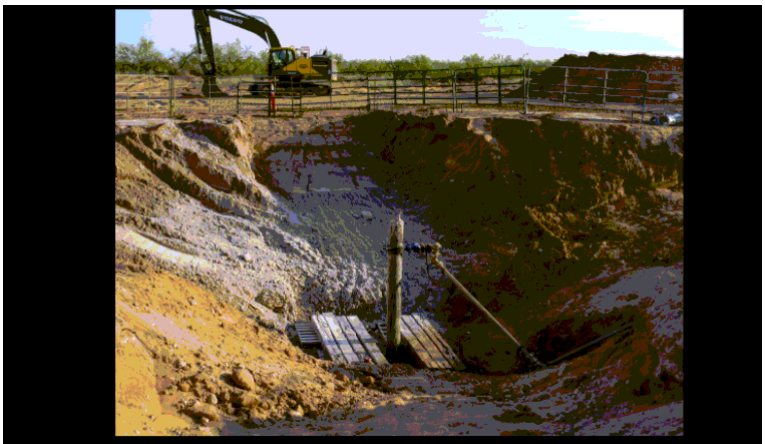
About INRIX:

Bloomberg @TheTerminal
Crisis on a Texas Ranch Shows the Toxic Legacy of Old Oil Wells
2021-06-29 09:00:14.40 GMT

By Sergio Chapa
(Bloomberg) -- Ashley Watt is nothing if not a friend of fracking. She's invested in mines that supply the sand frackers blast into the ground. Her family owns a ranch larger than Manhattan that's home to hundreds of oil and natural gas wells. Her Twitter handle is "Frac Sand Baroness."
That's what made it all the more jarring almost three weeks ago when Watt began publicly railing against one particular oil driller for leaks on her land. Noxious wastewater from oil drilling began leaching across the ground, endangering people and livestock. By her count, the pollution has killed four cows and two calves so far. Chevron Corp., which drilled the 1960s-era wells that polluted Watt's land, brought in earth-moving equipment and a well-control crew, even though it had sold most of its interests there years ago. It took 10 days to halt the first leak. Given the hundreds of other aging wells dotting the land, it's done little to put Watt's mind at ease.
"I am not anti-oil industry," Watt said in an interview. "That is the economy here. It's a good business." At the same the same time, she said, "We have to be responsible stewards. If we can't do it right here in the Permian Basin, then how can we do it right anywhere? Nobody should let us in if we're going to act like this."
And just like that, Watt — whether she liked it or not — became an ally to scores of environmentalists and activists who've been warning for years that America is on the verge of an environmental disaster. Long before the advent of shale drilling techniques that fueled the greatest move toward energy independence the nation's ever seen, conventional oil explorers left the country pierced with millions of defunct wells that are aging by the day and increasingly springing leaks.
"There's this enormous backlog" of abandoned wells, "and we don't have financing in place to clean them up," said Daniel Raimi, a fellow at the non-profit research group Resources for the Future. "We've seen very clearly that existing regulatory structures, particularly at the state level, have not properly incentivized companies to clean up their infrastructure."

There are 3.4 million old crude and gas wells in various states of abandonment across the U.S., an almost 20% increase in the past decade, according to the Environmental Protection Agency. Less than half of those holes have been plugged, EPA figures showed. In all, the wells are spewing about 7 million metric tons of methane into the atmosphere every year, although unplugged wells tend to be 100 times more polluting than their plugged brethren.
Methane releases from abandoned gas wells have been particularly egregious, growing by 40% in the past three

decades. As the energy industry pivots away from fossil fuels to combat climate change, the inventory of untended wells will only expand.



Noxious wastewater from plugged oil wells began leaching across the ground on Watt's ranch several weeks ago.

Read More: KKR-Backed Energy Investor Bets on Cleaning Up Drillers' Mess

Abandoned wells have become so thorny an issue in longtime oil states like Pennsylvania that President Joe Biden included $16 billion in his infrastructure package to put laid-off roughnecks to work plugging old wells and mines. Federal lawmakers including Senator Elizabeth Warren of Massachusetts have meanwhile blasted the Bureau of Land Management for failing to hold the oil and gas industry accountable for plugging millions of abandoned wells on public lands.

In Texas, the nation's largest source of oil, companies plugged almost 8,900 wells in the last fiscal year, and have sealed another 5,700 so far this fiscal year, according to the

Texas Railroad Commission that oversees the oil and natural gas industry. The agency requires cement barriers through sections of a well that go through aquifers, but the commission doesn't track how many of them spring leaks. The regulator documented more than 500 industry-related spills and accidents last fiscal year, with equipment failure and corrosion listed as the top two causes.

Chevron, which drilled the 1960s-era wells that polluted Watt's land, mobilized earth-moving equipment and well-control crew, even though the oil giant sold most if its interests there years ago.

For it's part, Chevron said in a statement that its priorities on Watt's property "are protecting people — including Ms. Watt and our workforce onsite, protecting the environment, plugging the well and remediating impacts." Industry experts estimated the cleanup is costing Chevron more than $250,000 a day, though the company has declined to disclose its expenses. The company also helped Watt relocate 500 cows and trucked in fresh drinking water for her family and ranch workers.

Despite all of Chevron's efforts, Virginia Palacios, executive director of the watchdog Commission Shift based in Austin, Texas, calls old wells like the ones on Watt's property "ticking time bombs." Her group has fought for tougher regulations to ensure drillers continue to monitor their operations long past the day they stop yielding oil.
"We need to plan to monitor these wells in perpetuity," she said. "Even if you plug these wells, as we have seen in this incident, they can still cause environmental damage and pose a risk to human health."

By Watt's count, the pollution has killed four cows and two calves so far.

Prior to the 1950s, the rules in Texas for taking wells out of service were so vague that they were sometimes plugged with brush, wood, rocks, paper and linen sacks, or any other item that could hold cement, according to a report from the National Petroleum Council, an industry group that advises the U.S. Energy Department. Last year, the railroad commission was sued by Public Citizen and two South Texas landowners over its alleged failure to responsible management of some abandoned, unplugged wells.

"There are hundreds of wells on this ranch alone," Watt said. "Extrapolating thousands of wells in the Permian Basin, tens of thousands, how many of those are going to collapse? Even if it's only 1%, that's going to pollute aquifers and destroy a huge swath of land. That's enough to make the Permian Basin functionally uninhabitable in 50 years."

After more than two weeks, the exact cause of the leak is not yet clear but experts hired by Watt pointed to tiny perforations in a cement plug installed in the mid-1990s to permanently take the well out service. It's a routine industry practice to pour cement down wells when production peters out and they no longer turn a profit. Most of the time, such plugs hold fast.

Watt looks over a map marking the hundreds of oil wells on her property alongside her attorney Sarah Stogner.

But with other decades-old wells and pipes leaking on her

property, Watt believes an environmental disaster is unfolding not just on her family's land but also elsewhere in the Permian Basin, the vast oilfield that's been a drilling hotbed for more than a century. Watt fears that legacy wells, neglected equipment and lax enforcement by state regulators are a recipe for disaster.
"Will this be inhabitable land in 100 years, if all of our old wellbores are collapsing underneath us?," Watt said after traversing the 22,000-acre ranch in a brown Ford F-150 pickup truck. "I don't know and, frankly, that's terrifying,"

The Watt family arrived in remote West Texas early in the 20th century when Ashley's great-grandfather quit a job at the Fort Worth Stockyards to begin ranching a decade before the first Permian oil boom in the 1920s. In the mid-1990s, her parents bought the nearby Antina property, a swath of sand hills and desert grasslands that provide excellent feed for cattle. Her folks' ashes are scattered among the dunes.
Roughly a dozen wells are still trickling out crude and gas, while the rest were all plugged decades ago. It's those legacy wells and the pipelines attached to them that concern Watt. The former U.S. Marine Corps captain who flew drones over Afghanistan is using those skills to scour her land for the telltale signs of other leaks.

An old Chevron gas pipeline was found to have contaminated the surrounding soil on Watt's cattle ranch and is undergoing remediation work.

Among her findings was a 1950s-era well that's leaking crude; Chevron is also cleaning up that site. She also found a natural gas pipeline that became exposed when sand dunes shifted

and spewed gas underground. In another location, she discovered broken storage equipment that was releasing gas into the atmosphere.

Watt and her attorney Sarah Stogner took to social media to highlight the scope of the pollution. In one Tweet, they showed a cleanup crew's ad hoc method of slowing a wastewater leak by placing a red plastic bucket atop a length of pipe. Red bucket memes exploded across Twitter's energy-industry subculture. In another, Watt invited Chevron CEO Mike Wirth to visit and "come get some sand in your Gucci loafers."

Chevron hired Cudd Well Control, a legendary oilfield outfit famous for snuffing out the late Saddam Hussein's fiery blowouts in Kuwait, to help with the cleanup.

Frac Sand Baroness@sand_frac

Yeah that should fix it.A big thank you to Red Bucket Well Control LLC! pic.twitter.com/YRdRCMzMHe

Sent via Twitter for Android.

View original tweet.

"It's important for the Railroad Commission and other agencies to understand that we need to plan to monitor these wells in perpetuity," said Commission Shift's Palacios. "Even if you plug these wells, as we have seen in this incident, they can still cause environmental damage and pose a risk to human health."

Adding more cement to key areas during the plugging process and testing could easily reduce risk, said Tom Slocum, a well-plugging expert and vice president with consulting firm Trifecta Solutions.

"This is a cheap insurance policy," Slocum said. "For an extra $1,000 to $1,500 of cement, a little bit more time and a

couple hundred bucks for testing the cement plug, you can avoid a catastrophe."
—With assistance from Joe Carroll and David Wethe

To contact the author of this story:
Sergio Chapa in Houston at schapa2@bloomberg.net
To contact the editor responsible for this story:
Simon Casey at scasey4@bloomberg.net
Joe Carroll

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Cameco Evacuating Cigar Lake as a Precaution due to Wildfire

Saskatoon, Saskatchewan, Canada, July 1, 2021

Cameco (TSX: CCO; NYSE: CCJ) has made the decision to evacuate all non-essential personnel from the Cigar Lake uranium mine in northern Saskatchewan.

The action is being taken as a precaution due to the proximity of a northern wildfire that is currently burning in the vicinity of the operation. The situation is complicated by extremely warm, dry weather, resulting from the heat dome that has settled over western Canada in recent days, along with variable wind and smoke conditions.

Production at Cigar Lake has been temporarily suspended. Approximately 230 workers are being transported off site. Roughly 80 essential personnel will remain on site to maintain the facility in a safe state. Should the wildfire threat grow considerably at site, a plan is in place to ensure their safety.

A number of precautions have been implemented at Cigar Lake to limit the risk posed by the wildfire. Cameco is working closely with provincial wildfire management personnel from the Saskatchewan Public Safety Agency, who are on-site assessing the situation on an ongoing basis. The decision to evacuate the operation was made in conjunction with these officials.

Profile

Cameco is one of the largest global providers of the uranium fuel needed to energize a clean-air world. Our competitive position is based on our controlling ownership of the world's largest high-grade reserves and low-cost operations. Utilities around the world rely on our nuclear fuel products to generate power in safe, reliable, carbon-free nuclear reactors. Our shares trade on the Toronto and New York stock exchanges. Our head office is in Saskatoon, Saskatchewan.

World Nuclear Association [LINK]

World Uranium Mining Production

(Updated December 2020)

- **Over two-thirds of the world's production of uranium from mines is from Kazakhstan, Canada and Australia.**
- **An increasing amount of uranium, now over 50%, is produced by in situ leaching.**

Kazakhstan produces the largest share of uranium from mines (42% of world supply from mines in 2019), followed by Canada (13%) and Australia (12%).

Production from mines (tonnes U)

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kazakhstan	17,80	19,451	21,317	22,451	23,127	23,607	24,586	23,321	21,705	22,808
Canada	9783	9145	8999	9331	9134	13,325	14,039	13,116	7001	6938
Australia	5900	5983	6991	6350	5001	5654	6315	5882	6517	6613
Namibia	4496	3258	4495	4323	3255	2993	3654	4224	5525	5476
Uzbekistan (est.)	2400	2500	2400	2400	2400	2385	2404	2404	2404	3500
Niger	4198	4351	4667	4518	4057	4116	3479	3449	2911	2983
Russia	3562	2993	2872	3135	2990	3055	3004	2917	2904	2911
China (est.)	827	885	1500	1500	1500	1616	1616	1885	1885	1885
Ukraine	850	890	960	922	926	1200	1005	550	1180	801
USA	1660	1537	1596	1792	1919	1256	1125	940	582	67
India (est.)	400	400	385	385	385	385	385	421	423	308
South Africa (est.)	583	582	465	531	573	393	490	308	346	346
Iran (est.)	0	0	0	0	0	38	0	40	71	71
Pakistan (est.)	45	45	45	45	45	45	45	45	45	45
Czech Republic	254	229	228	215	193	155	138	0	0	0
Romania	77	77	90	77	77	77	50	0	0	0
Brazil	148	265	326	192	55	40	44	0	0	0
France	7	6	3	5	3	2	0	0	0	0
Germany	8	51	50	27	33	0	0	0	0	0
Malawi	670	846	1101	1132	369	0	0	0	0	0
Total world	**53,671**	**53,493**	**58,493**	**59,331**	**56,041**	**60,304**	**62,379**	**59,462**	**53,498**	**54,752**
tonnes U_3O_8	63,291	63,082	68,974	69,966	66,087	71,113	73,560	70,120	63,087	64,566
% of world demand	84%	87%	94%	91%	85%	98%	96%	93%	80%	81%

* Data from the World Nuclear Association. NB: the figures in this table are liable to change as new data becomes available.

Mining methods have been changing. In 1990, 55% of world production came from underground mines, but this shrunk dramatically to 1999, with 33% then. From 2000 the new Canadian mines increased it again. In situ leach (ISL, also called in situ recovery, ISR) mining has been steadily increasing its share of the total, mainly due to Kazakhstan, and in 2019 accounted for over half of production:

Method	tonnes U	%
In situ leach (ISL)	31,435	57%
Underground & open pit (except Olympic Dam)	19,607	36%
By-product	3710	7%

Conventional mines have a mill where the ore is crushed, ground and then leached with sulfuric acid to dissolve the uranium oxides. At the mill of a conventional mine, or the treatment plant of an ISL operation, the uranium then separated by ion exchange before being dried and packed, usually as U_3O_8. Some mills and ISL operations (especially in the USA) use carbonate leaching instead of sulfuric acid, depending on the orebody. Where uranium is recovered as a by-product, *e.g.* of copper or phosphate, the treatment process is likely to be more complex.

During the 1990s the uranium production industry was consolidated by takeovers, mergers and closures, but this has diversified again with Kazakhstan's multinational ownership structure. Over half of uranium mine production is from state-owned mining companies, some of which prioritise secure supply over market considerations. In 2019, the top 10 companies by production contributed over 85% of the world's uranium production:

Company	tonnes U	% of world total
Kazatomprom	12,229*	22
Orano	5809	11
Cameco	4754	9
Uranium One	4624	8
CNNC	3961	7
CGN	3871	7
Navoi Mining	3500	6
BHP	3364	6
ARMZ	2904	5
Energy Asia	2122	4
General Atomics/Quasar	1764	3
Sopamin	1032	2
Rio Tinto	1016	2
VostGok	801	1
Other	3001	5
Total	**54,752**	**100**

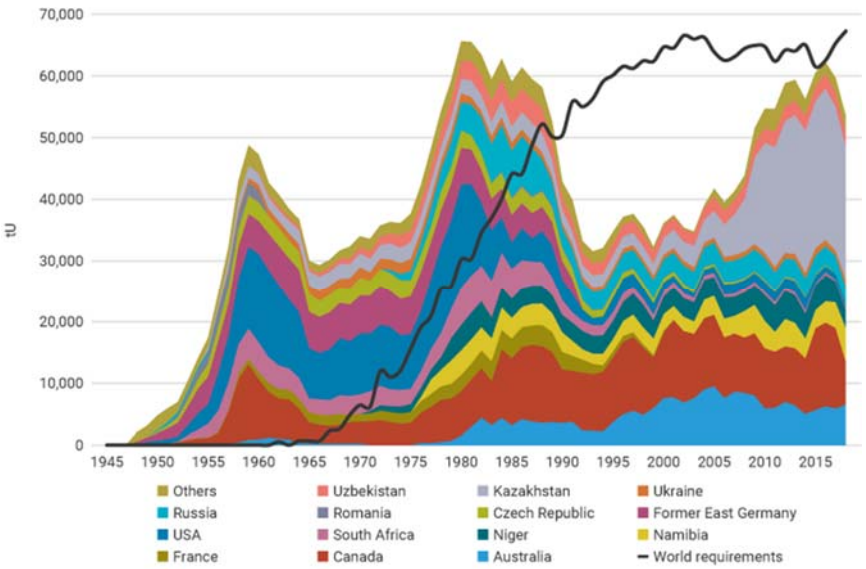
* Kazatomprom 2019 financial results show 13,291 tU as they include 50% of Energy Asia's production.

The largest-producing uranium mines in 2019

Mine	Country	Main owner	Type	Production (tonnes U)	% of world
Cigar Lake	Canada	Cameco/Orano	underground	6924	13
Husab	Namibia	Swakop Uranium (CGN)	open pit	3400	6
Olympic Dam	Australia	BHP Billiton	by-product/ underground	3364	6
Moinjum & Tortkuduk	Kazakhstan	Orano/Kazatomprom	ISL	3252	6

Mine	Country	Main owner	Type	Production (tonnes U)	% of world
Inkai, sites 1-3	Kazakhstan	Kazaktomprom/Cameco	ISL	3209	6
Budenovskoye 2	Kazakhstan	Uranium One/Kazatomprom	ISL	2600	5
Rössing	Namibia	Rio Tinto	open pit	2076	4
SOMAIR	Niger	Orano	open pit	1912	4
Central Mynkuduk	Kazakhstan	Kazatomprom	ISL	1964	3
South Inkai (Block 4)	Kazakhstan	Uranium One/Kazatomprom	ISL	1601	3
Top 10 total				**30,032**	**55%**

World uranium production and reactor requirements (tonnes U)



Sources: OECD-NEA/IAEA, World Nuclear Association

Uranium resources by country in 2019

	tonnes U	percentage of world
Australia	1,692,700	28%
Kazakhstan	906,800	15%
Canada	564,900	9%
Russia	486,000	8%
Namibia	448,300	7%
South Africa	320,900	5%
Brazil	276,800	5%
Niger	276,400	4%
China	248,900	4%
Mongolia	143,500	2%
Uzbekistan	132,300	2%
Ukraine	108,700	2%
Botswana	87,200	1%

	tonnes U	percentage of world
Tanzania	58,200	1%
Jordan	52,500	1%
USA	47,900	1%
Other	295,800	5%
World total	**6,147,800**	

Identified resources recoverable (reasonably assured resources plus inferred resources), to $130/kg U, 1/1/19, from OECD NEA & IAEA, *Uranium 2020: Resources, Production and Demand* ('Red Book'). The total recoverable identified resources to $260/kg U is 8.070 million tonnes U.

Notes & references

General Sources

OECD-NEA & IAEA, *Uranium 2020: Resources, Production and Demand* ('Red Book')
World Nuclear Association, *The Nuclear Fuel Report 2015, 2017 & 2019*

Bloomberg @TheTerminal: Canada Greenhouse Gas Emission Cut Bill Becomes Law (1)
2021-06-30 14:39:47.859 GMT

By James Munson
(Bloomberg Law) -- Canada will have to set national greenhouse gas emission reduction targets every five years, under legislation adopted into law.
The bill, known as the Canadian Net-Zero Emissions Accountability Act, passed the Senate, Canada's upper house, without amendment after clearing the House of Commons June 22. It's received Royal Assent, a formal procedure that makes the bill law.
The legislation requires Ottawa to lay out plans for how it will meet reduction targets that begin in 2030 and end in 2050, when the goal is net-zero emissions, according to the legislation. Regulators also must issue progress reports.
The bill is meant to strengthen the transparency and accountability of Canada's plans to reduce greenhouse gas emissions after decades of missing targets set at international climate change conferences.

Reduction Targets

Prime Minister Justin Trudeau during President Joe Biden's summit on climate change April 22 unveiled a reduction target of 40% to 45% below 2005 emission levels by 2030.
The Environment and Climate Change Canada minister must release the targets and plans for how to reach them at least five years before each target year, according to the legislation. The minister must provide a progress report two years before the target year and an assessment report one year later, it says.
The legislation also creates a 15-person advisory body to inform the target plans.
The House of Commons amended the bill to include 2023, 2025 and 2027 progress reports over concerns from left-leaning opposition parties that the targets were too far off in the future to increase accountability.
The Standing Committee on Environment and Sustainable Development also amended the bill to require the environment minister to include a 2026 interim reduction target within the plan to reach the 2030 target.
The committee also added mandatory factors the advisory body must include in its reports to the minister and made it compulsory for the minister to publish their response to the body's recommendations.
To contact the reporter on this story: James Munson in Ottawa at jmunson@bloombergindustry.com
To contact the editor responsible for this story: John Hughes at jhughes@bloombergindustry.com

To view this story in Bloomberg click here:
https://blinks.bloomberg.com/news/stories/QVIREBT0G1L0

http://www.caiso.com/Documents/CapacityProcurementMechanismSignificantEvent-Intent-Solicit-DesignateCapacity-070121.html

California ISO

Notice

July 1, 2021

REQUESTED ACTION
Action Date
Contact Client Representative
Immediate Response Requested

CATEGORIES
Legal & Regulatory
Markets
Operations
Planning

Capacity Procurement Mechanism Significant Event - Intent to Solicit and Designate Capacity; Informational Call 7/2/21

MESSAGE
The California ISO is seeking capacity it can procure under its Capacity Procurement Mechanism (CPM) to address a CPM significant event.

The ISO tariff defines a CPM significant event as a "substantial event, or a combination of events, that is determined by the ISO to either result in a material difference from what was assumed in the resource adequacy program for purposes of determining the Resource Adequacy Capacity requirements, or produce a material change in system conditions or in CAISO Controlled Grid operations, that causes, or threatens to cause, a failure to meet Reliability Criteria absent the recurring use of a non-Resource Adequacy Resource(s) on a prospective basis."

On June 29, 2021, Marybel Batjer, President, California Public Utilities Commission, and David Hochschild, Chair, California Energy Commission, sent a letter to Elliot Mainzer, President of the ISO. (See joint statement and letter here) The letter cites several significant changes in the assumptions underlying the resource adequacy program and in system conditions, including: (1) significantly reduced hydroelectric production due to worsening drought conditions; (2) unforeseen limitations on output of thermal resources; (3) extreme heat events that have begun unseasonably early; (4) planned online dates for several new resources have been delayed beyond the summer; (5) further development of demand-side resources in response to emergency

procurement authorizations remains uncertain; (6) resources sufficient to meet peak demand are not always adequate to support peak demand net of wind and solar generation (*i.e.*, the net peak demand); and (7) the timeline of the resource adequacy compliance processes provide limited ability to address the changed conditions in the near term. The June 29 letter requests the ISO use its tariff-based authority to procure additional capacity in response to these factors. The ISO has concluded that the combination of these factors constitutes a CPM significant event that may last through October. The ISO expects to use its CPM authority to address this significant event.

Under section 43A.4.2.1 of the ISO tariff, in designating CPM capacity the ISO will first look to meet its minimum designation criteria from capacity offered to the intra-monthly CPM competitive solicitation process (CSP) for the month in which the designation will begin. If there is insufficient capacity from those offers to meet the ISO's needs, the ISO may then offer CPM designations to capacity not offered into the intra-monthly CSP. If the ISO cannot meet its minimum designation criteria from both capacity offered and not offered in the CSP, then the ISO "may reassess and lower the minimum criteria."

The ISO intends its minimum criteria to cover capacity available at least during the net peak hours (4 p.m.-9 p.m.) and, for imports, that are both deliverable to the ISO at the delivery intertie and supported by firm transmission (or reasonably equivalent) rights to the delivery intertie.

Regardless of whether the capacity was offered to the CSP, the CPM significant event designations are for an initial 30-day term with a potential 60-day extension if the ISO determines the CPM significant event is likely to extend beyond the initial 30-day term and the scheduling coordinator accepts the 60-day extension. Capacity not offered to the CSP will be compensated at the CPM soft offer cap or at a higher price calculated per a cost-based formula in the ISO tariff and approved through a filing with the Federal Energy Regulatory Commission. Scheduling coordinators with non-resource adequacy capacity that is available and willing to receive a significant event CPM designation during this significant event should contact the ISO through a Customer Inquiry, Dispute and Information (CIDI) ticket as soon as possible, and preferably by July 7. In addition to submitting a CIDI ticket, parties with capacity available to meet this significant event should also submit offers to the intra-monthly CSP for August, September, and October.

When submitting a CIDI ticket, please submit with the subject line "Summer 2021 CPM Significant Event" and include the following information:

1. Resource ID(s)
2. MW available and eligible for CPM
3. Dates the capacity is available to serve as CPM capacity
4. If the scheduling coordinator is likely to accept a 60-day designation extension were it offered
5. If the scheduling coordinator intends to seek compensation above the soft offer cap through a cost showing approved by the Federal Energy Regulatory Commission

For informational purposes, scheduling coordinators that would accept a designation based on compensation above the soft offer cap justified on a basis other than the tariff-based formula should also contact the ISO through a CIDI ticket with the above-noted subject line and resource information.

The ISO will hold a public stakeholder call to discuss this matter on Friday, July 2, 2021.

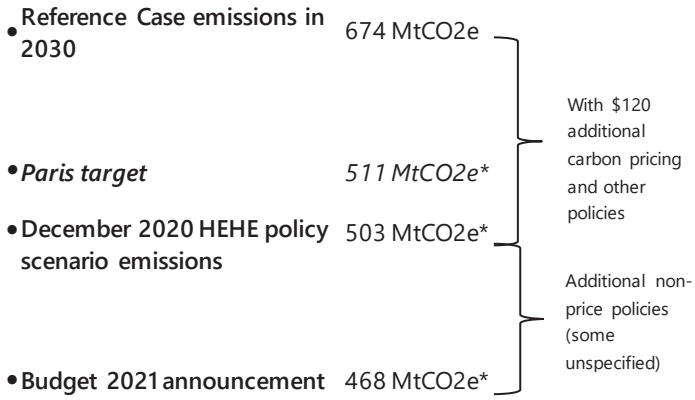
Meeting Details
Date: July 2, 2021
Time: 10 a.m. - 11 a.m. Pacific Time
Add to calendar

Summary

The Government recently announced changes to its climate change plan to exceed Canada's 2030 Paris Agreement target for reducing greenhouse gas (GHG) emissions:

- In December 2020, the Government announced a series of measures under the rubric of *A Healthy Environment and a Healthy Economy* (HEHE).
- The Government estimated that the HEHE measures would reduce Canada's emissions to 503 megatonnes (Mt) of CO_2 equivalent, or 8 Mt (31 per cent) below Canada's 2030 Paris target.
- Budget 2021 included further measures to reduce Canada's emissions to 468 Mt, or 36 per cent below Canada's 2030 Paris target.

Announcements and projected GHG emissions in 2030



Sources: Environment and Climate Change Canada and Office of the Parliamentary Budget Officer.

Note: (*) Including LULUCF, WCI and NBS, which reduce reported emissions by 39 Mt under HEHE and 29 Mt in the ECCC Reference Case. The ECCC Reference Case includes carbon pricing of $50 per tonne in 2030.

Under HEHE, the federal carbon levy rises from $50 per tonne in 2022 to $170 per tonne in 2030, which is $120 higher compared to the Environment and Climate Change Canada (ECCC) Reference Case.[1] HEHE projections also include an illustrative tightening in the emissions standards for the Output Based Pricing System (OBPS)—the mechanism under which carbon pricing is applied to trade-exposed energy-intensive industry—by 2 per cent per year starting in 2023. PBO has retained that change.

These visible market-based measures are complemented by other policies which are not immediately visible but, like carbon pricing, can raise the costs of firms' production.

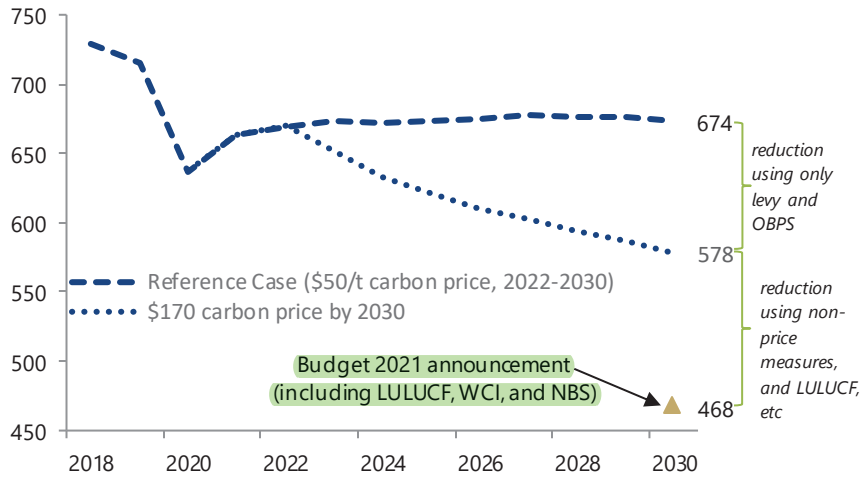
This report's main focus is to estimate the differential impacts on emissions reduction from market-based measures versus less visible regulatory policies. This is within the context of assessing the impacts of the Government's plan to exceed the reduction in Canada's GHG emissions by 2030 under the Paris Agreement.

We estimate that increasing the federal carbon levy by an additional $120 per tonne to $170 in 2030 and tightening OBPS standards will reduce Canada's emissions by 96 Mt: from 674 Mt in 2030 under ECCC's Reference Case to 578 Mt.

Since the Government projected that HEHE and Budget 2021 policies would reduce emissions to 468 Mt in 2030 (including 39 Mt from Land Use, Land Use Change and Forestry (LULUCF), the Western Climate Initiative (WCI) and nature-based solutions (NBS)), we conclude that 71 Mt in emissions reduction is being done through non-price and regulatory measures.

Projected GHG emissions with additional carbon pricing

Megatonnes of CO_2 equivalent



Sources: Environment and Climate Change Canada and Office of the Parliamentary Budget Officer.

Note: The reported reference emissions (674 Mt) and emissions with additional carbon pricing (578 Mt) do not include LULUCF, WCI and NBS, which reduce emissions by an additional 39 Mt.

The non-price measures in HEHE and Budget 2021 are then examined for the "minimum" price equivalent required to achieve the Government's projected emissions level of 468 Mt in 2030.

Since the cost of regulatory policies are not immediately visible, it is imperative to look at their price equivalent, and to anchor them to visible price policies, for example, a carbon levy. This report provides an anchor for the emission cost that non-price measures impose on firms and consumers to reach the projected emissions level of 468 Mt in 2030.

In this case, if the HEHE and Budget 2021 non-price measures are achieved at minimum cost—that is, the actions that firms undertake in response to policy have a minimum cost—we estimate that they would have to be equivalent to an additional $91 per tonne carbon levy to reduce emissions by a further 71 Mt ($72 in 2019 dollars).

We estimate that the HEHE price-based mechanisms that reduce emissions by 96 Mt will lower real GDP by 0.8 per cent in 2030. The non-price measures, if achieved a minimum cost, would further reduce real GDP by 0.6 per cent in 2030. Thus, the combined price- and non-price-based measures in HEHE and Budget 2021 would reduce the projected level of real GDP in 2030 by 1.4 per cent.

These estimates are provided without context. For example, there is no countervailing estimate of the impact that climate change might cause in Canada. We are also not allowing for the possibility of exceptional productivity gains in moving to new technologies. The estimates are, however, useful when looking at base-case projections of growth and government balances under climate policies.

Reducing Canada's GHG emissions to 468 Mt by 2030

	Additional carbon price (per tonne)[a]	Emissions reduction[b]	GDP impact in 2030[c]
HEHE carbon levy and OBPS	$120	96 Mt	-0.8%
Non-price policies (implicit price)[d]	$91	71 Mt	-0.6%
Total impact in 2030	**$211**	**167 Mt**	**-1.4%**

Source: Office of the Parliamentary Budget Officer.

Note: (a) Beyond the $50 per tonne over 2022-2030. Nominal dollars: to convert to 2019 dollars, divide by 1.258.

(b) Not including LULUCF, WCI and NBS.

(c) The impact is measured as the percentage difference between the level of real GDP in 2030 (under the Reference Scenario) and the level of real GDP in 2030 projected under HEHE and Budget 2021 measures.

(d) Minimum cost is achieved by using an equivalent price instrument.

On a sectoral basis, the additional carbon levy and OBPS will have the largest impact on the transportation and oil and gas sectors. By contrast, real GDP in heavy industry is projected to increase as it is sheltered from full carbon pricing under the OBPS system and can substitute its energy and production inputs for relatively lower cost.

Sectoral economic impacts with additional carbon pricing and OBPS

Real GDP, percentage difference from Reference Scenario

	2023	2024-2026	2027-2029	2030
Electricity	0.7	1.3	2.2	2.7
Oil and Gas	-2.6	-5.6	-9.2	-10.8
Heavy Industry	-0.1	0.7	1.5	1.7
Transportation	-3.1	-8.1	-13.5	-16.2
Agriculture and Fishing	0.2	0.7	1.5	2.1
Buildings	-0.1	-0.1	-0.2	-0.2
Waste and others	0.2	0.3	0.3	0.3
Total	**-0.1**	**-0.3**	**-0.6**	**-0.8**

Source: Office of the Parliamentary Budget Officer.

Note: Increasing the carbon levy from $50 per tonne over 2022-2030 to $170 per tonne in 2030 and tightening OBPS standards.

We also estimate that the carbon levy and OBPS alone will reduce economy-wide real labour income by 1.2 per cent, primarily in the oil and gas and transportation sectors. In addition, we project that workers with lower levels of education will see larger income losses than higher educated workers.

This report does not provide detailed analysis of the Government's April announcement to further reduce emissions to between 40 and 45 per cent below 2005 levels (that is, 438 Mt and 402 Mt, respectively). While technologies to achieve this reduction are currently available, the scale and speed of the changes will make it challenging to achieve.

3. Exceeding the Paris Target

Under the Paris Agreement, Canada committed to reduce its GHG emissions to 30 per cent below its 2005 level of 730 Mt by 2030. This translates into a target of 511 Mt in 2030.

Based on measures announced in the HEHE plan and Budget 2021, the Government projects that the reduction in emissions will exceed the Paris target, with emissions falling to 468 Mt in 2030, which would be 36 per cent below the 2005 level.

Relative to the Reference Case in 2030, this represents a reduction of 206 Mt, including 39 Mt in contributions from LULUCF, WCI and NBS. Thus, 167 Mt of the emissions reduction is due to the direct impacts of measures announced in the HEHE plan and Budget 2021.

Included in those measures is an additional $120 carbon pricing – indeed, probably its most important component. To partially disentangle those components, we use a modified version of the ENVISAGE model (van der Mensbrugghe, 2019) and the GTAP database (Aguiar et al., 2019; see Appendix A of PBO, 2020).

We begin by calibrating the model so it reproduces the aggregate profile of emissions in the ECCC 2020 Reference Case, and approximately reproduces the sectoral profile. Some differences between PBO and ECCC exist in the definitions of sectors, and these lead to some minor, but not consequential, effects on the analysis. This calibration is termed our *Reference Scenario* – it includes the $50 carbon levy and some basic OBPS measures (to 2030). Onto this scenario we then introduce the additional carbon levy and OBPS under the Government's HEHE plan.

Once the reduction in emissions from additional carbon pricing and OBPS is identified, we then estimate the (minimum) cost of reducing the remaining emissions to achieve the 2030 GHG level of 468 Mt that the Government projected in Budget 2021.

3.1. Contribution of additional carbon pricing and OBPS

The Government's assumptions regarding OBPS is a change from previous ECCC projections. OBPS is intended to mitigate the impact on international competitiveness of carbon pricing and does that by encouraging firms to reduce emissions while limiting the negative impact on their competitiveness (see Dobson, *et al*, 2017). In previous ECCC projections, the sectors covered by OBPS were expected to face an emission standard that was unchanged,

but a carbon levy on part of their emissions that rose to $50 in 2022 and remain unchanged thereafter.

Under the HEHE projections, firms face an increasing carbon levy on emissions above the standard, but that standard decreases by 2 per cent per year to encourage greater efficiency (Table 3-1). We have updated our OBPS modelling to account for this illustrative ECCC change, as well as the special treatment of fossil fuels used for generating electricity.[11]

Table 3-1 OBPS sectors and OBS fractions

Estimated fraction of historical emission intensity that will be exempt from the levy

OBPS sector	OBS fraction	
	2022	2030
Mining, Oil and gas, Pipelines, Food and tobacco, Lumber, Pulp and paper mills, Non-ferrous metals, Miscellaneous manufacturing, Transport equipment manufacturing	80%	66%
Fertiliser, Petrochemicals, Petroleum products	90%	77%
Electricity using solid fuels	74%	46%
Electricity using liquid fuels	95%	63%
Electricity using gaseous fuels	95%	46%
Cement, Gypsum and lime, Iron and steel	95%	81%

Sources: Environment and Climate Change Canada and Office of the Parliamentary Budget Officer.

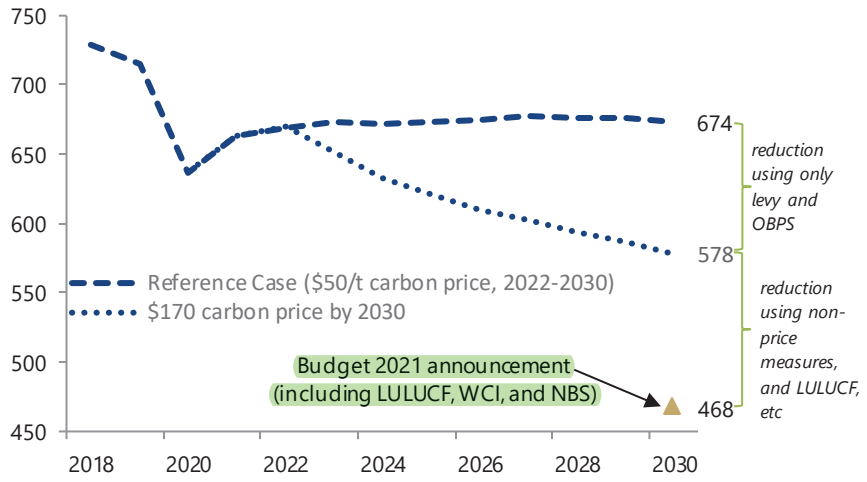
The partial change to the OBPS standard outlined in Table 3-1 places it between two earlier PBO scenarios (PBO, 2020).[12]

We estimate that the additional $120 carbon levy and enhanced OBPS will reduce emissions by 96 Mt by 2030 (Figure 3-1). The effect is weakest in agriculture, and waste and others (Table 3-2). Though the agriculture sector is subject to the levy on some of its activities, such as natural gas heating of buildings, the impact is small. The predominance of non-CO2 sources of emissions in waste and others also means that a carbon levy on fuels has little impact there.

Other sectors therefore have to contribute more to emissions reductions, including oil and gas, as well as transportation, with emissions in each of these two sectors falling by 30 Mt. Relative to our Reference Scenario, the levy would raise nominal gasoline prices in 2030 by about $0.27 per litre (for a total carbon levy of $0.38 per litre).

Figure 3-1 Projected GHG emissions with additional carbon pricing

Megatonnes of CO_2 equivalent



Sources: Environment and Climate Change Canada and Office of the Parliamentary Budget Officer.

Note: The reported reference emissions (674 Mt) and emissions with additional carbon pricing (578 Mt) do not include LULUCF, WCI and NBS, which reduce emissions by an additional 39 Mt.

Table 3-2 Sectoral GHG emissions with $120 additional carbon pricing and OBPS

	Reference Scenario levels in 2030*	Reductions in 2030	
	Mt	Mt	%
Electricity	28	-9	-31
Oil and gas	192	-30	-15
Heavy industry	64	-8	-13
Transportation	177	-30	-17
Agriculture	78	-0	-1
Buildings	75	-17	-23
Waste and others	61	-2	-4
Total	**674**	**-96**	**-14**

Source: Office of the Parliamentary Budget Officer.

Note: * Sectoral emissions in 2030 represent PBO's approximation of ECCC's Reference Case. Totals may not add up due to rounding.

3.2. Contribution of non-price measures

Based on the Government's estimates of reductions from LULUCF, WCI and NBS, non-price-based measures account for 71 Mt of additional abatement to achieve the emissions level of 468 Mt in 2030 projected in Budget 2021. That additional abatement is significant and will require effective measures.[13]

As announced, those measures span a wide range of policies: from building retrofits, to fuel standards, to transportation subsidies and even carbon capture. While it would be informative to outline a detailed description of each of the policies and their impacts, a more limited analysis could nonetheless serve to formulate some general conclusions. This could include, for example, their cost, both for the economy as a whole as well as for the cost (implicit and explicit) that firms and individuals will face for emissions.

Non-price measures impose costs on individuals and firms, for example by making them undertake expenditures, or change their operations to conform to the policy requirement. In principle, a price-based measure could achieve the same objective as a non-price measure. In such a case, the (implicit) cost of the non-price measure would be roughly the same as the price-based measure (though issues such as the treatment of revenues would still need to be dealt with).

This approach assigns an implicit carbon price to achieving a given reduction in GHG emissions. In this report, we assign an optimistic cost to the non-priced-based measures by using a price-based measure that achieves the same emission reduction. It is optimistic because it assumes that the Government has very detailed information concerning the operations of a large number of regulated firms (see Box 1).

However, like all scenarios where a levy is imposed, additional revenues are generated – whose use could engender important secondary effects. Here we deal with this issue by assuming these proceeds are refunded to households. Admittedly, this is itself not a completely neutral solution to the revenue-recycling question, but it engages fewer secondary effects such as the returns to government or private investment – or even the ability of green investments to generate super-normal returns.

Given the widespread nature of the non-price policies, we impose their price equivalent across the entire economy. Because extending the equivalent of a $170 (nominal) carbon price to all sectors is not sufficient to reach the target, we raise the carbon price and its equivalent throughout the economy until the 468 Mt level of emissions is achieved in 2030.

OBPS sectors also face the higher carbon price, but without additional changes to their performance standard. (Table 3-1). This may cause some upward bias in the carbon price since it implies some measure of protection to those sectors.

We thus estimate that the price and non-price policies needed to reach the Government's projection of 468 Mt in 2030 would have to be the equivalent of an additional $91 per tonne across all sources of emissions. This brings the combined measures to the equivalent of a carbon levy of $211 per tonne ($120+$91) (see endnote 5 for conversion of 2019 dollars) above the $50 per tonne in 2022. This price is only a little lower than Melton, et al, (2020) for a similar reduction (about $270 in constant 2019 dollars for a 200 Mt reduction in 2030).

Across sectors, there is now a more even proportional distribution of reductions except for agriculture (Table 3-3). All sectors are impacted, with electricity again showing the biggest proportionate decline relative to the Reference Scenario. The magnitude of these changes, particularly for oil and gas, imply substantial change. Without a more rapid development and implementation of technologies to reduce emissions, the scenario implies that output will have to be lower if exports cannot be increased.

Table 3-3 Sectoral emissions with measures

	Reference Scenario	Additional carbon pricing	Additional price and non-price measures	Total reduction
Electricity	28	19	16	-12
Oil and gas	192	163	139	-54
Heavy industry	64	56	51	-13
Transportation	177	147	132	-45
Agriculture	78	78	77	-1
Buildings	75	58	50	-25
Waste and others	61	59	43	-18
Total	**674**	**540***	**468***	**-168**

Source: Office of the Parliamentary Budget Officer.

Note: PBO's Reference Scenario approximates ECCC's Reference Case but differences persist due to sectoral definitions and other issues. Additional pricing includes increasing the carbon levy by $120/t and increasing OBPS stringency. The total reduction represents the difference between emissions under the additional price and non-price measures scenario relative to the Reference Scenario.

(*) including LULUCF, WCI and NBS.

https://www.canada.ca/en/transport-canada/news/2021/06/building-a-green-economy-government-of-canada-to-require-100-of-car-and-passenger-truck-sales-be-zero-emission-by-2035-in-canada.html

Building a green economy: Government of Canada to require 100% of car and passenger truck sales be zero-emission by 2035 in Canada

From: Transport Canada

June 29, 2021 Ottawa Transport Canada

To build a cleaner, more prosperous economy that fights climate change and creates good jobs, the Government of Canada is taking action to cut pollution from all sectors of the economy – including from the transportation sector, which accounts for one-quarter of our greenhouse gas emissions.

Today, the Minister of Transport, the Honourable Omar Alghabra, the Minister of Environment and Climate Change, the Honourable Jonathan Wilkinson, and the Minister of Canadian Heritage, the Honourable Steven Guilbeault, announced that the Government of Canada is setting a mandatory target for all new light-duty cars and passenger trucks sales to be zero-emission by 2035, accelerating Canada's previous goal of 100 percent sales by 2040.

To ensure Canada gets to this goal, and to provide certainty about the pathway to get there, the Government of Canada will pursue a combination of investments and regulations to help Canadians and industry transition to achieve the 100 percent zero-emission vehicle sales by 2035. It will work also with partners to develop interim 2025 and 2030 targets, and additional mandatory measures that may be needed beyond Canada's light-duty vehicle greenhouse gas emissions regulations.

Today's announcement is coupled with existing measures to support increased zero-emission vehicle adoption – from incentives that help with the upfront costs of zero-emission vehicles, to investments in zero-emission charging infrastructure, to partnerships with auto manufacturers which are helping them re-tool and produce zero-emission vehicles right here in Canada. Taken together, the government is setting the country on a clear path towards Canada's new 100 percent zero-emission vehicle sales goal and a prosperous net-zero emissions economy by 2050.

The Government of Canada also remains committed to aligning with the most ambitious light-duty vehicle greenhouse gas emission regulations in the United States. Supporting a strong and unified North American automotive sector to transition towards zero-emission vehicles contributes to Canada's climate change goals, and positions Canadian and American workers alike to benefit economically from this global shift.

Quotes

“Only bold climate policies lead to bold results. Through measures aimed at accelerating the transition to 100 percent zero-emission vehicles sales, we will continue building a cleaner and more resilient economy, while also creating good jobs and opportunities for all Canadians. We will also continue to support the automotive sector, including through our investment of $8 billion to accelerate the industrial transition thanks to the Net Zero Accelerator.”

The Honourable Omar Alghabra
Minister of Transport
“Cutting our transportation emissions is one of the most readily achievable and economically beneficial paths Canada can take on the road to net-zero emissions by 2050. That’s why we are committed to aligning Canada’s zero-emission vehicles sales targets with those of the most ambitious North American jurisdictions. We will work with the United States to harmonize performance-based greenhouse gas regulations and greenhouse gas emission standards. We’re investing in consumer rebates, charging stations, business tax breaks and industry transition costs to make the shift to zero-emission vehicles as seamless as possible for drivers, workers and entrepreneurs.”

The Honourable Jonathan Wilkinson
Minister of Environment and Climate Change
“Today, we take another important step on the road to net zero by accelerating our zero-emission vehicle targets to 2035. Achieving this target will require all Canadians, and businesses big and small, to embrace the change and go electric. That is why we will continue to invest in measures that put Canadians in the driver’s seat to a net zero future.”

The Honourable Seamus O’Regan Jr.
Minister of Natural Resources Canada
“Transportation accounts for one-quarter of Canada’s emissions. The Advisory Council on Climate Action, which I co-chaired, made the uptake of zero emission vehicles across Canada a key element of its recommendations in 2019. By increasing our ambitions on zero-emission vehicles, and by taking the measures needed to achieve them, we’re joining an increasing number of other jurisdictions, including Quebec, which have set 100 percent zero-emission vehicle sales targets. This important additional step today will help meet our goal of net zero emissions by 2050.”

The Honourable Steven Guilbeault
Minister of Canadian Heritage
“This initiative is another great example on the way in which the Government of Canada leads by example when it comes to building a climate-resilient economy.

Public Services and Procurement Canada is proud to advance the procurement and installation of Electric Vehicle Charging Stations infrastructure at federal buildings and we will continue to support the conversion of our government's fleets to zero-emission vehicles."

The Honourable Anita Anand
Minister of Public Services and Procurement

Quick facts

- Canada's accelerated zero-emission vehicle sales target will support the new 2030 climate reduction targets, which are 40 percent to 45 percent below 2005 levels. With light-duty vehicles remaining in service for about 15 years, requiring 100 percent of vehicles to be zero-emission by 2035 will also help put Canada on a path to achieving its long-term goal of net zero emissions by 2050.
- Today's announcement will bring the Government of Canada's level of ambition on zero-emission vehicles in line with other leading jurisdictions, such as the United Kingdom, and California. Within Canada, British Columbia and Quebec have also set 100 percent zero-emission vehicle sales requirements.
- Following the United States announcement, the Government of Canada will complete consultations with Indigenous Peoples, other levels of government and stakeholders to confirm Canada's approach to ensure we meet 100 percent zero-emission vehicle sales target by 2035.
- The Government of Canada will assess whether alignment with these regulations enables Canada to meet its more ambitious zero-emission vehicles sales target, or whether additional mandatory measures are required.
- Building on ongoing stakeholder engagement on zero-emission vehicles held to date, the Government will consult industry, non-governmental organizations, and other levels of governments on its approach to meet its 100 percent zero-emission vehicle sales target by 2035. These consultations will include engaging Inuit and Northern communities to address barriers to zero-emission vehicle uptake in remote regions.
- To date, the Government has invested more than $1 billion in measures to support increasing zero-emission vehicle adoption, including:
    - Providing $587 million towards Transport Canada's Incentives for Zero-Emission Vehicles program, which has helped over 92,000

Canadians and Canadian businesses make the switch to zero-emission vehicles; and
    - Providing more than $460 million to support the build out of a coast-to-coast network of electric vehicle fast chargers, electric vehicle chargers where Canadians live, work and play, natural gas stations along key freight corridors, and hydrogen stations in metropolitan centres. To date these investments have supported projects that will result in more than 16,500 new electric vehicle chargers, 10 hydrogen stations, and 20 natural gas stations.
- The auto industry is investing hundreds of billions of dollars to accelerate their vehicle electrification plans, including recent commitments to re-tool several Canadian factories to build zero-emission vehicles.
- The Government of Canada has also introduced new measures to support Canada's automotive sector transition to zero-emission vehicles, including a 50 percent corporate tax cut for businesses manufacturing zero-emission vehicles and components in Canada.
- The $8 billion Strategic Innovation Fund - Net Zero Accelerator is advancing projects that will help decarbonize heavy industry, support clean technologies and help meaningfully accelerate domestic greenhouse gas emissions reductions by 2030, including in the auto-manufacturing sector.
- The Government of Canada is making investments to support the transformation towards electrification, including $295 million to the Ford Motor Company of Canada's $1.8 billion project to build electric vehicles at its Oakville Assembly Complex.
- As the common service provider for the Government of Canada, Public Services and Procurement Canada (PSPC) leads and enables greening government operations, and will lead the procurement of electrical fleet vehicles as well as the procurement and installation of Electric Vehicle Charging Stations infrastructure in federal buildings.
- PSPC will run a pathfinder project over the coming years to support the greater deployment of zero-emission vehicles infrastructure, with the installation of chargers in crown-owned (and lease purchase) buildings with floor areas greater than 500 m2, which is required to meet the Government's greening government zero-emission vehicles targets. The procurement and installation of zero-emission vehicles infrastructure at crown-owned federal buildings' parking areas will prioritize the charging of the federal fleet, and make the overflow available to visitors seeking services from provided service counters to charge their personal vehicles.

- Clean Energy Canada found that with measures in Canada's A Healthy Environment and a Healthy Economy plan, jobs in the EV industry are expected to increase twenty-six fold by the end of this decade.
- As the sale and production of zero emission personal vehicles increases, upfront prices will fall. Bloomberg New Energy Finance and the International Council on Clean Transportation predict zero-emission vehicles will reach price-parity with their gas-powered counterparts in the 2025-2030 timeframe.

https://hub.united.com/united-adds-270-boeing-and-airbus-aircraft-to-fleet-largest-order-in-airline-s-history-and-biggest-by-a-single-carrier-in-a-decade-2653586391.html

United Adds 270 Boeing and Airbus Aircraft to Fleet, Largest Order in Airline's History and Biggest by a Single Carrier in a Decade

"United Next" includes addition of 200 Boeing 737 MAX and 70 Airbus A321neo as well as plans to retrofit 100% of remaining mainline, narrow-body fleet to transform the customer experience and create a new signature interior - a roughly 75% increase in premium seats per North American departure, larger overhead bins, seatback entertainment in every seat and industry's fastest available WiFi;

June 29, 2021

CHICAGO, June 29, 2021 /PRNewswire/ -- United Airlines today announced the purchase of 270 new Boeing and Airbus aircraft - the largest combined order in the airline's history and the biggest by an individual carrier in the last decade. The 'United Next' plan will have a transformational effect on the customer experience and is expected to increase the total number of available seats per domestic departure by almost 30%, significantly lower carbon emissions per seat and create tens of thousands of quality, unionized jobs by 2026, all efforts that will have a positive, ripple effect across the broader U.S. economy.

When combined with the current order book, United expects to introduce more than 500 new, narrow-body aircraft: 40 in 2022, 138 in 2023 and as many as 350 in 2024 and beyond. That means in 2023 alone, United's fleet will, on average, add about one new narrow-body aircraft every three days.

United's new aircraft order – 50 737 MAX 8s, 150 737 MAX 10s and 70 A321neos – will come with a new signature interior that includes seat-back entertainment in every seat, larger overhead bins for every passenger's carry-on bag and the industry's fastest available in-flight WiFi, as well as a bright look-and-feel with LED lighting. The airline expects to fly the first 737 MAX 8 with the signature interior this summer and to begin flying the 737 MAX 10 and the Airbus A321neo in early 2023.

What's more, United intends to upgrade 100% of its mainline, narrow-body fleet to these standards by 2025, an extraordinary retrofit project that, when combined with the number of new aircraft joining the fleet, means United will deliver its state-of-the-art inflight experience to tens of millions of customers at an unprecedented pace.

This order will also significantly boost United's total number of mainline daily departures and available seats across the airline's North American network, as well as the number of premium seats, both United First℠ and Economy Plus®. Specifically, United expects it will have on average 53 premium seats per North American departure by 2026, an increase of about 75% over 2019, and more than any competitor in North America.

"Our United Next vision will revolutionize the experience of flying United as we accelerate our business to meet a resurgence in air travel," said United CEO Scott Kirby. "By adding and upgrading this many aircraft so quickly with our new signature interiors, we'll combine friendly, helpful service with the best experience in the sky, all across our premier global network. At the same time, this move underscores the critical role United plays in fueling the broader U.S. economy – we expect the

addition of these new aircraft will have a significant economic impact on the communities we serve in terms of job creation, traveler spending and commerce."

United expects to create approximately 25,000 well-paying, unionized jobs at the airline as a result of adding these new aircraft and, based on a study from the Federal Aviation Administration, the airline expects to drive more than $30 billion in traveler spending when flying United and contribute an estimated $50 billion annually towards the U.S. economy by 2026.

Plus, adding these new 737 MAX and Airbus A321neo aircraft means United will replace older, smaller mainline jets and at least 200 single-class regional jets with larger aircraft, which the airline expects will lead to significant sustainability benefits compared to older planes: an expected 11% overall improvement in fuel efficiency and an expected 17-20% lower carbon emission per seat compared to older planes.

The best customer experience in the industry

United's new aircraft reflect a vastly improved customer experience standard – United's signature interior – that places a premium on the overall comfort of flying – more overall available seats in the market, more premium seats on each aircraft, as well as better entertainment, overhead storage and technology features. These standards will be applied to the airline's retrofit plan - a nose-to-tail transformation of its mainline, narrow-body fleet - that is expected to be 66% complete by 2023 and 99% complete by the summer of 2025.

United's new narrow-body jets will help the airline increase its total seats per departure for North American flights by 30 seats, or almost 30%, by 2026. At the same time, the airline will quickly grow the number of United First℠ and Economy Plus® seats for customers seeking an elevated experience.

United's 737 MAX 8 has 16 United First℠ seats and 54 Economy Plus® seats – more than double the number of extra leg room seats offered by competing airlines on similar-sized aircraft. The 737 MAX 10 - the largest member of the MAX family - makes up the majority of United's new order and will include 20 United First℠ seats and 64 Economy Plus® seats and the new A321neo aircraft are expected to have a United First℠ and Economy Plus® seat count similar to that of the 737 MAX 10.

By flying bigger jets with a signature interior that includes more premium seating, United will give customers more choice when selecting their onboard experience, provide MileagePlus® members more opportunity for upgrades, and position United to better meet the demand among United's business customers while creating even more connectivity to its global long-haul network, helping to fuel growth to all corners of the world.

"We'll deliver a better, more consistent experience, with more features for more customers, faster than ever. While some airlines are reducing the number of economy seats with extra leg room, United will offer the most premium seats in North America, taking a different, more customer-friendly approach," said Andrew Nocella, United's EVP and Chief Commercial Officer. "This is United playing to our strengths - the location of our U.S. hubs means we're uniquely positioned to focus on premium products, business travel and global flying like no other U.S. airline. Our new, signature interior creates a more consistent product across our mainline fleet - with a focus on the amenities that customers value most like seat back screens, fast WiFi and extra storage - to further set ourselves apart."

United's inflight entertainment – 13-inch high-definition screens in every first class seat and 10-inch HD screens in every United Economy seat on the 737 MAX – includes free access to more than

Lawmaker Threatens to Subpoena Exxon After Secret Video
2021-07-03 16:13:12.788 GMT

By Hiroko Tabuchi and Lisa Friedman

(New York Times) -- The chairman of a powerful House subcommittee said he is seeking answers from Exxon and other oil and gas giants over their role in spreading disinformation on climate change.

The chairman of a House subcommittee is demanding that executives of Exxon Mobil Corp., Shell, Chevron and other major oil and gas companies testify before Congress about the industry's decades-long effort to wage disinformation campaigns around climate change.

Representative Ro Khanna, Democrat of California, said Friday he was prepared to use subpoena power to compel the companies to appear before lawmakers if they don't do so voluntarily.

The move comes a day after a secretive video recording was made public in which a senior Exxon lobbyist said the energy giant had fought climate science through "shadow groups" and had targeted influential senators in an effort to weaken President Biden's climate agenda. Several of those senators said this week that the lobbyist exaggerated their relationship or that they had no dealings with him.

"The video was appalling," Mr. Khanna said in an interview on Friday. He called it the latest evidence of the fossil fuel industry's efforts to "engage in climate denialism and to manipulate public opinion and to exert undue influence in shaping policy in Congress."

Mr. Khanna said the House Oversight and Reform Subcommittee on the Environment, which he chairs, will issue letters next week to top executives at Exxon Mobil, Shell, Chevron and other oil and gas companies and trade groups demanding documents and testimony. One major target of the panel's inquiry are dark money groups that have been funded by fossil fuel companies to disseminate falsehoods about climate science and policy solutions. The hearing is expected to be held in the fall.

Representative Carolyn B. Maloney, the New York Democrat who chairs the Oversight Committee, said she was "very concernedby the new video evidence showing how Exxon knowingly tried to block action to address climate change" and said she intended to "hold Exxon and other companies accountable." Only Ms. Maloney, as chair of the full committee, is authorized to issue a subpoena.

So far, Mr. Khanna said, oil and gas executives have resisted requests to appear before Congress, unlike representatives from other industries. "I find it mind boggling, honestly. Tech CEOs from my district have showed up. Wall Street executives showed up many times to Congress. Pharmaceutical executives," he said. "We fully plan to issue subpoenas if they don't come voluntarily."

Officials with Exxon Mobil and the other major oil companies did not

immediately respond to requests for comment Friday. Keith McCoy, the Exxon lobbyist in the video, has not responded to several requests for comment.

After the video recordings became public on Thursday, Darren Woods, Exxon's chief executive, released a statement that said Mr. McCoy's remarks "in no way represent the company's position on a variety of issues, including climate policy, and our firm commitment that carbon pricing is important to addressing climate change."

The video was filmed in a sting operation by the environmental group Greenpeace UK, which set up a sham recruitment interview with Mr. McCoy, Exxon's senior director of federal relations. In the video, Mr. McCoy describes how the company targeted a number of influential senators with the aim of scaling back the climate provisions in President Biden's sweeping infrastructure bill by attacking the tax increases that would pay for it. A bipartisan package that Mr. Biden agreed to now leaves out many of the ideas the president initially had proposed to reduce the burning of fossil fuels, which is the main driver of climate change.

Mr. McCoy also said on the recording that Exxon's support for a tax on carbon dioxide was "a great talking point" for the oil company, but that he believes the tax will never happen. A carbon tax is a fee on the carbon content of fossil fuels meant to discourage emissions by making goods that are more polluting to manufacture more expensive. Carbon dioxide emissions from the burning of fossil fuels trap the sun's heat and are a major contributor to climate change.

He also said on the recording that the company has in the past aggressively fought climate science through "shadow groups."

Asked who was crucial to Exxon's efforts, Mr. McCoy singled out Senator Joe Manchin III of West Virginia and said the company was in touch with his office weekly because "he's not shy about staking his claim early and completely changing the debate." Mr. McCoy also said Exxon lobbyists "look for the moderates" among Democrats and identified senators such as Kyrsten Sinema and Mark Kelly of Arizona, Jon Tester of Montana, Maggie Hassan of New Hampshire and Chris Coons of Delaware as targets of their outreach.

Mr. Manchin's spokesman said that Mr. McCoy had "greatly exaggerated his relationship and influence" with the senator's staff and that Mr. Manchin typically meets with a broad range of people.

Aides to the other Democratic lawmakers said the senators never met with Mr. McCoy or any Exxon officials around the infrastructure negotiations. Senators Coons and Hassan also both said in statements that they support President Biden's efforts to enact climate legislation.

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

-0- Jul/03/2021 16:13 GMT

https://corporate.exxonmobil.com/News/Newsroom/News-releases/Statements/Our-position-on-climate-policy-and-carbon-pricing

News*July 2, 2021*

Darren W. Woods
Chairman and Chief Executive Officer

Our position on climate policy and carbon pricing

The past few days have been disappointing for everyone at ExxonMobil and for me personally. A current and former member of our government affairs team were secretly recorded making disturbing and inaccurate comments about our positions on a variety of issues, including climate change policy, and our interaction with elected officials.

Their comments are entirely inconsistent with our commitment to the environment, transparency and what our employees and management team have worked toward since I became CEO four years ago. I want to make our position clear.

We understand the tremendous challenge represented by climate change and have fully supported the Paris Agreement since its inception. Our scientists are working to develop innovative solutions to help reduce emissions, with a focus on the highest emitting and most difficult to decarbonize sectors of the economy: commercial transportation, power generation and heavy industry.

It is in these areas where we believe ExxonMobil can best contribute to the challenge of climate change. For example, through our new ExxonMobil Low Carbon Solutions business we are advancing plans for large-scale emission reductions with new carbon capture and storage opportunities around the world. We are also leveraging ExxonMobil's significant experience in the production of hydrogen which, when coupled with carbon capture and storage, is likely to play a critical role in a lower-carbon energy system. We're investing $3 billion on lower-emission energy solutions through 2025 on top of $10 billion we've spent over the past two decades. As we develop additional value-added opportunities, I expect these investments to grow.

We believe a price on carbon emissions is essential to achieving net zero emissions. Carbon pricing would send a clear signal through the market, creating incentives to reduce emissions, fostering investment in R&D to advance solutions and providing consumers with transparency to make the best choices.

While there is some resistance to a carbon tax, we are actively and publicly discussing other options, including lower-carbon fuels and other sector-based approaches that would place a uniform, predictable cost on carbon. Today, through government regulation and incentives, we are paying to reduce carbon throughout the economy. Unfortunately, most

of us don't know what it's costing. We think it's vitally important for the cost of reducing carbon to be more transparent to enable comparisons of the various options to help policy makers reduce emissions at the lowest overall cost to society.

We are actively working to reduce our own emissions. Overall, we have reduced operated greenhouse gas emissions by 11 percent from 2016 to 2020, and we've laid out plans for significant further reductions by 2025. We are also working to find new and better ways to monitor and reduce methane emissions, including collaborations with universities, environmental groups and other industry partners. Through 2020, we reduced methane emissions nearly 34 percent across our U.S. unconventional operations, compared to 2016 when the Paris Agreement was signed.

We have great respect for policy makers, elected officials and organizations across the political spectrum who are grappling to effectively address climate change, one of the greatest challenges of our time. ExxonMobil's position is clear: we want to be part of the solution while responsibly providing affordable energy required to power the economy. We have the experience, capabilities, capacity and commitment to help meet this critical need.

Dan Tsubouchi @Energy_Tidbits · 3h

Brent spot #Oil is all about #OPEC+ from @vitolnews Mike Muller "very little doubt that whatever OPEC+ agree with regard to reinstatement of production" "will surely" "be a fraction of the amount needed to meet growing demand" Usual great @gulf_intel podcast @sean_evers #OOTT

SAF Group Created Transcript of Gulf Intelligence New Silk Road "Live" July 4 podcast moderated by Sean Evers Managing Partner https://soundcloud.com/user-846530307/podcast-daily-energy-markets-forum-new-silk-road-live-july-4th

Items in "*italics*" are SAF Group created transcript

Mike Muller, Head, Vitol Asia

At 1:15 min mark. Muller "*.. fundamentals at the front end of the market are very different because everything we are talking about here is longer term like when Iranian volumes will come back to the market once there is an agreement. Not so much an if, it's a once I think. when is intercontinental business travel going to resume and allow people to consume that 2, 3 million barrel a day jet that is still missing from the global demand mix, how soon the US shale sector will start to produce marketably above the 11 point something million barrels as day we are seeing today. None of that is really going to influence the spot price of August Brent, which is the numbers I just spoke about. what's going to influence the price, of course, is OPEC. and that's why you had a very choppy price action last week when the total change on week was only 18 cents a barrel up when we spent time trading in a $3 a barrel range. But as I said it was very choppy, very volatile. So I mean, I think, lets first ay a number of things. these ministerial delegations and their political superiors are very sophisticated organizations who have done this and who have proven to us since April 2020 that they have a purpose about of what they are*

3 8

Dan Tsubouchi @Energy_Tidbits · 5h

#Oil must read. UAE clearly states #OPEC+ position: supports production increase now, does not support DOC extension or new agreement past Apr 2022 based on existing 2018 baselines. Great reporting @CNBC @_HadleyGamble @dan_murphy #OOTT

UAE 'unconditionally' supports OPEC+ supply increase, but says no to a bad deal

PUBLISHED SUN, JUL 4 2021E:03 AM EDT

Dan Murphy@DAN_MURPHY, Hadley Gamble@_HADLEYGAMBLE

The United Arab Emirates has pushed back on OPEC+ leaders Saudi Arabia and Russia, claiming its "sovereign right" to negotiate fairer terms for an oil production increase.

"For us, it wasn't a good deal," UAE Minister of Energy and Infrastructure Suhail Al Mazrouei told CNBC's Hadley Gamble, referring to OPEC+ production cuts which were based on a "level of production that goes back to 2018."

"We knew that the UAE position in that agreement was the worst in terms of comparing our current capacity with the level of production" he said.

"But an agreement is an agreement."

Asked if the UAE would be willing to walk away, the minister said "we cannot extend the agreement or make a new agreement under the same conditions. We have the sovereign right to negotiate that."

The comments come after the United Arab Emirates blocked some aspects of an OPEC+ proposal to increase output on Friday, seeking better terms for itself.

"Let's increase the production, and talk about the extension and the agreement and the conditions associated with it at a later meeting," he said, adding that the UAE unconditionally supports a supply increase.

"We are meeting on Monday, and I think we are all in agreement that we need to do something regarding the increase in production," Al Mazrouei said. "The issue is putting a condition on that increase, which is the extension of the agreement," he added.

High risk

The high stakes standoff comes as oil prices surge above $75 dollars a barrel for the first time in two years. Failure to reach a deal on Monday could risk the market recovery, and even unravel the fragile OPEC+ alliance if the deadlock is left unresolved.

"We have plenty of time to meet and discuss the terms of the extension with justification that can involve independent bodies to review it" he said. "I'm still hopeful that by Monday we will segregate the two decisions," he added.

The UAE threatened to leave OPEC late last year, and an exit would almost certainly trigger a repeat of the OPEC+ price war that pushed oil prices to -$40 in April last year.

"It's not wise nor a target for anyone to raise prices to a level that the world economy cannot handle," he said. "We think we need to do it and we need to do it for August" Al Mazrouei added.

At the core of the current proposal is a plan to increase production by 2 million barrels per day (mb/d) between August and December in 400,000 barrels per day monthly installments. OPEC+ also plans to extend its production cut agreement from April 2022 to December 2022.

"Now we think that linking the extension of the agreement for a reference that goes back to 2018, and for a period that starts from 2022, is just not realistic, because this is four years" Al Mazrouei said.

"That is totally unfair."

The UAE has spent billions investing in its oil production capacity, seeking to ramp up output. With Iran also set to return to the oil market in the coming months, the UAE sees good scope to review the terms.

"UAE crude oil production in October 2018 was 3.160 mb/d. But it increased to 3.841 mb/d in April 2020. By changing the base, UAE can increase its production drastically & immediately," tweeted Anas Alhajji, Managing Partner at Energy Outlook Advisors.

"They do not want OPEC+ agreement to limit their production and potential," he added.

In what could perhaps be another sign of strain in the relationship, Saudi Arabia moved to restrict travel to the UAE late Friday, citing the pandemic.

Asked about the silence from the White House on the production group's internal dispute, Mazrouei replied "Happy fourth of July."

1 6

Dan Tsubouchi @Energy_Tidbits · 19h

How can you not love the beauty of life when you see a local #Canmore mama elk feeding her 2021 calf? My wife Diane was able to catch this yesterday.

4

Dan Tsubouchi @Energy_Tidbits · Jul 3

#Pemex says "restoring normal operating conditions". does this mean fire out so crisis is over or are they saying, as being inferred, that no interruption or ongoing impact on production other than during the fire? Would have thought losing the gas line would impact oil #OOTT

https://www.pemex.com/saladeprensa/boletines_regionales/Paginas/2021-021_cddelcarmen.aspx

Pemex controls gas and fire emanation in the submarine pipeline near the KU-C satellite platform in the Campeche Sound

02/07/2021 | City of Carmen 21

Ciudad del Carmen, Camp. - At 05:15 am today a gas leak was registered in the 12-inch submarine pipeline and the presence of fire in the sea, 150 meters from the KU-C satellite platform, located in the Campeche Sonda belonging to the Ku-Maloob-Zaap Production Asset, attached to the Northeast Offshore Region Production Sub-Directorate of PEMEX Exploración y Producción.

The incident was dealt with immediately when the security protocols were activated and with the accompaniment of nearby firefighting vessels such as Santa Cruz Island, Campeche Bay and Bourbon Alienor.

In addition, the interconnection valves in the pipeline were closed, extinguishing the fire and the gas release, ending the contingency around 10:45 am and restoring normal operating conditions. No injuries or evacuees are reported.

Petróleos Mexicanos will carry out a root cause analysis of this incident.

Dan Tsubouchi @Energy_Tidbits · Jul 2

Breaking. Looks like major #Oil production interruption at #Pemex. Too early to know how long for fix or production impact. Fire impacting Pemex's major oil project that accounts for ~40% of Pemex oil. Thx @Reuters @Abeadriana @mariannaparraga #OOTT

2 4

Dan Tsubouchi @Energy_Tidbits · Jul 2

Breaking. Looks like major #Oil production interruption at #Pemex. Too early to know how long for fix or production impact. Fire impacting Pemex's major oil project that accounts for ~40% of Pemex oil. Thx @Reuters @Abeadriana @mariannaparraga #OOTT

MEXICO CITY, July 2 (Reuters) - A fire on the ocean surface west of Mexico's Yucatan peninsula early on Friday has been extinguished, state oil company Pemex said, blaming a gas leak from an underwater pipeline for sparking the blaze captured in videos that went viral.
Bright orange flames jumping out of water resembling molten lava was dubbed an "eye of fire" on social media due to the blaze's circular shape, as it raged a short distance from a Pemex oil platform.
The fire began in an underwater pipeline that connects to a platform at Pemex's flagship Ku Maloob Zaap oil development, the company's most important, four sources told Reuters earlier.
Ku Maloob Zaap is located just up from the southern rim of the Gulf of Mexico.
Pemex said no injuries were reported, and production from the project was not affected after the gas leak ignited around 5:15 a.m. local time.
The company, which has a long record of major industrial accidents at its facilities, added it also shut the valves of the 12-inch-diameter pipeline.
Angel Carrizales, head of Mexico's oil safety regulator ASEA, wrote on Twitter that the incident "did not generate any spill." He did not explain what was burning on the water's surface.
Ku Maloob Zaap is Pemex's biggest crude oil producer, accounting for more than 40% of its nearly 1.7 million barrels of daily output.
"The turbomachinery of Ku Maloob Zaap's active production facilities were affected by an electrical storm and heavy rains," according to an incident report shared by one of Reuters' sources. Those details were not mentioned in Pemex's statement.
Company workers used nitrogen to control the fire, according to one of the sources.
Pemex added that it would investigate the cause of the incident.
Reporting by Adriana Barrera and Marianna Parraga; Additional reporting by David Alire Garcia; Writing by Anthony Esposito; Editing

1 5 12

Dan Tsubouchi @Energy_Tidbits · Jul 2

#Alberta lifts all #Covid restrictions. I missed this as i am travelling out of country for first time. I hear the number is now ~80% of Albertans 12+ have received at least one dose.
alberta.ca/covid-19-publi...

Stage 3 reopening started July 1

Stage 3: Two weeks after 70% of Albertans 12+ (born in 2009 or earlier) have received at least one dose. Took effect July 1.

- All restrictions lifted, including ban on indoor social gatherings.
- Isolation requirements for confirmed cases of COVID-19 and some protective measures in continuing care settings remain.
- The general indoor provincial mask mandate will be lifted, but masking may still be required in limited and specific settings.

3

Dan Tsubouchi @Energy_Tidbits · Jul 2

the local #Canmore elk having breakfast. it is amazing how quickly the 2021 calves are growing, makes sense they have to get big enough to handle winter

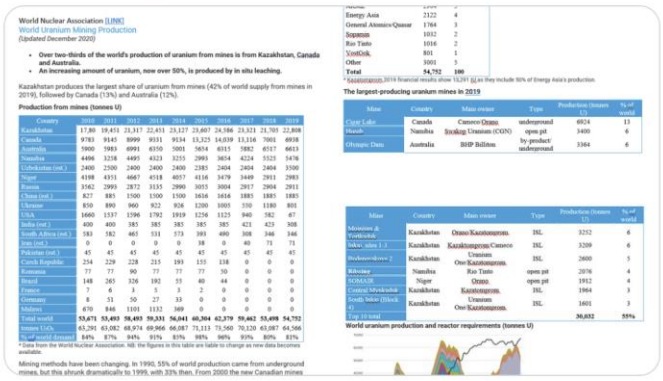
2

Dan Tsubouchi @Energy_Tidbits · Jul 2

#Cameco announced largest producing #Uranium mine at 13% of world production, #CigarLake, temporarily suspended production suspended with nearby by major wildfire. My SAF Group commodities partner @CnkGt reminded of its #1 status

cameco.com/media/news/cam...

world-nuclear.org/information-li...



World Nuclear Association [LINK]

World Uranium Mining Production

(Updated December 2020)

- **Over two-thirds of the world's production of uranium from mines is from Kazakhstan, Canada and Australia.**
- **An increasing amount of uranium, now over 50%, is produced by in situ leaching.**

Kazakhstan produces the largest share of uranium from mines (42% of world supply from mines in 2019), followed by Canada (13%) and Australia (12%).

Production from mines (tonnes U)

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kazakhstan	17,80	19,451	21,317	22,451	23,127	23,607	24,586	23,321	21,705	22,808
Canada	9781	9145	8999	9331	9334	13,325	14,039	13,116	7001	6938
Australia	5900	5983	6991	6350	5001	5654	6315	5882	6517	6613
Namibia	4496	3258	4495	4323	3255	2993	3654	4224	5525	5476
Uzbekistan (est.)	2400	2500	2400	2400	2400	2185	2404	2404	2404	3100
Niger	4198	4351	4667	4518	4057	4116	3479	3449	2911	2983
Russia	3562	2993	2872	3135	2990	3055	3004	2917	2904	2911
China (est.)	827	885	1500	1500	1500	1616	1616	1885	1885	1885
Ukraine	850	890	960	922	926	1200	1005	550	1180	801
USA	1660	1537	1596	1792	1919	1256	1125	940	582	87
India (est.)	400	400	385	385	385	385	385	423	423	308
South Africa (est.)	583	582	465	531	573	393	490	308	346	346
Iran (est.)	0	0	0	0	9	38	0	40	71	71
Pakistan (est.)	45	45	45	45	45	45	45	45	45	45
Czech Republic	254	229	228	215	193	153	138	0	0	0
Romania	77	77	90	77	77	77	50	0	0	0
Brazil	148	265	326	182	55	40	44	0	0	0
France	7	6	3	5	3	2	0	0	0	0
Germany	8	51	50	27	33	0	0	0	0	0
Malawi	670	846	1101	1132	369	0	0	0	0	0
Total world	**53,671**	**53,493**	**58,485**	**59,331**	**56,041**	**60,304**	**62,379**	**59,462**	**53,498**	**54,752**
tonnes UO2	63,291	63,082	68,974	69,966	66,087	71,113	73,560	70,120	63,087	64,566
% of world demand	84%	87%	84%	91%	85%	98%	96%	95%	80%	81%

* Data from the World Nuclear Association. NB the figures in this table are liable to change as new data becomes available.

Mining methods have been changing. In 1990, 55% of world production came from underground mines, but this shrunk dramatically to 1999, with 33% then. From 2000 the new Canadian mines

Energy Asia	2122	4
General Atomics/Quasar	1764	3
Sopamin	1032	2
Rio Tinto	1016	2
YestKok	801	1
Other	3001	5
Total	**54,752**	**100**

* Kazatomprom 2019 financial results show 18,291 (U) as they include 50% of Energy Asia's production.

The largest-producing uranium mines in 2019

Mine	Country	Main owner	Type	Production (tonnes U)	% of world
Cigar Lake	Canada	Cameco/Orano	underground	6924	13
Husab	Namibia	Sinoko/ Uranium (CGN)	open pit	3400	6
Olympic Dam	Australia	BHP Billiton	by-product underground	3364	6

Mine	Country	Main owner	Type	Production (tonnes U)	% of world
Moinkum & Tortkuduk	Kazakhstan	Orano/Kazatomprom.	ISL	3252	6
Inkai, sites 1-3	Kazakhstan	Kazatomprom/Cameco	ISL	3209	6
Budenovskoye 2	Kazakhstan	Uranium One/Kazatomprom.	ISL	2600	5
Rössing	Namibia	Rio Tinto	open pit	2076	4
SOMAIR	Niger	Orano	open pit	1912	4
Central Mynkuduk	Kazakhstan	Kazatomprom.	ISL	1964	3
South Inkai (Block 4)	Kazakhstan	Uranium One/Kazatomprom.	ISL	1601	3
Top 10 total				**30,032**	**55%**

World uranium production and reactor requirements (tonnes U)

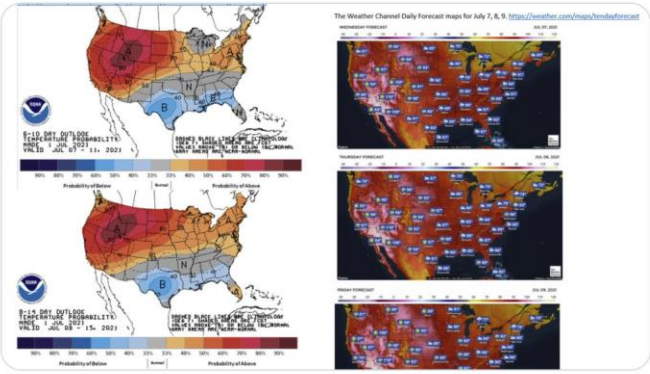
1

3

2

Dan Tsubouchi @Energy_Tidbits · Jul 1

#HenryHub closed $3.66. High global #LNG prices is pulling US LNG exports. Near term #NatGas weather demand looks either supportive if use #NOAA hot in north/cool in south, or very strong if use #TheWeatherChannel its hot everywhere.



1 4

Dan Tsubouchi @Energy_Tidbits · Jul 1

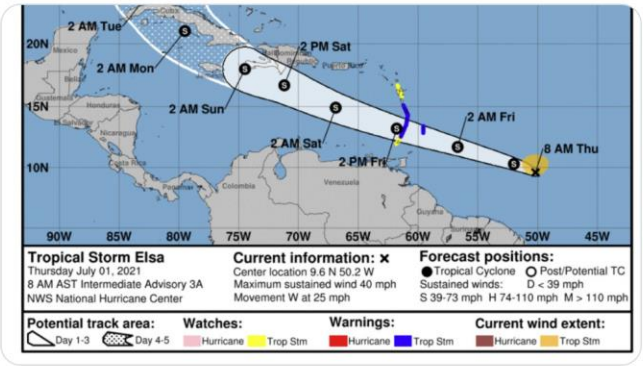
If you could invite 3 people for dinner? #SaudiEnergyMinister Abdulaziz should be on everyone's list, he is on mine! "The Man" who saved the #Oil market and shows he is just a good person with a heartfelt tribute. #OOTT Thx @dan_murphy for video.

> **Dan Murphy** @dan_murphy · Jul 1
>
> HRH shows why #OPEC goes beyond the politics. A very personal tribute from the #Saudi Energy Minister to his departing #Iranian counterpart. @CNBCi #oott #oil

23 112 83

Dan Tsubouchi @Energy_Tidbits · Jul 1

Time to watch for next #Hurricane #TropicalStorm. #Else reaches now at storm level, its early but if the current path doesn't turn to Florida, it would be to #Oil refineries in New Orleans/Gulfport. #OOTT



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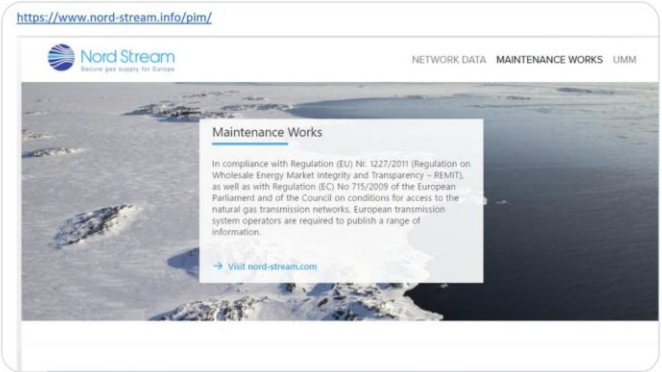
Dan Tsubouchi @Energy_Tidbits · Jul 1

#NordStream annual maintenance July 13-23 to take 5.3 bcf/d #Gazprom capacity to Europe offline. Note last yr, took 12 days July 14-26. #NatGas #LNG



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Dan Tsubouchi @Energy_Tidbits · Jun 30

Going to be a great Q2 reporting for Cdn #Oil #NatGas sector. Note June 30 closing prices WTI $73.52, EdPar $71,.67, WCS $59.52, HH $3.74, AECO $3.43. ~>10% higher than Q2 average. Q3 should be an even better quarter. #OOTT

Quarter	Brent	WTI	EdPar	WCS	HH	AECO
Q1/18	$67.00	$62.90	$57.26	$37.11	$3.09	$2.06
Q2/18	$74.41	$67.83	$60.78	$49.88	$2.84	$1.23
Q3/18	$75.27	$69.69	$59.81	$42.32	$2.92	$1.25
Q4/18	$68.18	$59.41	$36.53	$25.63	$3.78	$1.62
Q1/19	$62.91	$54.49	$50.28	$43.79	$2.92	$2.55
Q2/19	$68.58	$59.96	$54.41	$47.46	$2.55	$1.13
Q3/19	$61.95	$56.48	$52.43	$43.91	$2.37	$1.00
Q4/19	$62.51	$56.83	$50.61	$37.98	$2.36	$2.46
Q1/20	$51.28	$46.73	$39.75	$28.55	$1.91	$2.04
Q2/20	$31.14	$27.67	$21.84	$18.02	$1.70	$2.00
Q3/20	$42.70	$40.87	$36.83	$31.13	$1.98	$2.26
Q4/20	$44.47	$42.67	$37.92	$31.34	$2.47	$2.65
Q1/21	$60.51	$57.75	$54.17	$45.83	$3.39	$3.13
Q2/21	$68.43	$65.89	$61.93	$53.11	$2.76	$2.95

Source: Bloomberg

1 13

Dan Tsubouchi @Energy_Tidbits · Jun 30

Reached into the golf bag for the first time since Covid and pulled out this #Chevron golf ball. Found it pre Covid when golfing at @PalmillaGolf. Wonder with #WTI $73 will the 2021 version be Titleist?

2 6

Dan Tsubouchi @Energy_Tidbits · Jun 30

For those not near their laptop, EIA weekly #Oil #Gasoline #Distillates inventory data for week ended June 25 just out. Prior to release WTI was $73.70. #OOTT ir.eia.gov/wpsr/overview....

Oil/Products Inventory June 25: EIA, Bloomberg Survey Expectations, API

(million barrels)	EIA	Expectations	API
Oil	-6.72	-3.85	-8.10
Gasoline	1.52	-0.90	2.42
Distillates	-0.87	1.00	0.43
	-6.07	-3.75	-5.25

Note:In addition, SPR draw of 1.4 mmb for June 25-week
Note: Cushing had a draw of 1.46 mmb for June 25 week
Source EIA, Bloomberg
Prepared by SAF Group

2

Dan Tsubouchi @Energy_Tidbits · Jun 30

#OPEC internal doc, @Reuters bullish #Oil inventory deficit in H2, but potential overhang of 181 mmb by yr end 2022. Sounds ominous, but can flip to 181 mmb deficit if KSA keeps 1 mmbd off market Great reporting @Reuters Rania El Gamal & @aghaddar #OOTT reuters.com/world/middle-e...

The panel, known as the Joint Technical Committee, sees an overhang of crude by the end of 2022 under different scenarios looking at supply and demand in the oil market, the report said.
The report showed that while the oil market was in deficit in the short term, a glut was on the horizon after OPEC and its allies, a group known as OPEC+, unwinds cuts that now stand at just under 6 million barrels per day (bpd) from April next year.
Under a base scenario, inventories in OECD industrialised economies would stand at 96 million barrels below the 2015-2019 average for the third quarter and at 125 million barrels below that average in the fourth quarter, the report said.
"In 2022, a significant increase is seen, leading to an overhang of 181 million barrels by the end of the year," the report added.
The base case adopts global oil demand growth assumptions and non-OPEC supply growth from OPEC's June monthly report, with a preliminary forecast for 2022.
The panel said it still forecast global oil demand growth of 6 million bpd in 2021, but it said there were downside risks.
It said demand could slow given "uncertainties associated with the divergent pace of the global economic recovery, emerging inflationary pressures, the surge in sovereign debt, the uneven vaccine rollout ..., as well as the widening spread of the COVID-19 Delta variant."
OPEC watchers said the group could leave production unchanged when ministers meet on Thursday or decide to boost output, possibly by more than 1 million bpd or by a more modest 0.5 million bpd.
OPEC+ sources said no unanimous decision or recommendation emerged from panel's consultations on Tuesday.
Reporting by Rania El Gamal and Ahmad Ghaddar; Editing by Louise Heavens and Edmund Blair
Our Standards: The Thomson Reuters Trust Principles.

6 8

Dan Tsubouchi @Energy_Tidbits · Jun 30

#OilDemand likely lower in H2 than expectations. Reminder from @sean_evers #DeltaVariant is increasing travel restrictions in and from EU. Look for this as a theme in mid July @OPECSecretariat MOMR & @IEA OMR forecasts. Usual good @gulf_intel podcast today. #OOTT

SAF Group created transcript of excerpt from Gulf Intelligence Daily Silk Road "Live' [link]

Items in "*italics*" are SAF Group created transcript

Sean Evers, Managing Partner of Gulf Intelligence on his closing comments "*My second half of the year I think is going to be the European summer is not coming. I think that's what's transpiring now. That whatever aviation volumes that were going to be consumed with Europeans travelling to their holiday destinations is looking increasingly very doubtful with all these various restrictions coming back in due to this Delta variant. So I think you have, not going to be quite that second half of the year demand recovery that is forecast. to what extent that is built into the price, we're going to wait and see.*"

SAF Group http://www.safgroup.ca/insights/trends-in-the-market/

1

Dan Tsubouchi @Energy_Tidbits · Jun 29

#OPM. #Reuters report #Aramco looking at copy/paste of its $12.4b sale of minority interest in #Oil pipelines, this time in #NatGas pipelines. Reminds key KSA 2020s financial theme - increasing use of Other People's Money. Avoid burning Nest Egg. #OOTT

reuters.com/business/energ...

Dan Tsubouchi @Energy_Tidbits · Jun 28

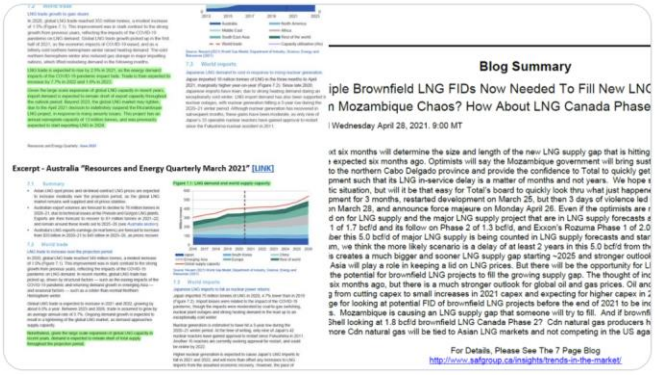
Positive for #Oil, KSA will want to keep oil prices high. Despite Brent $68, Nest Egg (Net Foreign Assets) still large but dropping, $432.6b 05/31/21, -$3.7b MoM, -11.7b YoY, -304.4b vs $737.0b peak 08/31/14. Reminds Other People's Money is big KSA 2020s financial theme #OOTT

Source: Bloomberg
Prepared by SAF Group http://www.safgroup.ca/insights/trends-in-the-market/

1 2 1

Dan Tsubouchi @Energy_Tidbits · Jun 28

#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 safgroup.ca/insights/trend...

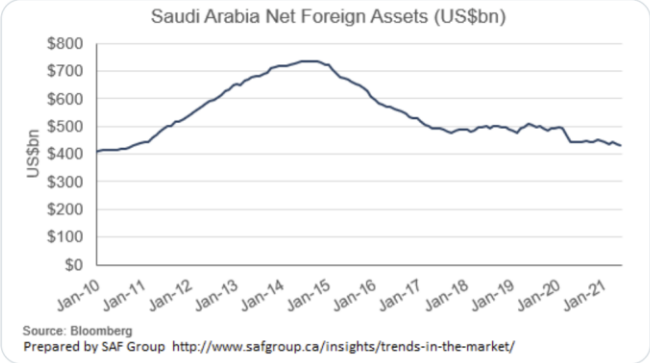


> **Dan Tsubouchi** @Energy_Tidbits · Apr 30
>
> Big new #LNGSupplyGap is coming. $TOT "at least" 1 yr delay at 1.7 bcf/d MZ Phase 1 LNG actually points to delays at it 1.3 bcf/d Phase 2 & $XOM 2.0 bcf/d Rozuma Phase 1 ie. 5 bcf/d MZ LNG is delayed. See below SAF blog. #LNG #OOTT safgroup.ca/insights/trend...

2 4

Dan Tsubouchi @Energy_Tidbits · Jun 28

Positive for #Oil, KSA will want to keep oil prices high. Despite Brent $68, Nest Egg (Net Foreign Assets) still large but dropping, $432.6b 05/31/21, -$3.7b MoM, -11.7b YoY, -304.4b vs $737.0b peak 08/31/14. Reminds Other People's Money is big KSA 2020s financial theme #OOTT



2 11

Dan Tsubouchi @Energy_Tidbits · Jun 28

Mid Oct election coming, #CatherineMckenna retiring good indicator. #Liberals platform will be tougher on #OilSands #FossilFuels. 06/13 #Trudeau wouldn't acknowledge their #NetZero plan, plus G7 30-pg added climate change commitments. #OOTT

SAF GROUP

Energy Tidbits

May 23, 2021

Produced by: Dan Tsubouchi

G7 Policymakers Make New Commitments On Energy Transition ie. Future Emissions Laws/Regulations That Are Coming

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. Our priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector and not just a specific company results.

Dan Tsubouchi @Energy_Tidbits · Jun 13

#OilSands. Note #Trudeau wouldn't even acknowledge the oil sands pathways to net zero, or say positive move but need to do more or move faster. not a good sign. have to worry it links to prior tweet #G7 May 21 warning re stranded assets risk. #OOTT...

1 2 1

Dan Tsubouchi @Energy_Tidbits · Jun 28

Cloudy/Rain = Less #Solar = More #LNG Imports in Japan. Continuing to keep more LNG cargoes in Asia & not going to refill Europe storage. Helping keep much higher than expected LNG summer prices & positive for summer US LNG exports. #NatGas Thx @SStapczynski @TheTerminal

(Bloomberg) — Fears that utilities will be caught without enough fuel this summer have re-emerged as thermal power generation jumps and rainy weather curbs solar output.

Kansai Electric Power Co., one of the nation's biggest power generators, recently purchased a shipment of liquefied natural gas for August and is seeking another cargo for the same month, according to traders with knowledge of the matter. This is a stark reversal to just a few weeks ago, when Kansai had said it wouldn't buy spot cargoes due to sufficient supply from long-term contracts.

Rainy or cloudy weather is forecast to continue across most of the country through July 4, according to the Japan Meteorological Agency. Available gas-fired power capacity is expected to top 70 gigawatts by the end of this week, a more than 50% increase from the start of June, according to data from the Japan Electric Power Exchange.

Utilities are facing one of the toughest summers in the last several years after the government warned of a potential supply crunch, which is compounded by the unpredictable nature of solar energy. While several nuclear reactors and older thermal facilities are slated to restart and add much-needed supply, a sudden spike of hot weather could catch some utilities unprepared.

To make matters worse, natural gas prices around the world are surging on a lack of spot supply. If a Japanese utility needs to procure an LNG cargo at the last minute, they may be forced to pay at sky-high rates, similar to what happened in the previous winter.

In the short-term, power prices may also be supported by forecasts for warmer-than-normal nationwide temperatures for the next nine days.

Japan's 24-hour average spot electricity price for next-day delivery settled at 7.65 yen per kilowatt-hour on Monday, up 4.1% from a week ago, according to data compiled from JEPX.

* Baseload Tokyo power futures for June delivery on EEX settled at 7.09 yen/kWh on Friday, down 2.3% from the previous week

** July contract -7.6% w/w to 10.42 yen

** August contract -4.5% w/w to 14.09 yen

Dan Tsubouchi @Energy_Tidbits · Jun 25

Support for summer #LNG prices. @JMA_bousai updated Japan July-Sept ave temp forecast still calls for warmer than normal summer. #TokyoOlympics starts July 23, even without foreign spectators, should add some more than usual power demand. #NatGas ...

1 2 11

Dan Tsubouchi @Energy_Tidbits · Jun 28

Monday #Oil data point to note. @Vortexa crude oil floating storage. 76.05 mmb at 06/25, -15.09 mmb WoW. 06/26/20 was peak at 217.17 mmb. Still up vs pre Covid, but a demand recovery of 1 mmb/d wipes that out very quickly. Positive for #Oil. Thx @Vortexa @TheTerminal #OOTT

* Middle East down 32% w/w to 7.21m bbl; lowest since February
* Europe up 57% w/w to 7.02m bbl
* West Africa down 6.5% w/w to 3.74m bbl
* North Sea up 18% w/w to 3.09m bbl
* U.S. Gulf Coast down 100% w/w to 0.00k bbl; lowest since December
* Company Exposure:
** Asia: Cosco Shipping Energy Transportation Co., HMM Co. Ltd., Mitsui O.S.K. Lines Ltd., Nippon Yusen KK
** Europe: Euronav NV, Frontline, Vopak
** U.S.: DHT Holdings, International Seaways, Nordic American Tankers, Teekay Tankers, Tsakos Energy Navigation
* NOTE:
** Vortexa data exclude FPSO units, oil products and Iranian condensate
** Crude oil transferred by STS isn't included until that volume has been stationary on receiving vessel for 7 days
** Data don't include vessels booked for floating storage until they are actually stationary for the minimum period
** See VTXA or DATA FLOAT for more data, which is subject to revisions, and see NI TANTRA for all tanker-tracking stories
** See SPOT FREIGHT for freight rate assessments using shipbroker data

To contact Bloomberg News for this story:
+1-212-617-2000 or newsauto@bloomberg.net

To view this story in Bloomberg click here:
https://blinks.bloomberg.com/news/stories/QVEGS1GFR4SG

7 10

Dan Tsubouchi @Energy_Tidbits · Jun 27

A first stop when looking for data on any US refinery is new @EIAgov annual Refinery Capacity Report posted Fri. Provides all key data for every US refinery and roll up to state/US. #OOTT eia.gov/petroleum/refi...

a constant reduction in conventional oil refining capacity. Our Energy Tidbits memos have noted several announcements of refinery closures or conversions into import facilities or conversion into renewable fuels. The EIA estimates that the US saw a decline in the number of operating refineries and operating refining capacity. We created the below table to show the comparison of the EIA data for Jan 1, 2021 vs Jan 1, 2020. The EIA sees 7 less operating refineries and ~830,000 b/d less operating capacity per calendar day. Note that the EIA provides the same data in the below table for every refinery. This is always our first go-to when we are looking for data on a US refinery. Our Supplemental Documents package includes excerpts from the EIA report.

Figure 20: US Refinery Capacity

				Atmospheric Crude Oil Distillation Capacity					
	Number of Operable Refineries			Barrels per Calendar Day			Barrels per Stream Day		
Total US	Total	Operating	Idle	Total	Operating	Idle	Total	Operating	Idle
Jan 1, 2020	135	131	4	18,976,085	18,548,985	427,100	20,092,219	19,634,219	458,000
Jan 1, 2021	129	124	5	18,127,700	17,719,600	408,100	19,160,469	18,722,969	437,500
YoY Change	-6	-7	1	-848,385	-829,385	-19,000	-931,750	-911,250	-20,500

Source: EIA

Excerpt EIA Refinery Capacity Report https://www.eia.gov/petroleum/refinerycapacity/refcap21.pdf

	Atmospheric Crude Oil Distillation Capacity				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day			Thermal Cracking			
State/Refiner/Location	Operating	Idle	Operating	Idle	Vacuum Distillation	Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
Texas	5,772,329	80,000	6,144,750	88,000	2,631,000	917,707	42,000	0	0
Pasadena Refining Systems Inc									

1 1

Dan Tsubouchi @Energy_Tidbits · Jun 27

ICYMI. Slowly removing oil sands facilities from Covid outbreaks list. Latest to be removed was Suncor Mackay River. #OOTT #OilSands

rmwb.ca/en/fire-and-em...

Source: Wood Buffalo

https://www.rmwb.ca/en/fire-and-emergency-services/resources/Documents/public_covid-19/06.24.2021---COVID-19-Community-Update-159.pdf

rmwb.ca/covid19

Regional Municipality of Wood Buffalo

Stage 3 of Open for Summer to begin July 1st

June 24, 2021

COVID-19 UPDATE

RMWB Municipal Face Covering Bylaw Repealed Provincial Mask Mandate still in effect until Stage 3.

March 20, 2020 – June 23, 2021

1 4

Dan Tsubouchi @Energy_Tidbits · Jun 27

Our weekly SAF June 27, 2021 Energy Tidbits memo was just posted to our SAF Group website. This 42-pg energy research piece expands upon and covers many more items than tweeted this week. See the research section of the SAF website. #Oil #OOTT #OPEC #LNG safgroup.ca/insights/trend...

Energy Tidbits

June 27, 2021

Produced by: Dan Tsubouchi

Biden Either Doesn't Estimate or Won't Say How Many $ Trillions To Get US to Carbon Neutral

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. Our priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector and not just a specific company results. Our target is to write on 48 to 50 weekends per year and to post by noon mountain time on Sunday.

This week's memo highlights:

1. Granholm says the Biden administration doesn't have an estimate for how many $ trillions it will cost to get US to carbon neutral. (Click Here)

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